

A COMPARISON OF THE EFFECTS OF A TRADITIONAL AND  
MEDIATED APPROACH IN TEACHING SPELLING TO  
HEARING IMPAIRED CHILDREN INVOLVED IN  
CAREER AWARENESS PROGRAMS

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A THESIS

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## CHAPTER I

### INTRODUCTION

Historically, career education for the deaf has received minimal attention at the elementary school level. However, since the beginning of the 1970's there has been a substantial trend toward the development of career awareness programs. Concurrently educators are seeking newer methods of instruction in order to improve the quality of recently adopted programs. Through career education many educators believe that the deaf child will better achieve his potential as a contributing member of society by having a more realistic awareness of his strengths and weaknesses.

"Career awareness is the goal of the '70's, the direction education will take, and the force that can give new meaning to all our teaching techniques and classroom organization" (May, 1973, p. 67). According to May (1973), career education is a new development that can better the lives of all students.

In 1970, President Nixon advocated educational reform to help students raise their level of achievements. Shortly after being named Commissioner of Education, Marland proposed career education to implement Nixon's suggestions for educational reform (May, 1973).

"Career education can give substance to all school subjects because careers can be related to everything children learn in school, and all their school learning to careers" (May, 1973, p. 70). Students can begin to see relevance in all academic subjects as they advance in school. "Such lessons are essential for the child who will use his hands to shape the future and for the one who will use his mind to direct destiny" (May, 1973, p. 72).

Language and communication skills are important to hearing children in career education, but even more important to deaf children. Due to the deaf child's communication handicap, the developmental process differs drastically between the hearing and the deaf. Much of the education of the hearing is derived from incidental learning, from repetition, and from vivid, exciting experiences. "It is the decrement in the rate and nature of incidental learning that may short out the deaf child's linguistic development" (Kopp, 1966, p. 672).

Since many avenues of communication are closed to the deaf child, additional means of exploration must be introduced. A language experience approach which incorporates substance from the child's world affords the teacher an opportunity to introduce and review needed developmental skills of communication.

Recognizing, however, the possibility of minimizing the teaching of academic information in heavily emphasized career awareness programs, an effort should be made to ensure that such fundamental skills as reading, writing, spelling, and arithmetic are not overshadowed. In fact, teachers should capitalize upon the inherent high interest aspects of career awareness to teach these fundamental skills. Research needs to be conducted to guide educators in their efforts to maximize the hearing impaired child's chances of acquiring needed academic abilities.

#### Statement of Problem

Since vision is the most relied upon of the five senses of a deaf person, the type of educational media presented to the deaf child can possibly determine the extent to which he learns and retains information. Traditionally in a career education classroom, the teacher makes an effort to teach critical spelling vocabulary by dittoed handouts to be used on an individual basis or in a group situation. The empirical question of this study is: "Is there a better way to increase spelling proficiency for the deaf child than by a traditional approach of using dittos?" It is anticipated that through the use of creative and imaginative instructional strategies, the efficiency and effectiveness of the teaching-learning process will be increased. The researcher postulates that using a mediated approach

involving a slide presentation which incorporates gadgetry, with pictures of actual objects, will more likely capture the interest and attention of a deaf learner than the traditional approach which relies heavily upon dittoed material, and thus result in more rapid development of spelling ability.

### Null Hypothesis

This study was designed to test the null hypothesis that there is no significant difference between the effects of a traditional and mediated approach in teaching spelling to hearing impaired children involved in career awareness programs.

### Definition of Terms

To ensure a greater understanding of this study, the ensuing terms have been defined as follows:

The deaf child. For the purpose of this study, the deaf child should be viewed as one who has a hearing loss of 70dB (I.S.O.) or greater in his better ear and who has suffered the hearing loss prelingually.

The hearing impaired. For the purpose of this study, the term hearing impaired covers the whole spectrum of hearing losses ranging from slight to complete (Rodda, 1970, p. 8).

Career education. For the purpose of this study, career education is considered an educational process



designed to assist the individual in mastering the skills necessary to function as an effective, responsible, and contributing member in our society (Stevenson, 1973).

Mediated approach. For the purpose of this study a mediated approach is defined as a means of teaching spelling to deaf children through the use of 35 mm colored slides.

Traditional approach. For the purpose of this study, the traditional approach is a method of teaching spelling to deaf children through the use of dittoed handouts.

## CHAPTER II

### REVIEW OF THE LITERATURE

Considering the importance career education has in the total development of today's deaf youth, it is expected that a considerable amount of research has been performed relating current trends. However, the writer has found very little information regarding any comprehensive models of career education designed for the deaf. In reviewing the literature, the areas emphasized were: (1) Evolving trends in career education, (2) Goals and definitions inherent in career education, (3) Rationale for current trends, (4) Significance of content, and (5) Development and implementation of current career education models.

#### Evolving Trends in Career Education

Since 1970, the term career education has become very familiar among educators of the deaf, but the principles and concepts underlying it are not new. Although the nomenclature has been changed in recent years, the basic goals remain the same, namely:

to assist individuals through the education process in securing the skills, information, attitudes, and understandings which will enable them to enter employment and progress satisfactorily. . . . A further purpose is to continue or supplement a

student's cultural education, especially the social, civic, and health aspects. (Daley, 1973, p. 85)

The concept of career education can be traced back to the early 1900's when Whitehead (cited in Marland, 1973) stated in the Aims of Education:

The anti-thesis between a technical and a liberal education is fallacious. There can be no adequate technical education which is not liberal and no liberal education which is not technical. . . . Education should turn out the pupil with something he knows well and something he can do well. (p. vii)

Dewey (1916) another early advocate of career education, also had theories which related to the present concept of career education. In Democracy and Education, he wrote that "To pre-determine some future occupation for which education is to be strict preparation is to injure the possibilities of present development and thereby reduce the preparation for a future right employment" (p. 19). After an investigation of American education in the 1960's, Conant (cited in Marland, 1973), former Harvard President, indicated that "in a heavily urbanized and industrialized free society the education experiences of youth should fit his subsequent employment" (p. vii). Conant believed there should be a smooth transition from full

time schooling to a full time job, whether the transition was made before or after graduation from high school, college, or a university.

Tideman (cited in Hoppock, 1967) suggested that "A curriculum will have to be constructed which will teach students how to use . . . education and information . . . in the framing of vocational decisions" (p. 95). He further suggested that career education program: (a) begin at a very early age and continue throughout formal education; (b) be reality based and provide opportunities to try various career tasks; (c) provide insights and information concerning the total range of careers; (d) utilize accurate and current vocational information; and (e) be descriptive of career paths or means of entering and progressing in a particular career.

The more modern concept of career education successfully combines the goals of Dewey, Whitehead, Conant, and Tideman as cited above. Marland (1973), Commissioner of Education, stated that the purpose of career education is to "remove the assumed distinctions between academic and occupational learning programs, blending them to serve all learners at all levels of instruction in their quest for productive careers and rewarding lives" (p. vii).

Regarding career education, Goldhammer (cited in Marland, 1973), the Dean of the School of Education at Michigan State University, has stated:

It is argued . . . that career education constitutes a new vitalizing thrust in education. There are, of course, those who say that it is just another passing fancy and if we don't pay too much attention to it, it will go away and leave us undisturbed. The evidence mounts daily that it is not the general reaction. The increasing public and legislative reaction to career education is one of hope that a new paradigm for educational operations has finally been found which will not only provide a basic social return consistent with the anticipated human and financial inputs, but a relevance for youth which will help them find their social identifications and secure a sense of mission and destiny as participating members of society. (p. xi)

#### Definitions, Goals, and Purposes of Career Education

Spradley (1973) suggested that the primary goal of career education was to "enable every person to make informed choices as he develops his own career . . . giving each person a greater command over his own life" (p. 10).

Gordon (1973) stated that "career education is not perceived as a substitute for some other aspect of education, or as an appendage to the existing content" (p. 59). Instead, it is seen by Gordon as an integral part of all basic educational programs. "Career education must be concerned more with facilitating the processes of living and less with preparation for making a living--more with the development of a meaningful life than with earning a good livelihood" (p. 58). Gordon declared that education must be concerned with "the mastery of basic communication skills; competence in problem solving; competence in management of knowledge; preparation for continuing education, employment and leisure; and competence in self management" (p. 62). Hanson (1973) described salient characteristics of a comprehensive career education program as:

(a) integration of career development through subjects and curriculum, K-12 or K-adult; (b) exploratory work or volunteer experiences in community sites; (c) hands-on experiences that integrate academic and vocational subjects; (d) career resource centers; (e) inservice training for faculty; (f) counseling, placement, and follow up.  
(p. 185)

Daley's (1973) definition of career education is concise yet very clearly delineates its purpose:

Career education embraces the total development of youth. It enhances academic preparation. True career development accentuates the development of attitudes, understandings, and self awareness, as well as the development of job skills. (p. 92)

Wernick (1973) described the career education teacher as one of basic skills concerned with foundational subjects, whose purpose is to draw upon the disciplines of knowledge and to use a wide variety of resources to give them greater meaning and significance. The strategies involved in a career education program are: (a) a discovery of potentially valuable instructional activities, (b) distinctive experiences in terms of maturational needs, talents, resources, and (c) comprehensiveness in well-articulated programs through all grades (Wernick, 1973).

One of the primary goals for career education has been that it begin very early in the educative process and continue as a lifelong process (McHugh, 1975). The initiation of the programs at an early age is even more important for the deaf than for the hearing. A modified form of the career pattern study developed by Super (cited in McHugh, 1975) for normal

hearing adolescents was used with deaf adolescents to measure their vocational maturity. The results indicated that the vocational development of the deaf differed from the normal hearing adolescent whose vocational development was the end result of a developmental process. The vocational information and planning of the deaf subjects related largely to their language and communication competence and the level of stimulation available at home. The conclusions of these tests revealed that the school, the home, and rehabilitation services must develop channels for increasing information changing attitudes and developing potentials, particularly at early ages (McHugh, 1975).

#### Rationale for Current Trends

Career education has evolved due to a number of seemingly valid reasons. Research indicated that the general curriculum has not been meeting the needs of many of today's youth, hearing or deaf. It is obvious that a vast majority of students do not attend college, with a large proportion dropping out of school much earlier. It appears that the objective of the educational system should be for broadening the base for employment purposes since most individuals will seek employment upon the termination of their education. Jochem (1970) stated that the education and training of the deaf are prerequisites for their subsequent employment.



Stahler (1969) found that underemployment of the deaf resulted from low educational achievement, obsolete vocational training, communication problems, and a lack of desirable work traits. Letson (1973) reported that educators have limited education to "academic vicarious experiences" (p. 97) when they work well for less than half of the students.

It appears that career education, implemented at an early age, could be the subsequent answer to the employment problems among the deaf. However, basic academics such as reading, writing, and arithmetic are essential to any person, hearing or deaf, and should not be disregarded or underemphasized. Career education should be a means of presenting these foundational skills while providing the necessary information about the world of work.

### Significance of Content

Wernick (1973) stated that the elementary teacher must have competence in the role of guiding language development, and in turn, self images. The elementary teacher of the deaf is in a uniquely important position with regard to the intertwining of language and self-image development. Wernick emphasized the importance of content in the language program of children when he stated the following:

Substance makes a developmental task meaningful and significant. Attention to what is being taught is attention to the quality of the developmental

process, especially in the area of communication. . . . A language experience approach incorporates substance from the child's world and also affords the teacher opportunities to introduce skills of communication. (p. 130)

"Laboratory subjects such as industrial arts, arts and crafts, and home economics can impart much career information to students" (Ressler, 1973, p. 10). The handling of machines, tools, and materials used by various occupations make it easier for students to form concepts of work. Students should be made aware of the relationship of their activity to specific occupations (Ressler, 1973). Ressler states that the "identification of careers related to shop activities is a necessary step and should be taken" (p. 9). These activities provide an introduction to work habits, attitudes, and interpersonal relation skills appropriate to the world of work. "Solving problems of construction to meet personal or group needs with whatever tools and materials are available develops creativity as well as critical thinking" (Swierkos & Morse, 1973, p. 10). Activities incorporated in career education programs should be meaningful and directed toward accomplishing a specific goal. Activities included in career education programs meet a number of needs for the deaf child, namely:

1. Aiding in dealing with abstractions
2. Providing motivation
3. Improvement of motor skills
4. Problem solving opportunities
5. Retention of subject matter
6. Opportunities for social growth
7. Some degree of success for all students
8. Reinforcement of subject matter
9. Involving all students in learning experiences
10. Therapeutic value for students (Ressler, 1973).

Wernick (1973) suggested that educators not become so enthused with the experiences, however, that they forget or avoid the necessary content and meaning of the activity.

McMurrin (1973) stated that career education should not be allowed to "preempt the educational field to the neglect of what has traditionally been called liberal education" (p. 24). He cited the need for a continuum of knowledge and experience in today's career education. "Education lies too close to the generative sources of human personality and the structure of society to permit the present confusions and contradictions to continue" (McMurrin, 1973, p. 24).

#### Development and Implementation of Career Education Models

California and Wisconsin have been among the first to develop and implement models of a comprehensive nature

which incorporate academic material as a part of the career education program. Kahl, State Superintendent of Wisconsin, initiated a committee to plan a curriculum centered career education model. The results of the two year study was a conceptual model intended to assist local school staffs in designing their own programs. A field test involving 35 school districts was later implemented to measure its usefulness and to identify elements that needed refinement. Initially, in each of the field test sites, the models, goals, concepts, and objectives were discussed and refined by the whole group. Then, the staff members were broken down into grade cluster groups to begin their writing tasks. No group could begin to develop their subject matter until the preceding grade group had completed its writing task, or unless the group was to introduce a new concept. The completed product was a specific guideline through which each local district was assured of a continuous process of career development (Drier, 1973).

Early in 1971, the Sonoma and the Alameda County Offices of Education in California joined in an effort to incorporate career education into their programs of education. An innovative aspect of their program was the employment of paraprofessionals as career education specialists. It was the duty of the specialists to help teams of teachers generate ideas on methods of implementing career education concepts.

Activities were developed in individual classes around particular areas of interest and were reported to have been very effective. This project model has been utilized in both California and parts of Washington with considerable success (Laramore, 1973).

The writer has found limited information concerning specific models of career education for the deaf. Munson and Egelston (1975) reported on a career education project for the deaf implemented in New York, however, the materials were developed for secondary deaf students. Munson (1975) stated:

The development of a comprehensive program of career education for deaf students which incorporates salience of the handicap into component materials has never been attempted. The role of the school in the early intervention of the deaf learner's career development is critical if individuals are to receive maximum benefits from that education. (p. 24)

In 1973, the Bureau of Education for the Handicapped supported a two year project that was designed to develop an approach for preparing schools for the deaf to implement a career education model and materials. The program model, to be available in the near future, promises to "alleviate a

critical and long standing void in the career education of deaf students" (Munson & Egelston, 1975, p. 34).

The 1973 Symposium on Research and Utilization of Educational Media for Teaching the Deaf revealed that there were a number of schools for the deaf involved in career education, however, a definite program model was not mentioned by any of the participants.

### Summary

In summation, the literature reveals that the concept of career education is not new, that it has been evolving in education since the early 1900's. Career education was encouraged nationally after Marland, Commissioner of Education, named it as the educational reform called for by the President.

The purpose of career education was cited as the removal "of assumed distinctions between academic and occupational learning programs, blending them to serve all learners at all levels of instruction in their quest for productive careers and rewarding lives" (Marland, 1973, p. vii). Rationale for current trends in career education has been cited as a need for broadening the educational base beyond academic vicarious experiences since many students drop out of school prior to college and are left virtually unprepared for employment.

Activities implemented in career education programs should be meaningful and directed toward accomplishing a specific educational goal. Teachers should take advantage of the activities as a motivating force for teaching the basic academic skills.

Research reveals limited progress in the development and implementation of career education models in schools for the deaf. Information was available regarding career education programs designed for hearing children, but from all indications minimal research has been conducted toward career education for the deaf.

### CHAPTER III

#### DESIGN OF STUDY

By all indications, career education will be a new area of emphasis in the education of deaf children in the 1970's. However, little research has been conducted on specific career education programs for the deaf regarding methods and programs of instruction.

Due to the sensory deprivation of a hearing loss, one would assume vision is the hearing impaired person's most important avenue for reception of information. It is postulated that using a slide presentation will more likely capture the interest and attention of a deaf learner than the use of dittos in presenting similar information, and thus result in a more rapid development of spelling ability. The purpose of this study has been to test the following null hypothesis that: there is no significant difference between the effects of a traditional and mediated approach in teaching spelling to hearing impaired children involved in career awareness programs.

#### Subjects

For the purpose of this study, eight deaf subjects were chosen from a school in Fort Worth. The subjects were not matched since each would serve as his own control.



Significant factors concerning the subjects including age, sex, hearing loss, and intelligence quotients have been outlined in Table 1.

Table 1  
Variables of Interest Related to Subjects

Subject	Sex	Age	Hearing Loss	Intellectual Rankings*
1	F	10	75dB	Average
2	M	10	95dB	Average
3	F	12	100dB	Bright Average
4	M	10	95dB	Bright Average
5	M	12	72dB	Bright Average
6	M	12	70dB	Below Average
7	M	10	82dB	Bright Average
8	M	10	90dB	Average

\*Obtained from school records.

The subjects' mean age was 10.8. The hearing losses, as reported in Table 1, were obtained from audiograms made available by the principal of the school. The mean hearing loss for the group was 84.9 dB in their better ear. The intelligence ranking for each child was obtained from his school records made available to the experimenter by the school principal. Numerical I.Q. scores, however, were not

available. The academic achievement as judged by their teachers could be noted as average for six of the subjects and somewhat below average for the other two.

### Materials Used

Materials for the study consisted of eight precut birdfeeders which were designed for the activity; 15 sets of dittos designed for the implementation of the traditional approach, and 15 sets of slides which were designed for the implementation of the mediated approach.

The spelling vocabulary consisted of 30 nouns related to the task of building a birdfeeder. The procedure for determining the vocabulary to be presented under each approach is listed as follows: (a) Thirty nouns associated with the task of building a birdfeeder were enumerated; (b) Using a table of random numbers, 15 words were randomly drawn and assigned to the traditional approach of teaching spelling; (c) The remaining 15 words were assigned to the mediated approach of teaching spelling. The researcher had determined prior to the drawing that the first group selected would be assigned to the traditional approach, and that the remaining 15 would be designated to the mediated approach.

### Procedure

The subjects were pretested to determine the number of spelling vocabulary each student knew prior to the

experiment. Pre and posttests were administered in the same manner as the words were to be presented for treatment.

The subjects were assigned six spelling words each day; three were presented in the traditional approach incorporating dittos and three were presented in the mediated approach utilizing slides. The two groups of spelling vocabulary words were given equal time and consideration in their presentation. Information regarding the presentation of the spelling vocabulary is outlined in Table 2.

Table 2  
Sequence of Word Presentation

Day	Slides	Dittos
D 1	paintbrush, sides, stain	joint, brace and bit, nails
D 2	lumber, screws, plexiglas	paint, bench, back-saw*
D 3	shingles, wire, perch	dowel-rod,* slot, pliers
D 4	drill, wood rasp,* clamp	roof, sandpaper, square
D 5	glue, scroll saw,* hammer	screwdriver, copingsaw, wrench

\*Taught as a single word.

The experiment was conducted on a 5 day basis, lasting two hours each day. The subjects were divided into two groups, and two work shifts, alternately working on the activity and the spelling vocabulary. Treatment of the subjects, tasks, and time schedule are outlined in Table 3.

Table 3  
Treatment of Subjects and Tasks

Time	15 Min.	<u>Shift 1</u> 45 Min.		15 Min.	<u>Shift 2</u> 45 Min.	
Subjects	General Assembly	Build Project	Word* Study	Break	Build Project	Word* Study
1-4	M-F	M,W,F,	T,Th	M-F	T,Th	M,W,F
5-8	M-F	T,Th	M,W,F	M-F	M,W,F	T,Th

\*The Word Study is divided into two parts, the first 22 minutes to be spent on the traditional dittos and the last 22 minutes to be spent on slides.

Analysis

Analysis of the results was made by means of a dependent t-test with a .10 level of significance. The .10 level of confidence was selected rather than the traditional value of .05 for the following reason: 90% confidence level was deemed acceptable, inasmuch as the researcher did not want to take a chance of wrongly failing to reject the null hypothesis, which was a possibility somewhat enhanced due to the short duration of treatment and the small number of subjects available for the study.

## CHAPTER IV

### ANALYSIS OF DATA

Eight elementary school age deaf children were used as subjects in this study to determine if there was any significant difference between a traditional and a medicated approach in teaching the spelling of career related vocabulary to deaf children. A total of 30 different words were presented over a period of five days; 15 words were presented through the traditional approach incorporating the use of dittos, and 15 through the mediated approach incorporating the use of slides. A test was given at the beginning of the five day period and again at the end to determine the gain scores made through each approach.

To determine whether or not the gain scores for each approach were significant, analysis was made by means of a dependent t-test. The t-test was also used to test the difference between the total gain scores of the two approaches for the purpose of testing the null hypothesis. The level of significance was set at .10 because of the small sample size and the short time interval of the experiment.

The pre and posttest results of the individual subjects for the traditional approach which incorporated the use of dittos are recorded in Table 4.

Table 4  
Pre and Posttest Results of the  
Traditional Approach

Subjects	Pretest	Posttest	d*	d <sup>2</sup>
1	1	9	8	64
2	1	5	4	16
3	0	4	4	16
4	4	10	6	36
5	1	7	6	36
6	4	15	11	121
7	0	1	1	1
8	2	5	3	9
Totals	13	56	43	299

\*difference between pre and posttest scores.

An examination of the data revealed in Table 4 shows that there was a significant difference between the pre and posttest scores. Further examination of the criterion measures reveals that the gains from the pre to posttests were from one to eleven with a mean gain of 5.375. There was a total post gain score of 43. To determine the significance, a t-test was computed with alpha set at the .10 level of significance which requires a computed t-value equal to or

greater than a 1.895 for statistical significance. The results of the t-test showed a computed t-value of 4.88 indicating a significance at not only the .10 level of significance ( $t = 1.895$ ), but also beyond the .01 level of significance ( $t = 3.499$ ).

The pre and posttest results of the individual subjects for the mediated approach which incorporated the use of slides are disclosed in Table 5.

Table 5

## Pre and Posttest Results for the Mediated Approach

Subjects	Pretest	Posttest	d*	d <sup>2</sup>
1	2	13	11	121
2	1	8	7	49
3	0	8	8	64
4	2	12	10	100
5	0	7	7	49
6	2	15	13	169
7	1	4	4	16
8	1	9	8	64
Totals	8	76	68	632

\*difference between pre and posttest scores.

The results reported in Table 5 reveal that there was an increase between pre and posttest scores ranging from



4 to 13 with a total gain score of 68 and a mean of 8.5. The results of the t-test reveal a t-value of 8.65, indicating not only significance at the .10 level of significance ( $t = 1.895$ ), but, in fact beyond the .001 level of significance ( $t = 5.405$ ).

The differences between the pre and posttest scores of the individual subjects comparing the traditional and the mediated approach are shown in Table 6.

Table 6

Posttest Gain Scores and Differences Between  
Traditional and Mediated Approaches

Subjects	Gains		d*	d <sup>2</sup>
	Traditional	Mediated		
1	8	11	3	9
2	4	7	3	9
3	4	8	4	16
4	6	10	4	16
5	6	7	1	1
6	11	13	2	4
7	1	4	3	9
8	3	8	5	25
Totals	43	68	25	89

\*difference between traditional and mediated gain scores.

An examination of the differences between the traditional and mediated approach indicates the mediated gain scores were greater than the traditional gain scores. The differences between the gain scores ranged from one to five with a mean score of 3.125. Using the dependent t-test, the results revealed an obtained t-value of 7.102, indicating significance at not only the .10 level of significance ( $t = 1.895$ ), but beyond the .001 level of significance.

### Findings

The results of the analysis indicate the following findings.

1. The posttest results for the traditional approach reveals that there was a statistically significant gain in the subjects' ability to spell target vocabulary words. Gain scores were such that one could be 99% confident that the observed differences were replicable.

2. A comparison of the pre and posttest scores for the mediated approach shows there was a mean difference of 8.5. This difference is statistically significant beyond the .001 level of significance, indicating clearly that subjects did significantly better in spelling the target vocabulary taught through the use of the slide projector.

3. A comparison of the gain scores for the two approaches reveals that collectively, the subjects spelled 25 more words correctly under the mediated approach than

they did under the traditional approach. Analysis of the difference was made by a dependent t-test and the results indicate not only a higher computed t-value ( $t = 7.102$ ) than the tabled t-value at the .10 level of significance ( $t = 1.895$ ), but also the computed t-value was large enough to reject the null hypothesis beyond the .001 level of significance.

### Discussion

The results of this study indicate clearly that both methods are beneficial in helping deaf children learn to spell target vocabulary, and that of the two methods compared, the mediated method seems to be the most powerful. Although no specific factor can be identified as the causal factor for the observed difference between the two approaches, the writer suspects that gadgetry, color and reality of the slides, as cluster factors, were more appealing to the deaf subjects than were the dittos, thus resulting in a more rapid development of spelling ability.

No one approach will ever meet all the needs or solve all the problems of the classroom or of individuals; therefore, it is of special interest to note that both methods appeared to have a significantly positive effect on the subjects.

One possible reason for the significant gains made in both approaches could be attributed to the fact that

career awareness materials produce a high interest level among deaf students. It is possible that the activity involved in the study produced the favorable results observed, by making the vocabulary, which was directly related to the activity, more meaningful to the students.

It has been stated that media plays such an important role in the career development of deaf students because it: "(1) increases the input for deaf students who are more dependent upon the visual mode; (2) increases the flexibility in the teaching-learning environment; (3) increases the efficiency and effectiveness of learning" (Clarcq, Johnson, and Speegle, 1973, p. 227). Clarcq et al. (1973) stated:

It is anticipated that through the use of creative and imaginative instructional strategies, that the efficiency effectiveness of the teaching-learning process will be increased. This will contribute significantly to meeting the needs of the deaf students relative to preparation for successful employment. (p. 245)

The results of this study do, in fact, support these assertions.

#### Limitations of the Study

The writer feels that inherent in any experimental program are a number of limitations. The limitations of this study were as follows:

1. Since the spelling vocabulary study was on an individual basis and the experimenter was not in the room at all times, it could not be determined that the students spent the exact amount of time on both the mediated and the traditional approaches.

2. This study was limited to eight subjects from a day school for the deaf which somewhat restricts one's ability to generalize broadly.

3. This study was limited to a time interval of five days.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

Due to the seemingly little research conducted on Career Education programs for the deaf, the researcher conducted an experimental study to determine the more effective approach of teaching career awareness spelling vocabulary to deaf children. The study was designed to test the null hypothesis that there is no significant difference between the effects of a traditional and a mediated approach in teaching spelling vocabulary to hearing impaired children involved in career education programs.

There were 8 deaf children ages 10 through 12 used as subjects in the 5 day experimental study comparing the effects of the traditional and mediated approaches of teaching spelling vocabulary to deaf children. The 5 day study consisted of: (1) assembling and painting a precut bird-feeder, (2) teaching 15 words through the traditional approach incorporating the use of dittos, (3) teaching 15 words through the mediated approach incorporating the use of slides, (4) administering pretests to determine prior knowledge of spelling vocabulary, and (5) administering posttests to determine number of spelling words gained through the study. Both the mediated and traditional

approaches were used when administering the pre and post-tests. Treatment of the subjects and approaches of teaching spelling words were equal throughout the study.

The scores of the two approaches were organized in such a manner that a statistical analysis could be made to determine the significance of each approach in teaching spelling. A dependent t-test was used to determine the level of significance of each approach and to determine if the difference between the resulting gain scores of the two approaches was of significant value. For all analyses, the .10 level of significance was considered appropriate because of the small sample size and the short interval of time during which the study was conducted.

### Conclusions

The results of this study indicate a statistically significant difference between the effects of a traditional approach incorporating the use of dittos and a mediated approach incorporating the use of slides. The null hypothesis was, therefore, rejected; and it was concluded that a mediated approach is a more powerful approach for teaching spelling to hearing impaired children for whom the subjects in this study are representative. Analysis of the individual test results indicate that although the mean gain score for the traditional approach was not as great as for the mediated

approach, analysis did reveal a significant gain for the traditional approach which would warrant its use in the classroom as an alternate approach.

It appears to the experimenter that the inherent high interest level of career education could possibly be a determinant factor in the rapid development of spelling ability in deaf youth. Based on these conclusions, the experimenter made a number of recommendations.

#### Recommendations

Due to the favorable results of these findings, it is recommended that educators involved in career awareness programs actively conduct research which would:

- (1) verify these findings,
- (2) expand the population to which the results can be generalized,
- (3) reveal those other academic areas which might also lend themselves to mediated instruction, and
- (4) reveal what other skills might also be enhanced through a mediated approach in addition to spelling skills.



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