

THE USE OF VOLUNTEER SPEECH AIDES IN RURAL MANITOBA

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ABSTRACT

The Volunteer Articulation Program was developed to provide direct, consistent, and scheduled services to students with mild to moderate articulation disorders in rural areas. The project was designed to train volunteer speech aides to implement the intervention programs to meet the specific needs of students with mild to moderate articulation disorders and to allow the speech/language pathologist time to provide more intensive involvement with more severe communication disorders. A volunteer selection criteria, specific training procedures, and a detailed description of program procedures and implementation are described within this article. Results of the project revealed that the Volunteer Articulation Program (VAP) was an effective method for providing direct, consistent, and scheduled speech services to students with mild to moderate articulation disorders.

Paraprofessionals or speech/communication aides have been used to provide articulation training to school age children in many urban and rural schools (Alpiner, Ogden, and Wiggins, 1970; Fahey, 1972; Jelinek, 1976; Pickering and Dopheide, 1976; Scalero and Eskenazi, 1976; Greer, 1978; Hall and Knutson, 1978). It has been found that speech aides who are properly trained by a qualified speech/language pathologist can provide specific programmed articulation activities which do not differ significantly in their effect from training provided by speech/language pathologists (Gray and Barker, 1977; Costello and Schoen, 1978). Aides have also increased the speech/language pathologist's efficiency by reducing the great numbers of students with mild to moderate articulation disorders on their caseloads (Braunstein, 1972; Galloway and Blue, 1975; Alvord, 1977).

One purpose of this project was to develop an articulation program to provide direct training to students with mild to moderate articulation disorders. Speech/language pathologists in rural Manitoba serve school divisions in large, sparsely populated areas. School personnel, such as resource and classroom teachers, have been trained to provide not only the educational instruction but the on-going direct training of students with severe communication disorders under the supervision of a fully licensed speech/language pathologist. Direct training has not been provided to students with mild to moderate articulation disorders except on an intermittent, inconsistent basis. A second purpose of this project was to investigate the use and effectiveness of speech aides in rural Manitoba.

The Volunteer Articulation Program (VAP) was first developed for implementation by speech aides in 1975 to: (1) provide direct, consistent, and scheduled services to students with mild to moderate articulation disorders; (2) allow the speech/language pathologist time to provide more intensive involvement with students with more severe articulation disorders and other communication disorders; (3) allow resource and classroom teachers more time to work with students with other educational needs; and (4) enrich the skills of community volunteers.

Volunteer Selection and Training

Volunteers rather than paid personnel were chosen due to the limited financial funding available through the school divisions. Each school was requested to obtain their own volunteers; it was believed that this would help to develop a greater commitment to the program on the part of each school. An additional reason for the school's initial recruitment was that the speech/language pathologists did not live in the communities nor did they have the community contacts required.

Local agencies, service clubs, parent groups, and church organizations were approached by the schools and speech/language pathologists; these groups proved to be valuable resources for volunteer selection. Experienced volunteer aides also recruited new volunteers through their own initiative and community involvements.

The school principals, resource teachers, and/or special education coordinators who recruited the volunteers followed the guidelines as set out by the Manitoba Speech and Hearing Association (MSHA, 1975) and the American Speech and Hearing Association (1970). The general qualifications, requirements, and duties of the aides may be found in Appendix A. Following the initial contact, the speech/language pathologist interviewed each potential volunteer. During these interviews general expectations of the program were outlined and requirements and duties were reviewed.

Volunteers participated in a two-day ten-hour intensive training workshop. Articulation, hearing, and auditory discrimination skills were assessed by the speech/language pathologist; the criteria for acceptance were normal articulation skills, hearing within normal limits, and satisfactory completion (85% correct) of an auditory discrimination task. General information on normal articulation development, types of disorders, and behavior modification principles was presented. Videotapes of speech sessions were used to acquaint the volunteers with the basic techniques and procedures involved in program administration. The volunteers were trained to administer each program step and to complete the necessary record forms.

Experienced speech aides participated in the training workshop by expressing their viewpoints on the role of a speech aide in the schools. They also participated in program administration practice. Refresher courses were provided periodically throughout the year on an individual and group need basis. Aides with a minimum of one year's experience were taught successive approximation shaping techniques.

At the successful completion of the training workshop or refresher course each speech aide was requested to sign a policy agreement (Appendix B) with the speech/language pathologist. This agreement stated the duties to be performed by both the aide and the speech/language pathologist, the confidentiality clause, probation period, and agreement reviewal date. The confidentiality clause was stressed during the training sessions and an aide would be immediately dismissed if this section was violated. If an individual was unable to fulfill the qualifications, requirements and duties after the two-day training period, that person was not accepted as a speech aide.

Procedures

This project was the outcome of an earlier study conducted from 1975-77. The earlier program did not include many of the training phases and steps described below. The earlier program also utilized short probe tests prior to each step to determine whether or not a student could omit a step of the program. These probe tests allowed students to move too rapidly through the program. Some students reverted to their previous articulation patterns and had to be readmitted to the program, from one to three years following dismissal. Because of these internal program changes and the lack of specific data, program and student data reported here were from only those students enrolled in the VAP for the first time during the 1978-79 school year.

The data reported here were from one speech/language pathologist's program within two school divisions. However, programs were conducted by three other speech/language pathologists within the rural area of the province. Each speech/language pathologist was responsible for training and supervising the aides within his/her own school divisions. Data from these other programs were not available.

Students were evaluated by the speech/language pathologist prior to placement on the VAP with a speech aide. Shaping of the target phoneme was completed prior to assignment to an inexperienced aide. In two instances shaping was done by an inexperienced aide because of the unavailability of an experienced aide and restrictions on the speech/language pathologist's time schedule. The target phoneme was elicited at least once prior to assignment to any aide; however, the criterion for Shaping, 30 consecutive correct productions of the target phoneme, was not met prior to that assignment.

Supervision of the 18 aides who participated in this study took approximately 10 hours per week. A fully licensed speech/language pathologist was responsible for the supervision of all speech aides throughout the program. Supervision was in the form of periodic on-site observations of speech sessions, daily written reports, and periodic tape recordings. A speech aide with less than one year's experience was directly observed a minimum of once per week during the two month probation period as stated in the aide policy agreement.

The speech/language pathologists developed criterion-based programs for implementation by the aides to ensure maximal productions of the target phonemes in a minimal time period. The instructional programs included thirteen steps. These steps consisted of from two to three phases (imitation, picture naming, answering questions) plus a test. Criterion for advancement to each phase was 97% correct. Criterion for advancement to each step was 99% correct on the test. High advancement criterion were used to ensure over-training correct productions of the target phoneme.

The thirteen program steps consisted of:

- I. Sound in isolation and nonsense syllables
- II. Sound in initial position of words
- III. Sound in the final position of words
- IV. Sound in the medial position of words
- V. Sound in blends, all positions of words
- VI. Voiced cognate, all positions of words
- VII. Multiple occurrence of the sound in words
- VIII. Trick words, e.g., "south" or "sleuth" on the /s/ Program
- IX. Phrases
- X. Reading sentences
- XI. Reading paragraphs
- XII. Timed reading
- XIII. Conversation

Two steps were not included in the /r/ and /l/ programs (voiced cognates, trick words). If a student was unable to read, Steps X and XI (reading sentences and paragraphs) were performed imitatively, and Step XII (timed reading) was omitted. This did not occur during this study.

After completion of Step XIII, each student was placed on an observation list. Students were observed by the aide and/or speech/language pathologist a minimum of three times over the following year. If the student maintained 95% correct production of the sound in conversation, the student was dismissed from the program. The final observation and dismissal was made by the speech/language pathologist.

A warm-up and speed tape were used for each session. During the warm-up the student repeated the target phoneme in isolation or nonsense syllables ten consecutive times without error at the beginning of each session.

A 30 to 70 word per minute (wpm) speed tape was incorporated at Step II of the program and used after the warm-up during each session thereafter. The speed tape was used to systematically increase the rate of imitation to approximate conversational rates of speech. Similar approaches were utilized by Bankson and Byrne (1972) and Strong (1975) to "encourage the development of the motor skills necessary to produce the sounds with ease and speed" (Bankson and Byrne, p. 161). Thirty words with the sound in the initial position were presented at a rate of one per two seconds (30 wpm). The student repeated the words immediately after each presentation; the aide counted all correct productions. Once the student achieved 30/30 correct, three days in a row, the student began the 40 wpm section and proceeded through the initial section. When the student achieved 70/70 correct in the initial position, the student began the 30 wpm section with the sound in the final position of words. This same procedure was followed for the sound in the medial and multiple positions of words.

Nine schools in towns throughout the Evergreen and Lakeshore School Divisions participated during the 1978-79 school year; from one to three volunteers were placed in each school, and from one to six students were placed with each aide. Sessions lasted approximately 20 minutes and took place from two to five times weekly. A total of 565 direct contact hours was spent with the students in this study.

Thirty-seven students (24 male, 13 female), Grades K-6, were enrolled in the VAP for the first time during the 1978-79 school year. Ages ranged from 5-8 to 11-4 years. Enrollment dates varied from October, 1978, to March, 1979. All students had at least one sound in error, in all positions of words and blends, 99-100% of the time prior to entrance in the program. Choice of target phoneme was based on developmental norms and ease of eliciting the sound in isolation. Data was reported on the training of only one target phoneme per student. Twenty-six students (18 male, 8 female) had a θ/s substitution, three students (1 male, 2 female) had a lateral $/s/$ distortion, four students (1 male, 3 female) had a distortion or w/r substitution, two students (male) had a t/k substitution, and one student (male) had a w/l substitution. One student (male) used either an l/s substitution or an omission of the $/s/$ ($l/or-/s/$) (Table 1).

Results

Twenty-seven students were able to meet shaping criterion (30 consecutive correct responses of the target phoneme in isolation) within one session. Twenty-four of these students had a θ/s substitution, two had a t/k substitution, and one student had a $l/$ or $-/s$ substitution. A classification of students by error type and number of sessions needed to meet shaping criteria is shown in Table 1.

TABLE I

Summary of students by error type and shaping sessions needed to produce target phoneme 30 consecutive times without error. N = 37

Error Type	Number of Students	x Sessions to Shape	Range
θ/s	26	1.11	1-3
lateral $/s/$	3	15.33	13-34
l or $-/s/$	1	1	---
w or x/r	4	5.5	3-12
t/k	2	1	---
w/l	1	5	---

Eight students (5 male, 3 female) met program criteria for Step XIII and were placed on the observation list (Table 2). Of these eight students, six had θ /s substitutions, one had a lateral distortion of the /s/, and one had a t/k substitution. Two students (1 male, 1 female) did not complete all thirteen steps yet met the criteria for placement on the observation list during the final week of the program. One of these students had a w/r substitution, the other had a t/k substitution.

TABLE 2

Summary of students meeting program criteria by step during the 1978-79 school year. Number of students = 35 (23 males, 12 females). Two students (1 male, 1 female) reached observation criteria after completing Steps IV and VI, respectively (41 and 60 sessions), and were not included in this table. Age range C.A. 6-10 to 11-4 years (grades 1 - 6).

Program Step	Number of Students Meeting Step Criterion	x Sessions Students Needed to Meet Step Criterion	Range of Sessions Students Needed to Meet Step Criterion
Shaping	35	3.14	1-34
I Isolation & Nonsense Syllables	34	6.647	1-15
II Initial	34	6.264	2-25
III Final	33	6.06	1-22
IV Medial	32	6.09	2-21
V Blends	28	4.71	2-11
VI Voiced Cognate	26	2.384	1-6
VII Multiple	24	3.58	2-8
VIII Trick Words	22	2.77	1-13
IX Phrases	21	5.14	2-13
X Reading Sentences	14	2.43	1-5
XI Reading Paragraphs	12	5.33	3-9
XII Timed Reading	10	6.9	3-14
XIII Conversation	8	5.5	3-16

Six students (3 male, 3 female) met criteria for the reading steps; two of these students (female) had begun Step XIII but had not met the criterion prior to the end of the school year. All six students had a θ /s substitution. The remaining 21 students progressed through varying levels of the imitation sections, with the exception of one student (female) with a lateral /s/who failed to meet criterion for Step 1 prior to the end of the school year.

Table 3 reveals that a mean of 7.125 (range 4 - 11) sessions was needed for completion of each step by those students who met the criterion on the /r/ program. The one student on the /l/ program needed a mean of 7.85 sessions (range 2 - 17) to meet the criterion for each step completed (Shaping, I, II, III).

The ten students who were placed on the observation list achieved 99% correct production of the target phonemes during conversation after a mean of 57.1 sessions (range 38 - 86). As shown in Table 2, Steps I, II and XII were the most difficult to complete while Steps VI, VIII, and X were completed in the least amount of time.

TABLE 3

Number of sessions needed to complete each program step, /r/. N = 4

Steps:	Shaping	I	II	III	IV	V	VI	VII
N	4	4	4	4	4	2	-	2
Mean	5.5	11.0	4.0	8.25	7.75	6	-	5
Median	3.0	8.5	5.5	3.0	5.0	5.5	-	5.0
Range	3-12	1-22	4-8	3-22	5-12	2-6	-	2-6

Discussion

The VAP was an effective method for providing direct, consistent, and scheduled speech services. The speech aides provided services to students with mild to moderate articulation disorders. These services had not been previously available.

Students consistently met high levels of performance on the program. Of the 37 students, 81% were able to emit the target phoneme in all positions of words and blends; 16% were able to emit the target phoneme in one or more positions of words. Only one student was unable to emit the target phoneme in any positions of words. The difficulty of students' error phoneme, the amount of time needed to shape the target phoneme, and the late enrollment dates may have caused the lack of program completion by some students. Although it may have been more efficient for the speech/language pathologist to shape these more difficult target phonemes, time was not available for the speech/language pathologist to do so. This time should be added to the supervisor's schedule of services.

Several of the program steps may be unnecessary. Steps VI, VIII and X (voiced cognates, trick words, and reading sentences) were completed rather quickly in comparison to the other steps. This may have been due to the previous intensive training of the target phonemes in the various conditions. It may be more appropriate to administer the test section of these steps prior to going through all the practice stages. If the student did not meet the criterion, all the practice stages would be administered; if the student met the test criterion, he would skip that step and begin the next step. This should be investigated in the future. Probe tests before each step of the program had been utilized in the earlier pilot project programs. These tests were found to allow students to move too rapidly throughout the program.

Although this program was successful there are certain factors that should be considered when utilizing volunteer speech aides in rural school systems:

1. The use of a systematic criterion-based program is a necessity for aide administration since movement to successive steps cannot be monitored daily by the supervising speech/language pathologist.
2. Intensive initial training and practice in program administration is an essential element for success. Inexperienced aides need to be familiar enough with program materials, procedures, and discrimination of correct and incorrect target phonemes to accurately conduct the daily sessions.
3. Accurate, precise daily and long-term record-keeping must be required as this is one facet of supervision. Analysis of the data also enables the supervising speech/language pathologist to monitor progress and make potential program changes.
4. Although the number of aides a speech/language pathologist could supervise would vary under differing circumstances, from pilot project results, it would seem that from one to five part-time aides may be supervised efficiently during the first year of a program. According to

the recently proposed ASHA guidelines (1979) no more than 90 hours per week should be provided by aides under one supervising speech/language pathologist.

5. The use of volunteer speech aides does involve a great deal of time for supervision, parent contacts, program analysis, and record-keeping. These factors should be remembered when establishing weekly time schedules and when deciding upon the number of aides to be supervised.

6. The use of aides or volunteers should be discussed with school personnel prior to implementation. The school's cooperation is invaluable in reinforcing the volunteer aide, and providing feedback, moral support, and recognition of the services given by the volunteer aide.

7. An awareness of the program used should be created through in-service training for the school personnel.

The volunteers and school personnel involved in this project were very enthusiastic about the VAP. Some volunteers remained with the program for as long as four years. The volunteers reported that the satisfaction of helping children was very rewarding. The aides requested that the program continue in the following year and that specific, criterion-based program materials continue to be used. Many of the program changes which have been made over the previous three years were the result of the aides' suggestions and comments on program administration.

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APPENDIX A

QUALIFICATIONS OF AIDES

1. Experience working with children is desirable.
2. High school education is desirable.
3. Ability to communicate effectively with children.
4. Ability to empathize with people, particularly the communicatively handicapped.
5. Acknowledge the different cultural and linguistic heritages of children.
6. Fulfill the requirements and duties as outlined by the speech/language pathologist.

REQUIREMENTS OF AIDES

1. To appropriately articulate the sounds of English.
2. To display hearing abilities within normal limits.
3. To auditorily discriminate differences in speech sounds.
4. To follow specified instructions and not deviate from the assigned task unless so instructed by the speech/language pathologist.
5. To participate in a ten-hour intensive training workshop.
6. To learn to operate tape recorders.

7. To volunteer their services a minimum of one hour per day, three days a week unless other arrangements were made through the speech/language pathologist and school.
8. To daily report to the principal/resource teacher when entering the school unless other arrangements were made directly with the school.

DUTIES OF AIDES

1. To be familiar with and administer the specific program exactly as designated by the speech/language pathologist.
2. To accurately complete record forms and charts after each session.
3. To weekly mail in or deliver to the speech/language pathologist copies of the record forms and charts for each student.
4. To complete the program information sheet at the termination of the program or school year.
5. To contact the speech/language pathologist immediately by telephone if problems developed.
6. To meet periodically with the speech/language pathologist and principal resource teacher and/or special education coordinator to discuss the program.
7. To ensure that, as volunteers, they were in attendance at the scheduled times, unless the school was contacted prior to the absence, preferably the day before.
8. To refer all parent/doctor/laymen requests for information or conferences directly to the speech/language pathologist.
9. To contact the speech/language pathologist for assessment of progress and program dismissals.

APPENDIX B

POLICY AGREEMENT RELATING TO SPEECH AIDES IN THE EVERGREEN AND LAKESHORE SCHOOL DIVISIONS

Definition: AIDE: - A person carrying out therapeutic procedures and/or speech stimulation and/or screening under the direct supervision of a fully licensed speech/language pathologist.

1. Hearing, articulation, and auditory discrimination tests will be administered to and successfully completed by all aides.
2. Every student enrolled in speech training will be assessed by the speech/language pathologist prior to enrollment.
3. Any problems relating to specific students must immediately be brought to the speech/language pathologist's attention.
4. All aides must follow the specific program instructions.
5. All programs will be prepared by the speech/language pathologist.
6. Cases may not be discussed with anyone outside the school setting, i.e., parents, doctors, laymen. Conferences with parents and/or doctors will be the responsibility of the speech/language pathologist.
7. Supervision will be in the form of:
 - (a) intensive initial training;
 - (b) periodic observation of speech training sessions;
 - (c) daily reports;
 - (d) periodic tape recording;
 - (e) periodic video tape recording.
8. Aides will keep daily reports and charts on each student.
9. A two month probation period will be completed by all aides.

10. An aide's position may be terminated at the discretion of the speech/language pathologist.
11. An aide's policy agreement is automatically terminated if the speech/language pathologist is unable to supervise.
12. Policy agreements will be reviewed annually.

Date _____

Aide

Speech/Language Pathologist