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Implementation of the Sound Partners Reading Program

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Abstract

Eleven first grade and 10 second grade students, all with reading and behavioral difficulties, received one-on-one tutoring using the Sound Partners reading program (Vadasy & Pool, 1997). Students received 30 min of tutoring each day for 5 months. Students were assessed on Letter-Word Identification, Passage Comprehension, and Word Attack subtests of the Woodcock-Johnson-Revised (WJ-R): Tests of Achievement. An informal measure (rapid letter naming) was also used. Results indicated that gains of approximately 1 standard deviation (or greater) were noted for subtests of the WJ-R for first-grade students; second graders showed relatively stable performance from pre- to posttest assessments. Similar performance was noted on the informal measure across grades. Program satisfaction data showed that overall the tutors, teachers, and students were pleased with the program. Discussion focuses on the implications for future investigations.

Keywords: Sound Partners, reading instruction, first and second graders, phonics, tutoring.

Reading is the foundation of a meaningful education. Reading deficits can result in negative outcomes for learning that affect all curricular areas across grade levels (Bartel, 1990; Kameenui & Carnine, 1998; Ross, Smith, Casey, & Slavin, 1995). According to Foorman, Francis, Fletcher, Schatschneider, and Mehta (1998), 74% of students who were identified as poor readers in third grade were similarly identified in ninth grade. Further, the U.S. Department of Education has determined that 40% of all fourth graders, 30% of all eighth graders, and 25% of all twelfth graders exhibit reading achievement significantly below the basic level (Campbell, Donahue, Reese, & Phillips, 1996). Given that reading skill is a strong predictor of academic performance (Stanovich, 1986), as well as the pervasive nature of reading failure (Meese, 1994; Ross et al., 1995), attempts to ameliorate achievement deficits should focus on augmenting reading skills. In particular, remedial programs should address the needs of learners who are at risk for school failure in order to prevent future academic deficits.

Students who are at-risk for reading failure often exhibit a lack of phonemic awareness (Adams, 1990; Ehri & Wilce, 1985; Foorman et al., 1998; Kameenui & Carnine, 1998; Lieberman, Shankweiler, Fischer, & Carter, 1974; Metsala, Stanovich, & Brown, 1998; Ross et. al., 1995; Snider, 1997; Stanovich, 1986; Vandervelden & Siegel, 1997; Weiner, 1994). Phonemic awareness has been identified as a significant component in the acquisition of reading skills. As Adams (1990) wrote, "children's levels of phonemic awareness on entering school may be the single most powerful determinant of their success" (p. 54). Further, a number of researchers have purported that an explicit understanding of phonics is a prerequisite for early reading success. For example, research conducted by Bradley and Bryant (1983) and Wagner and Torgeson (1987) concluded that the link between phonetic competence and reading ability is causal. Accordingly, students who do not obtain appropriate instruction in phonics are more likely to exhibit poor reading performance in the early grades (Bradley & Bryant, 1983; Snider, 1997; Vandervelden & Siegel, 1997) and in the upper grade levels where remediation efforts are less effective (Ross et al., 1995; Snider, 1997; Vandervelden & Siegel, 1997).

The notion that reading deficits become less responsive to remediation with an increase in grade level is well supported by research (Good, Simmons, & Smith, 1998; Ross et al., 1995; Snider, 1997; Vandervelden & Siegel, 1997; Wasik & Slavin, 1993). In the long term, the effects of remediation efforts applied to upper-grade students with poor reading skills are less significant than the effects of remediation efforts conducted to benefit lower-grade students with reading deficits. In other words, interventions conducted to increase the future reading success of students at-risk for reading failure should be directed at lower-grade students (Good et al., 1998; Vadasy & Pool, 1997; Vandervelden & Siegel, 1997). In particular, first and second grade students at risk for reading failure have been shown to display the greatest benefit from reading interventions with regard to acquisition and maintenance of skills (Foorman et al., 1998). Foorman et al. noted that reme-

dial interventions are most effective when both the necessity of phonemic awareness and early intervention are combined.

One type of early intervention, which has raised considerable interest in the field of education, is one-on-one tutoring. Previous research has indicated that one-on-one tutoring is an effective method for the remediation of reading deficits (Vadasy, Jenkins, Antil, Wayne, & O'Connor, 1997a; Vadasy, Jenkins, Antil, Wayne, & O'Connor, 1997b; Wasik, 1998a; Wasik & Slavin, 1993). Vadasy et al. (1997a) have referred to one-on-one tutoring as the strongest option for students who need help in learning to read. One-on-one tutoring programs which focus on providing instruction in phonics have been shown to result in positive gains in reading performance (Juel, 1996; Mantzicopoulos, Morrison, Stone, & Setrakian, 1992; Vadasy et al., 1997a, 1997b; Wasik, 1998a; Wasik & Slavin, 1993). Such results provide the basis upon which extended research in the area of phonics-based tutoring programs is warranted.

A promising, cost-effective one-on-one tutoring program providing phonics-based skill instruction is the Sound Partners program (Vadasy & Pool, 1997). Lessons contained in the Sound Partners program were designed to be delivered by nonteacher tutors so that intervention might be affordable by many schools and be accessible to the large number of students at-risk for reading disabilities (Vadasy et al., 1997b). Components of the Sound Partners program include isolated instruction in phonemic awareness skills as well as meaning-based instruction with increasing amounts of connected reading (Vadasy & Pool, 1997). Vadasy and colleagues conducted two studies to assess the effectiveness of the Sound Partners reading program. The first study (Vadasy et al., 1997a) included 40 first-grade students considered to be at-risk for reading failure. These students were tutored by family members, high school students, and college students for 30 min a day, 4 days a week, for 23 weeks. The control group did not participate in any reading intervention outside their regular classrooms. The scores of the experimental group were higher than the control group when measuring reading (effect size .21), decoding (effect size .35), spelling and segmenting (effect size .37), and writing (effect size .19). The second study (Vadasy et al., 1997b) involved 17 first-grade students considered to be at-risk for reading failure. Students received tutoring for 30 min per day, 4 days a week for 27 weeks by family members, college students, and high school students. As compared to the control group, the experimental group outperformed in areas of spelling and segmentation, although not on reading. However, effect sizes showed improvements on all measures for the experimental group. Since both investigations involved tutoring programs conducted after school by the authors of the program, further studies are needed using the program as part of the school day and including second-grade students.

The purpose of this study was to replicate the findings of Vadasy and her colleagues with first grade students and to extend the research on Sound Partners to second grade students.

Method

Participants

Eleven first-grade and 10 second-grade students at an elementary school in the Pacific Northwest participated in the investigation. Of these students, 14 were male. The urban school's population was 522 students; of those students 74% received free or reduced lunches, and there was a 46% turnover rate per year. The school's minority population was 22%.

Students were selected by teachers based on their externalizing behavior and/or reading difficulties by January of the academic year as part of a larger investigation of a violence prevention program. Therefore, the first criteria considered for entry into the program was externalizing behavior; however, if a student did exhibit externalizing behavior and had difficulty reading, he or she was included in the program. Students exhibiting reading difficulties were selected by their general education classroom teachers as those needing extra assistance in reading (could benefit from one-on-one reading assistance). Externalizing behavior was defined as all behavior problems that are directed outwardly by a child toward the external social environment. Examples included displaying aggression toward objects or persons, arguing, forcing the submission of others, defying the teacher, being out of seat, not complying with teacher instruction or directives, having tantrums, being hyperactive, disturbing others, stealing, and not following teacher or school imposed rules. These externalizing behavior problems usually involve too much behavior and are considered inappropriate by teachers and other school personnel (Nelson, Martella, & Marchand-Martella, in press). All students participated in their primary literacy program within the classroom and received tutorial assistance in this program at a later part of the school day from January to May (half of an academic year).

Tutors and Training

Tutors were recruited by placing ads in the university's weekly student newsletter, posting fliers around the university, contacting professors, and presenting in special education classes. Training sessions lasted 45 min to 1 hr and were conducted at the beginning of the study and as a follow-up (3 months later). Training consisted of providing a background of the reading program used in the study, reviewing materials to be used, demonstrating and allowing practice using program materials, practicing sounds and blending of sounds, demonstrating how to collect data, and orienting tutors to the school. Tutors were paid an hourly wage for tutoring and training time.

A total of 11 tutors participated in the program (i.e., nine females and two males, ranging in age from 20 to 53 years). Eight of the college tutors were educa-

tion majors with one communication major, and one criminology major. One volunteer was from the community.

Setting

The assessments and tutoring took place at the elementary school. The tutoring was conducted in a kindergarten room that was empty in the afternoon. The participants in the program followed their usual school routine most of the day. Tutors worked with students one-on-one. The students were scheduled at the convenience of the classroom teacher; students participated 3 to 5 days per week, schedules permitting. Tutoring was scheduled during 30-min blocks, Monday through Friday from 12:45 p.m. to 2:45 p.m. The students were assessed at tables in an empty art room, kindergarten room, office of a teacher, empty office, empty cafeteria, and in the hall at two desks.

Materials

The Sound Partners program was used in this project (Vadasy & Pool, 1997). The Sound Partners reading program is designed for students with reading skill deficits in the early elementary grades. Sound Partners consisted of 100, 30-min lessons developed to teach students sound-symbol correspondence, rhyming, blending, segmenting, decoding, and whole-word reading. The program included Bob Books sets 1–3 (Maslen, 1986; Maslen, 1987a, 1987b); *Sometimes I Wish*, *The Sled Surprise*, *The Bug Club*, *Bub and Chub*, *Frog Knows Best*, and *Night Light* (Foster, Erickson & Gifford, 1991a, 1991b, 1991c, 1991d, 1991e, 1991f); *Little Bear* (Minarek, 1957), *Little Bear's Visit* (Minarek, 1958), and *Father Bear Comes Home* (Minarek, 1959). Other materials used were a magnetic board (Wonderboard) with individual upper-case and lower-case letters (Dowling Magnets, 1996) and individual pads of paper for the students to write on during each lesson.

Dependent Variables and Measures

One norm-referenced assessment and one informal measure were used to assess the effects of the program. In addition, the number of lessons completed across participants was assessed. Finally, program satisfaction data were collected at the end of the program for student participants, tutors, and teachers.

WJ-R

Participants were assessed before (in January) and after the program (in May) using the Woodcock Johnson-Revised: Tests of Achievement (WJ-R) (Woodcock & Johnson, 1989, 1990). The students were assessed using the following subtests:

Letter-Word Identification, Passage Comprehension, and Word Attack. Forms A (pretest) and B (posttest) of the WJ-R were used. The mean is 100 and scores range from 0 to 200 with a standard deviation of 15. Standard scores were analyzed and served as the dependent measure. The participants' mean pre-test scores were below average.

Informal Measurement

The informal measure was a rapid letter naming assessment consisting of a sheet of 52 uppercase letters of the complete alphabet, in random order. This sheet was placed in front of the student, and he or she was instructed to point to each letter and say its name. The student was timed for 1 min, and the number of correct responses was recorded. Thus, rate of correct responses per minute served as the dependent measure.

Lessons Completed

The average number of lessons completed by students was calculated.

Program Satisfaction

Students, tutors, and teachers were given surveys to determine if they were satisfied with the Sound Partners program. Tutors read survey items to the students and recorded their responses. Students were asked to rate the program on five items using a Likert-like scale and were asked one additional item that required an open-ended response. Tutors were asked to rate the program on two items using a Likert-like scale and were asked to respond to four additional items that required open-ended answers. Finally, teachers were asked to rate the program on three items using a Likert-like scale and were asked to respond to two more items that required open-ended responses. Tables I through III show the questions provided to these three types of respondents. The scores from 90% (19/21) of the students, 73% of the tutors (8/11); and 90% (7/8) of the teachers were evaluated.

Table I. Students' Responses to Program Satisfaction Survey

	Averages
1. Did you like the reading program? (range)	4.7 (2–5)
2. Did you like how the lessons worked? (range)	4.3 (2–5)
3. Do you think you can read better because you went to Sound Partners? (range)	4.8 (3–5)
4. Do you think this program would work well for other kids? (range)	4.6 (2–5)

Scale of rating: 1 = NO; 2 = no; 3 = ?; 4 = yes; 5 = YES.

Table II. Tutors' Responses to Program Satisfaction Survey

	Averages
1. Overall, rate how satisfied you were with the reading program? (range) 1 = not satisfied to 5 = highly satisfied	4.0 (3–5)
2. Overall, rate your students' interest and attention for each lesson (range) 1 = not interested to 5 = highly interested	3.4 (2–4)
3. Rate the extent to which the reading program improved the students' reading performance. (range) 1 = not much improved to 5 = highly improved	3.9 (3–5)
4. Rate the extent to which the changes in your students' reading improvement met your expectations. (range) 1 = much lower than expected to 5 = much higher than expected	3.9 (3–5)
5. Rate the ease of presenting lessons to the students. (range) 1 = not easy to 5 = very easy	3.8 (2–5)

Note. Each item has separate and distinct descriptors.

Sound Partners One-On-One Tutoring

The program was conducted during the second half of the academic school year. The program included the following elements.

Letter Sounds

Tutors pronounced the letter sounds for students and had students repeat what they had heard. The tutors also read sounds from a page of randomly placed letters, and students identified the correct sound by pointing to the letter. New sounds were introduced, and previously learned sounds were practiced to maintain skills.

Rhyming

Tutors orally rhymed words for students (e.g., frog, dog), then provided a word for the students to find a rhyme, or asked the students to provide their own pair of rhyming words. If students were unable to perform the task successfully,

Table III. Teachers' Responses to Program Satisfaction Survey

	Averages
1. Overall, how satisfied were you with the reading program? (range)	3.3 (2–4)
2. Rate the extent to which the program helped improve students' reading skills? (range)	3.1 (2–4)
3. Rate the extent to which the changes in skills met your expectations. (range)	2.7 (1–4)

Items were rated from 1 D not satisfied to 5 D highly satisfied.

they would be shown two pictures (e.g., house, ham). Tutors then asked the students which picture rhymed with a given word (e.g., the students were shown pictures of a house and a ham, the tutors named the pictures and told the students to point to and name the picture that rhymed with Sam).

Segmentation

Tutors taught segmentation of sounds by pointing to divided rectangular boxes (e.g., one small section and one larger section for the word sock: s / ock). Students were told to say words while pointing to corresponding box sections. In later lessons, the number of sections in the box increased (e.g., m / o / s / t).

Magnetic Letter Board

Tutors modeled how to move the individual letter tiles to make words (e.g., three tiles for rip), then changed the initial, medial, or final letter to make new words (e.g., nip, rip, rid). The students were also given the opportunity to make words with the tiles. The letter tiles were also placed in a row and the students were given a word to spell with the task of placing the correct letters in the correct sequence.

Writing

Students wrote in their notebooks at each lesson. The students wrote letters and simple words at the beginning of the program and progressed to sentences and stories. Tutors assisted students with spelling, grammar, punctuation and legibility.

Storybook Reading

The students read books and/or poetry as part of each day's lesson. The reading included words from the daily lessons to facilitate accuracy and fluency. As students became more proficient, the reading time was increased to accommodate the longer books.

Error Correction and Motivation Procedures

Tutors were cautioned not to delete from or add to the script of each lesson. If following the error correction in the lesson was not adequate, the method of "I do, we do, you do" (model, lead, test) was employed. For example, if students pronounced *leg* as *lag*, tutors modeled reading the word correctly, students read the word with the tutors, and then students read the word independently. As an incentive for good effort during the lesson, students were sometimes given five minutes of free time at the end of the lesson to write on whiteboards, use large

magnetic letters in the classroom, read a book not in the program, or play and talk with the tutors or fellow students. In addition, students who demonstrated perseverance and politeness were given a star at the end of the lesson; when they collected ten stars, they could choose from among small items (e.g., plastic reptiles and spaceships, decorative erasers and pencils, and other small objects).

Results

Woodcock Johnson-Revised: Tests of Achievement (WJ-R)

Table IV shows the results of the students across subtests of the WJ-R. Recall that the amount of time between the pretest and posttest assessments was 4 months (January to May). On the letter-word identification subtest, first graders showed

Table IV. Pretest, Posttest, and Gain Score Averages and Ranges Across Woodcock Johnson-Revised (WJ-R) Subtests and Informal Reading Assessments for Students in Grades 1 and 2

	Pre	Post	Gain	*Z*	*p* value
Grade 1 (*N* D 11)					
WJ-R:					
Letter-Word Identification					
Average	84.2	102.8	18.6	4.11	<.0000
(Range)	(66 to 112)	(90 to 115)	(4 to 34)		
Passage Comprehension					
Average	82.2	96.6	14.4	3.19	<.0007
(Range)	(64 to 109)	(81 to 114)	(0 to 28)		
Word Attack					
Average	85.3	103.1	17.8	3.94	<.0000
(Range)	(78 to 110)	(84 to 114)	(4 to 25)		
Informal Reading Assessment:					
Rapid Letter Naming					
Average	38.1	47.5	9.4		
(Range)	(11 to 52)	(36 to 52)	(–1 to 25)		
Grade 2 (*N* = 10)					
WJ-R:					
Letter-Word Identification					
Average	86.8	92.1	5.3	1.12	<.1314
(Range)	(66 to 105)	(77 to 117)	(–2 to 12)		
Passage Comprehension					
Average	90.3	95.4	5.1	1.08	<.1401
(Range)	(74 to 112)	(61 to 119)	(–23 to 17)		
Word Attack					
Average	90.3	97.6	7.3	1.54	<.0618
(Range)	(70 to 102)	(88 to 112)	(–3 to 20)		
Informal Reading Assessment:					
Rapid Letter Naming					
Average	47.3	48.3	1.0		
(Range)	(27 to 52)	(30 to 52)	(–7 to 14)		

an average standard score improvement of 18.6 from pre to posttest assessment (over 1 standard deviation gain—recall that the standard deviation on the WJ-R is 15) ($z(11) = 4.11$; $p = .0000$). The average gain demonstrated by second graders was 5.3 ($z(10) = 1.12$; $p = .1314$). On the passage comprehension subtest, first grade students showed an average gain of 14.4 from pre to posttest assessment (almost 1 standard deviation) ($z(11) = 3.19$; $p = .0007$). Second graders exhibited an average standard score gain of 5.1 ($z(10) = 1.08$; $p = .1401$). The first grade results indicate an average standard score gain of 17.8 from pre to posttest assessment for word attack (more than 1 standard deviation) ($z(11) = 3.94$; $p = .0000$). The average gain demonstrated by second grade students was 7.3 ($z(10) = 1.54$; $p = .0618$).

Informal Measure

On the rapid letter naming assessment, first graders showed an average gain of 9.4 correct responses per min. (see Table IV). The second grade results indicated a mean gain of 1 correct response per min.

Lessons Completed

The average number of lessons completed by the first grade students was 48.4 (range = 34 to 64). The average number of lessons completed by the second grade students was 61 (range = 48 to 90). The first and second grade students participated in the same average number of instructional sessions (80).

Program Satisfaction

Students' Survey

Overall, students were pleased with the program, indicating that they thought they could read better and that this program would work well for other students (see Table I). Students were also asked to respond to one open-ended question, (i.e., Anything else that you would like to tell me about the reading program?). In both years students' responses indicated that they liked the program. Several replied that they enjoyed the books and magnetic letterboards.

Tutors' Survey

The tutors believed the program was helpful for students (see Table II). On the first essay question (i.e., What do you like about the program?) tutors indicated that they liked the simplicity of the program and variety of tasks. On the second essay question (i.e., What would you like to see changed?) tutors mentioned more

consistency in scheduling and tutor/student pairs. (Note: tutors were assigned to a student; however, when tutors failed to show for a scheduled session due to an illness or another reason or were unable to be present due to scheduling conflicts, tutor-student pairings had to be rearranged.)

Teachers' Survey

Overall, teachers were satisfied with the results of the program (see Table III). (Note: the teachers observed the program; however, they were not trained on the procedures.) On the first essay question (i.e., What did you like about the program?) the majority of teachers liked the one-on-one assistance and phonics instruction. On the second essay question (i.e., What would you like to see changed about the program?) teachers answered that they would like to see more consistency in tutor/student pairs and more time for each student.

Discussion

The purpose of this investigation was to further assess the efficacy of the Sound Partners reading program with first graders and to extend the research base to second graders identified as at-risk for reading failure by their teachers (based on externalizing behavior and/or reading difficulties). Thus, this study adds to the research conducted by Vadasy et al. (1997a, 1997b) by including second grade students in the Sound Partners program.

The results from this study showed that a phonics-based tutorial program for first grade students may have been effective in replicating the research results of Vadasy and others. Overall, first-grade students made gains close to or over one standard deviation across subtests of the WJ-R (on subtests involving both decoding and comprehension tasks). Rapid letter naming also improved from pre- to posttest assessments. The largest gains for first graders were noted in subtests that specifically assessed the functional reading skill of decoding (i.e., Letter-Word Identification and Word Attack).Word Attack requires students to decode nonsense words—thus, students cannot use prior history with words or other clues to assist in their reading performance. The skill to decode unfamiliar words by sounding them out (as with nonsense words) is a critical skill in learning to read (National Research Council, 1998). These findings suggest that phonological skills and letter-sound correspondence may have an impact on first grade reading performance. The students, tutors, and teachers were satisfied with the Sound Partners reading program. These findings were noted after an average completion of 48% of the program.

The results for the second grade students showed little change from pre- to posttest assessment on the WJ-R (there were no statistically significant changes noted). There was also little to no change on the rapid letter naming measure. The greatest gains were evidenced by the second graders on the Word Attack sub-

test (average = 7.3 gain score compared to 5.1 and 5.3 for Passage Comprehension and Letter-Word Identification, respectively). Interestingly, the second-grade students completed more lessons (61%) than did the first graders. Therefore, there was an overall failure to replicate the results shown in this and past investigations with first graders with second grade students. In other words, the gains made by the second grade students were not as dramatic as those made by the first graders. This may be due to the fact that the program was designed specifically for first grade students and was field-tested on this population. The second grade students may need a more intensive program that provides them the skills they need in a shorter time period. These students were not gaining the skills fast enough to catch up with their same age peers.

A difficulty experienced with the program was the availability of tutors. For the program, college students were used as tutors. Most tutors were not able to work everyday. Some tutors worked 1 to 3 days per week. The disparate number of days worked caused some confusion for the tutors when someone else had worked with the student. It took more time to deliver the lessons and prepare for the day. By contrast, the tutors who worked every day were able to be more organized, knew the students better, and were able to keep track and work on challenging skills continuously with the students. The use of tutors as instructors proved to be a challenging element of this program. A log was kept to apprise tutors where to start instruction, but it took extra time to read notes from other tutors which shortened instructional time. An additional difficulty arising from the unreliability of available of tutors was the inability of investigators to observe the tutoring sessions. Verification of the independent variable was difficult to determine since it was necessary for the primary investigators to tutor every day. Because time was spent tutoring, observation and supervision of other tutors was impossible. Even when it was clear the program was not being followed, feedback was delayed and limited to brief conversations due to time constraints. Another recurring obstacle was the scheduling of special events in the school. Since tutoring was offered from 12:45 to 2:45 daily, class projects, assemblies, field trips, and other events sometimes prevented students from attending Sound Partners. Also, some students were also in detention and tutors were usually not allowed to work with them until detention was completed. These difficulties were also noted by Vadasy et al. (1997a, 1997b) as they had difficulty retaining reliable tutors who could present the program effectively. Overall, the three groups surveyed were satisfied with the program. Tutoring difficulties found in this study were consistent with the investigations conducted by Vadasy and colleagues (Vadasy, 1997a, 1997b).

In addition to the difficulties seen in the program, limitations exist. First, since consistent opportunity for tutoring was lacking in these studies, there was no assurance that students would be able to participate for the full 30 min. Additional research is needed with first and second grade students outside regular school hours to determine if scheduling conflict is a significant factor. Second, these studies used a pretest and posttest design without a control group. More research that includes control groups is necessary to indicate that Sound Partners

is significantly beneficial to participants as compared to nonparticipants. Third, no quantitative data were collected on the reading performance in the students' classrooms, so it is not known if the skills taught in Sound Partners generalized to another setting. Fourth, in addition to their regular classroom instruction, most of the students received some other type of reading intervention other than Sound Partners. It is not known to what degree Sound Partners contributed to the students' improvement of reading skills. Fifth, none of the students completed the entire program. Data are needed to compare students with similar opportunities to be enrolled and finish the Sound Partners program. Finally, there were no treatment integrity data collected. Therefore, it is not possible to determine if and to what extent the Sound Partners program was implemented as designed. The difficulty experienced with the lack of lessons completed may be attributed to a lack of treatment fidelity. Therefore, future research should collect this data in order to ensure that the program is implemented correctly.

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