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Volunteer tutoring programs in reading: A review

The America Reads Challenge Act of 1997 (ARC) is the Clinton administration's effort to respond to the literacy problem faced by U.S. children. The ARC makes a national commitment to the goal that every child will read independently and well by the end of the third grade. This is a goal of great importance; 40% of U.S. children are now reading below the basic level on national reading assessments (National Assessment of Educational Progress, 1994). This challenge has elevated the importance of reading and education in children's lives. Children who do not learn to read in the early grades begin life's journey on a path of failure and poverty (Lloyd, 1978).

The intention of the proposed legislation is to support schools and families in teaching all children to read. The ARC legislation has two main components: (a) the America's Reading Corps, which includes a volunteer tutoring component, and (b) the Parents as First Teachers grant, which would support effective programs to assist parents in promoting their children's early literacy. Of the proposed US\$2.75 billion, the legislation allocates the majority of the funds to place 1 million volunteers in schools to tutor students in reading.

The guidelines for the ARC legislation propose that a local reading partnership be established between at least two agencies or organizations. One of the organizations must be a public school or a school district. The other can be a library, literacy group, museum, or youth service group, among others. The proposed legislation requires that each volunteer reading program (a) use qualified and trained volunteers, (b) target areas with a high number or percentage of children from low-income families or with the greatest need of reading assistance, (c) support in-school reading programs, and (d) involve parents in the reading process. However, the legislation does not prescribe how these recommendations will be

translated into practice. As of this writing, the ARC legislation has not been passed by Congress. Both the Senate and the House are examining and discussing the initiative, and it is likely that, if the legislation is approved, it will be extensively modified.

Although ARC is an ambitious and important challenge for U.S. children, there are several issues regarding volunteers and the role that they play in schools that need to be carefully addressed if this initiative is to have an important impact on the reading performance of young children. This has not been systematically addressed in the legislation. All over the U.S., school administrators, principals, and community activists are scrambling to identify or develop volunteer tutoring programs that can be used in their schools. Unfortunately, there are few guidelines for selecting or developing these programs.

Before millions of volunteers enter schools, it is important to thoroughly examine the role volunteers can play and the kind of training they will need to be effective. The purpose of this article is to provide a comprehensive review of the current state of knowledge about the effects of various volunteer tutoring programs in reading. If ARC is to achieve its ambitious goals, it is essential for its tutoring programs to have research supporting their effectiveness.

Currently, there is very little work documenting the effectiveness of adult volunteers as reading tutors. Wasik and Slavin (1993) reviewed five tutoring programs that used certified teachers and paraprofessionals. The findings from this review supported two important conclusions. First, one-to-one tutoring by teachers can be an extremely effective form of instruction. The primary drawback of tutoring is the high cost of providing these services to children. Second, programs that used certified teachers as tutors appeared to obtain substantially larger

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THE AMERICA Reads Challenge Act of 1997 makes a national commitment to the goal that every child will read independently and well by the end of the third grade. The primary means of achieving this goal are to place 1 million volunteers in schools to tutor children in reading. This article reviews both the quantitative and qualitative findings of 17 programs/studies in volunteer tutoring. Only 3 of the programs had an evaluation comparing equivalent treatment and

comparison groups to determine the effectiveness of the programs. Five of the programs had no evaluations at all. The limited research does indicate that volunteers can be successful if they are trained and follow specific guidelines. Important aspects of volunteer tutoring programs are summarized. Considerably more research needs to be done to ensure that tutoring by volunteers will result in meaningful benefits to children.

Programas de tutorías voluntarias en lectura: Una revisión

EL ACTA del Desafío América Lee (America Reads Challenge Act) de 1997 establece un compromiso con el objetivo de que cada niño leerá en forma eficaz e independiente al finalizar el tercer grado. Los medios principales para alcanzar este objetivo consisten en colocar un millón de voluntarios en las escuelas para realizar tutorías en lectura con los niños. Este trabajo revisa los resultados cuantitativos y cualitativos de 17 programas/estudios de tutorías voluntarias. Sólo 3 de los programas incluyeron una evaluación comparando

tratamientos equivalentes y grupos de comparación para determinar la eficacia de los programas. Cinco de los programas no presentaron ninguna evaluación. La limitada investigación indica que los voluntarios pueden tener éxito si están entrenados y siguen direcciones específicas. Se sintetizan aspectos importantes de los programas de tutorías voluntarias. Se requiere considerablemente más investigación para asegurar que las tutorías hechas por voluntarios resultarán en beneficios significativos para los niños.

Freiwillige Nachhilfe-Programme beim Lesen: Ein Überblick

DAS AMERIKANISCHE Gesetz über die Aufforderung zum Lesen, America Reads Challenge Act of 1997 macht es sich zur Zielsetzung als eine nationale Verpflichtung, daß jedes Kind am Ende der dritten Klasse unabhängig und gut lesen wird. Die wesentlichen Mittel um dies Ziel zu erreichen, bestehen darin, eine Million freiwillige Helfer in Schulen zu plazieren, um Kindern beim Lesen Nachhilfe zu erteilen. Diese Abhandlung setzt sich sowohl mit den quantitativen als auch mit den qualitativen Ergebnissen aus 17 Programmen/Studien über den freiwilligen Nachhilfeunterricht auseinander. Lediglich 3 der Programme hatten eine vergleichende

Bewertung unter äquivalenter Behandlung und hatten Vergleichsgruppen, um die Effektivität der Programme zu bestimmen. Fünf der Programme hatten keinerlei Bewertungen. Die begrenzte Nachforschung zeigt auf, daß freiwillige Helfer erfolgreich sein können, wenn sie geschult sind und bestimmten Richtlinien folgen. Wichtige Aspekte der Tutorenprogramme mit freiwilligen Helfern sind zusammengefaßt. Wesentlich mehr Forschung ist erforderlich, um sicherzustellen, daß Nachhilfeunterricht durch freiwillige Helfer zu einem bedeutsamen Nutzen für die Kinder wird.

ボランティアによる読みの個別指導プログラム：総括

1997年に制定された America Reads Challenge Act によって、全ての子供が小学3年を終える頃までには独力で上手に読むことができるようになるという目標を達成するために、全国レベルの運動が展開された。この目標を成し遂げるための主たる手段は、子供達の読みの個別指導をしてくれる百万人のボランティアを学校に配置することである。本論はボランティアによる個別指導に関わる17事例の量的及び質的研究の結果を総括したものである。しかし指導プログラムの効果を測定するために、似たような指導を施したいいくつかのグ

ループを比較して評価を行っていた事例はたった3件しかなかった。また17事例のうち5件は全く評価を行っていなかった。限られた研究ではあったが、結果としてボランティアが研修を受け、明確なガイドラインに従った場合にその効果を発揮するようであることが分かった。ボランティアによる個別指導プログラムの重要な側面が要約されている。ボランティアによる個別指導が結果的に子供達にとって意味があり役立つということを確かなものにするためには、まだまだ多くの調査研究がなされる必要がある。

Les actions de tutorat volontaire en lecture: état de la question

L' "ACTION Défi l'Amérique Lit" de 1997 représente un engagement national dont le but est que chaque enfant soit capable de lire tout seul et à un bon niveau à la fin de la troisième année d'école. Le principal moyen pour y parvenir consiste à mettre un million de volontaires dans les écoles en tant que tuteurs de lecture pour les enfants. Ce texte passe en revue à la fois les données quantitatives et qualitatives de 17 études/actions de tutorat volontaire. Seul 3 des actions comportait un dispositif d'évaluation avec traitement équiva-

alent et groupes de comparaison en vue de déterminer l'efficacité des actions. Cinq des actions ne comportait aucune évaluation. La recherche ainsi limitée indique que les volontaires peuvent réussir s'ils ont été formés et suivent des consignes spécifiques. On a également synthétisé des aspects importants des actions de tutorat volontaire. Il faudrait faire beaucoup plus de recherches pour être certain que le tutorat par des volontaires procure des bénéfices significatifs aux enfants.

impacts than those that used paraprofessionals. Further, in the programs that effectively used paraprofessionals, the paraprofessionals were highly trained and the program was highly structured, with specific tutors' manuals, student materials, and training procedures.

Two of the programs reviewed by Wasik and Slavin (1993) are important to understand as background to the current interest in volunteer tutoring. The most important of these is Reading Recovery, a tutoring program for at-risk first graders that was originally developed in New Zealand (see Pinnell, DeFord, & Lyons, 1988). This program, currently used in more than 6,000 U.S. schools, has excellent evidence of effectiveness for first graders who receive it. However, it is very expensive, with reported costs ranging from US\$2,400 (Assad & Condon, 1996) to \$8,000 per child (Shanahan & Barr, 1995), because it uses certified teachers as tutors and provides them with extensive professional development.

The success of Reading Recovery, and its expense, have led researchers and educators to search for less expensive means of producing similar outcomes. Several of the volunteer tutoring programs reviewed here are explicitly based on Reading Recovery; in fact, Reading Recovery researchers at Ohio State University developed one of the models to enable AmeriCorps volunteers to serve children who are less at risk than those served by Reading Recovery (DeFord, Pinnell, & Lyons, 1997).

The second influential tutoring program is one that is part of Success for All (Slavin, Madden, Dolan, & Wasik, 1996), a schoolwide reading model used in about 750 mostly high-poverty elementary schools. Success for All provides curriculum reforms, schoolwide professional development, and family support services in addition to one-to-one tutoring from certified teachers and paraprofessionals for the lowest achieving first, second, and third graders. Research on Success for All has also shown substantial positive effects, but like Reading Recovery it is expensive, and the tutors are a major portion of the expense.

As a practical matter, it would be a major contribution to find volunteer tutoring programs that have even half the impact of Reading Recovery and Success for All, as this would enable far more children to be served with some degree of success. Even in conjunction with these programs or others of similar intensity, effective volunteer tutoring programs could help a greater number of children benefit from one-to-one attention at a critical point in their literacy development.

Review methods

The primary goal of this review is to examine the practices that constitute volunteer tutoring programs in

reading and to understand the knowledge base that is available on using adult volunteers as tutors. Programs and research studies were selected if they met the following criteria: (a) use of adult volunteers as tutors, (b) a focus on reading as the subject area, and (c) a focus on children from kindergarten through third grade. The primary reason for these criteria was that they are aligned with the agenda of the ARC, in which adult volunteers (including college students) would be used to tutor reading to children in kindergarten through third grade. The review was not limited solely to achievement effects in reading, but all programs reviewed that had an evaluation did examine reading achievement as a primary outcome measure.

As in any review that requires an analysis and synthesis of researchers' work, it is important to make explicit the underlying assumptions that affect the perspectives taken in this article. First, it is assumed that it is possible to use comparative analyses to isolate causal factors responsible for specific outcomes (e.g., significant increases in reading comprehension). Second, while children's performance on standardized reading tests is not the only way, or necessarily the best way, to document positive changes in children's reading, these and other assessments were accepted as evidence, with appropriate controls. The focus of this review is on determining whether there are empirical grounds for making causal assertions about the effects of tutoring based on the research designs and findings of those studies.

Of course, valid forms of scientific inquiry extend well beyond considerations of causal relationships. Qualitative analyses of tutor-assisted classrooms can reveal underlying patterns and themes that emerge in these classrooms. Such analyses provide important insight into the nature of tutoring that is often missed when one conducts only a quantitative analysis of multivariate relationships (Owaga & Malen, 1991). To complement and extend the quantitative analysis of programs, it was important to include qualitative analyses in this review, and this was done whenever such data were available.

For this review, an ERIC search of all educational and psychological journals and unpublished dissertations was conducted to locate all studies and programs of reading-based tutoring programs that involved adult volunteers. This search identified 11 programs. In addition to these programs, I obtained the following information on programs that were described as effective programs in documentation published by ARC but did not appear in the literature search: the SLICE/AmeriCorp program, Early Identification Program, Intergenerational Tutoring Program, Growing Together, Hilliard Elementary School Tutoring Program, and Cabrini-Green Tutoring Program. This was done in order to provide information on

programs that are receiving considerable attention, even though data on them are lacking.

Whenever possible, effect sizes were computed on the evaluation data so that a common comparative metric could be used across programs. In this article, effect sizes are calculated by subtracting the control group's mean scores on a specific measure from the treatment group's scores and dividing by the control group's standard deviation. An effect size of $+0.25$ or more is considered an educationally meaningful difference (Cohen, 1988). For example, a treatment effect of this size would be roughly equivalent to a gain of 4 IQ points, 25 points on the Scholastic Assessment Test (SAT), or half of a standard deviation. Unfortunately, it was not always possible to compute effect sizes, making it difficult to make cross-program comparisons. In some cases gain scores and correlations are presented.

For each program or study in this review, there is a brief description of each program, the research findings, and information pertinent to dissemination of the program (see Appendix for a summary table of each tutoring program). This comprehensive approach was designed to foster insight into the structure, the effectiveness, and the feasibility of each tutoring model.

Evaluating tutoring programs

This section reviews research on programs that had at least some sort of evaluation evidence. These are (a) the Howard Street Tutoring Program, (b) School Volunteer Development Project, (c) Book Buddies, (d) Juel's (1996) program, (e) Reading One-One, (f) Helping One Student To Succeed (HOSTS), (g) Reading Recovery/AmeriCorps, (h) Intergenerational Tutoring Program, (i) Reading Together/VISTA, (j) Early Identification Program, and (k) Books and Beyond.

Howard Street Tutoring Program

The Howard Street Tutoring Program is a small community-based after-school tutoring program that was developed in 1979 as a joint venture of the National Reading Center at the National College of Education in Evanston, Illinois, and the Good News Educational Workshop, a community organization in a disadvantaged neighborhood in the North Side of Chicago (Morris, 1990). The goal of the program is to provide volunteer services to second- and third-grade students who are having difficulty in reading. Morris, Shaw, and Perney (1990) explained that the program did not focus on first graders because the tutoring program begins in the fall of the school year, and it is too early at that time to identify first graders who are failing in reading. It is important to note, however, that this program could easily be

adapted for first graders and implemented before the students have had the opportunity to fail.

Students are selected for the tutoring program on the basis of their performance on informal reading and spelling measures. These measures are administered by a school-based reading specialist. Students who scored the lowest on the pretest measures are selected to fill the slots available for tutoring.

The volunteer tutors vary from undergraduate college students to suburban mothers to retirees. Tutors are not paid and are trained on the job. Tutors begin working with a tutoring supervisor who is a teacher. The supervisor models a tutoring session with a child while the volunteer tutor observes. After this session, the supervisor and the tutor discuss the techniques used in this session. During the next session, the volunteer tutor is observed by the supervisor. The supervisor provides feedback and comments on the tutoring session. This one-to-one modeling and feedback continues for approximately three to four sessions or until the supervisor is satisfied with the tutor's performance. After this observation period, the tutor continues to work independently with the student.

After the initial training, the supervisor develops lesson plans for each tutor to use with each student. This is a labor-intensive activity that requires a skilled reading specialist. Tutors are also provided with a tutoring manual that outlines the basic components of the tutoring session as well as the suggested time allotted for each component. These components are theoretically based and are similar to the components of Reading Recovery tutoring sessions. For example, reading at the child's instructional level takes 15–20 minutes, word study takes 10–12 minutes, and writing takes about 15 minutes. Students are tutored in 1-hour sessions twice a week for a minimum of 1 year.

Materials required for this program are basal readers, trade books, and word cards. The cost of the program, in addition to these materials, included a salary for a trained reading specialist to supervise the tutors.

Research findings. To determine the effectiveness of the Howard Street Tutoring program, Morris and his colleagues (1990) gathered data from a treatment and a control group. In addition, data from case studies and descriptive data were collected. The evaluation involved 50 second and third graders in an inner-city Chicago neighborhood who were screened and pretested on word recognition measures, spelling, and basal reading passages. These measures were adapted from standardized measures, but none of the measures in themselves were standardized. Students were matched on the word recognition score and randomly assigned to either the control or treatment group. Over the course of the

school year, the tutored children received an average of 50 hours of one-to-one instruction in reading. Given the availability of tutors and student mobility, posttesting was based on 17 matched pairs at the end of the first year of the evaluation and 13 different matched pairs of students at the end of the second year of the evaluation.

Students were posttested on the same reading and spelling battery that was used as a pretest. Results from the Year 1 evaluation revealed overall positive effects for the tutored group over the control group. On the measures of general word recognition ($ES = +.25$) and basal word recognition ($ES = +.61$), the tutored group recognized more words than the nontutored group. On the basal passage that required oral reading, the tutored group performed substantially better than the nontutored group ($ES = +1.07$). The spelling scores also showed that the tutored children spelled more words correctly than the nontutored children ($ES = +.82$).

Data from the second-year evaluation show similar findings. Word recognition scores for timed and untimed performance showed that the tutored group performed better than the nontutored group ($ES = +.58$ for timed and $+38$ for untimed). On basal word recognition, the tutored group performed better than the nontutored group ($ES = +.68$). On the basal passage assessment, a measure of oral reading, the tutored students were able to read more effectively than nontutored students ($ES = +1.77$). Tutored students outperformed nontutored students on spelling ($ES = +.82$). Although these data are based on a small sample of children, they clearly support the effectiveness of the Howard Street Tutoring Program.

Morris et al. (1990) also reported interesting findings on the variability in the performance among the students in both the treatment and control group. In the group of students who received tutoring, approximately a third were reading at grade level at the end of the year, another third gained about 1 year but were still not reading at grade level, and the remaining third had improved but at a slower rate compared to the other students in tutoring. In comparison, about 50% of the students in the nontutored group were reading at a slower rate and making limited progress. Only one of the nontutored children was reading at grade level at the end of the year, and less than half of the nontutored students made gains of 1 year but were still not reading at grade level.

Data from two case studies also provided information regarding pacing effects and tutoring. Two students are described who were not statistically significantly different in reading sight vocabulary at pretesting but who performed very differently in the year of tutoring. One student did very well in tutoring and began to excel, whereas the other student was struggling and learning at

a slower pace. The case study data described how the reading supervisor assessed the differences in the two students and adapted the tutoring lessons to fit the skill level of the student.

Morris et al. (1990) argued that adjusting the pacing of information in tutoring to match the needs of the students was productive for both students. Although the student who was reading at a slower pace also received instruction at a slower pace, this student was able to develop a solid foundation in reading. Similarly, the student who responded well to tutoring, consequently, received instruction at a faster pace and had opportunities to read more and at a higher level than the slower paced student.

Dissemination issues. The Howard Street Tutoring Program required a skilled supervisor to monitor the tutors and to write individual lesson plans for the children. The supervisor was paid, but the volunteers were not. Information on monitoring and developing lesson plans was not clearly documented, so dissemination of this aspect of the program would be difficult. There is a manual that includes the various components of the program. The materials for this program are not standard. The basal readers and trade books that are used in the program are widely available.

The Howard Street Tutoring Program is still in existence in Chicago, but its author, Darrell Morris, is now at Appalachian State University in Boone, North Carolina, and has implemented similar programs in western North Carolina. His current project, First Steps (Morris, 1995), is a first-grade, one-to-one tutoring program that trains certified teachers to work with children who are at risk for reading failure.

School Volunteer Development Project

The School Volunteer Development Project was developed in Dade County, Florida, as an intervention for second through sixth graders who were having difficulty in reading. This program is no longer being implemented (U.S. Department of Education, 1979). Community volunteers tutored children for a half hour a day four or five times a week. Tutors were trained prior to tutoring in a variety of tutoring skills and the use of multimedia materials. In addition, tutors worked with a reading specialist on the skills that they were tutoring.

Research findings. Fifty students were randomly assigned to tutored or untutored groups. All students were pre- and posttested on the Metropolitan Achievement Test (MAT). After one year of tutoring, students who received tutoring gained $+50$ standard deviation more in reading than the untutored group. These data support the effectiveness of this tutoring project on children's reading.

Dissemination issues. This program was disseminated in two schools in Florida and was terminated during the 1980s. The only available information is from the Joint Dissemination Review Panel (JDRP) reports.

Book Buddies

Book Buddies is a program developed by Marcia Invernizzi, Connie Juel, and their colleagues (Invernizzi, Juel, & Rosemary, 1996/1997; Invernizzi, Rosemary, Juel, & Richards, 1997) at the University of Virginia. The goal of this program is to provide low-cost, one-to-one tutoring to first graders who are having difficulty learning to read. Invernizzi et al. (1997) argued that, with intensive and structured training and ongoing supervision, volunteers can be trained to work effectively in helping at-risk children to read.

A volunteer recruiter solicited interested community members through media, public meetings, and business associations to work in the schools. In the first 3 years of this program, a maximum of 15 community volunteers per school were placed in six elementary schools in the Charlottesville City, Virginia, School District. First graders were tutored twice a week for 45 minutes each time. This program mainly provides pull-out services but could be adapted for use after school.

The Book Buddies program developers, who are university-based reading researchers, provided an initial 2-hour training session and two additional sessions throughout the school year. Each of these sessions incorporated video demonstration lessons of actual tutoring sessions and a walk-through of the tutoring lesson plan. The training sessions were modeled on the format of teachers' professional conferences, with whole-group presentations focusing on reading methods and theory and small-group workshops allowing volunteers to ask questions and discuss the information presented.

In addition to these training sessions, a graduate student or a former graduate student in reading education served as an onsite reading coordinator at each school to provide ongoing training and supervision to the volunteers. The reading coordinators supervised the tutors on a daily basis, assessing the children, preparing lesson plans for the volunteers to implement, and gathering the appropriate materials that the tutors needed in order to carry out the lesson plan. In addition, they modeled tutoring sessions, observed the volunteers, provided feedback and support to the tutors as they worked with the students, and provided the volunteers with one-to-one instruction on becoming a reading tutor. Tutors also had access to a tutoring manual that outlined the tutoring methods and guidelines (Johnston, Juel, & Invernizzi, 1995).

The reading coordinators worked 17 hours a week at an hourly wage comparable to that of part-time pro-

fessionals. They supervised a maximum of 15 volunteer tutors along with their students. These reading coordinators also received training from the university researchers on topics related to reading education and to working with children who are at risk for reading failure.

The tutoring lesson was structured, and the volunteers were trained in each component of the lesson. Tutoring sessions consisted of four components: (a) rereading familiar storybooks, (b) word study, (c) writing, and (d) reading a new story. This model was similar to the tutoring lessons in the Howard Street Tutoring Program and Reading Recovery.

The cost per child for this program was estimated at US\$595.00. This figure included the salaries of the reading coordinator, salary of the volunteer recruiter, and all the books and materials used in the program.

Research findings. The evaluation of Book Buddies was originally designed to compare a treatment group to a control group of children who were on the waiting list. However, the agreement with the school district to work with the neediest children made this evaluation design impossible. Instead, pre- to posttest gains were compared for data on three cohorts of children.

All children were pre- and posttested on four measures: alphabet knowledge, concept of word knowledge, phoneme-grapheme knowledge, and word recognition in isolation. Three of the pretest measures, alphabet proficiency, concept of word, and phoneme-grapheme knowledge, were unrelated to the number of sessions that the children received. However, pretest performance on word recognition was statistically significantly correlated with number of sessions. The higher the pretest word recognition score, the fewer the number of tutoring sessions.

Given these data, Invernizzi and her colleagues (1997) compared the effects for children who had a high number of tutoring sessions compared to children who had a low number of sessions. The number of sessions ranged from 6 to 63. The median number of 40 sessions was selected as the dividing point; those who received fewer than 40 sessions were placed in the low-session group, and those who received 40 sessions or more were placed in the high-session group. An analysis of variance (ANOVA) was conducted on the data collapsed across the three cohorts. Statistically significant differences were reported between the two groups, with the children in the high-session group outperforming the children in the low-session group on phoneme-grapheme knowledge and word recognition in isolation but not on alphabetic knowledge and concept of word knowledge.

Without a no-treatment comparison group, it is not possible to fully determine the effects of the tutoring

program. It is possible that there were systematic reasons (such as poor attendance) that some children might have received fewer sessions, and these differences could have affected the outcomes. Invernizzi et al. (1997) reported that although the children in the low-session group were not different from the others in terms of poverty level, they were absent more from school. The increase in reading scores could also be the result of parent involvement and motivation to have their children read (and attend school), and not the tutoring program itself. In addition, as we learned from the Howard Street Tutoring Program, some children even without any tutoring made gains similar to those children in tutoring.

In addition to asking whether the tutoring program results in achievement gains for the students, other important questions remain regarding the structure of lesson plans. With regard to the structure of the lesson plans, Invernizzi et al. (1997) conducted a factor analysis to determine if the lesson plans statistically matched the literacy needs measured by the pretest data. From this analysis emerged four distinct factors: alphabet knowledge, concept of word knowledge, phoneme-grapheme knowledge, and word recognition. These results are described by Invernizzi et al. as "consistent with our initial beliefs about the need for a balanced approach and [they] validated our lesson plan format" (p. 286).

Dissemination issues. Book Buddies has been disseminated to six schools and is in the process of being implemented districtwide in Charlottesville. There are videotapes of effective tutoring sessions and a manual used by the tutors. The training for the reading coordinators onsite would need to be developed so that they could be trained by people other than the researchers at the University of Virginia. The cost of the program includes the salaries of reading coordinators at each school, a volunteer recruiter, and student materials, including a variety of books such as the Ready Readers by Modern Curriculum Press and other phonetic readers and easy-to-read trade books.

Jucl (1996)

Connie Jucl (1996) developed and evaluated a program at the University of Texas at Austin using at-risk college students to tutor at-risk first graders. The goal of the study was to determine the effects of tutoring on both the college students and the children and to determine what factors contribute to the successful outcomes of one-to-one tutoring. For the purposes of this review, only the effects on the children will be reported.

The tutors were students who participated in a reading methods course that was described to them as a class in which they would learn how to teach a child to read as well as work on their own reading and writing.

The majority of the students were male student-athletes who were having difficulty in reading. Children from a high-poverty, Title I school in Austin participated in the study. Each university student tutored one child for 45 minutes, twice a week.

The tutoring sessions consisted of seven components: (a) the reading of children's literature by the college student to the child and, when possible, allowing the child to read; (b) a writing activity in which the child was asked to compose a storybook, message, or free writing about a particular topic; (c) the reading of build-up readers (Guszk, 1985), which are stories made up of high-frequency words found in the children's basal readers; (d) journal writing, in which there is a combination of child-initiated and tutor-initiated writing; (e) alphabet books, which contained each letter and a key picture and key word related to the letter; (f) hearing sounds activities, such as reading rhyming books and recognizing words with similar beginning sounds (to develop phonemic awareness skills); and (g) letter-sound activities, which involved spelling and word family activities. Tutors were encouraged to use three or four of these components during each tutoring session.

Tutors met at the university once a week for a 2.5-hour class, which was taught by Connie Jucl. During this time, the tutors had the opportunity to discuss tutoring activities, literacy development, and any specific concerns about the children they were tutoring. Also, the students were trained in the components of the tutoring sessions.

Research findings. Jucl (1996) presented both quantitative and qualitative data in exploring the effects of tutoring at-risk first graders by at-risk college students. Thirty of the lowest performing first graders (including three self-contained special education students) were selected by the principal and classroom teacher to participate in tutoring. The remaining 15 first graders, who were less at risk and in general education, served as a comparison group. These 15 students were mentored by the university students but did not receive tutoring in reading. There were statistically significant and substantial initial differences between the tutored and mentored (comparison) students on the reading composite of the Metropolitan Readiness Test (MRT), 26.4 ($SD = 23.4$), and 46.1 ($SD = 14.1$), respectively.

At posttesting, all children were assessed on the Iowa Test of Basic Skills (ITBS). The mean score for the tutored children (excluding the scores from the special education students) on reading comprehension was at the 41st percentile ($SD = 24.5$), compared with the mean score of the 15 mentored students, which was at the 16th percentile ($SD = 14.1$). This suggested that, although the mentored students started out at less risk

than the tutored students, the tutored students were performing better at the end of the first grade.

The main problem with this evaluation is that the treatment and comparison were not comparable. Initially, there were statistically significant differences between the tutored and mentor groups on their performance on the MRT. Juel (1996) acknowledged this problem and stated that this was not an ideal situation from a design standpoint but made the most sense with regard to delivery of services to the children.

When Juel (1996) compared the tutored group to a normative sample, she reported that the intervention was not as successful as had been hoped. The standard deviation of the ITBS suggested that there was wide variation in the performance of the tutored students. In addition, the tutored students' performance on the Diagnostic Reading Scales (DRS) also indicated that, as a group, the tutored students were not performing much above the lowest level. These findings led Juel to examine two questions regarding tutoring: (a) What might have made some tutoring dyads successful and others not successful? and (b) Was 1 year a sufficient amount of time for the intervention?

In an analysis of the data, Juel determined that some tutoring dyads were more successful than others. Fifteen of the dyads were considered especially successful because the children scored above the 50th percentile on the ITBS and had an instructional level of at least 1.8 on the DRS. The 15 remaining performed below the 50th percentile and were reading below grade level. In order to determine what factors contributed to successful dyads, Juel (1996) examined the initial differences in students, the number of tutoring sessions students received, and the common characteristics present in successful tutoring sessions.

With regard to initial student differences, there were no statistically significant differences on the MRT between children in the successful ($x = 28.02$) and less successful ($x = 24.10$) group. Similarly, there were no differences between the number of tutoring sessions that students in the successful dyads received compared to children in the less successful dyads.

However, concurrent observations from four observers coding behaviors from transcripts and videotapes of tutoring sessions suggested that there were three characteristics of the tutoring sessions typical of the successful dyads that were not present to the same extent in tutoring dyads of less successful students: (a) more scaffolded reading and writing experiences, (b) explicit modeling of reading and writing processes by the tutor, and (c) the presence of specific activities in tutoring. Children in the more successful tutoring dyads experienced statistically significantly more scaffolding experi-

ences than children in the less successful dyads in four of the activities that were conducted during tutoring: journal writing, direct letter-sound instruction, writing, and reading literature.

In these activities, tutors in successful dyads provided opportunities for the children to receive just enough information to help them figure out a word on their own. Tutors in successful dyads also modeled the reading and writing process statistically significantly more than often in journal writing activities, direct letter-sound instruction, and writing activities. The tutor often modeled how to identify a word for the child by talking through a step-by-step process.

In analyzing the tapes and transcripts that indicated the amount of time dyads spent on specific activities, it was also determined that the 15 most successful dyads spent more time engaging in the two activities involving build-up readers and working on direct letter-sound instruction and spent less time on journal writing and reading literature. Juel (1996) explained that more successful dyads spent more time on activities that ultimately contributed to learning to read such as sounding out words and the actual reading of connected text, which occurs in the reading of the build-up books. Students who spent time on journal writing actually often drew pictures after the tutors wrote the stories. Thus, the children were not engaged in reading and writing during the journal writing activities.

Finally, Juel also explored the issue of continuing tutoring after the first grade and how it related to student success. She was able to follow a group of 13 students who were in the initial pilot study from the first to the second grade. Of these, 7 were reading at or above the 50th percentile on the ITBS at the end of first grade. Six children were still reading below grade level. For the children who entered second grade as relatively strong readers, all the children who continued to be tutored scored above the 50th percentile on the ITBS, while few of the nontutored children were performing as well.

For the children who entered second grade as poor readers, not one who continued in tutoring in the second grade ended the year scoring below the 40th percentile on the ITBS. However, for the nontutored children who entered second grade as poor readers, none scored above the 43rd percentile on the Iowa; the group average was at the 25th percentile.

These observations suggest the importance of continuing tutoring beyond first grade for students at risk of reading problems. Although it is difficult to completely determine how effective this tutoring program was, the quantitative information about tutoring and the qualitative information from the tutoring dyads add to the gen-

eral knowledge about the nature of one-to-one instruction in reading.

Dissemination issues. Juel's work was a research study and, as reported, was not designed as a program for dissemination. However, given the structure of the program, it seems to have potential for dissemination.

Reading One-One

Reading One-One is a program developed by George Farkas and his colleagues (Farkas, 1996) at the University of Texas at Dallas in collaboration with the Richardson Independent School District. The goal of the program is to have volunteers tutor first, second, and third graders who are having problems in reading. It is designed as a pull-out, in-school program.

Students are selected for tutoring based on their performance on the Iowa Test of Basic Skills (ITBS). Children in Grades 1 through 3 who score at or below the 40th percentile were identified as potential candidates for tutoring. Teachers then selected the children most in need of additional services.

Initially, college students were recruited as tutors, but recruitment has expanded to include community volunteers. Volunteers are paid approximately US\$7.00 an hour. This money comes from the schools' Title I funds. Paid volunteers make the tutoring program more structured. In order to maintain consistency for the children, the tutors are asked to make a commitment to the program of at least 6 months and at least 2 hours a day, twice a week. Also, absenteeism and lateness policies help to ensure the consistency of the tutor's work with the student. The average tutor works 15 to 20 hours a week.

The tutors are trained using the Reading One-One Tutoring Manual (adapted from the Success for All Tutoring Manual, Wasik & Madden, 1996), and they are assessed on their understanding of the concepts presented in the manual. This manual details the components of the tutoring sessions and the assessment techniques used for determining the skill levels of the student. Tutors are observed and provided feedback by more experienced tutors called lead tutors. The lead tutor uses a checklist to evaluate whether the tutor is performing adequately and to identify areas in the tutor's approach and skills that need to be addressed. This observation and feedback is done for about 4 to 6 weeks, depending on the skill level of the tutor. Tutors are also encouraged to discuss concerns about students with either the lead tutor or with central staff at the University of Texas at Dallas.

Students in Reading One-One receive tutoring a minimum of three and a maximum of four sessions per week. Tutoring sessions are approximately 30 to 35 minutes long. Because of tutors' schedules, most students are tutored by two different tutors. There are forms used

to communicate between tutors about the students they share. Reading One-One uses the same basal readers children use in their classroom as well as the Sunshine books, easy-to-read minibooks published by the Wright Group.

Research findings. There are pre- and posttest data on students in Reading One-One but no comparison group. Therefore, it is not possible to determine if the students improved because of the tutoring intervention, ordinary classroom instruction, or other factors.

Farkas (1996) presented correlational data to support the effectiveness of his tutoring program. Using a regression equation, the number of tutoring sessions along with 10 other variables (such as limited English proficiency, repeating a grade, and eligibility for free lunch) were used to predict students' scores on the Woodcock Reading Comprehension Test. Farkas extrapolated from the observed correlation between the number of tutoring sessions and outcome to predict student performance at 0 and 100 tutoring sessions and then reported the difference between these, 7.3 months, as the program effect.

There are several problems with this analysis. First, the predicted impact of the theoretical regression equation is based on children who received 0 to 100 tutoring sessions. In actuality, no student received 0 tutoring sessions. The minimum amount was 25 sessions. In addition, as Farkas (1996) stated, "the average student received only 60 tutoring sessions" (p. 165), and 100 tutoring sessions is the "high end of what students typically receive" (p. 167). Therefore, the 7.3 months gain reported for students in Reading One-One is an extrapolation outside of the range of actual observation and is speculative. Further, there is no control for self-selection. Students with fewer tutoring sessions could have been those who were absent a great deal.

Dissemination issues. Reading One-One has a tutoring manual that describes the various components of the program, and the program is building a national training capacity. Among volunteer tutoring approaches, the program is relatively expensive, as the tutors are paid, and each school requires a skilled supervisor to monitor the tutors.

Help One Student To Succeed (HOSTS)

Help One Student To Succeed (HOSTS) (Gallegos, 1995; HOSTS Corporation, 1994; Wilbur, 1995) is a volunteer tutoring and mentoring program designed for first- through sixth-grade children who are at risk for school failure. The HOSTS program can be used either as a pull-out or an after-school program, depending on the needs of the individual school.

Personnel in HOSTS schools recruit community volunteers from businesses, universities, and local churches, and also use peers and older students to serve as tutors. Typically, volunteers are not paid. The HOSTS school appoints a teacher, who is often the Title I resource or reading teacher, to organize the HOSTS materials, to coordinate the volunteers, and to develop diagnostic plans for each student.

Teachers/coordinators have 3 days of initial training, during which they review the HOSTS materials and are instructed in how to make a diagnostic plan. An additional 3 days of training are scheduled throughout the first year. In addition to this organized training, there is a HOSTS hotline that the teachers/coordinators can call to ask questions and receive guidance.

The training for the volunteer tutors is also ongoing. Training takes place at the school and is done by the teacher/coordinator. There are 2 hours of initial training. When the tutors meet with their students, the teacher/coordinator is expected to be present in order to answer any questions and provide feedback on the tutoring sessions. Additional training can vary from school to school and is determined by the teacher/coordinator.

HOSTS is a structured, systematic program. Each child is assessed to determine his or her individual strengths and weaknesses. Using a computer-based management system, the teacher/coordinator identifies the student's areas of weakness and cross-references materials that can be used to work on specific skills. The volunteer tutors follow a computer-generated lesson plan that outlines the skill areas in which each child needs help. The materials to work on the skills are included with the program. The lesson plans used by the tutors focus a significant amount of time on isolated skills and a minimal amount on having the children actually reading books. Although a tutor may work on a skill area that the child is also having problems with in his/her regular classroom, the materials used in HOSTS are not expected to be well coordinated with what is used in the classroom.

There are over 3,400 learning materials available as a part of this program. Materials include worksheets to identify word families, sight words, and categorization activities. A small number of books are a part of the program, but reading of connected text is not the major focus of the program.

Research findings. HOSTS evaluations have not included pre- and posttesting of experimental and control groups. Data were collected for a Title I national validation (HOSTS, 1994) in which a multistate study examined normal curve equivalents (NCE) gains. The results showed that in a spring to spring evaluation, first, second, and third graders made substantial NCE gains (15, 25, and 25, respectively). However, from the data report-

ed, it cannot be determined if these gains are statistically significant. These NCE gains exceeded those of the school and the state.

Dissemination issues. Since its inception in Vancouver, Washington, in 1972, HOSTS has involved over 150,000 students and 100,000 volunteer tutors in more than 400 schools throughout the U.S. There is a systematic training sequence as well as a significant amount of materials. The cost of HOSTS's materials and the computerized diagnostic program is approximately US\$5,000 per school plus the salary of the teacher/coordinator.

Reading Recovery/AmeriCorps

In a pilot project in three Reading Recovery schools in Ohio, AmeriCorps volunteers have been trained to tutor children who are having problems learning to read. Reading Recovery is a well-researched, one-to-one tutoring program focusing on early intervention for first graders who are at risk for reading failure (Pinnell et al., 1988). The goal is to train AmeriCorps volunteers so that additional resources can be provided to high-poverty Title I schools.

The AmeriCorps volunteers make a full- or part-time commitment to the school in exchange for a small stipend. The volunteers tutor children two to three times a week for 30 minutes. The AmeriCorps volunteers do not tutor the children who have been identified as being in need of Reading Recovery, who are children reading in the lowest 20% of their class. Instead, AmeriCorps volunteers tutor children who are reading better than the children who have met the criteria to be included in Reading Recovery but who are still reading below the average expected for first grade. In addition to providing one-to-one tutoring, the volunteers assist teachers in the Early Learning Literacy Initiative (ELLI), the whole-class reading instruction component often implemented with Reading Recovery (Pinnell et al., 1988).

AmeriCorps volunteer training is extensive. The volunteers receive approximately 150 hours of training. For 2 weeks in the beginning of their assignment, the volunteers participate in classroom training during which they learn about reading instruction and theory, techniques used to help children who are having reading problems, and general strategies used by Reading Recovery tutors. In addition, the volunteers observe experienced Reading Recovery tutors, called teacher leaders, working with students. The AmeriCorps volunteers spend an additional week tutoring students while they are observed and provided feedback by a Reading Recovery teacher leader. During the year, the AmeriCorps volunteers meet with teacher leaders once a week for 2 hours to discuss students and effective strategies to help children read.

For a volunteer tutoring program, the training that the AmeriCorps volunteers receive is very sophisticated. However, it is only a fraction of the training that a certified teacher wanting to become a Reading Recovery tutor would receive. The volunteers are given the materials that the Reading Recovery tutors use, which include US\$700 worth of classroom books, easels, and magnetic letters, which are shared between two volunteers.

Research findings. A pre- and postevaluation has been conducted by the Reading Recovery researchers. Pre- and postevaluation data without a comparison group do not allow definite conclusions to be drawn about the effectiveness of the intervention. However, these data do tell something about measures on which gains have been made. Students were pre- and posttested on Reading Recovery measures that included word knowledge, letter identification, concepts of print, and text comprehension. On word knowledge, letter identification, and concepts of print, the students who were tutored by the AmeriCorps volunteers increased by two stanine scores (DeFord, Pinnell, & Lyons, 1997). However, on text comprehension, which is a measure of oral reading and comprehension, no statistically significant gains were found. DeFord et al. (1997) hypothesized that these results suggest that volunteer tutors can have an impact on basic processing skills such as letter identification and word knowledge. However, on more complex processes required in text comprehension volunteer tutors may not have enough training to have an impact. Teaching text comprehension requires an advanced understanding of reading and information processing, so volunteer tutors are less likely to influence that outcome.

There are other possible explanations for these results. One possibility is that children's performance on the letter identification and concepts of print reached ceiling levels, which is possible with these measures but less likely to occur on comprehension measures. The only way to truly understand the effects of this program is to conduct an evaluation with a comparison group.

Dissemination issues. In Reading Recovery schools, volunteer tutors could provide additional services to children who need help in reading. However, because the training is extensive and specific to Reading Recovery, it would be difficult to disseminate this model in a non-Reading Recovery school. Because there are more than 6,000 Reading Recovery schools in the U.S., this is not a major limitation.

Intergenerational Tutoring Program

This program is a joint venture among Jerome Kagan of Harvard University, the American Academy of Arts and Sciences, Boston Partners in Education, and the

Boston Public Schools in Massachusetts (Kagan & Vogel, 1997). The goal of the program is to improve the reading skills of first-grade students.

Six schools in the Boston area are involved in this project. One-to-one tutoring is provided three times a week for 45 minutes to a total of 70 first graders. This has been a pilot program for the past 3 years and is currently being evaluated. The intention is to expand nationally as the program is refined and prepared for dissemination.

Volunteers are senior citizens recruited from various community groups. Some are part of a foster grandparent project in which seniors commit to working a designated number of hours in a school in exchange for a small stipend, some are former teachers who had worked with the Boston Partners in Education, and some are senior citizens in the community wanting to contribute to their local schools.

There is a volunteer coordinator who is a certified teacher. The responsibilities of this coordinator include scheduling and training the volunteers in each school. Initially, the volunteers receive three blocks of 3-hour training sessions. During this training, the tutors are instructed in the basic format of the tutoring sessions and introductory concepts in teaching reading, such as concepts about print and phonics.

After the initial training, tutors meet twice a month for follow-up training. One training session a month is done with the small group of tutors at individual schools. This allows the issues that pertain to a specific school to be addressed and also allows the tutors opportunities to share their experiences. The other monthly meeting is conducted with all the tutors across the six schools and is similar to an inservice meeting. During this meeting, guest speakers discuss topics on reading, or the tutors are trained in specific techniques that can be used during tutoring sessions. In addition to undergoing training, tutors are asked to keep daily logs on each of the children whom they are tutoring. Many of the techniques used in this program are modeled after strategies used in the Reading Recovery program (Pinnell et al., 1988).

Because this program is in the process of being developed, materials and a tutoring manual are not yet complete. The tutor coordinator has been documenting the training component.

Research findings. This program is in the process of being evaluated, and posttest data were collected in the spring of 1997. However, at this writing the final report on this project has not been completed. Because this program is being evaluated using a treatment and comparison group, and children were randomly assigned to either group, the results from this study will contribute

significantly to our understanding of the effectiveness of a volunteer tutoring program with well-trained tutors. In the fall of 1996, pretest data were collected on 140 first graders who were identified by their teachers as having difficulty learning to read. All students were pretested on components of the Reading Recovery assessment, including assessments of concepts of print as well as oral reading skills and comprehension. Students were randomly assigned to either the tutoring group or the no-services group.

Dissemination issues. Since this program is in the early phases of development and evaluation, it is not possible to comment on dissemination issues.

Reading Together/VISTA

Reading Together is a community-supported, intergenerational tutoring program developed by Susan Neuman of Temple University in Philadelphia, Pennsylvania (Neuman, 1995). Reading Together engages Volunteers in Service To America (VISTA) to work with parents in the community to participate in teaching their children to read. Like AmeriCorps volunteers, VISTA volunteers are paid a small stipend for their services. The focus of the VISTA volunteers is to mobilize the community to help serve itself. Parents were recruited to work with economically disadvantaged kindergartners and pre-first graders to provide additional opportunities to read and write in a playful context.

On the basis of previous work by Neuman and Gallagher (1994), the VISTA volunteers developed literacy prop boxes to be used as the bases for activities that the parents would share with the children. Each prop box was thematically based and contained four main components: (a) a jingle or a finger-play song related to the theme of the box, (b) storybooks that were related to the theme, (c) play objects that could be used in acting out an activity related to the theme, and (d) a blank writing book that the children could use for composing. For example, a prop box on a post office theme would include songs or finger plays about the post office or mail delivery; storybooks such as *The Jolly Postman* (Ahlberg & Ahlberg, 1986); objects such as stamps, envelopes, and a mail bag, which are used in creative play; and blank paper so the children could have the opportunity to write about this topic.

The VISTA volunteers, along with the university reading researcher, trained the parents to use the prop boxes. The researcher met with the VISTA volunteers once a week to discuss issues ranging from emergent literacy to recruitment strategies. The VISTA volunteers then trained the parent volunteers in the use of the prop boxes.

Parents met for 1 hour twice a week to work with the children. Tutoring was done during the school day

and was scheduled around other activities such as reading and math. Tutoring was typically done one-to-one, but at times there could be two children with one tutor.

Research findings. There is no systematic, formal evaluation of this program. The developer did informally assess the degree to which the program met the needs of the teachers and the children (Neuman, 1995). The responses from the schools were positive. Also, the volunteer effort recruited 89 adults who volunteered regularly at least 2 hours a week to read to the children. However, there are no qualitative or quantitative data to determine if the program increased the language and literacy skills of the children.

Dissemination issues. In 1995, this program was based in five elementary schools in high-poverty areas of Philadelphia. Tutors were trained by the VISTA volunteers, who were themselves trained by a university reading researcher. There is no systematic training developed, and no manuals exist outlining the procedures to use the prop boxes.

Early Identification Program

The Early Identification Program (Early ID) is a kindergarten intervention program focusing on preliterate skills developed by Robert Stark and his colleagues in the Reading, Ohio, School District (Stark, 1996). The goal is to expose children to a wide variety of activities and skills that will help prepare them to learn to read when they reach the first grade.

The Early ID program uses parents, high school students, and other community volunteers to implement the program. The volunteers are not paid. Two half-time assistants are paid to schedule the volunteers and coordinate the services.

All kindergartners are screened on the Visual Motor Inventory (VMI), which is a perceptual motor assessment, and the Boehm, which is a cognitive assessment of readiness skills. Children who score at or below the 35th NCE on either of these tests are selected to participate in the program. The kindergartners are pulled out of their regular classes and tutored four times a week for 10 minutes each time.

Training of volunteers for the Early ID program is not extensive. There is an initial training during which the program is explained to the volunteers. The program is designed so that the volunteers work on a specific skill in the area of perceptual motor, fine motor, and cognitive concepts with the child. The activities are outlined in a handbook. The volunteers acquaint themselves with the activities and then with the child. No additional training is provided.

Research findings. Data have been collected on each cohort of kindergartners for the past 10 years. Data

reported here are from the 1995–1996 school year (Stark, 1996). Children selected to be in the program were compared with children who did not participate. Selection for program participation was based on poor performance on the VMI and Boehm. Therefore, the comparison group's pretest scores were higher than the treatment group's scores, making this group not the best one to be used as a comparison group.

Data are reported in gain scores. For the children who were in the Early ID Program, scores increased 29.8 points on a visual motor skills assessment, 19.2 points on a fine motor skills assessment, and 19.3 points on the Boehm. Children who were in kindergarten but not in the Early Identification Program had gains of 5.4 points in visual perception, 3 points in fine motor skills, and 7.4 points in basic language skills. However, the children in the Early ID program still did not perform at the same level as the comparison group. Absolute scores are not reported, and it is uncertain whether gains are due to the Early ID program or to the effects of the kindergarten experience, which also emphasizes fine motor skills, visual perception, and conceptual development. Test scores for young children are highly unstable, so there is a high probability that regression to the mean for the very low-scoring Early ID children accounts for all or some of the observed gains.

Dissemination issues. There is a manual that outlines the activities that the children work on. Volunteers are expected to follow the sequence of activities. Two part-time assistants are paid to schedule the volunteers and coordinate the services. The total program cost is about US\$1,500 per student. The program is currently being implemented in the Reading, Ohio, School District only and has not been disseminated.

Books and Beyond

Developed in 1979 under the auspices of the Solana Beach School District in California, Books and Beyond is a program designed to encourage children to read more and watch TV less, and to involve parents in children's reading for pleasure at home (U.S. Department of Education, 1989). Although Books and Beyond started as a parent-child reading program, the program has taken different forms as schools adapt it to fit their individual needs.

The goal of Books and Beyond is to create a positive reading environment and thus does not focus on individual children's reading problems. The program is implemented schoolwide in elementary and middle schools.

Parents and other community members such as police officers, firefighters, and business persons are recruited to participate in reading activities such as

Read-a-Thons or hourlong, once-a-week Read-Ins. Volunteers also run afterschool programs in which they read to and with the students. Parents participate in special workshops that introduce them to high-quality children's literature and to the school library.

Given the intention of the program, volunteers receive minimal training. A school staff member is assigned to be in charge of Books and Beyond and coordinates the volunteers and the workshops for parents.

Research findings. The evaluation consisted of a pre- and postsurvey that was administered to students and parents. In addition, students were requested to keep a TV viewing log for 1 week documenting the number of viewing hours. Participants in the Books and Beyond program were compared with children who did not participate in the program. After implementation of this program, children in the program watched less TV and were reading more than the control group. No measures of reading ability were administered.

The goal of this program is to increase recreational reading, not to provide one-to-one instruction for children who are having difficulty reading. The program has been successful in increasing reading behavior among participants and their families. However, children participating in this program most likely already knew how to read. Therefore, Books and Beyond may not be successful in reaching the children who are not reading.

Dissemination issues. Books and Beyond is being disseminated nationally. There is a manual that can be purchased for US\$45.00. A trainer from Books and Beyond will come to a school or other community sites to provide training, but even this is optional.

Additional programs mentioned by ARC

Among the programs described, the Early Identification Program, Intergenerational Tutoring Program, Reading One-One, and Books and Beyond were mentioned in materials distributed by America Reads. The following programs are also on the ARC list but have either no or limited quantitative or qualitative evaluation.

Read*Write*Now

Read*Write*Now is an initiative launched by the U.S. Secretary of Education, Richard Riley, and developed by a team of reading research experts directed by Richard Venezky at the University of Delaware (U.S. Department of Education, 1996). The goal of this program is to foster good literacy habits in children from a young age and to mobilize volunteers and parents to improve children's reading and writing skills.

The focus of Read*Write*Now is on children from birth through sixth grade. One component of the program is partner tutoring, a one-to-one tutoring program for school-aged children in Grades 1 through 6. High school, college, or adult volunteers are trained in a process for tutoring that is outlined in the Read*Write*Now materials. The process focuses on several strategies such as paired reading, echo reading, and a balance between phonic and whole-word strategies. In partner tutoring, tutors and students commit to an initial 24 tutoring sessions over a 12-week period for at least 30 minutes per week. In addition to the partner tutoring, there are suggested activities to create a home environment that is print rich and activities to facilitate creative writing in young children, and strategies for finding books that children will want to read. A book list developed by Reading Is Fundamental (RIF) is included.

A national summer reading program also has been established by the Read*Write*Now initiative. Community volunteers, including former teachers, senior citizens, and high school students, along with the local libraries, sponsor a reading incentive program that challenges children to read 30 minutes per day and to be involved in a writing activity. Upon meeting the reading challenge, children are rewarded with an incentive such as a certificate from Pizza Hut or from other national business sponsors.

Research findings. There has been no evaluation conducted on this program.

Dissemination issues. Three kits of Read*Write*Now materials can be obtained through the Department of Education. The kits contain outlines of activities that can be done with children. In addition, there are suggestions for incentives. Training for the volunteer tutors is a minimum of a half day, but most schools and community organizations offer more training and tailor the training to meet the needs of the volunteers. The program is designed to be flexible so that it can be used with other school tutoring programs.

SLICE/AmeriCorps

SLICE is an AmeriCorps project developed in conjunction with the Simpson County Schools, a rural school district in Kentucky. One of the foci of the program is to provide one-to-one tutoring services to children who are at risk for reading failure (Houston, 1997).

In the initial 2 years of this project, AmeriCorps members tutored children in the schools four times a week for 30 minutes. The focus has been on kindergartners and first and second graders. AmeriCorps volunteers received ongoing training in selecting appropriate literature, reading comprehension strategies, and techniques used in teaching phonics. A significant amount of the

AmeriCorps volunteers' time has been spent on ongoing training. Mike Houston, the director of SLICE, has noted the importance of high-quality training for the volunteers and has coordinated university reading researchers and school personnel to be a part of the volunteers' training.

As this program proceeds into its third year, the goal is to use the AmeriCorps volunteers to mobilize other community volunteers to provide services to the children. AmeriCorps volunteers will be reading coaches who will essentially work as tutor coordinators. The reading coaches will recruit new community volunteers and provide technical assistance to the tutors.

Research findings. A pre- and postevaluation was conducted on the SLICE program. Students were administered an informal reading inventory to determine the effects of the program. Houston, the program director, orally reported that students made gains in their reading skills; however, there is no formal documentation of these findings. In addition, there was no comparison group, so it was not possible to determine if the students improved because of the tutoring intervention or because of ordinary class instruction or other factors.

Dissemination issues. The SLICE program is in the development phase. The training consists of an introduction to reading and training in how to use the books and questions that have been developed for the program.

Reach Out and Read (ROAR)

Reach Out and Read (ROAR) is not a one-to-one tutoring program. It was developed as a clinic-based intervention program designed by physicians at Boston City Hospital to expose and encourage early book use among parents of children at risk (Needleman, Fried, Morley, Taylor, & Zuckerman, 1991).

The program includes three components: (a) volunteers who read aloud to children in the waiting room, (b) counseling by a pediatrician about literacy development and the importance it plays in children's lives, and (c) distributing a book to each child who sees the physician. The program was designed so that the children would initially spend time with the reader in the waiting room. When the children moved to the examination room, the physician would talk to the child and the parent about the importance of reading and having books in the home. As an encouragement to read, each child was given a book to take home.

A program coordinator organizes and administers the program. The program coordinator is typically a physician, child life worker, nurse, or volunteer. Training for the program coordinator consists of a series of lectures and workshops. The lectures present issues regarding literacy development. The workshops focus on ways to encourage parents to engage their children with litera-

cy activities as well as helping parents understand age-appropriate expectations for reading.

Volunteers who read to the children in the waiting room were trained in a 1-hour session that focused on flexibility in reading to children of different ages and with different interests. For example, volunteers are taught to not always stick to the text if they think that the children will not understand it, or to stop and ask questions about the story as they are reading. There is a training manual that documents how to implement ROAR. In addition to training costs, books are needed to be read in the waiting room as well as to be distributed to the children to take home from their visit.

Research findings. A pre- and postevaluation was conducted on the ROAR program (Needleman et al., 1991). Comparisons were made between families who recalled being involved in the study and those who did not recall the components of the intervention.

Each family was administered a structured interview in which they detailed the kinds of activities they participated in with their child. The main finding from the pre- and postevaluation data is that parents who were given books during their visit to the clinic and recalled getting the book reported an increase in book reading when they were interviewed during their next visit.

One serious problem with this evaluation is that the comparison group did get the treatment but did not recall getting it. Of the 77 families involved, 32 families did not recall getting a book or hearing what the physician said about the importance of reading. Perhaps the intervention needs to be more salient to have a more substantial effect.

Dissemination issues. Currently, the ROAR program is being disseminated throughout the U.S. Initial training and start up costs are minimal and are currently being subsidized by large grants from private foundations.

Cabrini-Green Tutoring Program

The Cabrini-Green tutoring program is a grassroots program that was developed and implemented 31 years ago near the Cabrini-Green housing projects in Chicago to serve the children of this high-poverty community (Christie, 1997). This one-to-one tutoring program serves 480 children a week and has 480 volunteer tutors. It operates 3 nights a week from 5:30–7:00 p.m. Kindergarten through sixth graders are tutored once a week for 1.5 hours.

The goal of the Cabrini-Green tutoring program is to build literacy skills. The tutors work primarily with the children on homework that the children bring from school. However, if a child does not have homework, the tutors read with or to the children and have a variety of

art or writing projects that they work on. The tutoring center is equipped with a library and material for projects.

All tutors are unpaid volunteers. Most are professionals who work in downtown Chicago. Parents and other community people are also volunteers. All tutors go through a training and orientation session, take a tour of the facility, and speak with the program coordinators and experienced tutors before they begin working with the children. Volunteers also attend three additional workshops throughout the year. The Cabrini-Green tutoring program has forged a relationship with Reading Is Fundamental and has worked to obtain free books for the children.

Research findings. As is the case with many community volunteer programs (Michael, 1990), there is no evaluation of the program.

Dissemination issues. The program has little information documented. Dissemination in its current form is not feasible.

Hilliard Elementary School Tutoring Program

Hilliard Elementary School is located in a high-poverty, predominately African American neighborhood in Houston, Texas (R. Allen, personal communication, February 22, 1997). For the past 3 years, Hilliard has been operating a tutoring program to work with first through fifth graders who are at risk for school failure. The tutoring program focuses on various subject areas, including reading.

Teachers train parent volunteers to be a part of the tutoring program. The focus of the tutoring is on the Texas Assessment of Academic Skills (TAAS) and Essential Elements of the Texas state curriculum. Parents team with teachers in the classroom and also in the afterschool and Saturday program. Certified teachers guide the training of the parents. As part of the Hilliard tutoring program, the children and parents participate in special projects such as writing storybooks and doing a schoolwide science project. There are no training manuals, and most of the information is passed orally from the teachers to the volunteers.

Research findings. There has been no evaluation of the program.

Dissemination issues. There has been no formal training of the tutors; therefore, dissemination of this program is not practical.

Growing Together

Growing Together is a community-based tutoring program in Washington, D.C. It serves 100 students from 12 area schools (T. Knudson, personal communication, February 13, 1997). Each student is tutored for 2 hours

once a week. The focus of the program is on reading, writing, and math skills.

Community volunteers work one-to-one with students under the expert guidance of a teacher/tutor. The tutor training consists mostly of online feedback from an experienced tutor who observes the tutoring sessions and provides input. In *Growing Together*, the tutors use a variety of materials from different reading programs, including structured phonics programs. Most of the guidance to the tutor comes from the project director and teacher/tutors.

Research findings. There has been no evaluation of the program.

Dissemination issues. This is a grassroots tutoring program serving a small number of children. However, there is no formal tutor training program, and no evaluation of this program has been undertaken. Dissemination would not be practical at this time.

Summary and discussion

What do we know about volunteer tutoring programs in reading? One important finding is that there is a surprising lack of evidence about achievement effects of one-to-one tutoring by volunteers. There is a general belief that one-to-one tutoring is an effective form of instruction (Bloom, 1981; Wasik & Slavin, 1993), yet little research has documented the effectiveness of one-to-one instruction using adult volunteers. Two of the 17 programs reviewed, the Howard Street Tutoring program and the School Volunteer Development Project, provided evaluations using rigorous experimental design. One other program, Intergenerational Tutoring Program, also conducted a randomized design, but the data are not yet available. The data from Howard Street and School Volunteer Development project do support the effectiveness of one-to-one tutoring using volunteers.

The review also indicates the difficulty faced by researchers in conducting experimental research in schools and community settings. Three of the programs, Book Buddies, Juel's program, and Reading Recovery/AmeriCorps, reported that they initially intended to conduct evaluations using a treatment and no-treatment comparison group. Because of logistics with working with schools or conflicts with denying services to children who were in need, these programs were evaluated using pre- and posttest comparisons of just the experimental group or a nonequivalent comparison group. The problem with using pre- and posttest measures is that all children grow and develop over time. Without a comparison group, it is difficult to determine if the year-end gains are due solely to the tutoring intervention.

When the 17 programs are considered together, similarities emerge that provide important insights. Four are of particular importance. The first concerns the presence of a designated coordinator who knows about reading and reading instruction. It seems essential that a knowledgeable person provide a basic understanding of the reading process to volunteers and also give them feedback on their tutoring sessions. These elements were emphasized in all 17 programs, but especially in the Howard Street Tutoring Program, Juel's program, Book Buddies, Reading One-One, and HOSTS. In many cases, the reading specialists develop a lesson plan for each child, and the volunteer implements the plan under the supervision of the reading specialist. It is worth knowing that such expert guidance is needed in order for a volunteer program to work.

The second common feature is the presence of structure in the tutoring sessions and the similarities among basic components presented in the lessons. The Howard Street Tutoring Program, Book Buddies, Juel's program, Reading One-One, Reading Recovery/AmeriCorps, and the Intergenerational Tutoring Program all contain, at minimum, these four components in the tutoring session: (a) reading of new material by the student, (b) reading books in which either the words or the entire story were familiar to the student, (c) an activity that emphasized word analysis and letter-sound relationships, and (d) a writing activity that emphasized composing. These activities are also shared by Reading Recovery and Success for All tutoring, which use certified teachers as tutors.

Juel's (1996) work contributes further to our understanding about the components that need to be a part of an effective tutoring session. She found that the more successful tutoring dyads devoted more time to reading books with familiar vocabulary words and working on direct letter-sound instruction. This supports the use of the reading of stories and word analysis activities found in other programs. It also supports the use of activities that actively involve the children in reading and figuring out grapheme-phoneme relationships. In addition, Juel's research showed that in the dyads in which the tutor did most of the reading and writing activities, the student was less successful, stressing the importance of the child as an active participant in learning to read. This would be important information to communicate when training tutors.

The third common component was the training provided to the tutors. There was great variability in the amount and quality of training that was given to the volunteers. At one end of the continuum, there is the Reading Recovery/AmeriCorps program that invests in over 150 hours of training for the volunteer tutors. The tutors are monitored while tutoring, as well as given a

significant amount of information about reading. Moreover, they have opportunities to observe Reading Recovery certified teachers tutor children and are given feedback on these sessions as well as their own tutoring.

Similarly, volunteers in Book Buddies and the Howard Street Tutoring Program are monitored closely by certified reading specialists. The reading specialists provide feedback to the volunteers and supervise their implementation of the lesson plan. Reading One-One provides onsite supervision of tutors, but not to the same degree of intensity as provided by Reading Recovery/AmeriCorps, the Howard Street Tutoring Program, and Book Buddies.

On the other end of the continuum is the training provided in programs such as HOSTS, the Early Identification Program, and Growing Together. In the HOSTS program, the activities are highly structured for the volunteers. They are supervised, but not to the same degree as in the other programs. Training, then, seems most needed for programs in which there is an emphasis on (a) having the students actively involved in higher level reading and writing activities, and (b) the use of informed judgment on the part of the tutor. Programs that emphasize basic skills using tutor-proof materials require less time training. Unfortunately, because it is difficult to make cross-program comparisons, it is difficult to determine if more intensive volunteer training or more highly structured materials yield more positive results for students.

In addition to understanding the importance of training, it is also necessary to know the specific techniques that the volunteers should be trained to use. Juel (1996) found that the use of scaffolding and explicit modeling of reading and writing were effective behaviors used by tutors. A scaffolding experience was one in which "the tutor enabled the child to complete a task that the child couldn't otherwise do (e.g., read or spell a word) by providing a piece of information and/or segmenting the task into smaller, clearer ones" (Juel, 1996, p. 283). In reading, the tutor may help a child with an initial sound of a word instead of just telling the child the word or having the child sound out the word with no additional guidance. Tutors in the more successful dyads used scaffolding more than those in the less successful dyads.

Volunteers in the more successful dyads also explicitly modeled reading and reading strategies more than in the less successful dyads. Volunteers who modeled sounding out words and fluent reading provided children with opportunities to observe good reading and also to observe strategies that good readers implement when they have comprehension or decoding problems. These results suggest that volunteer programs would want to train volunteers in scaffolding and modeling

techniques to increase the probability that they would be effective.

Morris et al.'s (1990) work also raised the issue of variability among students in tutoring. In all the programs, volunteers were working with children who were having reading problems or who showed signs of language deficits. However, even though the children were the lowest performing readers in their class, they were not a homogeneous group and not all benefited from volunteer services. As Morris et al. pointed out, there appeared to be three groups of children who received tutoring: (a) one group that greatly benefited from the tutoring and was reading at grade level; (b) another group that improved but was still reading below grade level; and, (c) a third group that appeared to make little progress. Juel (1996) found similar results when she examined successful and unsuccessful dyads in tutoring. Future research could help clarify for which students tutoring is most effective.

Another issue that Morris et al. (1990) addressed in their work was the issue of the pacing of instruction. Based on their case studies, Morris et al. argued that it is best to tailor the pace of instruction to the individual needs of the child. However, in doing this, the child may lose pace with instruction in the classroom. They suggested that even though one of the children they reported on was not reading at grade level at the end of the yearlong intervention, the child had mastered some limited skills and had established a solid foundation in reading with those skills. This philosophy is inconsistent with the goal of having the child keep pace with classroom instruction. This issue needs to be examined further to gain additional evidence on what is the most effective method in working with children who have difficulty in keeping pace with classroom instruction.

The fourth consistent feature across programs was the lack of coordination between the volunteer programs and classroom instruction. It would appear that coordination between tutoring services and classroom experiences would benefit the child. One could argue that such coordination would be beneficial only if the instruction in the classroom was of high quality. However, it could be confusing for children if they are learning, for example, a whole-word approach in the classroom and a phonetic approach in tutoring (as was the case in most programs reviewed). At present, it is not possible to use the research findings of the programs to determine the effects of inconsistent instruction between tutoring and classroom instruction. It would be helpful to explore this issue in future research.

One issue that appears to be inconsistent across programs is the relationship between the number of tutoring sessions that a child receives and the effect that

this has on achievement. Reading One-One and Book Buddies found that the number of tutoring sessions that a child had was related to the child's success in tutoring. However, in Juell's (1996) work, the number of tutoring sessions was not related to the success of the child in tutoring. This discrepancy raises questions concerning the amount of tutoring as opposed to the quality of the tutoring that matters.

Finally, in addressing the issues concerning the America Reads Challenge, which was the initial impetus for this article, portions of the money for ARC need to be used to develop and evaluate programs and to answer critical questions about the components of effective tutoring approaches. Without sufficient evidence, money could be spent on programs that are not effective. Without adequate training, untrained volunteers could be more of a hindrance than a help to a struggling child. The America Reads Challenge could contribute to the success of thousands of children who are struggling in early reading. The literature reviewed in this article shows the potential of well-designed volunteer tutoring programs. However, there is much more we need to know to be sure that these programs will result in meaningful benefits for children.

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Revised May 27, 1997

Final revision received October 21, 1997

Accepted October 30, 1997

AUTHOR NOTES

This article was written under funding from the Office of Educational Research and Improvement, U.S. Department of Education (Grant No. R-1170-40005). However, the opinions expressed are those of the author and do not necessarily represent the positions or policies of the U.S. Department of Education.

APPENDIX**Program elements**

Program name	Howard Street Tutoring Program	School Volunteer Development Project
Age/grade	Grades 2 and 3.	Grades 2 through 6.
Student eligibility	Poor performance on informal reading and spelling measures.	Poor performance on reading as identified by the teacher.
Description of volunteers	Nonpaid adults and college students.	Nonpaid community volunteers.
Other personnel required	A reading specialist/teacher to supervise volunteers.	Reading specialist or supervisor to supervise volunteers.
Program description	One hour, one-to-one tutoring twice a week. Session includes reading familiar material, word recognition, unfamiliar text, and writing.	One half hour, one-to-one tutoring four to five times a week.
Training	On-the-job training by supervisor. Lesson plans are made by the supervisor.	On-the-job training by supervisor.
Materials required	Basal readers, trade books, word cards, lesson plans. Tutoring manual.	Materials were developed to meet students' needs including multimedia materials.
Cost	Cost of materials and salary of reading specialist/teacher.	Cost of materials and the salary of the reading specialist.
When tutoring occurs	After school.	In-school pull-out program.
Program effects	Tutored and control group of 17 matched pairs. Tutored group performed statistically significantly better than the control group on basal word recognition (ES = +.61) and oral passage reading (ES = +1.07).	Students randomly assigned to tutored and nontutored groups. Tutored group performed statistically significantly better than the comparison group (ES = +.50) on the Metropolitan Achievement Test.

(continued)

APPENDIX (cont'd.)**Program elements**

Program name	Book Buddies	Juel (1996)
Age/grade	Grade 1.	Grade 1.
Student eligibility	Teacher identification of students with reading problems.	Poor performance in reading, selected by principal and teacher.
Description of volunteers	Nonpaid community volunteers.	Nonpaid college students who had problems reading.
Other personnel required	Volunteer recruiter and master's-level reading coordinators.	Reading researcher who taught college course on reading and tutoring.
Program description	One-to-one tutoring twice a week for 45 minutes. Tutoring session is highly structured and volunteers are observed by the reading coordinator.	Forty-five-minute sessions, two times a week.
Training	Two hours of initial training by reading researchers and reading coordinators. Ongoing training.	College course.
Materials required	Storybooks and other materials for writing and working with words. Tutoring manual.	Materials and activities were developed by reading researcher.
Cost	US\$595/child, including cost of coordinator, volunteer recruiter, and materials.	The cost of a college course or some mechanism to train volunteers plus the salary of the supervisor.
When tutoring occurs	During the school day.	In-school pull-out program.
Program effects	Children with more tutoring performed statistically significantly better ($p > .05$) on phoneme-grapheme knowledge and word recognition measures than children with fewer sessions.	Compared students more at risk to those less at risk. Posttests revealed more at-risk students performed statistically significantly ($p < .05$) better on Iowa Test of Basic Skills.
Program name	Reading One-One	Help One Student To Succeed (HOSTS)
Age/grade	Grades 1, 2, and 3.	Grades 1 to 6.
Student eligibility	Teacher selection and poor performance on the Iowa Test of Basic Skills.	Identified by teacher and diagnostic assessment.
Description of volunteers	Paid college students and community volunteers.	Nonpaid community volunteers.

(continued)

APPENDIX (cont'd.)

Program elements

Other personnel required	Lead tutors who typically are college students.	Certified teacher to assess and develop diagnostic plan.
Program description	One-to-one tutoring three to four times per week for 30 minutes. Tutoring sessions follow a specific format. Emphasis is on letter and word mastery.	One-to-one tutoring following skills that have been identified in diagnostic plan. Emphasis on activities that address isolated skills.
Training	Volunteers are assessed on knowledge of the manual plus 4 to 6 weeks of observations.	Initial training of program coordinator. Coordinator trains volunteers.
Materials required	Basal readers plus Sunshine books from the Wright Group. Tutoring manual.	Over 3,000 materials to support skills development.
Cost	Salary of tutors plus materials.	US\$5,000 per school for materials plus certified teacher's salary.
When tutoring occurs	During the school day.	During or after school.
Program effects	Students who had more tutoring sessions performed statistically significantly better ($p < .05$) on the Woodcock compared to students who had fewer tutoring sessions.	Pre- and posttest data on children's NCE scores. Pre- and posttest NCE gains exceed those of others in the school and state.
Program name	Reading Recovery/AmeriCorps	Intergenerational Reading Program
Age/grade	Grade 1.	Grade 1.
Student eligibility	Children who are low performers but have not been selected for Reading Recovery.	Children identified by teacher as at risk for reading problems.
Description of volunteers	Paid AmeriCorps volunteers.	Senior citizens; some Foster Grandparent paid volunteers.
Other personnel required	Reading Recovery teacher leader.	Certified teacher to train and supervise tutors.
Program description	One-to-one tutoring program in which volunteers are trained in many of the Reading Recovery tutoring techniques.	One-to-one tutoring three times a week for 45 minutes. Focus is on reading connected text, working on phonics, and writing.
Training	One hundred fifty hours of training plus online supervision of tutoring sessions.	Initial training plus ongoing twice a month meetings and inservices.

(continued)

APPENDIX (cont'd.)
Program elements

Materials required	Storybooks and Reading Recovery materials.	Storybooks and word strategy materials.
Cost	AmeriCorps salaries plus Reading Recovery teacher's time plus materials.	Salary for certified teacher plus materials.
When tutoring occurs	During school.	During school.
Program findings	In progress. Reading Recovery staff report that children in AmeriCorps tutoring have made gains in NCEs.	Data collection took place in spring of 1997. Random assignment of children to tutored and nontutored groups. Data not available yet.
Program name	Reading Together/VISTA	Early Identification Program
Age/Grade	Kindergartners and pre-first graders.	Kindergartners.
Student eligibility	Students in high-poverty schools.	Performance below the 35th NCE on either the Boehm or VMI.
Description of volunteers	Paid VISTA volunteers.	Nonpaid parent and community volunteers.
Other personnel required	Program coordinator and a university reading researcher.	Two part-time program coordinators.
Program description	Parents work with children 1 hour twice a week promoting literacy and language development in disadvantaged children.	One-to-one tutoring on perceptual motor and fine motor skills, and categorization concepts as well as readiness skills.
Training	Training involves instruction in developing prop boxes and demonstrating techniques to parents.	Minimal initial training. Manual of activities is used as a guide.
Materials required	Prop boxes that include books.	Manual that contains sequenced activities.
Cost	Program coordinator, paid volunteers, plus materials for prop boxes.	Salaries of coordinators US\$1,500 per student plus materials.
When tutoring occurs	During school.	During half-day kindergarten.
Program effects	No evaluation.	Tutored group compared to children who performed better than the tutored group. Gain scores showed that tutored group improved but still performed worse than nontutored group.

(continued)

APPENDIX (cont'd.)
Program elements

Program name	Books and Beyond	Read*Write*Now
Age/grade	Elementary students.	Birth to sixth grade with an emphasis on K through sixth.
Student eligibility	All students.	All students.
Description of volunteers	Nonpaid parents and community volunteers.	Nonpaid parents, community volunteers, and teachers.
Other personnel required	Program organizer.	Program coordinator.
Program description	Reading incentive program; not one-to-one instruction. Goal is to motivate and interest children in reading.	Tutoring at least once a week for 30 minutes. Students are encouraged to read five times a week.
Training	Training is not required.	Minimum of half-day training. This can vary by site. There is a tutor guide.
Materials required	Manual outlines the activities.	Storybooks and other reading materials.
Cost to implement	Manual is US\$45. 100 posters = \$25. If requested, training is \$350 per day.	Salary of onsite coordinator. This also can be a volunteer position.
When tutoring occurs	Both during and after school.	After school or weekends.
Program effects	Children in program watched less TV and read statistically significantly more ($p > .05$) than a comparison group.	No evaluation.
Program name	SLICE/AmeriCorps	Reach Out and Read (ROAR)
Age/grade	Kindergartners through Grade 2.	Three-year-olds through Grade 1.
Student eligibility	Teacher selection.	Children in health clinics whose parents agree to participate.
Description of volunteers	Paid AmeriCorps volunteers.	Pediatricians and health professionals.
Other personnel required	Program coordinator.	Volunteer to read to children in hospital waiting room.
Program description	One-to-one tutoring four times a week for 30 minutes. Tutors focus on learning to read through reading and writing.	Health clinic-based intervention. Pediatrician encourages literacy during check-up. Children are given a book to take home during one visit.

(continued)

APPENDIX (cont'd.)**Program elements**

Training	Two and a half days plus ongoing training. Tutors are observed, and there are weekly meetings and inservices.	Pediatrician or other health care provider are given a day of training. Volunteer readers are given a 1-hour training session.
Materials required	Trade books.	Storybooks.
Cost	Paid volunteers, program coordinator, training costs (US\$2,000), and materials.	Minimal costs to train personnel and provide books to each child. Private grant support.
When tutoring occurs	During school.	During visit to health clinic.
Program effects	Pre- and postevaluation of students showed increase in performance at posttesting. Data not formally reported.	Pre- and postevaluation showed increase of book reading after intervention. Families who recalled getting information, reported reading more to children.
Program name	Cabrini-Green Tutoring Program	Hilliard Elementary School Tutoring Program
Age/grade	Kindergartners through Grade 6.	Grades 1 to 5.
Student eligibility	All children.	All children.
Description of volunteers	Volunteers from businesses and organizations in Chicago.	Paid certified teachers along with nonpaid parent volunteers.
Other personnel required	Two full-time program coordinators.	Program coordinator.
Program description	One-to-one tutoring program focusing on helping children with homework. Children meet 1.5 hours once a week. Other activities center around building literacy skills.	Parent volunteers assist teachers in classroom and afterschool tutoring program. Teachers monitor the parents' tutoring sessions.
Training	Initial 2-hour training plus three workshops throughout the year.	On-the-job training is provided by the certified teachers with whom the volunteers are working.
Materials required	Children bring homework. Facility contains library and other materials.	Basals and other materials from school are used.
Cost	Two full-time program coordinators. Private funds support this project.	Small stipend for teacher plus materials for activities.
When tutoring occurs	Evenings 5:30-7:00 p.m.	During and after school.
Program effects	No evaluation.	No evaluation.

(continued)

APPENDIX (cont'd.)**Program elements**

Program name	Growing Together
Age/grade	Grades 1 to 5.
Student eligibility	Falling or below grade level.
Description of volunteers	Nonpaid adults and college students.
Other personnel required	Program director experienced in teaching reading.
Program description	One-to-one instruction once a week for 2 hours focusing on phonics and reading comprehension. Tutoring sessions are monitored by director. Tutoring is done in other subject areas.
Training	Tested on tutoring manual, orientation sessions, and ongoing workshops.
Materials required	Reading materials and tutoring manual.
Cost	Program director and materials.
When tutoring occurs	After school, evenings, and weekends
Program effects	No evaluation.

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that occur over the summer months (June to September). They believe gains in test scores that occur during the school months can be thought of as "the school's contribution to achievement," while gains (or losses) that occur over the summer months are not likely to be related to schooling, but to children's individual family and neighborhood circumstances. Because the group of Baltimore children they studied included poor and non-poor children, Alexander and Entwisle also analyzed how school-year and summer test score gains related to children's economic circumstances.

Alexander and Entwisle found poor and non-poor children have very similar test score gains during the school year. However, more affluent Baltimore children continue to gain over the summer months, when school is not in session. Their test scores actually increase during the summer, while scores of less advantaged children typically decline or, at best, stay even over the summer. The authors argue that this pattern of year-round gains for advantaged children and school-year gains for less affluent children has profound implications for Baltimore and other urban school districts.² But while social scientists

know of these seasonal learning patterns, educators and the general public are generally not aware of these findings or of their importance for poor, urban school districts.

Separating Home and Community Influences on Tests Scores from School Influence

More than 30 years ago, the Equality of Educational Opportunity Report (now widely known as the Coleman Report) showed that the gap between the test scores of poor and more affluent children increased from first grade through high school. The Coleman report studied a large number of children across the nation and included both urban and suburban school districts. The report's authors concluded that family factors, not school factors, are mainly responsible for unequal educational performance. Given the long-standing findings of the Coleman Report, and the fact that 68% of Baltimore's public school population is poor enough to qualify for subsidized meals, it is not surprising Baltimore has lower test scores than the nation as a whole. Nor is it surprising that differences in performance grow as children continue in school.

Alexander and Entwisle see family circumstances as critical to children's achievement. However, they hold that the importance of family circumstances does not necessarily mean schools are unimportant or that schools are failing to teach America's poor children.

While schools are responsible for

children's academic learning, Alexander and Entwisle argue that experiences at home and conditions in the community contribute as well. They maintain out-of-school experiences explain why test scores of low-income and minority youths are already behind at the start of first grade, and why Baltimore's school children do not compare favorably with national testing norms. In their sample of Baltimore children, Alexander and Entwisle found that those from poor families scored well below their non-poor peers at the start of first grade. (See Table 1 below.)

The authors also argue that life circumstances that undermine school readiness don't "turn off" when children turn six and schools begin to influence learning. Instead, they believe home influences on children's school performance continue after school starts. Given that many of the home circumstances of Baltimore's school children are far from ideal for learning, Alexander and Entwisle structured their analysis to determine how much of the widening gap in school performance could be attributed to the schools and how much to out-of-school influences.

Typically, performance is assessed at the end of an academic year, and children's progress is measured by comparing achievement scores from the end of one year with scores from the end of the preceding year. The authors note that because this approach incorrectly assumes children's academic growth is supported by the same inputs year-round, the conclusions based on such annual comparisons are mislead-

The Abell Report

Published bi-monthly by
The Abell Foundation
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ing. Rather than measuring achievement on an annual basis and using statistical adjustments to separate home and school influences,³ Alexander and Entwisle assessed children's achievement twice a year, which permitted them to compare the gains during the school year with those over the summer.⁴ They reasoned that children learn all the time, in school and out. But while children are in their homes and communities year-round, they are in school for only part of the year. It is the long summer recess that provides an opportunity to separate home/community influences from school influences, because all settings can contribute to achievement gains during the school-year, but only home and community can do so during the summer months.

Annual versus Seasonal Testing Patterns: Results from the Beginning School Study.

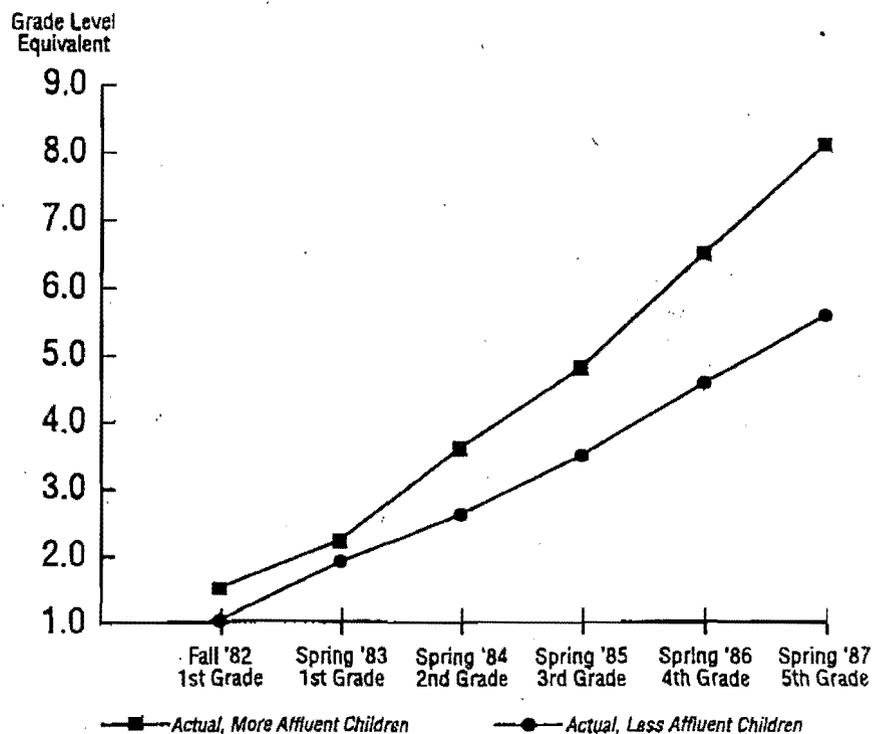
Alexander and Entwisle's Beginning School Study (BSS) reveals important patterns that are hidden in annual testing data. The BSS is an ongoing study of a representative random sample of 790 children who began first grade in the fall of 1982 in 20 of Baltimore's public schools. Fall and spring test scores are available, so school year gains (fall to spring) can be separated from summer gains (spring to fall) for the first five years of the study group's schooling. This period covers all of elementary school for children

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Table 1
Children's Standardized Test Scores
Grade Level Equivalent Scores

	Fall '82 1st Grade	Spring '83 1st Grade	Spring '84 2nd Grade	Spring '85 3rd Grade	Spring '86 4th Grade	Spring '87 5th Grade
Verbal Test						
<u>Less Affluent</u>						
Grade Level Equivalent	1.0	1.9	2.6	3.5	4.6	5.6
<u>More Affluent</u>						
Grade Level Equivalent	1.5	2.2	3.6	4.8	6.5	8.1
Difference	.5	.3	1.0	1.3	1.9	2.5
% of Standard Deviation	66%	56%	72%	91%	80%	87%
Math Test						
<u>Less Affluent</u>						
Grade Level Equivalent	1.0	1.9	2.9	3.7	4.9	6.1
<u>More Affluent</u>						
Grade Level Equivalent	1.5	2.4	3.7	5.1	6.6	7.9
Difference	0.5	0.5	0.8	1.4	1.7	1.8
% of Standard Deviation	84%	57%	82%	94%	93%	81%

Chart 1
Actual Verbal Test Grade Level Equivalent Scores



promoted regularly each year.⁵

In this analysis, Alexander and Entwisle use children's annual test averages on reading and math subtests from the California Achievement Test (CAT), a standardized test widely available during the 1980's. Mother's and father's educational levels (years of school attended), mother's and father's occupational status, and whether or not the youngster received reduced-price meals at school⁶ were used to assess family circumstances and divide the sample into two groups. In the first, mother's education averaged 14.6 years, father's education 15.1 years, just 13% received meal subsidies at school, and 72% were living in two-parent households as first graders. Most families in this group are not poor, and include two parents who have graduated from high school. The other ("less affluent") group includes children whose mothers attended school, on average, for only 10.7 years and whose fathers stayed in school 11.0 years. Only 51% of these children lived in two-parent households, and 81% of them were poor enough to qualify for subsidized school lunches.

Alexander and Entwisle's analysis includes only those children with complete testing data over the entire five-year period.⁷ Their results are shown in Table 1 as grade level equivalents. A grade level equivalent of 1.0, for example, means that a child is performing at the level of a beginning first grader, while a 1.5 indicates that a child is performing as a first grader in his/her fifth month of the school year.

"...all children learn more and learn more efficiently when they are in school."

As Alexander and Entwisle note, scores of less affluent children lag behind more affluent children even at the fall of first grade. Unfortunately, less affluent children fall farther back the longer they are in school. In both verbal and math skills, less affluent children score five months behind more affluent children at the start of first grade. By the end of the fifth grade, however, the difference in verbal achievement is more than two years; in math it is a grade and

half. Chart 1 plots these grade level equivalents; its diverging lines show graphically how far behind less affluent children fall as they continue in school.

Alexander and Entwisle argue that this growing gap is only part of the story of Baltimore children's learning patterns. Table 2 shows average monthly gains in school-year test scores and summer test scores separately for more and less affluent students. In presenting test scores in this way, Alexander and Entwisle identify three factors critical to understanding learning patterns of Baltimore City school children.

First, test gains are much larger when children are in school (top row of Table 2) than over the summer months, (bottom row of Table 2). Thus, the first major point brought home by this table is that "all children learn more when they are in school" (Alexander & Entwisle, 1998).

Second, verbal test gains over the summer are larger than math gains over the summer, which suggests that math learning may be more dependent on schooling than verbal learning.

Finally, while school-year gains in each year are similar for more and less affluent children, more affluent children's scores continue to improve during the summer, while less affluent children's scores do not. Less affluent youth tread water over the summer, sometimes gaining a few points, sometimes losing a few, with the largest losses in the first two summers. Thus, less affluent children start a new school

Table 2*

Children's Standardized Test Gains by Season and Economic Level

	<i>Verbal Test</i>		<i>Math Test</i>	
	<i>Less Affluent</i>	<i>More Affluent</i>	<i>Less Affluent</i>	<i>More Affluent</i>
<i>School Year Gains:</i>				
Average Gain/Month ^b	5.13	4.66	4.79	4.73
<i>Summer Gains:</i>				
Average Gain/Month ^b	0.11	3.59	-0.14	1.29

b) Scale scores based on 8 months winter (Oct-May), 4 months summer (June-Sept).

*Alexander and Entwisle (1998)

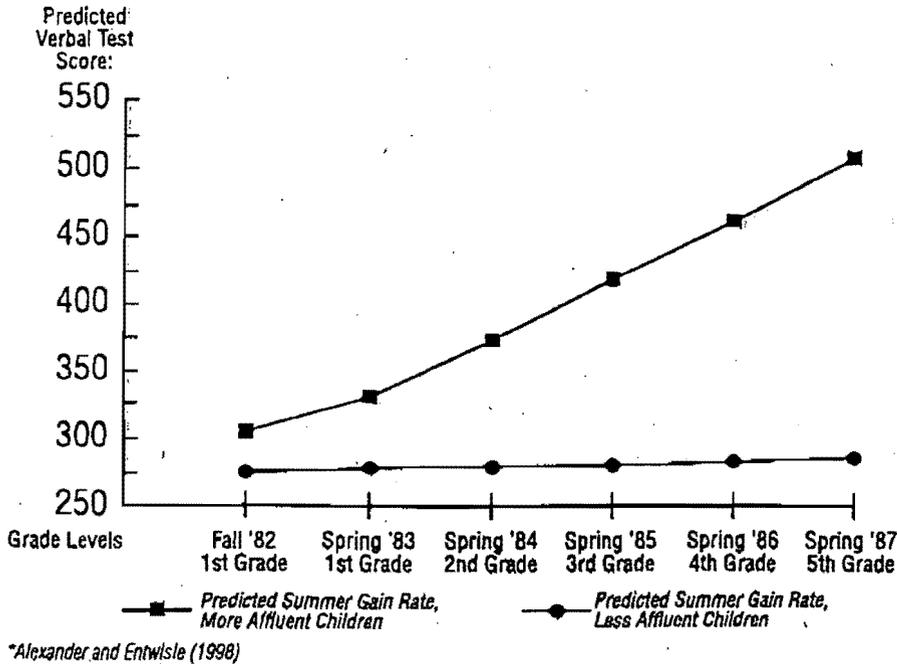
9.10 F.03/03
 In contrast, when they apply the winter pattern year-round, the gap between these two groups almost disappears by year five.

Modeling the Time-Line of Cognitive Growth

Alexander and Entwisle used additional statistical modeling techniques to support patterns revealed by analyses of average test scores.⁸ These statistical models allowed the authors to separate effects due to gender and ethnicity from effects due to economic circumstances of children. The authors found that race and gender have "small and scattered effects on learning patterns,"

continued on page 6

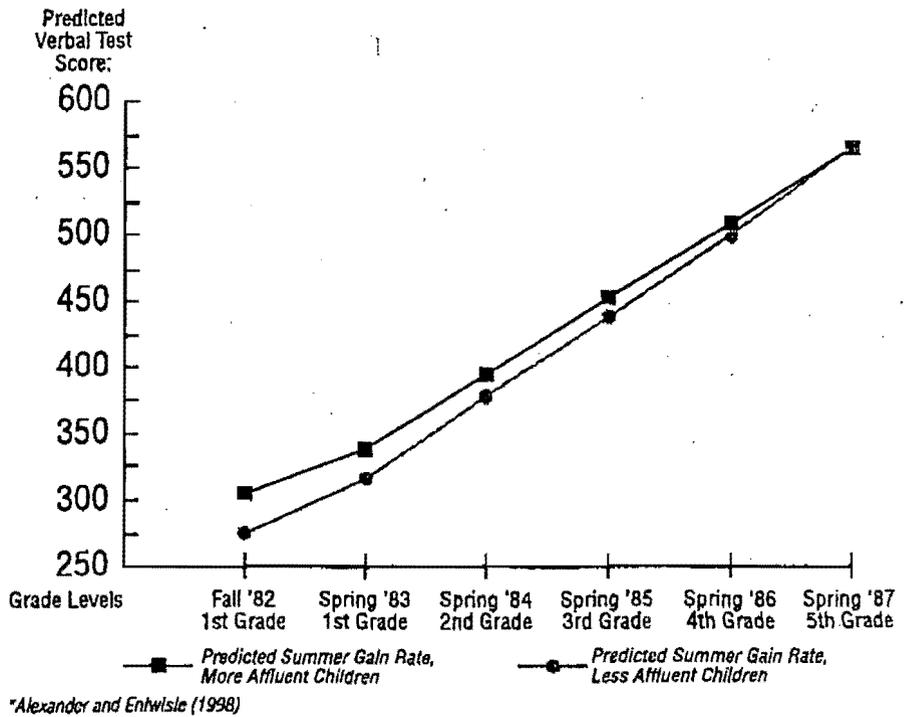
Chart 2*
Predicted Verbal Test Averages Over Five Years by Economic Level Projecting Summer Gains Year-Round:



year about where they ended the previous spring, while more affluent children have moved ahead. Alexander and Entwisle note that these summer differentials are very large: when added over the four summers, "they account for practically the entire gap in scores between less and more affluent children that emerges over the first five years of school." (1998) School-year gains do not contribute to the gap: all children progress at about the same rate during the school year.

Alexander and Entwisle make this pattern even more vivid by projecting seasonal gains year-round. When they apply the summer pattern through the entire year (Chart 2), the less affluent group hardly progresses at all and the gap between less and more affluent children increases tremendously. In con-

Chart 3*
Predicted Verbal Test Averages over Five Years by Economic Level Projecting School Year Gains Year-Round:



it that economic characteristics of children's families most strongly influence summer learning patterns. In their own words:

Socioeconomic standing is not simply a proxy for race in these analyses (or for gender). And since socioeconomic standing effects on the summer reductions are both larger and more numerous than race effects, we conclude that the summer drop-off has more to do with lower socioeconomic standing than with minority group standing. (1998)

Summary and Conclusions

Alexander and Entwisle's findings reinforce the notion that the early primary grades are the years when cognitive gains are most profound and losses most dramatic. Their research indicates that schooling is important for verbal learning, but even more important for learning in math. Alexander and Entwisle also document that Baltimore children exhibit the same economically-dependent patterns of summer learning found in other districts where the family resources vary widely. Simply put, children from Baltimore's disadvantaged families do not progress when school is out of session, while children from more affluent families continue to learn. Finally, Alexander and Entwisle find "that children of all economic levels gain at close to the same rate when they are in school," and that learning rates during the school

year are much greater than are summer learning rates. Put another way, this research strongly suggests that Baltimore's schools - when they are in session - help the neediest children to learn at rates very comparable to more affluent children.⁹

"Baltimore City's public schools can help poor children learn efficiently."

The equalizing power of schooling is perhaps never more important for Baltimore than the present. The authors note current conditions in Baltimore put many more children "at risk" academically than heretofore, and that the concentration of poverty has increased substantially over the past three decades. In 1990, for example, Baltimore's childhood poverty rate for children 18 and under was 32.5% overall, 39.1% among African-Americans. The national child poverty average that year for the nation's 200 largest cities (population 100,000 and above) was 15.2%. In 1989, average poverty rates across all of Baltimore's 203 census tracts are classified by noted sociologist William J. Wilson as "high poverty," and almost a fifth surpassed his 40% cutoff for "extreme poverty" areas. These rates placed Baltimore 11th among the nation's 100 largest cities in 1990 in concentration of poverty.

There is a good deal of research that links increasing levels and concentrations of poverty to a whole range of social problems, not the least of which

is poor schooling. But, Alexander and Entwisle argue, even with growing poverty and without a substantial middle class, their seasonal perspective on learning suggests Baltimore City's public schools do help poor children learn efficiently during the school year. While they caution that it is unrealistic to expect schools to substitute *wholly* for parental influence, they also acknowledge, "We will look to our schools for solutions, as historically we have, and as well we should" (Alexander & Entwisle, 1998).

Given that students appear to make up for lost time during the school year, a commonsense approach would seem to involve year-round schooling for low-income children. While logical, research has yet to document that this approach would erase the "summer learning gap," - as some researchers have named it. In the case of summer programs, lack of documented improvement may be due to the fact that summer school is generally less intensive and less academic than regular schooling. Many programs do not insist on certified teachers, last for only part of a school day, and do not extend throughout the whole summer. Few are connected to the regular curriculum of schooling. Unlike regular schooling which typically includes a mix of more and less able and more and less advantaged students, many summer programs include only children who have failed during the regular school year and/or come from very disadvantaged circumstances. When, under these circumstances, summer schools don't

produce great strides in achievement, observers may assume they are unsuccessful. Alexander and Entwisle's research suggests that this assessment may be too harsh, given that such students would likely have suffered large losses without summer tutoring. There is little research which studies student achievement separately for poor and more affluent children in year-round schooling. Overall, however, year-round schools¹⁰ have reported improved student performance, reduced problem behavior and vandalism, and improved graduation rates.

Alexander and Entwisle's picture is both promising and disheartening. Schools appear to be more successful than is generally believed, but they do not prevent learning gaps between more and less affluent children from growing larger as children move through the system. Reforms of school-year programs are necessary to improve students' performance, but just as clear, thanks to this study, is the need to improve summer learning opportunities for less affluent children. While current models of summer programs and year-round schools may need further study, they are clearly the place to start.

- 1 The Baltimore headline pertains to city-wide test results in reading and math over grades one through five.
- 2 For an overview of test scores in other urban districts which show similar patterns, see Cooper, Nye, Charlton, Lindsay and Greathouse, 1996.
- 3 While statistical adjustments are often used to partition home and school influences, their reliability is limited, because in-school and out-of-school influences are hopelessly confounded in annual data.
- 4 This method was first applied to understanding differences in school performance and educational stratification by Barbara Heynes (1978).
- 5 Regularly promoted children make up about 60% of the group studied.
- 6 To be eligible to receive subsidized meals, family income cannot exceed 159% of the federally-determined poverty level.
- 7 Test scores come mainly from school records, so the 75% of this sample who remained in Baltimore's schools are more likely to have complete test records and be included in this analysis than those who moved out of the public school system. As can be seen, case coverage drops substantially from first grade through fifth. Under certain conditions, attrition can distort results; in this study, attrition would be a problem if many high-performing students or all of the more affluent students left the study. The authors maintain that attrition probably did not change the pattern of results because it was not highly selective and mainly involved economic standing and race/ethnicity. In particular, there is very little selection along academic lines. Additionally, when achievement trends are plotted using all available scores (which maximizes case coverage each year, but does so by including different subsets of the group at different points), the pattern of results is much the same as in Table 1.
- 8 The authors used a hierarchical linear technique to model the growth curve of their sample. Interested readers may contact the authors for further information or see Byrd and Raudenbusch, 1992.
- 9 The sample used in this research was chosen randomly to be representative of Baltimore's school children. The authors have used five years of data on the same children to document learning trends. What this means is that the learning patterns demonstrated by the sample children in Alexander and Entwisle's research can be generalized with a high degree of confidence to the Baltimore system as a whole (and likely to other north eastern, urban school districts as well). Also noteworthy is the statistical growth curve model that backs up their analysis of average test scores.
- 10 Specifically, achievement gains are most likely when year-round schools offer remediation/enrichment during school breaks and teach new material during the typical 5-6 week "review" periods that exist in traditional school calendars (Ballinger, 1987).

A Bibliography with publication information on these sources appears on Page 8.

ABELL SALUTES:

Continued from page 1

school uniforms make to his own school's character building program?

With parent and student support and a \$25,830 grant from The Abell Foundation, school uniforms were introduced at Greenspring Middle in the fall of 1997. Although there is some leeway, students must wear plain white shirts, khaki pants or skirts. Students who wear baggy pants and no belt must come to the office to get a length of string to wear as a belt. Mirrors are posted around the school and students are told, "Look in the mirror and take responsibility for yourself."

What has been the effect of mandatory school uniforms in Greenspring Middle School? "There is no direct cause and effect," Mr. Bundley says, "but my sense is that mandatory uniforms are making a very positive contribution to our overall program of character building. They are helping to make possible in our school what I call 'uniformity of character.'

"In 1995 and 1996 our attendance was 79 percent; year to date in 1998 it is 87 percent. School discipline data reflects the same positive influence of the uniforms. In February 1997 there were 705 office referrals [for discipline problems]; a year later there were 266.

"Uniforms help give us our uniformity. They identify us to ourselves and to our community. Because I believe school uniforms have made an important difference in the behavior of our students and in the spirit of our faculty and parent group, Greenspring Middle will have uniforms as long as I am the school principal."

Abell salutes Mr. Bundley for the sensitivity, energy, and administrative skills he brought to bear to make, through the use of uniforms, Greenspring Middle a better school.

Some Recent Grants by The Abell Foundation

**Arts Education In
Maryland Schools \$25,000**
Two grants for general support of a statewide partnership dedicated to advancing the cause of arts education as a basic component of public education.

**Center on Juvenile
& Criminal Justice \$73,000**
To create a Special Education/Alternative to Detention Pilot Program for institutionalized delinquent youth in Baltimore City, whose special education needs had been previously undiagnosed.

**Charles Village
Community Foundation \$11,693**
To provide surveillance enhancements to the Video Patrol Program at the Dallas F. Nicholas Sr. Elementary School in an effort to reduce drug dealing and crime.

Harford Road Partnership \$150,000
For the creation and implementation of the urban renewal and marketing plans for the Harford Road commercial corridor.

**Herring Run
Watershed Association \$3,000**
For support of the Annual Spring Migration Walk-a-thon and Festival in Herring Run Park.

**Institutes for
Behavior Resources \$119,339**
For the purchase of a mobile health services vehicle for disbursement of methadone, primary health services and counseling for heroin addicts.

**Maryland Disability
Law Center \$20,000**
In support of the Citywide Special Education Advocacy Project to provide disabled children with appropriate educational services.

**Peabody Institute of
The Johns Hopkins \$500,000**
A ten-year grant for scholarships and a longitudinal study to measure the impact of an intensive after-school arts education program on students' academic success for at-risk students.

Teach for America \$50,000
Toward recruitment, selection, training and sustaining an ongoing support network for Teach for America/Baltimore corps members placed in Baltimore City Public Schools.

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The Abell Report

What we think about, and what we'd like you to think about

Published as a community service by The Abell Foundation

Baltimore's Poor Children Learn As Much As Middle-Class Children During the School Year, But Fall Behind During the Summer, Hopkins Researchers Document.

ABELL SALUTES: Greenspring Middle School's "Uniformity Of Character" Program

School uniforms are making a difference

"School crime has decreased 36 percent."

"Leaving class without permission is down 47 percent."

"There has been an overall improvement in the school climate and a greater focus on positive behavior."

These comments from principals in schools around the country where uniforms have been made mandatory, came to the attention of, and intrigued, Mr. Audrey Bundley, principal of Greenspring Middle School in Baltimore. The positive effects of school uniforms wherever they had been introduced prompted Mr. Bundley to ask: What contribution would mandatory

continued on page 8

If disadvantaged students stayed in school 12 months, would they progress academically at the same rate as middle-income students? New research shows that the likely answer is "Yes."

"Pupils Lose Ground in City Schools: The Longer Children Stay in the System, the More They Fall Behind."

Baltimore Sun¹

November 12, 1997

Baltimore schools are not unusual among large American cities; typically, in urban schools achievement scores of low-income students fall farther and farther behind national averages the longer children attend public school (e.g., *Education Week*, Special January 1998 Issue). But what is less certain is whether the schools are largely responsible for these problems. Many factors, including poverty, meager funding, and poor parenting, have been blamed for

widespread urban failure, yet there is little consensus in either public or academic debates about which factors are most important.

A recent study of Baltimore City school children sheds light on this important issue. Johns Hopkins University sociologists Karl Alexander and Doris Entwisle have been following the progress of 790 Baltimore students who began first grade in 1982. In trying to understand how public schools contribute (or fail to contribute) to student learning, they have studied standardized test results of these Baltimore children. But rather than studying changes in test scores from one grade to the next, Alexander and Entwisle have compared changes in test scores during the school months (September to June) to changes

continued on page 2

Making the Most of Summer School I

To: Paul Glasstis

2 pages

6 mos - publ. date

**Making the Most of Summer School:
A Meta-Analytic and Narrative Review**

Harris Cooper
Kelly Charlton
Jeff C. Valentine
Laura Muhlenbruck
University of Missouri-Columbia

1/1/99

Draft manuscript, not for citation without author permission

Abstract

Summer schools serve multiple purposes for students, families, educators, and communities. The current need for summer programs is driven by changes in American families and by calls for an educational system that is competitive globally and embodies higher academic standards. A research synthesis is reported that used both meta-analytic and narrative procedures to integrate the results of 93 evaluations of summer school. Results revealed that summer programs focusing on remedial or accelerated learning, or other goals have a positive impact on the knowledge and skills of participants. While all students benefited from summer school, students from middle class homes show larger positive effects than students from disadvantaged homes. Remedial programs have larger effects when the program is relatively small and when instruction is individualized. Remedial programs may have more positive effects on math than on reading. Requiring parent involvement also appears related to more effective programs. Students at all grade levels benefit from remedial summer school but students in the earliest grades and in secondary school may benefit most. These and other findings are examined for their implications for future research, public policy, and the implementation of summer programs. Policy makers should require that summer programs: (a) contain substantial components aimed at teaching math and reading and (b) include rigorous evaluations, but also (c) permit local control of curricula and delivery systems. Funds should be set aside to foster participation in summer programs, especially among disadvantaged youth. Program implementers should (a) begin summer program planning earlier in the year, (b) strive for continuity of staffing and programs across years, (c) use summer school in conjunction with summer staff development opportunities, and (d) begin integrating summer school experiences with those that occur during the regular school year.

- From study: The average student who attends summer school will climb about 10 percent in class rank compared to students who don't attend summer school.