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NOWLIN, LUCINDA LYON. Investigation of Facilities and Equipment Available for Speech and Hearing Therapy in the North Carolina Public Schools. (1970) Directed by: Dr. Lawrence M. Vanella pp. 52

The objectives of this study were: (1) to describe the facilities and equipment currently used by speech and hearing therapists in the public schools of North Carolina; and (2) to compare North Carolina facilities and equipment with (a) those found in public school therapy programs in the United States, and, further, (b) with those considered to be "ideal." A questionnaire was used to accomplish the objectives.

The questionnaire was mailed to a random sampling of twenty-eight therapists employed throughout the United States and to a random sampling of twenty-eight therapists employed in North Carolina during the school year, 1968-69. Questionnaire returns were 75 per cent from both reporting groups.

Comparisons of North Carolina facilities and equipment with United States facilities and equipment and "ideal" facilities and equipment revealed that facilities and equipment in North Carolina compare favorably with those throughout the United States. When comparing both the North Carolina and the United States reports to the "ideal," it

was concluded that facilities and equipment throughout the entire United States show need for enrichment and elaboration.

Suggestions drawn from the study pertaining to alleviation of the problems follow:

(1) Mobile units might be considered as a solution.

(2) Special education directors and members of the Division of School House Planning should be made aware of the need for enrichment and elaboration of public school facilities and equipment.

AN INVESTIGATION OF FACILITIES AND EQUIPMENT
AVAILABLE FOR SPEECH AND HEARING THERAPY
IN THE NORTH CAROLINA PUBLIC SCHOOLS

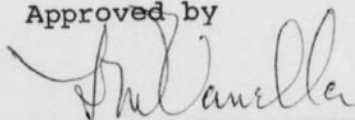
by

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A Thesis Submitted to
the Faculty of the Graduate School at
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CHAPTER I

INTRODUCTION

Van Riper states that "Speech is defective when it deviates so far from the speech of other people that it calls attention to itself, interferes with communication, or causes its possessor to be maladjusted."¹ According to the American Speech and Hearing Association's Committee Report on the Midcentury White House Conference on Children and Youth, a minimum of 5 per cent of the school-age population in the United States have serious defects of speech, with an additional 5 per cent having relatively minor speech defects.² As a specialized help for these students, the public schools provide speech and hearing therapy services. The speech therapist is specifically trained to render this service; however, the effectiveness of the therapist's program is dependent in part upon the type of facilities and equipment provided for the execution of the program. It is

¹Charles Van Riper, Speech in the Elementary Classroom (New York: Harper and Bros., 1955), p. 16.

²ASHA Committee on the Midcentury White House Conference, "Speech Disorders and Speech Correction," Journal of Speech and Hearing Disorders, XVII (1952), pp. 129-137.

generally accepted that poor facilities minimize motivation of not only the clinician but also the clients.³

Purposes

The purposes of this study were: (1) to describe facilities and equipment currently used by speech and hearing therapists in the public schools of North Carolina; and (2) to compare the North Carolina facilities and equipment with (a) those found in public school speech and hearing therapy programs throughout the United States, and (b) further to compare the North Carolina facilities and equipment with those considered to be "ideal." Chapter I is concerned with a discussion of findings from the literature pertaining to facilities and equipment used or recommended for use by public school speech and hearing therapists. The survey covers literature published over approximately a twenty-year period, from 1948 through 1969.

Survey of Literature

In 1948, Stanley Ainsworth outlined therapist equipment. The school used as the therapist's office as well as

³"Your Committee in Action," ASHA, XI (April, 1969), p. 181.

for conduction of therapy should provide one desk, one four-drawer filing cabinet, extra shelf space for books, drill materials, and games. Each school served should provide stationery supplies such as drawing paper, mounting paper, and drill materials. In addition, Ainsworth lists an audiometer, a tape recorder, typewriter, record player, and portable hearing aid as equipment to be provided by the school office. Each school served should provide one large mirror 24 x 36 inches, two or more small mirrors, and tongue depressors.⁴

Ruth Beckey Irwin studied speech and hearing therapy in the public schools of Ohio. In answer to her question concerning needs and wants, she reports that the public school therapists indicated most frequently the following:

- Place in each building to call my own
- Large and small mirrors
- Recorder
- Audiometer
- Filing space or steel cabinet file
- Games and toys
- Cots
- Bulletin board
- Space to store equipment
- Better lighting

⁴Stanley H. Ainsworth, Speech Correction Methods, A Manual of Speech Therapy in Public School Procedures (New York: Prentice-Hall, 1948), pp. 8-9.

Tongue depressors

Space and equipment for lip reading and auditory testing⁵

Recommendations included in this report indicate that, when possible, a room should be selected with the following characteristics:

1. Easily accessible
2. Well-lighted, ventilated, heated, and quiet
3. Attractively decorated
4. Equipped with chairs and tables of various sizes⁶

Elizabeth MacLearie considers that the room where the therapist works sets the "tone" of the therapy. A large mirror, table, and chairs to fit the children are minimum essentials. Comfortable seating of children and teacher is conducive to best work. Pictures and bulletin boards should be meaningful in terms of the work being done.⁷

Harold Luper and Stanley Ainsworth, in 1955, published blueprints of speech correction rooms and included descriptive details. Basically, many of the requirements are the same as would be needed for any classroom, and such rooms may also be used effectively by other itinerant personnel. The room should be well-lighted, well-ventilated, contain a

⁵Ruth Beckey Irwin, "Speech and Hearing Therapy in Public Schools of Ohio," Journal of Speech and Hearing Disorders, XIV (March, 1949), p. 66.

⁶Ibid.

⁷E. C. MacLearie, "Evaluation and the Effectiveness of the Speech and Hearing Teacher in Public Schools," The Speech Teacher, II (September, 1953), pp. 209-211.

blackboard, tackboard, and have ample storage space for teaching materials.⁸

Specifically, the space for speech and hearing therapy should be ample for both individual and small group work. It should include special equipment needed for speech correction activities, lip reading, auditory training, audiometric testing, and recording.

Since the speech correction room will serve as an office, a testing room, and a therapy room, it is best to think in terms of two adjacent rooms. The two rooms (one soundproofed) may cost less than one larger room if adequate soundproofing is provided. However, if this is not feasible, one room 21 x 12 can provide adequate arrangements.⁹

All rooms should have ample acoustic tile to insure a fairly "dead" room. The portion used for hearing testing must be partially soundproofed (in addition to the acoustic tile) so that corridor or playground noises do not invalidate the testing. By decreasing window space, outside noise is reduced; however, special ventilation may need to be provided.¹⁰

Electrical facilities should be planned in detail. Wall receptacles must be numerous and located so that the

⁸H. L. Luper and S. H. Ainsworth, "Speech Correction Rooms in the Public Schools," Exceptional Child, XXII (October, 1955), p. 38.

⁹Ibid.

¹⁰Ibid.

equipment can be used without excessive moving or inconvenience. Wiring for inter-communication between the rooms should be installed during construction. Special attention should be given to lighting because of its importance in lip reading.¹¹

In addition to the usual filing cabinets and desk for the therapist, other items are needed. There should be a counter along at least one wall for equipment. Shelves can be built under the counter to provide closed "cupboard" storage space. When there are two rooms, there should be studio windows between the two therapy rooms. A padded bench along one wall could serve as a relaxation table for use with certain problems such as cerebral palsy and stuttering. A large mirror, blackboard, low table, and chairs of several sizes are imperative.¹²

In June, 1957, a workshop on speech correction was conducted at Catholic University of America. Sister Mary Cyprian Spralding edited a comprehensive report on the workshop.

One preliminary task is to find adequate space in which to conduct the speech activities. . . . Speech activities have been carried on in supply rooms,

¹¹Ibid.

¹²Ibid.

teacher's lounges, cafeterias, and under trees. In any event, the space should be easily accessible, quiet, and free from interruption, well-lighted, properly heated and ventilated, and attractively decorated. The room should be equipped with a chalkboard, mirror, tables and chairs to fit the pupils, locked cupboard and drawer space. In the school that provides the office space, there should be a desk and chair, a locked file, storage space for general supplies, and a telephone. The technical equipment and teaching materials should include a pure tone audiometer, a recording machine, books, charts, record forms, games, speech testing aids, and many other materials which the speech correctionist may requisition.¹³

West, Ansberry, and Carr discuss physical facilities of speech clinics in The Rehabilitation of Speech.

If the clinic is connected with public schools, the therapist will not be able to prescribe to any great degree the location of the clinic or the type of rooms in which therapy will be conducted. Certain essentials, however, should be considered. A quiet location is necessary since children are more readily distracted than adults. The space should be well-lighted and well-ventilated and cheerfully decorated. Electrical outlets should be available. Toilet facilities and a source of drinking water should be reasonably close.¹⁴

Whenever possible, an office should be available in at least one of the schools to which the therapist is assigned.

¹³Sister Mary Cyprian Spralding, ed., Speech Correction: Workshop on Speech Correction in Special Education (Washington, D. C.: The Catholic University of America Press, 1958), pp. 7-8.

¹⁴Robert West, Merle Ansberry, and Anna Carr, The Rehabilitation of Speech (3rd ed.; New York: Harper and Bros., 1957), p. 341.

The case files, other records, and various supplies should be kept here.¹⁵

Helen Knight and others investigated public school speech and hearing services, and their findings were published in July, 1961.

With respect to therapy rooms, 50 per cent of the practicing school clinicians believe that they are carrying on their programs in rooms not conducive to a good therapeutic result, . . . As to equipment, thirty-one per cent find their equipment inadequate. . . . In face-to-face interviews, a substantial number of informants reported lack of facilities. A frequent complaint is that clinicians must carry everything everywhere, there being no room designated for their services or designed for their needs.¹⁶

Norman Willey, Director of Special Education, Shelbyville, Indiana, examined public school speech and hearing therapy facilities. A detailed study of Indiana's facilities showed approximately 75 per cent of the speech rooms to be substandard.¹⁷

¹⁵Ibid.

¹⁶Helen Knight, and others, "Public School Speech and Hearing Services: II The Public School Clinician: Professional Definition and Relationship," Journal of Speech and Hearing Disorders, Monograph Supplement 8 (July, 1961), pp. 10-21.

¹⁷Norman R. Willey, "Public School Speech and Hearing Therapy Facilities," Exceptional Children, XXVIII (November, 1961), pp. 129-130.

After discussing therapy accommodations, and studying existing situations at great length and with detailed care, Willey submits standards for facilities and equipment. The room should be at least 150 square feet. It should be located in a quiet area and used exclusively by the speech and hearing therapist during the time scheduled for the program. Adequate electrical outlets, lighting, heating, ventilation, sound absorbing material, and storage space should be planned for in construction. The color of the room should be planned to be appropriate for the exposure. A mounted chalkboard, mirror, and bulletin board should be included upon initial construction.¹⁸

As to equipment, Willey lists table and chairs of appropriate size, a teacher's desk, locked filing cabinet or storage space, audiometric, recording, and amplification equipment. He also includes teaching materials among essentials for therapy.¹⁹

Wendell Johnson and Dorothy Moeller edited one of the most widely used books that the speech therapist refers to for aid. The book is entitled Speech Handicapped School

¹⁸Ibid., p. 134.

¹⁹Ibid.

Children; and in the ninth chapter, Clarence Edney states the following concerning therapy:

An ideal room is pleasant, well-lighted, easily accessible, quiet, attractively decorated, well-ventilated; it is equipped with a blackboard, large and small mirrors, chairs and tables of varying sizes, perhaps even a cot. It has a letter-size file cabinet, a file for 4 x 6 cards, a speech recorder, and storage space for books, pictures, toys, modeling clay, games, and other instructional equipment.²⁰

In the basic library for all students and professional workers in speech pathology, we find Martha Black's Speech Correction in the Schools. Detailed blueprints for two grade school and two high school therapy working areas are included. These are fully described and explained in the text.²¹

Often the therapist has no choice in the location of a room; however, if the therapist does have any choice, Miss Black states that a room as quiet as possible should be selected. Always avoid a room that is next to a gymnasium or a band room, if at all possible. In order not to waste time between classes and to avoid hall problems, a room as

²⁰Wendell Johnson and Dorothy Moeller, ed., Speech Handicapped School Children (3rd ed.; New York: Harper and Row, 1967), p. 75.

²¹Martha E. Black, Speech Correction in the Schools (New Jersey: Prentice-Hall, Inc., 1964), pp. 40-44.

near the primary classrooms as is available should be selected.²²

In a grade school where lessons will probably not exceed twenty minutes, a room which will accommodate a maximum of eight pupils is sufficient. In addition, a small office in at least one school is advantageous, leaving the larger room free for therapy. A screen, or partial partitions, can separate the office from the therapy space.²³

In the high school, scheduling may make it necessary for the therapist to keep the students for a full sixty-minute period. Therefore, provision should be made for cubicles where speech may be practiced independently. The room should be sound conditioned, attractively decorated, have adequate natural light and diffused artificial illumination of at least fifty foot candles.²⁴

Basic equipment should include sets of tables and chairs appropriate for the smallest and oldest clients, comfortable chairs for visitors, a typewriter and desk, a filing cabinet that locks, storage space, a mirror, chalkboard, and bulletin board. Other essentials are tape

²² Ibid., p. 40.

²³ Ibid., p. 41.

²⁴ Ibid., p. 42.

recorders, auditory trainers, record players, pianos, bells and whistles, visual aids, an audiometer, and games.²⁵

In 1964, the State Department of Public Instruction in Raleigh, North Carolina, following recommendations of an advisory committee, prepared a special education guide for public school speech therapists and administrators. The following recommendations are included:

- (1) Rooms should be on the first floor and away from the playground, gym, recreation room, and cafeteria, if possible.
- (2) The room should be approximately 15 x 10 feet, acoustically treated, well-lighted, and well-ventilated.
- (3) Each room should have one round table, six appropriate chairs, a plate glass mirror, and storage space.
- (4) The office school should provide a teacher's desk, chairs for adult conferences, file cabinets, and additional storage space.
- (5) Equipment should include an audiometer, tape recorder, record player, auditory training units, toys, and drill materials.²⁶

At the Special Education Conference in Charlotte, North Carolina in November, 1968, the writer heard Dr. Eugene McDonald discuss equipment. At that time, Dr. McDonald set

²⁵Ibid., pp. 44-47.

²⁶State Department of Public Instruction, Special Education: Guide for Public School Speech Therapists and Administrators (Raleigh, North Carolina, 1964), pp. 65-69.

forth the following interesting considerations. He is in favor of using the tape recorder in beginning therapy for a complete study of the client's speech. However, he is apprehensive about the value of the tape recorder during actual retraining. "Learning is enhanced by immediate reinforcement, and the therapist may be reinforcing inappropriate behavior by the time the place has been found on the tape."²⁷ Preferable to too extensive use of the tape recorder, is the use of a quart milk carton cut so that the therapist may talk directly into the ear of the child. The therapist repeats the correct sound three times directly into the client's ear; the client attempts a simultaneous production at about the third repetition of the sound. As to mirror use, Dr. McDonald feels that problems can arise from the fact that with the mirror, the client is getting everything in reverse.²⁸

The publication, School Management, includes a blueprint of a mobile speech unit, used in East Whittier, California, as an answer to finding a place for speech therapists. The East Whittier schools have in use three

²⁷Eugene McDonald, "Articulation Therapy," Lecture presented to the Special Education Conference, Charlotte, North Carolina, November 22, 1968.

²⁸Ibid.

custom-designed mobile units. They are surplus, 35-passenger buses. Equipment in the units includes a record player, tape recorder, and an auditory training unit, along with school furniture for six, a mirror, and chalkboard. The central therapy area is 7 1/2 x 9 feet, and generous storage and office space are provided.²⁹

The East Whittier therapists drive the units themselves, usually visiting four schools twice weekly. Electric power is achieved through simply plugging the buses in at each individual school.³⁰

Recommendations by the American Speech and Hearing Association's Committee on Speech and Hearing Services in the Schools for Housing of Speech Services in the Schools are as follows:

In addition to the clinical room itself, the clinician needs an office with satisfactory equipment, secretarial assistance, duplicating equipment, a private conference area, and an annual budget for improving facilities and equipment. Special provision for observational purposes should be made if the installation is to be used for training (university students), or observation by parents or professional colleagues.

²⁹James Doherty, ed., "Workshop: Finding a Place for Your Speech Therapists," School Management, X (October, 1966), p. 15.

³⁰Ibid.

ROOM

<u>Location</u>	In a relatively quiet area near administrative unit with accessibility to classrooms, waiting area, secretarial services, and other special service personnel.
<u>Size</u>	150-250 square feet to be used primarily (or ideally, exclusively) for speech and hearing services.
<u>Number</u>	One room, ideally with an adjoining office.
<u>Lighting, artificial</u>	60-75 foot candles.
<u>Lighting, natural</u>	At least one window with shade, ideally with drapes.
<u>Heating</u>	Adequate heating, ideally with thermostatic control.
<u>Ventilation</u>	One window which can be opened, or air conditioning.
<u>Acoustical treatment</u>	Acoustical treatment of ceiling, doors, and walls, ideally draperies and carpeted floors.
<u>Electrical power supply</u>	One 110V double plug on each wall. Ideally a rheostatic mechanism to facilitate use of audio-visual equipment.
<u>Intercom</u>	Ideally, one intercom unit, connected to administrative offices.
<u>Chalkboard</u>	One 3' x 5' (approximate) mounted on wall at appropriate height for pupils.
<u>Bulletin board</u>	One 3' x 5' (approximate) mounted on wall.

Mirror (s) One 3' x 5' (approximate) mounted on wall at appropriate height for pupils. Should be able to be covered. [sic]

FURNITURE

Desk One office desk.

Chairs, adult At least two chairs.

Chairs, child Sufficient number of student school chairs to accommodate pupils at various grade levels.

Table One table adjustable in height to accommodate pupils at various grade levels.

Equipment stand One stand on casters suitable for tape recorder, record player, etc.

STORAGE FACILITIES

Storage space Locked storage space.

File case Locked file cabinet.

Bookcase Bookcase with 4'-8' (approximate) linear space.

EQUIPMENT

Audiometer Properly calibrated portable audiometer available.

Auditory training equipment Individual amplification units available according to need.

Tape recorder One assigned for exclusive use of clinician.

<u>Phonograph</u>	One 3-speed phonograph available in building.
<u>Telephone</u>	One telephone, ideally a direct outside line.
<u>Typewriter</u>	Available.
<u>Electric clock</u>	One.
<u>Wastebasket</u>	One.

Not included in this report but extremely useful to clinicians is a growing list of recently developed electronic equipment such as retrieval systems, language labs, video tape, etc.³¹

The Executive Council of the American Speech and Hearing Association approved this report in November, 1968, and requested its publication. The description identifies the equipment and facilities considered necessary for speech therapy services in the public schools by a well-qualified committee of planners from the field of Speech Pathology and Audiology. It is concluded that this report reflects the "ideal" of basic equipment and facilities, as of this writing.

The ensuing chapters of this thesis are devoted to discussing procedures utilized in this study. Facilities and equipment currently used by speech therapists in North Carolina are compared with those of therapists in selected

³¹"Your Committees in Action," ASHA, XI (April, 1969), pp. 181-182.

locations throughout the United States and with the "ideal" as quoted above.

CHAPTER II

INVESTIGATION DESIGN

The purposes of this investigation were: (1) to describe facilities and equipment currently used by speech therapists in the North Carolina public schools; and (2) to compare the North Carolina facilities and equipment with (a) those found in public school speech and hearing therapy programs throughout the United States, and (b) the "ideal."

A questionnaire was used to facilitate the accomplishment of these purposes. The questionnaire (Appendix A) was mailed to a random sampling of twenty-eight speech therapists throughout the United States, excluding North Carolina, and to a random sampling of twenty-eight speech therapists employed in the public schools of North Carolina during the 1968-69 school year.

Arrangement of Questionnaire

The first section of the questionnaire was designed to obtain answers concerning the room utilized for the conduction of therapy as to size, type, location, and physical condition. The second part pertained to equipment. The

questionnaire provided an opportunity for respondents to check all of the listed items available for their use. The third section considered teaching materials, posing questions relative to the adequacy of supply and selection of these materials. The fourth section provided for an assessment of the availability of portable items of equipment. Finally, a blank was provided for any additional comments on therapy conditions the therapist wished to relate.

Sampling Procedure

The questionnaire was mailed to two random samplings of speech therapists. The first randomly selected sample was of twenty-eight speech therapists located throughout the United States, excluding North Carolina. In order to arrive at the sampling, the writer divided the United States into fourteen geographical areas of approximately equal size. Eight widely spread cities were chosen from each of these areas, and the names of these cities were listed on separate sheets of paper. The names of two cities from the eight were drawn for each of the fourteen areas, and these cities were used for investigation.

In an effort to secure specific listings of personnel, the investigator obtained the names and addresses of

special education directors in all of the states in the United States from the Department of Health, Education, and Welfare, Washington, D. C. The United States Office of Education furnished a Directory of Special Education Personnel in State Agencies, June, 1968. The directory did not supply listings of supervisors and/or therapists in specific cities. Therefore, the writer wrote the supervisor of special education in each state in which cities had been selected for investigation. The letter explained the study and asked that the supervisor direct the questionnaire to a representative therapist in the city, or cities, selected in his state. The letter to the state supervisor contained the following enclosures: a copy of the cover letter (Appendix A), a stamped return envelope, and a one-dollar bill, all placed in an unaddressed and unsealed but stamped envelope. One such set of enclosures was included for each city that had been chosen for the study in the specific state. These letters were sent Air Mail on April 18, 1969.

The same questionnaire with a different cover letter (Appendix A) was sent to a random sampling of twenty-eight speech therapists in the public schools of North Carolina. To obtain the sampling, the Directory of Speech and Hearing Personnel in North Carolina Public Schools, 1968-69 was used

to secure a master list. Each name in the directory was given a number. Corresponding numbers were printed on separate sheets of paper, and from these, a total of twenty-eight numbers were drawn. The cover letter, a copy of the questionnaire, and a stamped return envelope were mailed on April 20, 1969, to the individuals whose names corresponded with the numbers drawn. Follow-up cards which extended the deadline for answering until June 1, 1969, were sent to ten therapists in North Carolina on May 20, 1969.

CHAPTER III

RESULTS

Questionnaires were sent to twenty-eight speech therapists employed for the academic year 1968-69 in public schools in selected locations throughout the United States, excluding North Carolina, and to twenty-eight therapists working in North Carolina. Twenty-one, or 75 per cent, of the out-of-state speech therapists completed and returned the questionnaire. Coincidentally, twenty-one, or 75 per cent, of the North Carolina therapists sent back the completed questionnaire.

Of the total letters sent out of North Carolina, nine returned the one-dollar token. Seven dollars were returned by therapists who completed the questionnaire, while two dollars were returned by therapists who did not wish to participate in the study. One out-of-state supervisor not only returned the monetary token, but also had eleven therapists fill out a copy which she personally had Xeroxed. These provided interesting study; however, the majority ruled in the data analysis, as it was necessary to consider this response as one unit of the sampling.

Table 1 shows a compilation of the responses received from throughout the United States and those received from the North Carolina sampling. Each item on the questionnaire is listed, and the number who checked the item is shown.

TABLE 1

COMPILATION OF RESPONSES OF UNITED STATES AND
NORTH CAROLINA THERAPISTS AS THEY
APPEARED ON THE QUESTIONNAIRE

	United States	North Carolina
<u>I. Room for Conduction of Therapy Sessions</u>		
A. Size		
Under 5' x 10'	6	2
15' x 10'	12	13
10' x 20'	3	6
B. Type		
1. Classroom	6	8
2. Library Work Room	2	1
3. Health Room	4	3
4. Book Room	2	2
5. Teacher's Lounge	1	1
6. Other	6	6
C. Location		
1. First Floor	15	18
2. In Basement	1	2
3. On Second Floor	3	0
4. Other	2	1
D. Physical Condition (Check All)		
1. Distracting Noise	13	16
2. Interruptions of Privacy	11	12

TABLE 1--Continued

	United States	North Carolina
3. Poor Lighting	11	7
4. Inadequate Heating	6	2
5. Too Small	9	6
6. Bad Ventilation	8	8
7. Unclean	6	8
8. No Electrical Outlet	5	3
9. Other	3	1
II. <u>Equipment</u> (Check All Items Available)		
A. Mounted Mirror	15	16
B. Chalkboard	18	21
C. Bulletin Board	16	17
D. Teacher's Desk	17	15
E. Locked Storage	11	11
F. Table and Chairs of Appropriate Height	16	13
G. Audiometer	14	17
H. Record Player	15	15
I. Tape Recorder	19	14
J. Auditory Training Units	9	4
K. Other	10	6
III. <u>Teaching Materials</u>		
A. Adequate Supply	17	15
B. Inadequate Supply	4	5
C. Inadequate Selection	4	2
IV. <u>Availability</u>		
A. Always Available	13	8
B. Sometimes Available	7	11
C. Time Consuming, Strength Exhausting	4	3

Table 2 shows a comparison of the most frequent responses appearing on the questionnaire. The item checked most often and the number answering is listed for both the United States and North Carolina.

TABLE 2

COMPARISON OF THE MOST FREQUENT RESPONSES ON THE
QUESTIONNAIRE BETWEEN UNITED STATES THERAPISTS
AND THOSE FROM NORTH CAROLINA

	United States	North Carolina
<u>I. Room for Conduction of Therapy</u>		
A. Size		
15' x 10'	12	13
B. Type		
Classroom	6	8
Other	6	6
C. Location		
First Floor	15	18
D. Physical Condition		
Distracting Noise	13	16
Interruptions of Privacy	11	12
Poor Lighting	11	7
No Electrical Outlet	5	3
Inadequate Heating	6	2
Too Small	9	6
Bad Ventilation	8	8
Unclean	6	8
<u>II. Equipment</u>		
A. Chalkboard	18	21
B. Bulletin Board	16	17

TABLE 2--Continued

	United States	North Carolina
C. Mounted Mirror	15	16
D. Tape Recorder	19	14
E. Audiometer	14	17
F. Record Player	15	15
III. <u>Teaching Materials</u>		
Adequate Supply	17	15
IV. <u>Availability</u>		
A. Always Available	13	8
B. Sometimes Available	7	11

The following additional comments on the questionnaires reflect the thinking of some of the therapists:

Room for improvement. . . . Conditions vary, none ideal or even satisfactory. . . . Administration considers mobile trailers the answer. . . . Have improved from nothing. . . . Very few appropriate chairs for children. . . . Case loads too heavy. . . . Therapists take what is left, step-child of the system. . . . Facilities not designed as such for speech and hearing. . . . No facilities in very rural schools. . . . If it had not been for . . . and use of University equipment, I would have resigned. . . . Our speech program has improved with a supervisor, and improvements are continuing. . . . Schools are too crowded; also lack of understanding as to what is needed for good therapy conditions; hopefully, this study will help.

Comparison with "Ideal"

Table 3 is a reflection of the comparison of responses from throughout the United States and those from North

Carolina therapists with the recommendations listed in the American Speech and Hearing Association's Committee on Speech and Hearing in the Schools report.³² The recommendations were quoted in Chapter I and set forth an "ideal" as of 1969. The questionnaire was compiled and mailed before the recommendations were published; therefore, the questionnaire does not follow the committee's outline exactly.

TABLE 3

FACILITIES AND EQUIPMENT FOR PUBLIC SCHOOL SPEECH
AND HEARING THERAPY IN THE UNITED STATES AND
NORTH CAROLINA COMPARED WITH "IDEAL"
FACILITIES AND EQUIPMENT

"Ideal"	United States	North Carolina
	(% Reporting Within Recommendations)	
I. <u>Room</u>		
A. Size		
150-250 square feet	71	90
B. In a Relatively Quiet Area	39	24
C. Used Primarily for Speech	48	43
D. Room Considered Too Small	43	29
E. Clean	71	62
F. Lighting (Adequate)	48	66
Reporting No Electrical Outlet	24	14
G. Heating (Adequate)	72	91
H. Ventilation (Adequate)	62	62
I. Mounted Mirror	71	76

³²Ibid.

TABLE 3--Continued

"Ideal"	United States	North Carolina
J. Chalkboard	85	100
K. Bulletin Board	76	80
II. <u>Furniture</u>		
A. Desk	80	71
B. Table	76	61
C. Children's Chairs of Appropriate Height	76	61
III. <u>Storage Facilities</u>		
A. Locked Storage Space	52	52
IV. <u>Equipment</u>		
A. Audiometer	66	80
B. Auditory Training Units	42	18
C. Tape Recorder	90	66
D. Phonograph	71	71

The size of the room that is recommended for conduction of therapy is from 150-250 square feet. The size of the room most frequently used both throughout the United States and in North Carolina is shown as at least 150 square feet. As shown in Table 3, 71 per cent from throughout the United States and 90 per cent from North Carolina reported a room of this size.

The American Speech and Hearing Association committee recommends that the room be located in a relatively quiet area with accessibility to classrooms and the administrative unit. Only 39 per cent from the United States and 24 per cent from North Carolina reported a quiet area. From the United States, 48 per cent, and in North Carolina, 43 per cent, reported relatively private areas. From throughout the

United States, the classroom and "other" category were indicated by an equal number of therapists as location for therapy, while the classroom was the most frequently listed room indicated as used by therapists in North Carolina. Such rooms as the men teachers' smoking room, specific speech room, physical education office, and mobile trailers were listed under "other." Forty-three per cent of the United States respondents considered the room for therapy too small, and 29 per cent from North Carolina checked this item. Seventy-one per cent from the United States and 62 per cent from North Carolina reported a clean room available for therapy. The first floor proved to be the location used most often in both groups. With 71 per cent from out-of-state and 86 per cent from North Carolina checking this category, it would appear that the majority of therapists work in rooms that are accessible.

On the questionnaire, 48 per cent from the United States and 66 per cent from North Carolina reported lighting as adequate. A description as to foot candles, number of windows, and treatment, that the American Speech and Hearing Association committee presented was not included on the questionnaire.

A specific description of heating was not included on the questionnaire; however, 72 per cent from out-of-state

and 91 per cent from North Carolina reported heating to be adequate. Ventilation was reported adequate by 61 per cent of both study areas.

The American Speech and Hearing Association committee described acoustical treatment of ceiling, doors, and walls. Ideally, the room should have draperies and carpeted walls. The acoustical aspect was not included as an item for investigation on the questionnaire.

As to electrical power supply, the "ideal" specifies one 110V double plug on each wall. They also recommend a rheostatic mechanism to facilitate use of audio-visual equipment. The questionnaire asks that respondents indicate if no electrical outlet is located in their working area; 24 per cent from the United States sampling and 14 per cent from North Carolina checked this item.

An intercom is recommended by the committee. This item was not included on the questionnaire.

A chalkboard is recommended by the American Speech and Hearing Association committee. This item proved to be a frequently listed facility, with 85 per cent from the United States and 100 per cent of the North Carolina therapists specifying presence of at least one chalkboard. A bulletin board is also recommended. From the United States,

76 per cent of the therapists checked the bulletin board, and from North Carolina 80 per cent reported having one. Seventy-one per cent from the United States and 76 per cent from North Carolina report having a mounted mirror. The mirror is another item included on the committee's description of needs for therapy services.

In consideration of furniture, the "ideal" specifies an office desk; 80 per cent from the United States and 71 per cent from North Carolina list a desk. A table and chairs appropriate for use with children is shown by 76 per cent of the United States respondents and 61 per cent of the North Carolina therapists. The American Speech and Hearing Association committee includes an equipment stand; this was not listed as part of the questionnaire.

As to storage facilities, 52 per cent from both groups indicated presence of some type of locked storage. The locked file cabinet was not specifically listed on the questionnaire and neither was the specified bookcase.

Four items of equipment are among the most vital recommended by the American Speech and Hearing Association committee. An audiometer is reported by 66 per cent of the United States therapists and 80 per cent of the North Carolina therapists; a tape recorder, by 90 per cent of the

United States respondents and 66 per cent of the North Carolina respondents; a phonograph, by 71 per cent of both reporting groups; and auditory training units, by 42 per cent from the United States and 18 per cent of the North Carolina therapists.

Under equipment, the American Speech and Hearing Association committee also specified a telephone, electric clock, wastebasket, and typewriter. These items were not investigated by the questionnaire.

The questionnaire considered two aspects that the American Speech and Hearing Association committee did not cover in a like manner. One concerned teaching materials. The majority of therapists reporting from both areas indicated that the supply is adequate. With respect to availability, 95 per cent from the United States and 90 per cent from North Carolina showed acceptable availability of portable items.

CHAPTER IV

SUMMARY AND RECOMMENDATIONS

The objectives of this study were: (1) to investigate facilities and equipment available for use by public school speech and hearing therapists in North Carolina; and (2) to compare these with a distributive sample of the United States and, further, to compare these with the "ideal" as described in ASHA.³³ A questionnaire was sent to a random sampling of twenty-eight speech therapists throughout the United States and to a random sampling of twenty-eight North Carolina public school speech and hearing therapists. The questionnaire was completed by 75 per cent of the therapists, with an equal number of responses being received from throughout the United States and North Carolina.

Facilities and equipment for speech and hearing therapy in the public schools generally have been described as being inadequate. Therefore, a comparative study of responses received from a representative group of workers in the field of speech and hearing therapy was conducted.

³³Ibid.

Results of the study appear in Chapter III. In this chapter, salient observations of how North Carolina compares with the United States and with the "ideal" are discussed and some recommendations are presented.

Observations (Comparison of North Carolina and United States Facilities and Equipment)

1. Rooms for speech and hearing therapy in both the United States and North Carolina are generally 15 x 10 feet, classroom type, located on the first floor, clean, and accessible.

2. Lighting, heating, and ventilation are classified as adequate by both groups.

3. Rooms for speech and hearing therapy in both areas have distracting noises.

4. Considerable interruptions of privacy are reported by both groups.

5. Rooms in both groups have a mounted mirror, chalkboard, and bulletin board.

6. Furniture consists of a desk, table, and chairs of appropriate heights.

7. Both areas report some locked storage space.

8. Over 50 per cent of the therapists reporting

from both groups indicate having an audiometer, tape recorder, and phonograph.

9. From the United States, 42 per cent of the therapists report having auditory training units; only 18 per cent of the North Carolina therapists report having auditory training units. This was the greatest difference reported from the two groups.

Conclusions

The public schools of North Carolina furnish facilities and equipment for speech and hearing therapy that are comparable with those available throughout the United States.

Observations (Comparison of North Carolina with "Ideal")

Upon examination of the comparison of North Carolina facilities and equipment with the "ideal," the following observations are noted:

1. The size of the room for conduction of speech and hearing therapy in North Carolina compares favorably with the "ideal."
2. With 86 per cent of the respondents reporting the location of therapy rooms on the first floor, it would appear that rooms for therapy are accessible.

3. With 76 per cent of the North Carolina therapists reporting distracting noise, and 57 per cent reporting interruptions of privacy, the majority of the respondents indicate that the room is not located in a relatively quiet area. Because of the nature of the activities performed in therapy, in order to improve the effectiveness of therapy, this inadequacy needs remediating.

4. No additional room is listed and neither is special provision for observational purposes noted by any respondent from North Carolina.

5. There is no question on the questionnaire concerning the recommended secretarial services and other special service personnel. It is generally accepted that special service personnel are cooperative; however, due to the job task of public school secretaries, there are rare occasions when secretarial services are available.

6. Heating, ventilation, and lighting are classified as adequate by a majority of the North Carolina therapists.

7. Acoustical treatment and electrical power supply are not investigated on the questionnaire.

8. A mounted mirror, chalkboard, bulletin board, desk, table, and appropriate chairs are reported by a majority.

9. Locked storage is reported by 52 per cent of the respondents from North Carolina.

10. An audiometer, a tape recorder, and a phonograph are reported by a majority.

11. Auditory training units are shown to be available in only 14 per cent of the locations reporting. Since the ATU's are considered important therapy tools, it would seem desirable to have ATU's available for use.

Conclusions

Facilities and equipment furnished for speech and hearing therapy in the public schools of North Carolina show needs of further improvement when compared with the "ideal."

Recommendations

Since location in a quiet area has been shown to be available by such a small percentage of respondents, planners might consider mobile units as a solution. The mobile units in service in California were discussed in Chapter I and blueprints included in Appendix B. One of the chief

advantages to the use of trailers appears obvious: a private and quiet location where equipment can be available for all sessions. The increased efficiency from such a dependable housing arrangement seems apparent. Time for setting up therapy and dismantling could be more profitably utilized. The therapist could be confident that he/she could follow the lesson plan. Also, the therapist could capitalize upon a period when effective use of some item of equipment arises unexpectedly. However, the importance of adverse criticisms such as inefficient electric power, fewer square feet of space, and necessity of children going outdoors in unfavorable weather should be noted and evaluated. The expense of this unit might be prohibitive in some locations.

It would seem that in each school system, the director of special education, or supervisor of speech correction, if one is provided, should have a copy of the recommendations for housing of speech services. These standards should be criteria for approving plans for school construction by the Division of School House Planning. With this regulative and advisory board informed concerning the needs, the local speech and hearing programs should operate in improved teaching facilities in all new schools. Though impossible to attain the

ideal immediately in older schools, many substandard facilities can be brought nearer to adequate standards over a period of a few years. The important considerations appear to lie in having the planners intelligently informed and actively and sincerely concerned.

As has been stated earlier in this thesis, the success of the speech and hearing program is dependent, in part, upon the environment for therapy. After a comprehensive study of the literature published over a twenty-year period by authorities in the field, and after detailed analysis of data obtained from the questionnaire used in this study, it is concluded that facilities and equipment for speech and hearing therapy in the public schools of North Carolina and throughout the United States need enrichment and elaboration. This study has endeavored to provide specific information and recommendations to that end.

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APPENDIX A

OUT-OF-STATE LETTER

110 Elgin Place
Greensboro, N. C. 27410
March 15, 1969

Dear Sir:

The area of facilities and equipment available for use by public school speech and hearing therapists is being studied in order to determine the degree of adequacy of currently utilized facilities and equipment. In an effort to assess existing conditions in the United States, I am asking that a random sampling of special education supervisors and therapists fill out the enclosed questionnaire.

I should appreciate your returning the questionnaire not later than May 15, 1969. As a token of my consideration of your time and thought, I ask that you accept the enclosed \$1.00. If you do not care to fill out the questionnaire, kindly return the \$1.00.

The reports shall be anonymous; however, if you would like a copy of results, fill in your name and address.

Sincerely yours,

Mrs. Lucinda Nowlin
Principal Investigator

Neal Smith
Associate Consultant
Speech and Hearing
State Department of Public
Instruction
Raleigh, North Carolina

Enclosures

NORTH CAROLINA COVER LETTER

110 Elgin Place
Greensboro, N. C. 27410
April 15, 1969

Dear Therapist:

The area of facilities and equipment available for use by public school speech and hearing therapists is being studied in order to determine the degree of adequacy of currently utilized facilities and equipment. In an effort to assess existing conditions in the United States, I am asking that a random sampling of individuals fill out the enclosed questionnaire.

Would you please return the completed questionnaire by May 15, 1969. The reports shall be anonymous; however, if you would like a copy of results fill in your name and address on the form.

Thank you for your cooperation.

Sincerely yours,

Mrs. Lucinda Nowlin
Principal Investigator

Neal Smith
Associate Consultant
Speech and Hearing
State Department of
Public Instruction
Raleigh, N. C.

Enclosures

PUBLIC SCHOOL SPEECH AND HEARING THERAPY
FACILITIES AND EQUIPMENT

Please read carefully and select the answer under each Roman Numeral which most nearly describes your situation.

I. Room for Conduction of Therapy Sessions

A. Size

1. Under 5' x 10' _____
2. Approximately 15' x 10' _____
3. Over 10' x 20' _____

B. Type

1. Classroom _____
2. Library Work Room _____
3. Health Room _____
4. Book Room _____
5. Teacher's Lounge _____
6. Other (Describe briefly) _____

C. Location

1. On First Floor _____
2. In Basement _____
3. On Second Floor _____
4. Other (Specify) _____

D. Physical Condition (Check All Items that Apply)

1. Distracting Noise _____
2. Poor or Inadequate Lighting _____
3. Interruptions of Privacy _____
4. Inadequate Heating _____
5. Too Small _____
6. Inadequate Ventilation _____
7. Unclean _____
8. No Electrical Outlet _____
9. Other (Specify) _____

II. Equipment (Check All Items Available)

- A. Mounted Mirror _____
- B. Chalkboard _____
- C. Bulletin Board _____
- D. Teacher's Desk and Armchair (at
least at one school served by a
therapist) _____
- E. Locked Storage _____
- F. Table and Chairs of Appropriate
Size _____
- G. Audiometer _____
- H. Record Player _____
- I. Tape Recorder _____
- J. Auditory Training Units _____
- K. Other (Specify) _____

III. Teaching Materials

- A. Adequate Supply and Selection _____
- B. Inadequate Supply _____
- C. Inadequate Selection _____

IV. Availability (Portable Items)

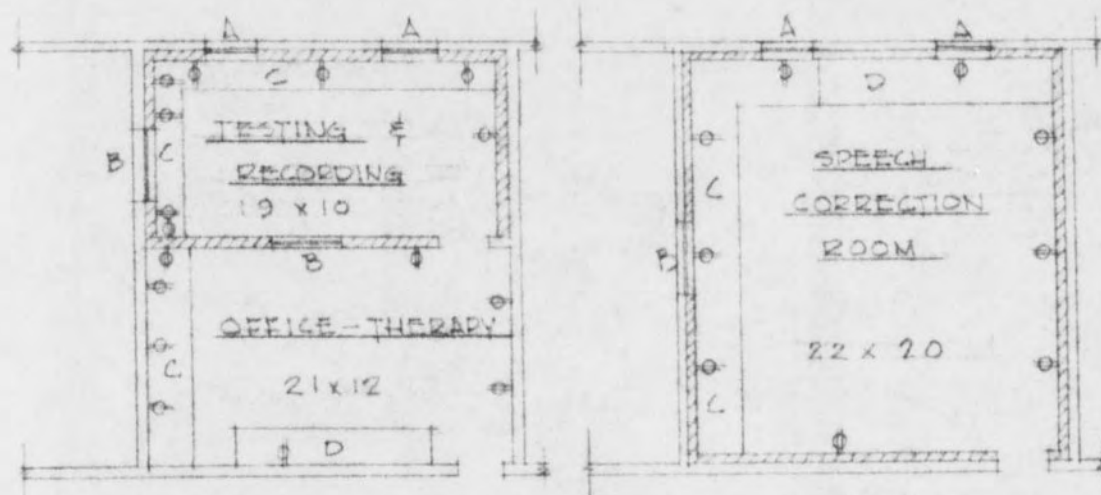
- A. Always Readily Available _____
- B. Sometimes Available _____
- C. Time Consuming, Strength
Exhausting Availability _____

Any Additional Comments on Therapy
Conditions: _____

Name and Address, If Results Desired:

APPENDIX B

BLUEPRINTS



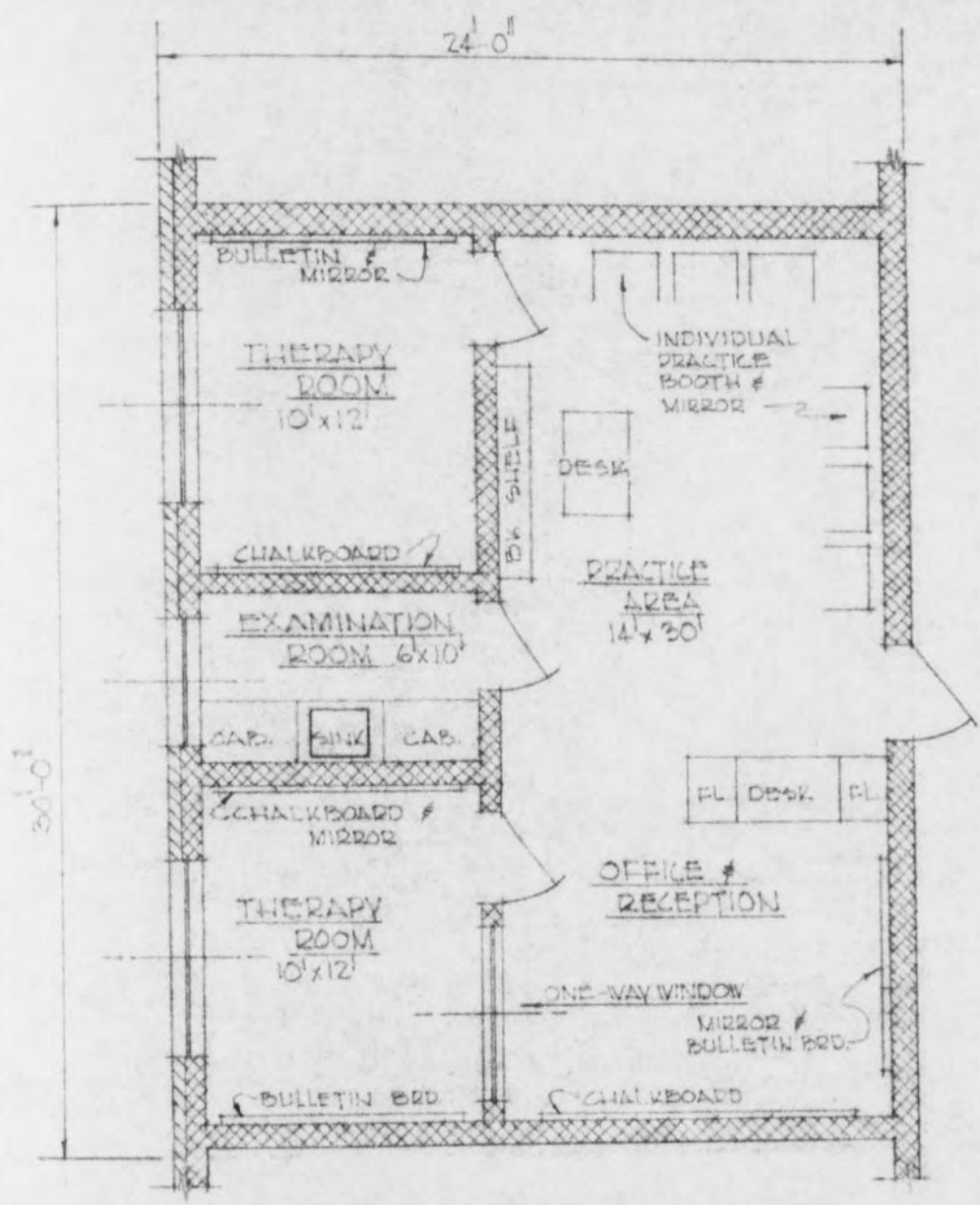
A - HIGH WINDOWS
 B - STUDIO WINDOWS
 C - CLOSED CLIPBOARDS
 D - PADDED BENCH

Φ - ELEC. OUTLET
 ZZZ - SOUND PROOFING

FACILITIES FOR SPEECH THERAPY

³⁴H. L. Luper and S. H. Ainsworth, "Speech Correction Rooms in the Public Schools," Exceptional Child, XXII (October, 1955), p. 38.

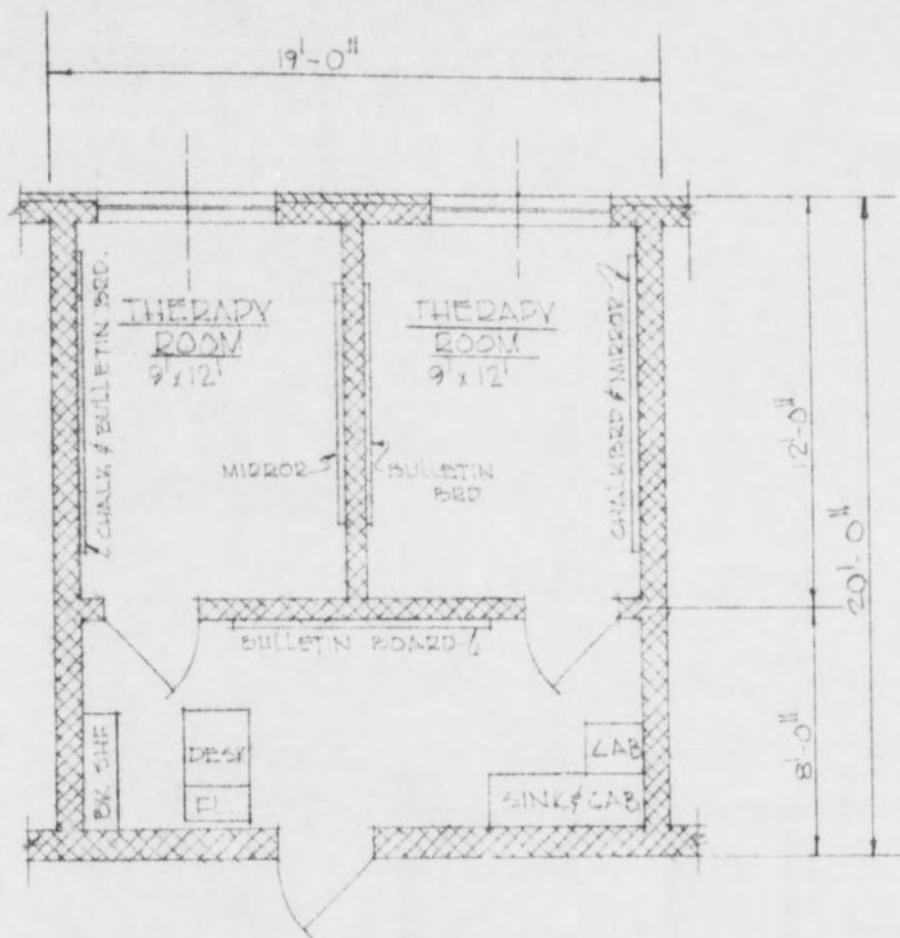
DRAWN BY PHILIP L. STOKAN
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 GREENSBORO STATE COLLEGE
 GREENSBORO, N.C.
 MARCH 15, 1970



HIGH SCHOOL

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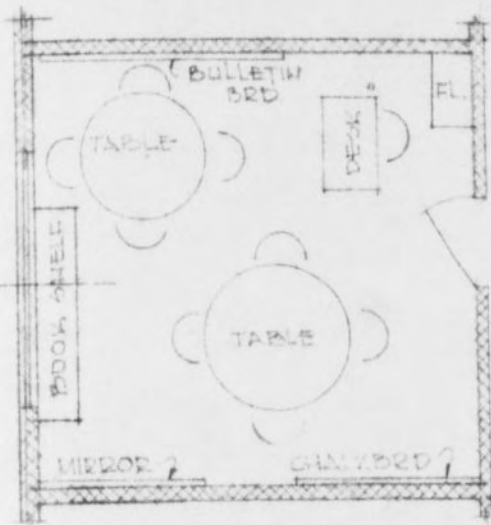
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 DRAFTING DEPT.
 GREENSBORO H.S. HIGH SCHOOL
 GREENSBORO, N.C.
 MARCH 13, 1970



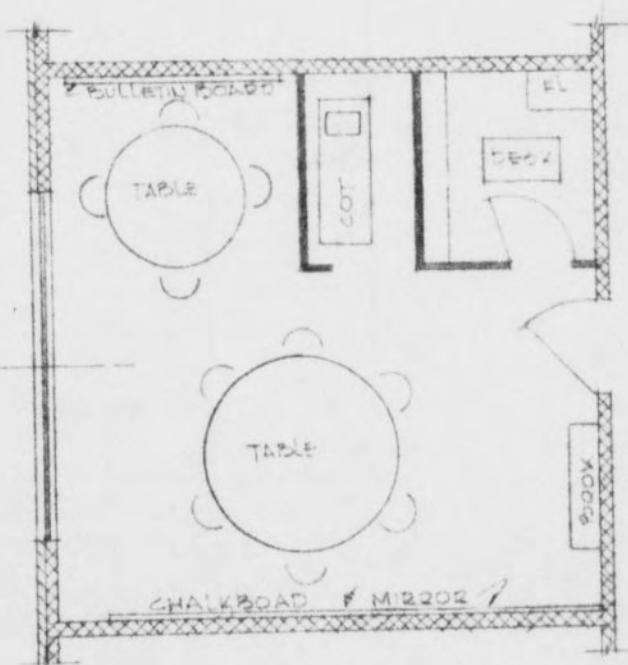
HIGH SCHOOL

36 Ibid., p. 43.

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 GRIMLEY JR. HIGH SCHOOL
 GREENSBORO, N.C.
 MARCH 5, 1970



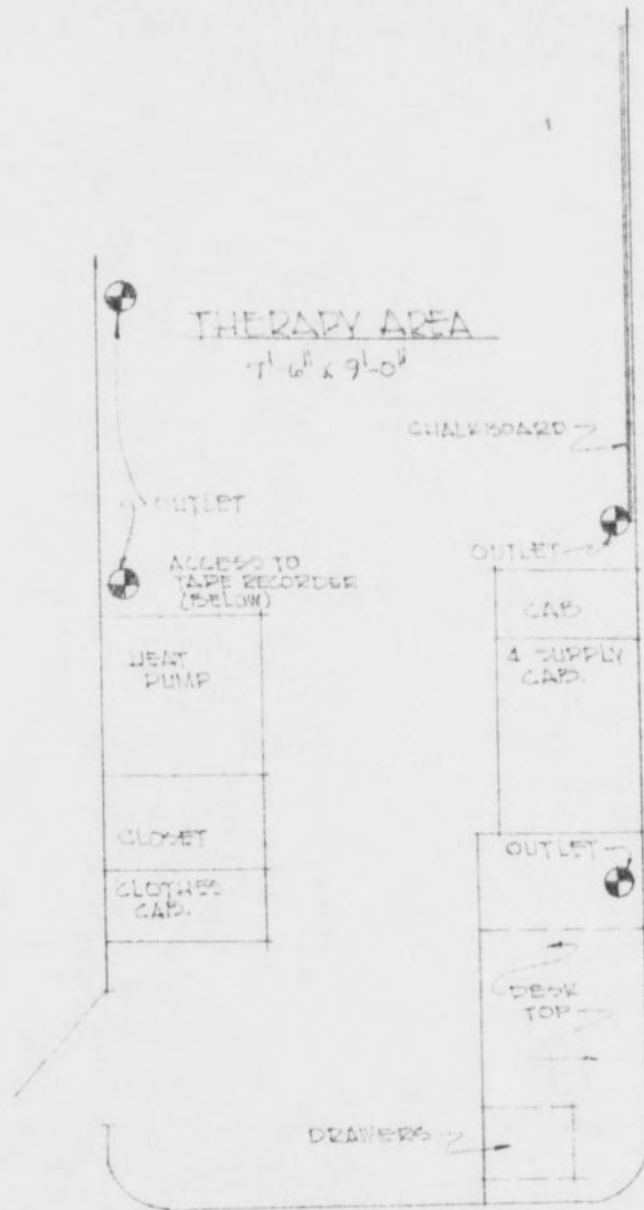
GRADE SCHOOL



GRADE SCHOOL

³⁷ Ibid., p. 41.

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³⁸ James Doherty, ed., "Workshop: Finding a Place for Your Speech Therapists," School Management, X (October, 1966), p. 15.

DRAWN BY PHILIP L. TROTTAR
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 GRIMBLEY SR. HIGH SCHOOL
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