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A STUDY OF CARRYOVER PRACTICES AMONG SCHOOL CLINICIANS IN NORTH DAKOTA

by
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A Thesis

Submitted to the Faculty

of the

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in partial fulfillment of the requirements

for the degree of

Master of Science

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1972

This thesis submitted by Mary Pat Johnson in partial fulfillment of the requirements for the Degree of Master of Science from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

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Title: A Study of Carryover Practices Among School Clinicians in North Dakota

Department: Speech Pathology and Audiology

Degree: Master of Science

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Date: April 17, 1972

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ABSTRACT

The purpose of this study was to determine what school clinicians do to accomplish articulation carryover, the length of time it takes, and the success of the carryover techniques. Caseloads and dismissal rates were also investigated.

Thirty North Dakota school speech clinicians at the 1970 North Dakota Speech and Hearing Association Convention were presented a questionnaire survey developed for this study. Information was requested regarding their 1970-71 caseload. Results were tabulated and mean values were computed.

Results of this study indicated that articulation cases accounted for 75.8 percent or three-fourths of the clinician's caseload. It was also noted that articulation carryover methods used by clinicians were limited. Finally, the clinicians reported that on the average, 51 weeks (34 hours) of group therapy were necessary before a child could be dismissed.

CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

When the speech clinician sees a person with an articulation problem such as a lisp or the distortion of one or more phonemes, she works with the case seeking to eliminate maintaining factors, to discriminate the error production from the standard production, and to learn to produce the standard sound in isolation, in words, and in sentences. Textbooks on the subject, such as Voice and Articulation (Van Riper and Irwin, 1958), Disorders of Articulation (Carrell, 1968), Speech Pathology: An Applied Behavioral Science (Perkins, 1971), etc., provide numerous suggestions on how to accomplish these tasks. However, they usually have little to suggest about how to accomplish carryover. The purpose of this study is to determine what a representative group of school speech clinicians in North Dakota report they do to accomplish articulation carryover, how much time it takes, and how successful they think their methods are.

Powers (1957) defines carryover as "the habitual use of the new sound in real-life speech situations, outside of the speech therapy session" (p. 796). Once the target sound can be correctly produced at will in the therapy setting, carryover therapy should be initiated into the client's speech program. Powers (1957) feels that the client must be self-motivated to articulate correctly and to learn to monitor

his own speech before carryover can be effective. The classroom teacher, parents, and peers can be helpful in assisting as speech monitors to promote carryover outside of the therapy setting since they have more contact with the child.

Chapman, et al., (1961) suggest that the goal of carryover is reached when the client has attained control of speech sounds to the degree that the classroom teacher or parent can take over, continuing the final steps of carryover into conversational speech. Dismissal would occur prior to this happening only if the client was unresponsive to therapy or continuation would yield no further results. Many clinicians believe their responsibility has not been discharged until carryover into conversational speech has been accomplished whether or not a parent or teacher is both willing and able to participate in therapy.

In discussing the therapy setting which will promote carryover, authors have noted that real-life situations are necessary to elicit real speech responses. Backus and Beasley, in their textbook, (1951) stress the importance of real-life situations. They also suggest group therapy as a means of promoting carryover.

Beasley (1951) also affirms the importance of basing therapy on real social experiences, in addition to real-life situations. In a group setting, the client learns social skills which facilitate carryover and benefit the child in his own personal associations with his environment.

Backus (1952) notes that a combination of both group and individual therapy is more beneficial than just one or the other alone.

She mentions a group structure focusing on interpersonal relationships in a speech setting with the child's peers.

McIntyre and McWilliams (1959) also stress the importance of encouraging interpersonal relationships in promoting carryover. They experimented with communication therapy in the form of creative dramatics to facilitate an atmosphere where the group could respond meaningfully to each other, and misarticulations could be corrected in context.

Van Riper (1963) suggests enlarging the therapy situation in treating articulation disorders to promote carryover. He affirms that the therapy setting must be revised to include the client's whole living space where he may be given the opportunity to scan, compare, and correct his speech. These areas should include the school, playground, job, and home. In suggesting carryover procedures, Van Riper mentions speech assignments, checking devices and penalties, nucleus situations, negative practice, using the new sound in all various types of speaking, and emphasizing proprioceptive feedback (pp. 294-300).

Another setting in which it is important for carryover to continue is the classroom. Backus' (1943) book shows elementary teachers how to assist the speech therapist in extending the speech therapy program into the classroom (p ix). She believes that encouragement from the teacher and students in the classroom would be beneficial in reinforcing the child's new speech pattern and in promoting carryover.

Marquardt (1959) suggests that children learn behavior more quickly from their peers as demonstrated by their apt ability to

imitate one another. She proposes using another student in the classroom to act as a "speech pal." The speech pal sits in on the therapy sessions to learn the therapy procedures used by the speech clinician in working with the particular child. Once he has gained adequate knowledge to continue on his own with his classmate, he arranges with the teacher to schedule fifteen minutes per day to review what has been learned in the therapy session. This program "benefits the speech handicapped child by providing carryover and at the same time, furnishes social success companionship which aids in personality adjustment" (p. 156).

Engel (1968) proposes soliciting the aid of someone whom the child admires to respond to his new speech behavior. He also suggests, "Instead of looking for ways to reward the child for modifying his behavior in outside situations, we reward persons in his environment" (p. 30). These situations include the classroom and the home environment so that peers and parents both play an important role in carryover. In the classroom, children are selected to monitor and tally each correct production of the target sound. Achieving a required number of points brings a reward to the entire class for their part in assisting with carryover. Thus, the "carryover child" is greatly motivated to do well to please his friends and gain a reward for them and for himself. The classmates presumably deliver social reinforcement for improved articulation. Peer monitors can also be responsible for tallying the child's correct responses in play situations. Parents or siblings can be very helpful in carryover in the home in the same way.

Lillywhite (1948) stresses the importance of the parent's role in promoting carryover. He believes the mother should serve as the clinician in the home. She should, however, remain objective and understanding when working with her child so that she does not undo or jeopardize progress the child has already made.

In recent years, research has noted the effectiveness of operant conditioning procedures in modifying speech behavior. In continuing this research, authors have attempted to discover where operantly based techniques can be successfully employed in carryover therapy.

Brookshire (1967) speaks of operant conditioning as an "experimental analysis of behavior." He discusses schedules of reinforcement. The reinforcement he has found to be the most useful in carryover is a progressive type of approach beginning with continuous reinforcement, gradually changing to either a variable ratio or interval schedule toward the time for dismissal.

Measurement of Articulation Change

Recent studies show that the effect of articulation therapy techniques can be statistically measured and recorded. Mowrer (1969), in designing a Speech Response Chart for precision recording of responses to quantify results of direct operant therapy, emphasizes the great need for recording instruments to allow the experimenter to analyze what, if any, learning has taken place. Mowrer's chart is constructed to represent both the total response rate and the incorrect response rate produced per minute. He stresses that analyzing the

total response rate of each session is imperative in assessing the clinician's ability to evoke a desired response and to note changes in the client's speech behavior.

Mowrer, Baker, and Schutz (1970) collaborated on what they termed The Modification of the Frontal Lisp Programmed Articulation Control Kit, better known as the S-PACK. This kit provides the therapist with a specific program of articulation therapy procedures, which will evoke results which can be measured to determine whether a client is ready to be dismissed from therapy.

The S-PACK is an instructional three-part program using standardized stimuli to evoke sounds correctly in words, short sentences, all word positions, continuous discourse, connected speech, and social discourse. The author's note: "great care must be taken to teach for transfer [carryover]. One cannot assume the newly learned response will be used in daily speech" (p. 6).

S-PACK P (the parent program) consists of a workbook and instructions for a series of daily lessons to be administered by the mother for a three-week period at home (p. 7).

A study of the original S-PACK by Mowrer, Baker, and Schutz (1966) suggests that both of the instructional programs are effective in controlling the new responses outside of the therapy setting.

Ryan (1971) also studied the S-PACK to determine its effectiveness in the elimination of frontal lisping behavior. The S-PACK programmed articulation therapy was administered to 18 subjects. Of this number, 50 percent scored 92 percent or above on a follow-up

conversational speech sample. Clinicians participating in this evaluation of the S-PACK were generally favorable toward it but were very concerned with the lack of carryover in conversational speech. It was felt that results should show all subjects achieving scores closer to 100 percent on the conversational speech sample. They suggested that group therapy, role playing, or creative drama might be used to increase the level of carryover into conversational speech.

According to Mahoney (1970), "a major barrier to assessing the worth of current carryover procedures and the development of new ones is the problem of measuring the effect of a given procedure on the everyday speech of the client when he is separated in time and space from the clinician" (pp. 67-68). He utilized peer monitors in his carryover strategy to tally correct responses. At the end of a certain period of time, the peer tallying the most correct responses was to receive a prize. A speech sample was obtained by a teacher aide at a time and place different from the peer monitoring situation and error rate was noted at periodic intervals. Mahoney concludes that articulatory behavior change can be documented through the use of this sampling technique, making it unnecessary to obtain information in the form of "testimony" from teachers, parents, or the client himself.

Jackson (1970) used the S-PACK to study the effects of an operant program applied to the correction of frontal lisp in young adults. She wanted to determine if the S-PACK could be effectively used with young adults with trading stamps administered as reinforcers. The use of peers to aid in carryover of desired /s/ responses to

nonclinical situations was also investigated. The subjects were allowed to chose a peer who also was given trading stamps for correct responses by the subject. Results showed the kit was successful in correcting frontal lisps, trading stamps were positive reinforcers, and peers were effective in aiding carryover procedures.

Kalash (1970) has also used peers in a study to evaluate the effect of a carryover technique on the speech of the subjects outside of the therapy environment. She employed peer monitors in the elementary school classroom. The peers tallied correct articulations and the class was told they would receive a reward contingent on the subject's correct responses. Results showed the percentage of error decreased in all cases from baseline to completion of the class project. Kalash suggests that the peer influence was a meaningful motivation when used to promote articulation carryover.

Groth (1971) has studied the possibility of establishing feedback as a secondary reinforcer for correct target sound production in the carryover stage of articulation therapy. He projected that feedback would act as an internal reinforcer to promote carryover. The subjects in this study were asked to raise their hand following the correct production of the target sound during reading. If they produced the sound correctly and signaled, they were reinforced. All of his subjects reached zero percentage of error in four to six weeks and maintained the correct response behavior on follow-up studies.

Carryover in Articulation Therapy

The importance of carryover in articulation therapy cannot be overemphasized to clinicians. One has only to look at case records to see the high percentage of articulation cases, many of which have been retained from previous years. Records in the Department of Public Instruction in North Dakota (Smaltz, 1971) show that school clinician's caseloads included 85.7 percent articulation cases in 1964-65 and 79.2 percent in 1969-70. These figures are comparable to the 80 percent figure for articulation cases obtained by Sommers (1967) in Armstrong County, Pennsylvania.

These figures also suggest much of the clinician's time is spent working with articulation cases. It is then logical to assume that carryover procedures in articulation therapy are of utmost importance if the speech clinician is to attain a high rate of dismissal.

Little is known about what school clinicians do to accomplish articulation carryover, how much time it takes, and how successful they think their techniques are. In planning research on carryover, it becomes important to know these things. The following study involving a survey to be conducted among North Dakota school speech clinicians was designed to seek answers to questions such as:

1. What percentage of the caseload consists of articulation cases?
2. What are the methods used by the clinicians to promote articulation carryover?

3. How many articulation cases have been dismissed and how many cases does the clinician expect to dismiss in an academic year?
4. How much carryover therapy is required by the average articulation case?

CHAPTER II

PROCEDURE

Subjects

Thirty North Dakota speech clinicians were asked to participate in filling out a questionnaire. All school clinicians who attended the April 23, 1971, meeting of the North Dakota Speech and Hearing Association in Dickinson, North Dakota, were included as subjects. The only qualification for participating was that the subject be a "school" speech clinician rather than an instructor or supervisor of speech therapy in an institution of high education such as a college or university.

Questionnaire

A questionnaire was designed to obtain data concerning such areas as: caseloads, methods and techniques, carryover therapy, and dismissal rates of articulation cases. The format of the questionnaire was similar to Chapman, Herbert, Avery, and Selmar's (1961) survey of clinicians throughout the country. Their survey contained questions regarding caseloads and disorders, how often the clients were seen, number in group and individual therapy, dismissal rates, therapy techniques, and remedial procedures. Their results involving numerical data were noted in percentage values as will be done, where appropriate, in this study.

In the present study, the questionnaire (see Appendix I) consisted of 16 questions requiring both numerical data and carry-over suggestions. Items 1 through 3 concerned information about the total school population, caseload total, and breakdown of total case-load enrollment. Items 4 through 8 asked questions regarding dismissal rates, recommendations for re-enrollment, and cases retained from previous years. Item 9 consisted of 35 articulation carryover methods as suggested by Engel, _et al._, (1966) and space for further suggestions. Items 10 through 12 required information about how often clients were seen weekly, individual or group therapy, and the amount of time necessary to incorporate the desired sound, and carryover. Item 13 questioned carryover techniques being employed by the subjects. Items 14 and 15 concerned follow-up studies and Item 16 asked about the problem of carryover.

Presentation of Questionnaire

The clinicians were seated together at four tables in the convention motel's meeting room. In introducing the questionnaire, several verbal instructions were given:

1. Please read this questionnaire over carefully and fill it out as accurately as possible with data concerning your 1970-71 caseload. Estimate figures as closely as possible.
2. Please do not omit any items.
3. You will be given one-half hour to complete the questionnaire.

4. Are there any questions before the questionnaires are passed out?

The questionnaires were then distributed. The subjects provided the necessary information and returned the questionnaires. Results were tabulated for Items 2, 3, 4, 6, 7, 8, and 10 and the group information was supplied back to the clinicians at the morning session of the convention the following day.

CHAPTER III

RESULTS AND DISCUSSION

The Articulation Carryover Questionnaire (see Appendix I) was completed and returned by 30 North Dakota school speech clinicians. Results were tabulated and, where appropriate, percentage values were calculated for the numerical data. A breakdown of the results and a discussion of each item follows.

Item 1 - The average number of students enrolled in the school system was estimated by the clinicians to be 3,800.

Item 2 - The average number of students per clinician enrolled in therapy up to the end of April was 58 as compared to 60 reported by Smaltz (1971) in the 1969-70 academic year. It is unlikely clinicians would add many, if any, cases during the last few weeks of the academic year. The Chapman, et al., (1961) survey noted an average caseload of 130. This reflects a generally recognized trend toward a decline in the average caseload (Smaltz, 1971).

Item 3 - Breakdown of total caseload (averaged and then converted to percentages):

Stuttering	3.4%	Articulation	75.8%
Voice	3.4%	Language Problem	10.3%
Cleft Palate	1.7%	Tongue Thrust	3.4%

Other	1.7%	Hard of hearing, foreign language, aphasia, and cerebral palsy

Sommers' (1967) study revealed that articulation cases consisted of 80% of the caseload and Chapman, et al., (1961) noted that they accounted for 81%. Unpublished data (1971) from Smaltz, Director of Special Education in North Dakota, regarding the 1964-65 and 1969-70 North Dakota case review figures showed 85.7% and 79.2%, respectively, for articulation cases.

Item 4 - Of the students enrolled in therapy at the beginning of the year, 17.2% were dismissed as no longer requiring therapy as of April, 1971.

Item 5 - Those students dismissed for other reasons totaled 7%.

Item 6 - An expected average of 20.7% more students would be dismissed at the end of the academic year as no longer requiring therapy. An expected dismissal rate of 37.9% was noted combining the figures in Items 4 and 6. Chapman, et al., (1961) showed a 30% dismissal rate and the North Dakota case review figures (Smaltz, 1971) noted 38% dismissal for 1964-65 and 41% for 1969-70.

Item 7 - The estimated number of students to be recommended for re-enrollment next year was 51.7%, about half the caseload.

Item 8 - The number of cases retained from previous years was 36.2%. Some of these are probably included again in the figure in Item 7 to be re-enrolled again next year.

Item 9 - A listing of 35 articulation carryover methods was presented to the clinicians. Subjects were asked to check which techniques they employed. The 5 items checked most often were:

1. Encourage parents to spend time working with the child in his speech.
2. Place responsibility for change with the client.
3. In the clinic, practice the new responses until they can be produced rapidly, accurately, and effortlessly.
4. Teach the client to discriminate between his responses and normal production and establish that these differences constitute a real or potential problem to him.
5. Practice in distracting situations, such as exciting games and conversations.

The therapists were requested to make additions to the list. They added: good rapport with parents, have parents tally, establish the sound in automatic responses such as counting, put flowers on the bed posts reminding the child of good speech, put signs on his desk at school, specific assignments for home practice, and use the peer speech monitor for playground supervision of the client.

Chapman, _et al._, (1961) also questioned therapists regarding therapy techniques and remedial procedures. They noted that the most often used were: parental guidance, auditory discrimination training, speech sound games, and minor observation and practice. Parental guidance was suggested by 59% of the therapists as compared to 40% in the present study.

Item 10 - The average number of weeks which the clinicians reported were required for the client to produce sounds correctly in running speech during pre-carryover therapy was 14 weeks (9 hours of

group therapy). Incorporation of the target sound into everyday speech was reported to take an average of 51 weeks (34 hours of group therapy) which is more than an academic year of therapy. From this figure, one might deduce that most articulation cases are seen in therapy for more than one academic year. This is compatable with data earlier in the questionnaire which indicated that less than half the cases are dismissed during the course of an academic year.

Item 11 - The therapists noted that articulation cases were seen both individually and in groups of 2 or 3. The Chapman, et al., (1961) survey also found that both individual and group therapy were employed, but group therapy consisted of a homogeneous group of 4 or 5 clients.

Item 12 - Articulation cases were seen 2 times per week for 20-minute sessions. The Chapman, et al., (1961) survey was in agreement.

Item 13 - Only one of the therapists reported using any carryover techniques learned about during the past year. She listed Mowrer's operant techniques, counting errors, a wrist counter (suggested at the February, 1970, American Speech and Hearing Association sponsored workshop in Minneapolis, Minnesota), and the use of the classroom peers (Engel, 1968).

Item 14 - Ninety-seven percent of the clinicians reported they followed up cases already dismissed from therapy be retesting at the end of the academic year and at the beginning of school next fall by soliciting comments from the classroom teacher and parents, and by a recheck in unstructured situations of spontaneous speech.

Item 15 - The estimated re-enrollment of cases after a recheck or follow-up study averaged 8%.

Item 16 - All the therapists (100%) agreed that carryover was one of the major problems confronting today's therapist.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this study was to determine what school speech clinicians do to accomplish articulation carryover, how much time it took, and how successful they thought their techniques were. This study further investigated caseloads and dismissal rates of articulation cases.

A questionnaire survey was developed and presented to 30 North Dakota school speech clinicians. They were requested to give information concerning their own caseload for the 1970-71 academic year. Results were compiled and percentage values were noted where appropriate.

On the basis of this study, the following conclusions were made:

1. Caseloads consisted of three times as many articulation cases as all other problems combined.
2. Methods used by clinicians to promote carryover were sometimes very limited. Few were applying recently learned techniques.
3. Clinicians expected to dismiss considerably less than half of their articulation cases after one full year of therapy.

4. A client received an average of 51 weeks (34 hours) of group therapy prior to dismissal.

It is believed that the results of this study should be significant to school speech clinicians in that the data suggest that caseload turnover progresses at a slow rate. Since such a high percentage of the caseload does consist of articulation cases, a greater effort should be made by clinicians to utilize the many new carryover therapy methods and techniques. This study is also significant for researchers because it emphasizes the need to develop better carryover procedures.

QUESTIONNAIRE AND TALLY OF ANSWERS

ARTICULATION CARRYOVER QUESTIONNAIRE

Answers to this questionnaire will be held in strictest confidence. Your name will permit us to request responses from other clinicians without bothering you again.

NAME OF CLINICIAN: ______________________________

SCHOOL: ______________________________

1. No. of students enrolled in school system (estimate): 3,800

2. Total no. of students enrolled in therapy during the present academic year: 58

3. Breakdown of total enrollment:

3.4%	Stuttering	75.8%	Articulation
3.4%	Voice	10.3%	Language Problem
1.7%	Cleft Palate	3.4%	Tongue Thrust

1.7% Other (specify) Hard of hearing, foreign language, aphasia, and cerebral palsy

(Total should be the same as #2.)

4. No. of students no longer requiring therapy dismissed so far this academic year: 17.2%

5. No. of students dismissed for other reasons: 7%

6. Estimate of the no. of additional students you expect to dismiss as no longer requiring therapy: 20.7% For other reasons: 5.1%

7. Estimate no. of students you expect to recommend be re-enrolled next year: 51.7%

8. No. of articulation cases on this year's caseload retained from previous year: 36.2%

9. Please check articulation carryover methods used:

__6__ (1) Identify and then eliminate, reduce, compensate for, or overcome the maintaining conditions.

__2__ (2) Select cases which the clinician is convinced should have clinical treatment.

__7__ (3) Teach the client to discriminate between his responses and normal production and establish that these differences constitute a real or potential problem to him.

__8__ (4) Place responsibility for change with the client.

__4__ (5) Clarify the point that the major goal of therapy is change in behavior.

__5__ (6) Use tape recordings to demonstrate progress.

__6__ (7) Use illustrations, such as star charts, good speech medals, thermometers, and speech ladders, to record progress.

__3__ (8) Make clients aware of the goals of outside assignments.

__3__ (9) Have clients participate in making their own home assignments.

______(10) Have clients report their assignments in writing.

______(11) Have clients report by postcard during vacation periods.

__8__(12) In the clinic, practice the new responses until they can be produced rapidly, accurately, and effortlessly.

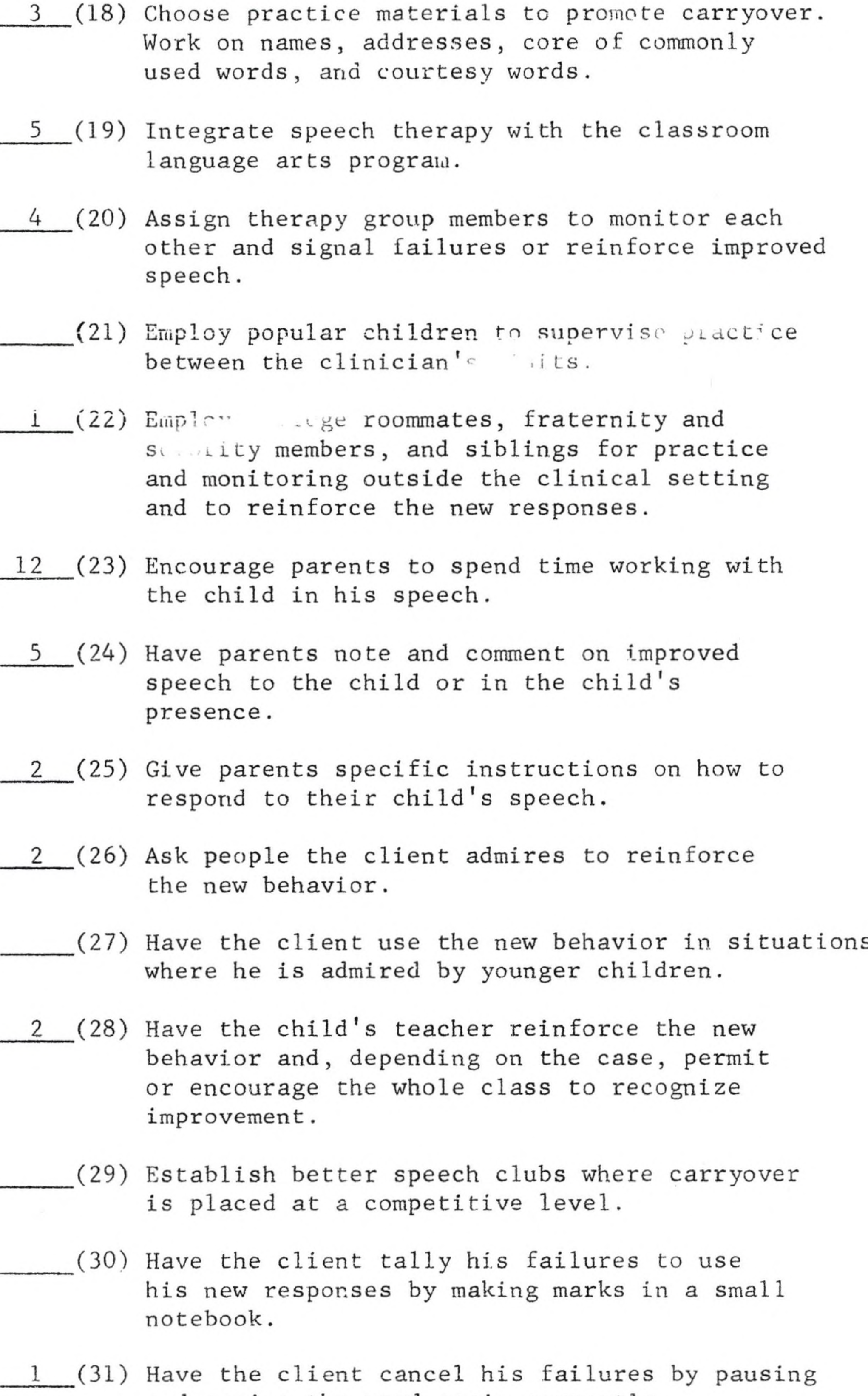
__2__(13) Practice under emotional conditions.

__7__(14) Practice in distracting situations, such as exciting games and conversation.

______(15) Practice over masking noise.

__3__(16) Practice in dramatizations of real-life situations.

__2__(17) Take the client into outside situations to practice.



3 (18) Choose practice materials to promote carryover. Work on names, addresses, core of commonly used words, and courtesy words.

5 (19) Integrate speech therapy with the classroom language arts program.

4 (20) Assign therapy group members to monitor each other and signal failures or reinforce improved speech.

___ (21) Employ popular children to supervise practice between the clinician's visits.

1 (22) Employ college roommates, fraternity and sorority members, and siblings for practice and monitoring outside the clinical setting and to reinforce the new responses.

12 (23) Encourage parents to spend time working with the child in his speech.

5 (24) Have parents note and comment on improved speech to the child or in the child's presence.

2 (25) Give parents specific instructions on how to respond to their child's speech.

2 (26) Ask people the client admires to reinforce the new behavior.

___ (27) Have the client use the new behavior in situations where he is admired by younger children.

2 (28) Have the child's teacher reinforce the new behavior and, depending on the case, permit or encourage the whole class to recognize improvement.

___ (29) Establish better speech clubs where carryover is placed at a competitive level.

___ (30) Have the client tally his failures to use his new responses by making marks in a small notebook.

1 (31) Have the client cancel his failures by pausing and saying the word again correctly.

_____(32) Have the client use his new response in a nucleus situation.

_____(33) Have the client distribute reminders in his speech environment such as bookmarks, notes on cigarettes, signs on the mirror.

_____(34) Make certain events into reminders by associating them with the new response.

_____(35) Use self-imposed penalties for negative reinforcement, such as, "Each time you fail to use your new response contribute five cents to the Cancer Fund."

(36) Good rapport with parents. Have parents tally.

(37) Establish sound in automatic response such as counting.

(38) Flowers on bedposts reminding child of good speech. Signs on desks at school.

(39) Specific assignments for home practice.

(40) Use peer speech monitor for playground supervisor of client.

Of the above, which 5 items do you feel is the most important: 23, 4, 12, 3, 14.

10. On the average, how many weeks of therapy are required until the client begins to produce sounds correctly in running speech during therapy: 14 Until he incorporates it into his everyday speech: 51

11. Are articulation cases seen individually: x Group: x Average no. of children in group: 2-3

12. How often are articulation cases seen per week: 2 Length of each session: 20 min.

13. Are you using any carryover techniques you just heard about this year: 1 Please specify and give source of information.

    Mowrer's operant techniques, counting errors, wrist counter (American Speech and Hearing Convention, February, 1970, Minneapolis, Minnesota), use of classroom peer (Engel)

14. Do you do follow-ups on cases dismissed from therapy: 92%
    How? Retest at end of year and beginning of next, comments of classroom teacher and parents, recheck in unstructured situation.

15. Estimate percent of cases dismissed as no longer requiring therapy that must be re-enrolled upon recheck: 8%

16. Do you consider carryover to be a major problem? 100%

SELECTED BIBLIOGRAPHY

Books

1 ..KUS, OLLIE, Speech in Education. New York: Logmans, Green and Company, 1943.

BA 'KUS, OLLIE, and BEASLEY, JANE, Speech Therapy with Children. Cambridge, Massachusetts: The Riverside Press, 1951.

CAR ELL, JAMES A., Disorders of Articulation. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.

PERK NS, WILLIAMS, , Speech Pathology: An Applied Behavioral Science. St. Louis: The C.V. Mosby Company, 1971.

VAN R PER, CHARLES, and IRWIN, JOHN V., Voice and Articulation. Englewood Cliffs, New J sey: Prentice-Hall, Inc., 1958.

VAN RIPER, CHARLES, Speech Correction: Principles and Methods. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963.

Articles

BACKUS, OLLIE, The use of a group structure in speech therapy. Journal of Speech and Hearing Disorders, 17, 116-122, 1952.

BEASLEY JANE, Development of social skills as an instrument in speech therapy. Journal of Speech and Hearing Disorders, 16, 241-245, 1951.

BROOKSH RE, ROBERT H., Speech pathology and the experimental analysis of behavior. Journal of Speech and Hearing Disorders, 32, 215-227, 1967.

CHAPMAN, M. E.; HERBERT, ESTHER L.; AVERY, C. B.; and SELMAR, J. W., Clinical practice: remedial procedures. Journal of Speech and Hearing Disorders, Monograph Supplement 8, 58-77, 1961.

ENGEL, DEAN C.; BRANDRIET, S. E.; ERICKSON, K. M.; GRONHOVD, K. D.; and GUNDERSON, G. D., Carryover. Journal of Speech and Hearing Disorders, 31, 232-233, 1966.

ENGEL DEAN C., Promoting social reinforcement for articulation carryover. The North Dakota Speech and Hearing Journal, 11, 29-33, 1968.

KALA H, SHARON L., A study of a carryover technique for articulation therapy. The North Dakota Speech and Hearing Journal, 13, 25-37, 1970.

LILLYWHITE, H., Make mother a clinician. Journal of Speech and Hearing Disorders, 13, 61-66, 1948.

MAHONEY, WILLIAM D., Measurement of articulation carryover. The North Dakota Speech and Hearing Journal, 13, 64-74, 1970.

MARQUARDT, ERLEEN, Carryover with speech pals. Journal of Speech and Hearing Disorders, 24, 154-157, 1959.

McINTYRE, BARBARA AND McWILLIAMS, BETTY JANE, Creative dramatics in speech correction. Journal of Speech and Hearing Disorders, 24, 275-279, 1959.

MOWRER, DONALD E., Evaluating speech therapy through precision recording. Journal of Speech and Hearing Disorders, 34, 239-244, 1969.

POWERS, MARGARET H., Clinical and education procedures in functional disorders of articulation. In Lee Edward Travis (Ed.) Handbook of Speech Pathology. New York: Appleton-Century-Crofts, Inc., 769-804, 1957.

RYAN, BRUCE P., A study of the effectiveness of the s-pack program in the elimination of frontal lisping behavior in third-grade children. Journal of Speech and Hearing Disorders, 36, 390-396, 1971.

SOMMERS, RONALD K., et al., Effects of speech therapy and speech improvement upon articulation and reading. In Speech Handicapped School Children. New York: Harper and Row, 444, 1967.

Other

GROTH, LYNN R., The effect of post-articulation signaling on carryover. Unpublished M.S. thesis, Department of Speech Pathology and Audiology, University of North Dakota, 1971.

JACKSON, BEVERLY, A study of the effects of an operant program applied to the correction of frontal lisps in young adults. Unpublished M.S. thesis, Department of Speech Pathology and Audiology, University of North Dakota, 1970.

MOWRER, D. E.; BAKER, R. L.; and SCHUTZ, R. E., Extending control of lisping behavior to non-laboratory situations. Paper presented at the American Speech and Hearing Association National Convention, 1966.

MOWRER, D. E.; BAKER, R. L.; and SCHUTZ, R. E., Modification of the Frontal Lisp Programmed Articulation Control Kit. (Revised Edition), Educational Psychological Research Associates, Tempe, Arizona, 1970.

SMALTZ, JANET M., Personal Communication, 1971.