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Education Doctorate (Ed. D)

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It is entitled Assuring the Subject-Matter

Competence of Teachers of Deaf and Hard of Hearing

Learners: How Can We Make It Happen?

Approved by:

James M. Baird
[Signature]
[Signature]
[Signature]

**ASSURING THE SUBJECT-MATTER COMPETENCE OF TEACHERS OF THE
DEAF AND HARD OF HEARING: HOW CAN WE MAKE IT HAPPEN?**

A dissertation submitted to the

**Division of Research and Advanced Studies
of the University of Cincinnati**

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requirements for the degree of**

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of the College of Education**

2000

by

Shobha Chachie Joseph

B.A., Women's Christian College, 1986

M.A., Gallaudet University, 1994

Committee Chair: Dr. Anne M. Bauer

UMI Number: DP16713

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ABSTRACT

In response to concerns that most Americans have not been receiving the kind of education that prepares them adequately to live in the 21st century, a number of reform initiatives have been undertaken in general education to prompt school improvement and student achievement. Although the academic achievement of deaf and hard of hearing learners has historically lagged behind that of their hearing peers (Allen, 1986), the field of deaf and hard of hearing education has not participated in similar reform movements to improve instruction for its learners. By viewing deaf and hard of hearing education under the umbrella of 'special education,' there has been a tendency to blame deafness itself for the inferior performance of deaf and hard of hearing learners (Johnson, Liddel & Erting, 1989). There have been limited efforts to investigate the subject-matter preparation of teachers of the deaf and hard of hearing while evidence reveals that teachers' knowledge affects the achievement of their students (Grossman, 1987).

This investigation documents the current state of subject-matter preparation of teachers of deaf and hard of hearing learners and the facilitators and barriers to preparing subject-matter competent teachers. A survey was sent to coordinators of graduate and undergraduate teacher preparation programs throughout the United States. Interviews were conducted with a sample of program coordinators and two experts in the field of deaf and hard of hearing education. Data was analyzed using descriptive statistics and comparative analysis.

Results indicate a great deal of variability in how subject-matter is addressed in teacher preparation programs. Similarly, a variety of factors influenced decision making regarding the subject-matter preparation of teachers of the deaf and hard of hearing.

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CHAPTER I

STATEMENT OF THE PROBLEM AND PURPOSE

This chapter presents the purpose of the current investigation. It describes the problem being addressed, its significance to the field and the questions that address the issue at hand. Definitions are provided, as is a theoretical framework for the study.

The Problem

In recognition of the increasing competitiveness of the global community and the realization that American schools were not on the leading edge, there were a flurry of reports in the early 1980s that attempted to respond to America's call for higher standards in general education. Out of this began a reform movement in general education, exemplified by professional organizations like the National Council of Teachers of Mathematics which published three separate documents to guide mathematics reform. These documents set standards in mathematical curriculum, instruction and evaluation for the K-12 grades, focused on the professional development needs of teachers and addressed assessment practices in the field (Pagliaro, 1996).

While reform in both the curriculum and teacher preparation continue in general education, deaf and hard of hearing education rhetoric continues a traditional focus with attention to language and speech teaching, auditory training and methodologies for teaching deaf and hard of hearing learners. The literature is replete with reports regarding the poor academic performance of deaf and hard-of-hearing learners (Allen, 1986; Johnson, Liddel & Erting, 1989; Moores, 1996; Paul & Quigley, 1994). Since the traditional expectation of teachers of the deaf has been to teach grammar and speech,

teacher preparation programs tend to ignore instruction in subject-matter areas. The academic consequences of being taught by teachers who are insufficiently prepared to teach in subject-matter areas is severe and long reaching. The mathematics performance of deaf and hard of hearing learners has shown little improvement; deaf and hard of hearing seventeen-year old students are behind their hearing counterparts by an average of five years in mathematics. Surpassing this alarming figure is the eight year lag recorded in reading (Moore, 1996).

No study has systematically documented the current state of subject-matter preparation in the field. This first step is necessary to bring attention to the need for subject-matter competence in teachers and to pave the way for further reform.

The Significance of the Problem

Competence in knowledge of subject-matter is crucial to success in today's world. The growing demand for skilled workers, spurred by rapidly advancing science and technology, has generated an increasingly competitive job market. The knowledge base is growing fast and students need to master that base. Only an educated and informed citizenry can fully utilize these rapid changes and ever increasing opportunities. In recognition of this, the U.S. Department of Education supported the development of standards in history, the arts, civics and government, geography, English language arts, and science (Abdal-Haqq, 1995). At the same time, it is noted that thirty percent of deaf students leave school without a diploma (Nash, 1992). Inadequate academic preparation frequently forces deaf learners to take on largely blue collar work (MacLeod-Gallinger, 1992).

“Changes in job requirements and increasing use of technologies impact the accessibility of opportunities for deaf individuals. The declining availability of blue collar jobs and the increasing need to communicate effectively and participate in collaborative problem-solving lay a heavy responsibility upon deaf education to better prepare students for the workplace” (Dietz, 1995).

Much of the responsibility for the poor performance of deaf and hard of hearing learners rests on the inadequate preparation of their teachers. Work done by Johnson (1977), in the area of mathematics, concluded that teachers’ subject-matter competence may indeed be the best predictor of student achievement. Parallels may be drawn to other subject-matter areas as well (Lytle & Rovins, 1997). Therefore it is critical that teacher preparation programs reflect on the orientation of their programs and reform the “traditional” way in which they prepare teachers of the deaf and hard of hearing. This timely study responds to the current, critical need for subject-matter competent teachers.

Purpose of the Study

This study seeks to document the status of subject-matter preparation of teachers in the field of deaf and hard-of-hearing. This is a preliminary investigation that seeks to set the groundwork for further research.

Research Questions

1. What is the current status of efforts to ensure the subject matter competence of graduating teachers of deaf and hard-of-hearing learners?
2. What are the facilitators in preparing subject-matter competent teachers of deaf and hard-of-hearing learners?
3. What are the barriers to preparing subject-matter competent teachers of deaf and hard-of-hearing learners?

Definitions of Terms

Competency: adequacy for a task, or possession of required knowledge, skills and ability (Houston & Howsam, 1972).

Subject-matter knowledge: includes knowledge related to the mathematics, science, social studies, language and literature disciplines.

deaf: audiological deafness which includes individuals with a hearing loss great enough to preclude the understanding of speech through the ear alone, with or without the use of a hearing aid (Frisina, 1974, p. 3).

Hard-of-Hearing: audiological deafness which includes individuals whose hearing loss makes it difficult, but does not preclude the understanding of speech through the ear alone, with or without a hearing aid (Frisina, 1974, p. 3).

General Education: Kindergarten through 12th grade educational processes that do not include Special Education.

Pre-service Preparation: education and experience obtained prior to professional employment.

Theoretical Framework

Conceptions of teaching and learning influence practice and the way in which teacher preparation programs plan, organize and deliver the content of their programs. The technological orientation emphasizes more process-product research and has dominated special education, with an emphasis on lists of knowledge and skills that teachers should possess. The deliberative orientation causes researchers to view teaching more broadly and may focus on classroom settings and teacher thinking (Zumwalt, 1982 cited in Blanton 1992).

Alternate models have been proposed for developing teacher preparation programs. The 'sources of knowledge' model suggests that teacher educators should be able to organize the essential knowledge and skills that are to be presented in their programs. To avoid lists of prescriptive competencies that are frequently not understood in terms of types of knowledge, it is recommended that conceptual frameworks of knowledge be developed (Blanton, 1992).

Professionals have maintained that the focus of teacher preparation should be on three domains, including content, pedagogy, and cognition. Each of these is contingent on the other and cannot stand alone (Lappan & Theule-Lubienski, 1994). Shulman (1987) included subject-matter knowledge as one of the four major sources that make up a knowledge base for teaching. The knowledge base that teachers possess is important because it is this that guides their behaviors and beliefs that in turn influences the comprehension of their students. Subject-matter knowledge (content knowledge) according to Shulman refers to the factual knowledge and concepts within a particular

discipline. This is knowledge that is contained in a text book, that teachers must know. While subject-matter is only one of many critical components of the teaching-learning domain, it remains a crucial part. Content knowledge has been referred to as the “essential component of teacher knowledge” (Ball & McDiarmid, 1989). Thus subject-matter knowledge should be an integral part of the teacher education curriculum

CHAPTER II

A REVIEW OF THE LITERATURE

In the context of today's increasingly competitive, highly technological and rapidly changing world, there has been a growing distrust among the public of the existing foundations for teaching and learning. Much of this distrust rises from a lack of confidence in the nation's teachers and the programs which prepare them (Dietz, 1994). Among the various areas targeted for higher standards and achievement, is basic subject-matter; including math, science, English and social studies (Moores, 1996).

Influence of Teacher Backgrounds on Student Achievement

Studies have examined the relationship between teacher knowledge and instructional practice (Grossman, 1987). Conclusions indicate that when teachers' knowledge is more explicit and organized, their instruction tends to allow for more conceptual relationships, and therefore more varied and appropriate involvement of students than with teachers with limited knowledge. When knowledge was organized poorly, instruction was less effective (Stein, Baxter, and Leinhardt, 1990).

Students' achievements rise dramatically when they are taught by teachers with strong academic backgrounds. Bodenhausen (1989) compared the achievement of classes of students taught by teachers with strong academic backgrounds and degrees in the subject-matter area of expertise and students whose teachers did not have degrees and subsequently weaker academic backgrounds. Students taught by the former group of teachers did significantly better on advanced placement tests; a clear indication that teachers' academic backgrounds affect the performance of their students. The significant

effects of a teacher who is subject-matter competent on the achievement of students has also been recorded by Shanoski and Hranitz (1991).

A teacher deficient in content knowledge can greatly hamper the advancement of students' learning, especially when advanced course work is involved (Evertson, Hawley, & Zlotnik, 1985). The National Commission on Teaching and America's Future (1996) reported that schools with higher achievement were staffed by teachers with an extensive knowledge of content and pedagogy. Several important recommendations were made by the Commission; higher subject-matter standards for teachers; re-designing of teacher education programs; and establishing a hiring practice whereby it would be necessary for teachers to be licensed in accordance with these higher standards.

Beyond general education, deaf and hard of hearing college students also indicated that one of the characteristics they valued most in their teachers was their competence in the various subject-matter areas. A study was done to examine how administrators, instructional faculty and deaf college students viewed the importance of various teaching characteristics. Following interviews and discussions, a final list of 32 characteristics which contributed to teaching effectiveness was determined. Surveys with rating and ranking scales were distributed to administrators, chairpersons of academic departments, faculty members and a sample of 334 deaf college students. 'Knows the subject well' was one of seven competencies that was rated highly in terms of significance by both faculty and students. Even in the ranking procedure, all four groups of respondents ranked 'knows the subject well' as being the most important competency for faculty members to have (Lang, McKee, & Conner, 1993).

Reform in General Education

Since the early 1980s, educators have debated repeatedly on a national level over how to improve the quality of the curriculum and those who teach it. This resulted in a number of reports including *A Nation at Risk: The Imperative for Educational Reform* (National Commission for Excellence in Education, 1983); *The Troubled Crusade: American Education, 1945-1980* (Ravitch, 1983); and *High School: A Report on Secondary Education in America* (Boyer, 1983). The Nation at Risk pointed out that there was too much of an emphasis on educational methods courses and too little attention being paid to subject-matter preparation. The greatest imbalance was in elementary teacher education and the need for these teachers to be subject-matter competent was emphasized. The report also pointed to a rapidly expanding knowledge base for which students were not adequately prepared. The Carnegie Forum proposed to create a National Board for Professional Teaching Standards to establish high standards for what teachers ought to know and be able to do. The forum proposed higher standards in undergraduate education in the arts and sciences and suggested making it mandatory for teachers to possess a strong liberal arts and sciences background prior to their professional education. The Holmes Group Report of 1986 emphasized the importance of subject-matter knowledge for teachers. It recommended that teachers specialize in a subject-matter area at the bachelors level; that there be a reduction in the number of required professional education classes in order to allow for teachers to specialize in a subject-matter area; and that practicum experiences be increased. The report also recommended that professional coursework and the practicum experience take place in a fifth year,

following a four year program that focused on a subject-matter area. These initiatives, along with Goals 2000 (1992), are the forerunners of initiating educational reform for improved curricula and knowledgeable teachers in general education.

As a result, several reforms have been undertaken, which have led to changes in certification laws, teacher testing practices and changes in the state curricula. In 1994, President Clinton and Congress passed into law “Goals 2000 Educate America Act,” a national charge for all children (U.S. Department of Education, 1994b). Of the eight goals stated in “Goals 2000”, there are at least two that make reference to the importance of subject-matter.

- all students will be competent in the core academic subjects
- all teachers will have the opportunity to acquire the knowledge and skills needed to prepare U.S. students for the next century

Specifically, with regard to subject-matter, the National Goals state:

“American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject-matter, including English, mathematics, science, history, and geography;further learning and productive employment in our modern economy.” (Gronlund, L., 1993).

In response, the U.S. Department of Education supported projects to develop model standards in seven “challenging” subject-matter areas: science, history, the arts, civics and government, geography, English language arts, and foreign languages (Standards for All, 1993). The National Council of Teachers of Mathematics (NCTM) has led the way by revising the standards and requirements for certification of teachers of

mathematics. Two important documents, Curriculum and Evaluation Standards for School Mathematics (NCTM, 1989); and Professional Standards for Teaching Mathematics (NCTM, 1991) offered a framework for improving the mathematics preparation of teachers in general education.

Subject-Matter, Deaf Education and Teacher Preparation

In this new century, the fastest growing occupations are those that require higher mathematics and reasoning abilities (Hudson Institute, 1987). If deaf and hard of hearing students are to be competitive, they must be prepared well academically. At the root of all educational shortcomings is the lack of serious attention to subject-matter both in teacher preparation and in school curricula (Dietz, 1994).

The monograph Curriculum: Cognition and Content, was the first effort to compile curricular materials for deaf and hard of hearing students. However a review by Behrens and Meisengeier (1968 as cited in Moores, 1996), noted that there was little focus on subject-matter areas. As an example, the review commented on the area of social studies:

“A review of the literature on curricula for social studies for deaf children published in the two American periodicals on education for deaf children can be quite a shock. From the paucity of articles on this subject, one might conclude that social studies is not considered important for our children. If the number of publications.....rank ordered, papers on general educational issues would seem to be the most important followed by articles on language, speech, speechreading and psychology. These categories have received six to nine times as much written attention as social studies. The other content areas of arithmetic and science would

appear to have been considered as low, or perhaps even lower, in their importance to the field of education of deaf children .”

Thirty years later, the situation regarding subject-matter has not changed much. In Volta Review's, Curriculum: Content and Change, not one of the fourteen articles published specifically addressed subject-matter issues in particular areas such as math, science, social studies, or history (Kirby, 1980 cited in Moores, 1996).

The consequences of neglecting subject-matter area preparation for deaf and hard of hearing students is apparent in their poor academic achievement over the years which has long since been reported to be behind that of their hearing peers (Johnson, Liddel, & Erting, 1989). The literacy achievement of these learners are reportedly below the 3.5 grade level (CADS, 1995). The reading and writing levels of graduating deaf and hard-of-hearing learners reached only the third and fourth grade levels (Allen, 1986; King & Quigley, 1985; Quigley & Paul, 1990; as cited in Mc Anally, Rose & Quigley, 1994). Data gathered by the Center for Assessment and Demographic Studies (CADS) at Gallaudet University indicated that deaf and hard of hearing students have made little progress in the last twenty years with regard to mathematics achievement (Allen, 1995 as cited in Pagliaro, 1996)). Deaf and hard of hearing students are seen to lag behind their hearing peers by an average of 40-65 points on the mathematics subtest of the Stanford Achievement Test. Similar parallels in low achievement may be drawn to other subject-matter areas as well (Lytle & Rovins, 1997).

Referring to secondary education, Luckner (1991) suggested that one factor that could be causing this low achievement in students could be the acute shortage of

adequately prepared teachers of deaf and hard-of-hearing learners. He pointed out that secondary level teachers were not adequately prepared in their content areas. Fifty-three percent of eighty-one programs that prepared teachers of the deaf and hard of hearing surveyed in 1992 felt that their graduates were minimally or not prepared to teach secondary level students while thirty-four percent reported that their graduates were only moderately prepared to teach deaf and hard-of-hearing learners at the secondary level.

Despite the reform movements in general education and more stringent standards, deaf and hard of hearing teacher preparation programs continue to focus on issues related to language and communication, and on the pathological aspects of deafness, resulting in classroom teachers who are not competent in the academic areas they later teach (Innes, 1992).

Further evidence of this was reported by Blackburn and Pagliaro (1994 as cited in Pagliaro, 1996) who conducted an informal review of fourteen graduate programs approved by the Council on Education of the Deaf. A review of materials and documents indicated a heavy focus on speech, audiology and language. In fact, 38 percent out of seventy-nine core courses examined in the first eight programs focused on speech, audition or language. Fourteen percent of the courses focused on curriculum and instruction with a focus primarily on reading. None of these courses focused on mathematics.

Examining states' requirements for certification revealed that two-thirds of states required aural rehabilitation education for certification; half of the states required a strong background in speech and audiology. Subject-matter coursework was often neglected.

When teachers are unsure of how to teach various subject-matter areas, they tend to emphasize the teaching of speech and language (Moore, 1996).

Focus in the field of deaf and hard of hearing education tends toward pedagogical aspects of education. Further, for over a decade, attempts have been made to identify necessary competencies for teachers of the deaf and hard-of-hearing. These competencies were regarded as prescriptive measures and largely addressed only the methods of teaching. In 1992, the Council for Exceptional Children concluded a process of identifying knowledge and skills seen to be necessary for all teachers of exceptional students. In all, 107 core statements were identified, in 8 different categories. Only one competency statement addressed the subject-matter knowledge of teachers (Swan & Sirvis, 1992, cited in Easterbrooks, 1995). This competency, as stated in a 1996 publication of the Council for Exceptional Children publication, reads, "curricula for the development of motor, cognitive, academic, social, language, affective, career and functional life skills for individuals with exceptional learning needs." This statement is at best vague regarding its direction for subject-matter competence in teachers. In a collaborative effort with the Council on Education of the Deaf and representatives from a number of national organizations, an additional 66 skills, specific to the discipline of deaf and hard of hearing education were created. Altogether, these competencies were to serve as a resource to influence standards, make professional development decisions, guide credentialing and serve as a tool for self-assessment for teachers (Easterbrooks, 1995). However most of CED's 66 competency statements focuses on methodology. Only one statement addresses subject-matter. It reads: "Subject-matter and practices used

in general education across content areas” (Easterbrooks, 1995). Once again this statement is vague regarding its charge for creating subject-matter competent teachers and offers no specific guidelines to enable programs to put the requirement into practice.

A content analysis of seven major competency studies (CEC-CED Joint Knowledge and Skills Statement for All Beginning Teachers of Students who are Deaf or Hard-of-Hearing, 1996; Rosenfeld, Mouny, & Ehringhaus, 1995; Lang, Dowaliby, & Anderson, 1994; Lang, McKee, & Conner, 1993; Swan & Sirvis, 1992; Luckner, 1991; Sass-Lehrer, 1982) resulted in the categorizing of 462 competency statements. Of these 462 statements, only 18 made reference to content competence. Furthermore, of these 18 content competencies, only one was explicitly stated its direction for competence in academic content subjects such as social studies, science, health and math (Joseph, 1996, unpublished manuscript).

One of the factors that contributes to the poor performance of deaf and hard of hearing students in subject-matter areas could be that teacher preparation programs do not adequately emphasize the subject-matter preparation of its student teachers. Several studies clearly establish both the importance of subject-matter and the role of teacher preparation programs in making the subject-matter competence of teachers a reality. In an attempt to find out how secondary level teachers regarded the various competencies necessary for teaching deaf and hard of hearing learners, Luckner (1991) presented teachers with a series of 26 competency statements. Subject-matter was rated seventh. The investigator probed the extent to which the teachers believed they were prepared to work with secondary level students in the competency areas listed. Teachers were asked

to provide two mean ratings for each item: one that indicated the importance of the skill and a second that showed the degree of training they had received in the particular skill. A 5-point scale was used, with 5 indicating the highest score. The Wilcoxon matched-pairs signed-rank test was provided and the Wilcoxon was computed to determine if there was a remarkable difference between the importance of a competency or skill and the training that had been received in that skill. Overall, except in the areas of teaching speech and auditory training, median scores indicated a discrepancy between the importance of a competency and the training that teachers received for it. The subject-matter area competency statement read as follows: 'Teaching academic content subjects such as social studies, science, health and mathematics. The following medians were recorded: Importance= 4.53; Training received = 3.35; Wilcoxon score=13.16. In contrast, 'teaching auditory training to secondary students received the following median scores: Importance =3.16; Training received=3.13; Wilcoxon score=0.9 and teaching speech to secondary students received an importance median of 3.33; training=3.36 and Wilcoxon score=0.80.

A survey of 102 elementary and secondary teachers of reading and 46 secondary level subject-matter teachers from 45 local district and residential schools for the deaf revealed minimal preparation for teachers in reading instruction. A fifth of the teachers received no undergraduate reading instruction. Fifteen percent had only had one course while 26 percent did not take even one graduate level course in reading. Another 26 percent had taken only one graduate course (Luckner, 1991b).

A separate study compared the mathematics achievement of deaf students in a

general education classroom with those in a self-contained classroom. It found that students in the general education classroom exhibited higher achievement than those in the self-contained classroom. This difference could be attributed to various factors including the fact that all the teachers in the general education setting were trained in mathematics and held at least a masters degree in mathematics or mathematics education. Teachers in the self contained setting had not received any special mathematical training or mathematics education (Kluwin and Moores, 1985). Thus it was concluded,

“The prerequisites for success, then, do not appear to be limited to an integrated versus a self-contained classroom or to a day versus a residential setting. The major components appear to be teachers trained in academic content areas, high expectations, presentation of large amounts of content.....If we are to maximize academic achievement of deaf children in all settings, we must supply them with the best possible learning environment within each setting. (Kluwin and Moores, 1985; p. 159 cited in Moores, 1996).

When 88 elementary teachers and 44 secondary teachers were questioned about their mathematics preparation it was found that, overall, the number of mathematics related courses taken by teachers of deaf and hard of hearing learners was significantly lower than the number recommended for mathematics teachers in general education (Goodstein, 1981).

Despite this bleak picture regarding subject-matter preparation of teachers in the field of deaf and hard of hearing education, there is evidence to indicate that those involved in the preparation of these teachers, including teacher educators and professional

agencies, are increasingly acknowledging the need for the subject-matter preparation of teachers. When a 100 teacher educators were surveyed regarding the subject matter competencies required by teachers of the deaf and hard of hearing, an overwhelming 95 percent of them acknowledged the importance of subject-matter knowledge and believed that subject-matter should be a consideration in the certification of teachers (Lytle, 1992a). A recent national survey of school administrators in 145 programs and schools that serve deaf and hard-of-hearing children showed that the majority of respondents believed that teachers of the deaf should have the same content competency as teachers in general education. This idea was supported by 98 percent of the respondents from day and residential schools and 89 percent of mainstream program administrators (Lytle & Rovins, 1997). Additionally, professional organizations have made efforts to include subject-matter as part of the discussion in preparing teachers. The National Association of State Directors of Special Education (NASDSE) indicated that teachers of the deaf and hard of hearing should meet the standards necessary for teaching general education (NASDSE, 1995). In proposing standards for special education, including deaf and hard of hearing education, the National Board for Professional Teaching Standards indicated that teachers of deaf and hard of hearing learners should have the “same mastery of subject-matter as comparable generalists.” (National Board, 1996). Finally, the results of a national survey conducted by the Educational Testing Service (ETS) to delineate competencies necessary for beginning teachers of deaf and hard of hearing learners indicated strong support for subject-matter and the need for teachers to be subject-matter competent (Rosenfeld, Mouny, & Ehringhaus, 1995).

Reform efforts in the field of deaf and hard of hearing education have been undertaken by a group of teachers and administrators in the subject-matter area of mathematics. The National Action Plan for Mathematics Education Reform for the Deaf (Dietz, 1995) was developed and the group's goal was for the mathematics education of deaf and hard of hearing learners to be in accordance with the Standards developed by the National Council of Teachers of Mathematics. Unfortunately, similar efforts have not been undertaken in other subject-matter areas.

Rationale for Subject-Matter Reform in Deaf and Hard of Hearing Education

Research in the area of cognition and deafness shows that deaf and hard of hearing individuals have normal intellectual capabilities and display the same variability in intellectual functioning as the hearing population (Moores, 1996). Deaf children have an "intact cognitive machinery" and the inferior achievement alluded to in the traditional literature may be due to additional handicapping conditions or issues around communication (Wolff, 1985).

There is evidence to show that increased concentration on subject-matter preparation can have positive results in the academic achievement of deaf and hard of hearing students. Yet, the traditional focus of teaching continues mainly because those responsible for training teachers are oriented to traditional ways of teaching. There is a need for re-orientation of focus with a greater emphasis on the subject-matter preparation of deaf and hard of hearing learners (Moores, 1996). Those who are setting the standards must emphasize the importance of various subject-matter and conceptual matter in the curriculum. This can give those who are responsible for planning a greater ability to

prioritize expectations for teachers (Diez, 1994). Referring to deaf and hard of hearing children, Moores (1986) states that “achievement....clearly lags behind what should be attainable....for children with normal intellectual capabilities.” Deaf individuals have the intellectual potential to pursue higher education but they do not have the literacy skills to assure them of success (Moores, 1986). Given these normal intellectual capacities, the current, all round achievement of deaf and hard-of-hearing learners is clearly unacceptable and lamentable. The time to deal with this issue was over a decade ago. Deaf education must take the lead of general education and make efforts to ensure the subject-matter competency of its teachers.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to describe the methodology and instruments used to study the state of subject-matter preparation of teachers of deaf and hard of hearing learners. The chapter includes a rationale for the choice of methodology; an overview; details regarding the participants and setting; instrument design, procedures, data collection methods, methods of analysis; and limitations.

Rationale

This is a descriptive study that utilizes surveys and interviews to collect data. Descriptive research “determines and reports the way things are” and is useful for investigating educational problems (Gay, 1987). Descriptive research is generally used as foundation-building research and is appropriate for use in this exploratory study.

Surveys and interviews may be used to collect descriptive data. A survey is “an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables” (Gay 1987). Alreck & Settle (1995) indicate that the survey should be used “to enhance the literature and the state of current thought” in a discipline. Interviews are useful to clarify responses that are incomplete or unclear and to seek out reasons for particular responses (Gay, 1987).

Triangulation is accomplished by employing quantitative surveys, open-ended questions, and semi-structured interviews. Triangulation validates findings and involves obtaining data from more than one source (Miles & Huberman, 1994).

An Overview

This is a three-stage study. In the first phase, surveys were mailed to the head/coordinator of all graduate and undergraduate deaf and hard of hearing teacher preparation programs. Surveys were analyzed based on criteria regarding the subject-matter preparation of teachers. Based on the results of the first phase, programs were selected for participation in in-depth interviews. Interview data and survey findings were presented to two experts in the field of deaf and hard of hearing education, in order to gain their insights.

The study involved every graduate and undergraduate program that trains teachers of deaf and hard of hearing learners, listed in the American Annals of the Deaf 1996 *Reference Issue*. In all, a total of 34 undergraduate and 50 graduate level teacher preparation programs, in 71 colleges and universities were included in the study.

Eight teacher educators, representing four graduate and four undergraduate deaf and hard of hearing teacher preparation programs, were selected to be interviewed. They were selected based upon whether their respective programs offered relatively more or relatively fewer subject-matter related courses.

Two expert advisors, one deaf and one hearing, were selected based on the positions of leadership they hold and their established interest and involvement in subject-matter related issues.

Procedures

The following is a description of the three phases of the study including instrument design, data collection and data analysis.

Phase I

A letter was sent to all the coordinators of the 50 graduate and 34 undergraduate programs that prepare teachers of deaf and hard of hearing learners listed in the American Annals of the Deaf 1996 Reference Issue. In the letter a request was made for (a) listing of the sequence of subject-matter related courses required for students, (b) course descriptions, (c) policy book stating eligibility and other requirements for students, and (d) program description. The purpose for requesting these materials was to obtain general information on the state of subject-matter preparation and to assist in developing the survey instrument.

A survey (See Appendix A) was sent to the program head/coordinator of every graduate and undergraduate deaf and hard of hearing teacher preparation program. The purpose of the survey was to gather the following: (a) demographic details regarding program size and organization, (b) beliefs regarding the importance of various competencies for teachers of the deaf and hard of hearing, (c) entry and exit requirements for subject-matter coursework, (d) in-program subject-matter requirements, (e) assessment procedures for subject-matter, (f) faculty involvement with subject-matter, and (g) faculty professional belief statements. The survey also included two open-ended questions that sought information on the barriers and facilitators to preparing subject-matter competent teachers of deaf and hard of hearing learners.

Survey Instrument Design

Survey items were developed following a review of the literature that pertains to the subject-matter preparation of teachers in general education; a review of program materials; test bulletins; and consultations with teacher educators and deafness experts. Five separate revisions of structure and content were performed.

In order to establish face reliability, content and face validity of the survey instrument (Gay, 1987), the survey was reviewed by 6 teacher educators from the field of deaf and hard of hearing education. Questions, formats and scales were subsequently modified and revised. Final approval for the survey was received from a member of the dissertation committee and the chairperson.

The surveys, along with a cover letter explaining the purpose of the survey was mailed to programs on April 5, 1997. A second mailing was done 10 days later, on April 15, 1997. This was followed by a third mailing two weeks later, to programs which had not responded.

Phase II

Interviews were used to gather in-depth data beyond that provided by the surveys. A good study seeks to understand the reason behind the responses to the survey questions (Settle, & Alreck, 1995). Interviews offer an opportunity to clarify previously unclear items from the survey.

Following an analysis of the data received from the survey, eight programs (four graduate and four undergraduate) were selected for further interviews. These eight programs were selected because they had relatively higher or relatively lower amount of

subject-matter related coursework in their programs of study. This determination was based on the responses of programs to questions #8 and #10 on the survey. Question #8 asked programs to identify the areas in which pre-requisite coursework was required in their programs, along with the number of credit hours required in each identified subject-matter area. Question #10 referred to 'in-program' subject-matter and methods course requirements, including the number of credit hours required in each area. Of the four graduate programs selected, two indicated relatively lower subject-matter requirements and two had relatively higher subject-matter requirements for their students. Similarly, of the four undergraduate programs selected, two programs indicated relatively lower subject-matter requirements while the other two had relatively higher subject-matter requirements in their programs of study.

Interviews with Program Coordinators

A letter of introduction was sent to the eight program coordinators, detailing the purpose of the study and the purpose for the interview. Follow-up calls were made to the individuals to confirm consent for participation in the interviews. Questions regarding expectations and time commitments were clarified during conversation. Consent forms were mailed for signatures. Six interviews were conducted over the telephone and two were conducted on the TTY. All the telephone interviews were transcribed. The TTY conversations printed out as a hard copy.

Phase III

In order to obtain an insight into what teacher educators in the field were reporting regarding the subject-matter preparation of teachers of deaf and hard of hearing learners,

findings from the content analysis conducted on data obtained from the eight interviews with program heads/coordinators and data from the survey were summarized and presented to two professionals in the field. Both expert consultants, one deaf and one hearing, hold leadership positions in the field of deaf and hard of hearing education and have an established interest in the subject-matter preparation of teachers.

A direct, face to face interview was conducted with the two experts. The interview was conducted in sign language and videotaped by a graduate assistant. The interview was transcribed by the researcher. Accuracy of the transcription was reviewed by a deaf adult who is a native signer. The transcripts were sent to the two experts for their review, prior to the analysis.

Data Analysis

Fifty-eight out of eighty-two surveys were received, resulting in an overall response rate of 70.7 percent. Data was processed using "SPSS for Windows" software. Descriptive statistics were summarized (frequency counts and measures of central tendency) for the quantitative survey items. A problem that occurred with two survey questions was that respondents rated items instead of ranking them as the directions had instructed. To convert rating scores to ranks, the researcher first took the highest rating and assigned it to the highest ranking and continued to work down the various ranks. When tied ratings were encountered, rankings were averaged out and average ranks were assigned to them. This was to force individuals to use the whole distribution of ranks.

A content analysis was conducted on the open-ended survey questions and the interviews with the program coordinators and the experts. Schwandt (1997) describes

constant comparative analysis as the ongoing review of data to form categories.

Indicators from the data were identified for similarities and differences. From this process, the researcher identified underlying uniformities in the indicators and produced a coded concept or category. Categories were compared with indicators and within each other to sharpen the categories and define their properties.

Glaser and Strauss suggest four states of constant comparative analysis:

1. items applicable to each category were compared. While coding, ideas were compared which developed within a category with those that previously arose in the same category.
2. categories and their properties were integrated. From comparing items with other items, the researcher then compared items with the properties of the category.
3. while comparing and linking categories, patterns were found in the categories which aided in the formulation of theory.
4. theoretical notes were collated which were in a category, summarized, and major themes were established.

Inter-rater agreement will be established with the Chairperson of the doctoral committee.

Limitations

Limitations of the scope and design of this study include:

1. Self-Reported Data A disadvantage of the survey instrument lies in the fact that the data gathered was dependent largely on the person responding to the questions and his/her perception of the questions and perspective of the situation. A subject's true response may not also have been listed among the alternatives provided.
2. Misinterpretations It is possible that individuals may have misunderstood some questions, due to the way they were worded. Definitions for terms were not included in the survey and this may have caused different individuals to understand different words differently.
3. Bias It is possible that individuals responded to certain items in a way that would reflect themselves and their programs positively.

Although the above limitations exist, none of them have had a significant impact on the study.

CHAPTER IV

RESULTS

This chapter describes and summarizes responses to the surveys sent to teacher preparation programs in the United States. The first mailing of surveys was conducted on April 5, 1997. The initial return included 18 surveys from graduate level programs and 8 from undergraduate teacher preparation programs. A second mailing was conducted 10 days later, with 16 surveys returned by graduate level programs and 7 by undergraduate programs. Personal contact, via telephone and e-mail, was made by the researcher with the programs that did not respond to both mailings. A third mailing followed two weeks later. Ultimately, the sample for this study included 78 percent of the graduate level teacher preparation programs and 59 percent of the undergraduate programs. The receipt of surveys is summarized in Table 4.1. Fifty-eight out of eighty-two surveys were received, resulting in an overall response rate of 70.7 percent. The number of valid responses for each question in the survey may vary from each other because all respondents did not respond to every question. The varying numbers of responses may influence the interpretation of results presented.

Table 4.1Survey Response Rate

	First mailing	Second mailing	Third mailing	Total number sent	Number received	Percentage of returns
Graduate surveys received	18	16	5	50	39	78
Undergraduate surveys received	8	9	2	32	19	59
Graduate and undergraduate surveys received	26	25	7	82	58	71

The respondents were not clustered by size or geographical location. Results of the survey from graduate and undergraduate programs are discussed separately. Graduate survey results are presented first, followed by results of the undergraduate level program surveys.

Graduate Survey Results

Table 4.2 describes the size of deaf education teacher preparation programs based on the number of students who graduated in the 1995-96 year and the number of faculty employed in programs across the country, whose primary responsibility is working in deaf education.

Table 4.2Program Size

	# of faculty															
	1	2	3	4	6	7	17									
# of programs	4	12	9	3	1	1	1									
Range	1-17															
Median	2															
Mean	2.49															
	# of students															
	0	1	2	3	5	6	7	8	10	11	12	14	15	25	27	67
# of programs	4	1	1	2	8	4	3	2	3	1	2	2	1	2	1	1
Range	0-67															
Median	6															
Mean	9.5															

The organization of programs, indicating their geographical location and whether they are state approved, is shown in Table 4.3.

Table 4.3

Program Organization

Program Organization	Number of Programs
Semester	35
Quarter	4
State Approved	
Yes	38
No	1
Geographic Location	
North East	7
Mid West	10
South	12
West	10

In evaluating the importance of subject-matter against nine other competencies considered important for teachers, subject-matter appeared to have neither a very high or low ranking. On a scale of 1-10, where 1='most important' and 10='least important', respondents were asked to rank order the importance of various factors according to their perceived importance for teachers. Despite being asked to rank order the ten competencies according to their perceived importance, many respondents assigned the same rating to several items. Median scores were calculated to reflect this type of response.

The number of respondents who awarded the top ranking ('most important') to

each competency is shown in Table 4.4. The highest number of individuals (32 percent) indicated that *Teaching Methods* was most important. *English Literacy* received second place with 19 percent of the respondents giving it the highest ranking. This was followed by *ASL Fluency* (17 percent of respondents) and *Subject-Matter* in fourth place with 13 percent of the respondents stating that it was the most important competency for teachers to possess. *Deaf Culture* alone was not ranked as ‘most important’ by any of the respondents.

Table 4.4

Number of Individuals Rating Each Competency as ‘Most Important’

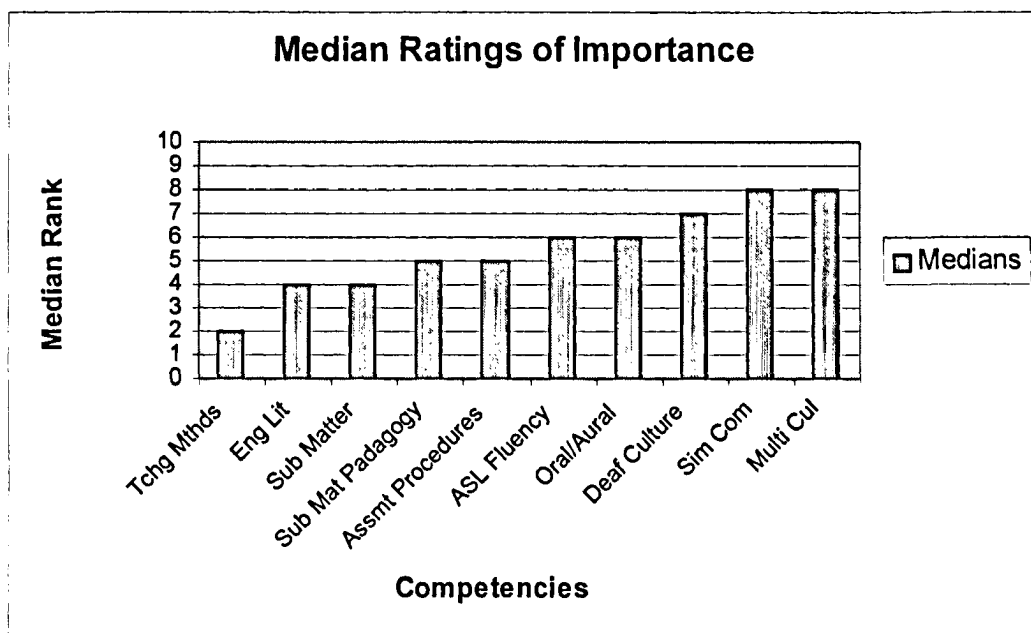
Competencies	Individuals who rated it #1	
	#	%
Teaching Methods	10	32
English Literacy	6	19
ASL	5	17
Subject-Matter Knowledge	4	13
Oral/Aural Competencies	2	7
Multicultural Awareness	1	3
Simultaneous Communication	1	3
Assessment Procedures	1	3
Subject Matter Pedagogy	1	3
Deaf Culture	0	0

As shown in Figure 4.1, the number one rankings, for the most part, are also reflected in the median rank computed for each factor. *Teaching Methods* (median=2; mean=2.94) and *English Literacy* (median=4; mean=4.05) have the highest median ranks.

ASL Fluency and *Oral/Aural Competencies* drop from third and fifth place (see table 4.4) to sixth and seventh place. *Multicultural Awareness* and *Simultaneous Communication* also drop in importance. The median ranking for *Deaf Culture* improved a little and held the eighth rank (median=7; mean=6.61).

Median Ratings of Importance for Each Competency

Figure 4.1



Subject-matter was ranked very highly in a series of statements which reflected the professional beliefs of respondents. Table 4.5 summarizes the results of the ranking of 4 such statements that refer to the importance of competence in subject-matter. On a scale of 1 - 7 with 1 = 'strongly disagree' and 7 = 'strongly agree', respondents were asked to indicate the degree to which they agreed or disagreed with a list of four professional belief statements. Though *subject-matter* received only the fourth and third ranks (see tables 4.4 and Figure 4.1 respectively) in a ranking of relative importance, a high median ranking

here of 6 (mean=5.23) supports the regard for subject-matter and the belief that the subject matter training of teachers of the deaf and hard of hearing should be equivalent to that of teachers of hearing students. In fact, a low median ranking of 2 (mean=2.52) shows that respondents clearly disagreed that competence in subject-matter for teachers of the deaf could not be expected because of the low incidence of the deaf and hard of hearing population. This rating is consistent with the median ranking of 5 (mean=4.72) indicating agreement that teachers of the deaf should have regular education credentials prior to enrolling in a teacher education program. With a median ranking of 4 (mean=3.58), it was less clear if respondents believed that the Council on Education of the Deaf (CED) should take a leadership role in specifying the subject-matter competencies necessary for certification.

Table 4.5Professional Belief Statements

Professional Belief Statements	Strongly Disagree		Neutral			Strongly Agree		Median	Mean
	1	2	3	4	5	6	7		
The subject-matter training of teachers of the deaf and hard of hearing should be the same as that of teachers of hearing students (n=38)	8	8	3	8	13	23	37	6	5.23
Teachers of the deaf and hard of hearing should have regular education credentials prior to enrolling in our program (n=38)	8	13	6	21	8	12	32	5	4.72
The Council on Education of the Deaf (CED) should specify, by age and specialization taught, the necessary competencies for certification (n=36)	19	11	11	25	22	6	6	4	3.58
It is not practical in a low incidence population to require subject-matter competence in teachers (n=38)	47	18	3	14	8	5	5	2	2.52

By and large, teacher preparation programs appear to train their students to work primarily in *self-contained classroom* settings. Table 4.6 shows the various roles/environments for which pre-service teachers are prepared. On a scale of 1-6, with 1 = 'most frequently' and 6 = 'least frequently', programs were asked to indicate, based on the teaching positions most or least frequently assumed by their graduates, the school placement/environment for which they primarily prepared their students. Despite being asked to rank order the six roles according to the ones for which programs prepared their students, several respondents assigned the same rating to several items. Median scores were calculated to reflect this type of response. The number of respondents who awarded

the top ranking ('most important') to each role is shown in Figure 4.6. Over half of the respondents (59 percent) assigned the top rank to *self-contained classrooms*, indicating that it was clearly the primary placement for which students were prepared.

Comparatively, only 6 or fewer respondents indicated that the remaining placement options was the primary one for which students were prepared.

Table 4.6

Primary Roles for which Graduate Programs Prepare Their Students

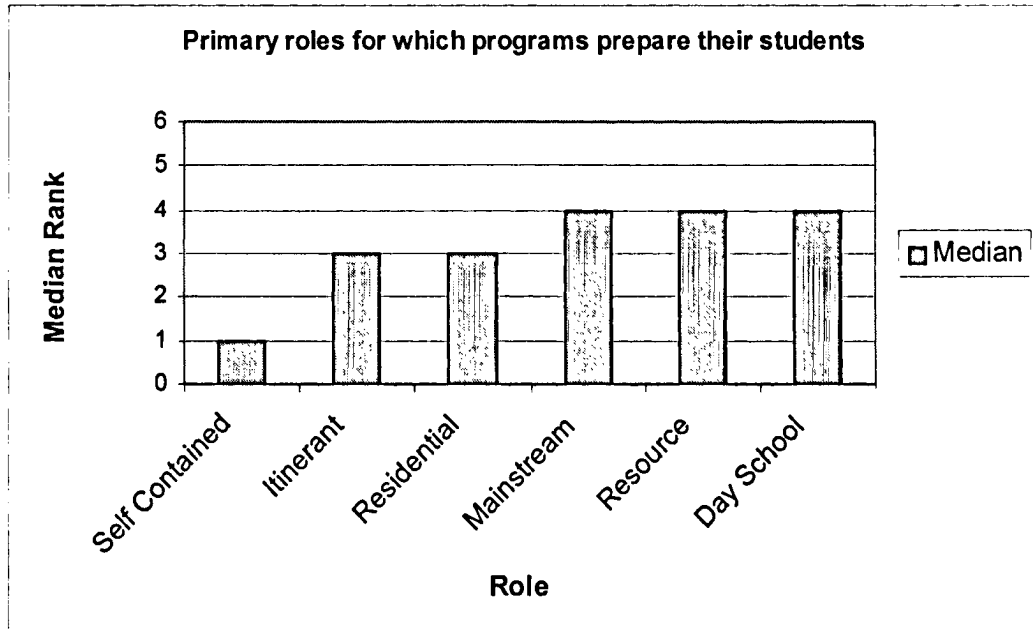
Role	Programs that rated this #1	
	#	Percentage
Self contained	22	59
Residential	6	15
Resource	4	10
Mainstream	3	7
Itinerant	3	7
Day school	1	2
		n=37

As shown in Figure 4.2, the number one rankings, for the most part, are also reflected in the median rank computed for each factor. Of the mean ranks assigned to various placements, self contained classrooms lead the others with a median ranking of 1 (mean=1.82). The median ranking for the *Itinerant* role (median=3; mean=3.35) improved from fifth place to share second place with *Residential School* (median=3; mean=3.66). *Mainstream* settings continued to hold the fourth place with a median of 4 (mean=3.87). *Resource Room* settings dropped from third to fifth place (median=4;

mean=3.94). Finally the role for which programs least geared their preparation towards was for *Day School* settings, with a median of 4 (mean=3.98).

Median Ratings of Importance for Each Factor

Figure 4.2



Of the different ways to assess the subject-matter competence of new students, the use of *transcripts* was most popular. Table 4.7 summarizes the ways in which teacher preparation programs ensure that incoming students have at least basic subject-matter competence. One program reported that it used all the factors mentioned to assess the subject matter competence of new students; 5 (13 percent) of the total number of respondents reported using at least 5 of the measures. More than half the respondents (51 percent) indicated that they used at least 3 different measures to assess the subject-matter competence of incoming students; 2 programs used only one measure and 1 program

indicated that it did not use any particular measure to assess the subject matter competence of entering students. *Transcripts* were reportedly used by the largest number (92 percent) of programs as a way to assess the subject-matter competence of incoming students. Over half of the respondents reported using each of the above measures except for the *General Knowledge Test on the NTE* (43 percent) and the *Multiple Subjects Assessment* or *MSAT test* (18 percent). In addition, 3 programs reported the use of state specific Basic Skills Tests; 1 program considered Grade Point Averages of at least 3.0; and 4 programs reported using scores from the Millers Analogies Test.

Table 4.7

Subject-Matter Assessment of New Students

Assessment of subject-matter competence	# of programs indicating 'yes'	% of programs
Transcripts (n=36)	33	92
Degree in subject matter area (n=37)	30	81
Graduate Record Exam (GRE)(n=35)	21	60
Prior teaching experience in subject matter area (n=33)	19	58
General Knowledge Test on the NTE (n=28)	12	43
Multiple Subjects Assessment (MSAT) (n=28)	5	18
Other (n=12)	9	75

Pre-requisite coursework was required by many programs in order to assess the subject-matter competence of incoming students. Coursework in *English (Reading/Writing)* and *Math* was most frequently reported. Table 4.8 presents a summary of the various pre-requisites including the number of credit hours required within each subject-matter area. Pre-requisite coursework in *Math* was reported by 80 percent of the programs and 79 percent of programs said they required pre-requisite work in *English*. *Science* and *Social Studies* was third and fourth with 71 percent and 68 percent of programs respectively indicating that they required pre-requisite coursework in the two areas. All respondents did not report the specific credit hour requirements. Of those that did, credits required in the various subject-matter areas ranged from 2 to 24 credit hours with a mean of 8 credit hours in each area. *Literature* alone had a lower range of credit hour requirements (2 to 6 credit hours) with a mean of 3 credit hours.

Table 4.8

Subject-Matter Pre-requisites to Assess Competency of Incoming Students

Subject-matter areas	Number of programs (N)	Programs that required pre-requisites		Programs that reported the number of credits required		Number of credits required		
		#	%	#	%	Min	Max	Mean
Math	31	25	80	17	55	2	24	5
English: Rdg/Wrtg	29	23	79	15	52	3	24	8
Science	28	20	71	12	43	2	24	8
Social Studies	28	19	68	11	39	2	24	8
Literature	25	15	60	8	32	2	6	3

Overall, programs indicated that curriculum decisions regarding subject-matter was largely made by subject-matter area faculty members. Most of the *methods* related coursework, at both the elementary and secondary levels, was reported to be in the areas of English (Reading/Writing) and Math. Overall, subject-matter requirements at the elementary level exceeded that at the secondary level. Programs differed in the licensure exams that students were required to take. Praxis I was more commonly taken than Praxis II and III. State specific tests were also reported. Tables 4.9, 4.10, 4.11, 4.12 and 4.13 illustrate how decisions regarding subject-matter requirements are made within teacher preparation programs. These tables also describe the various requirements of programs as pertains to subject-matter.

Table 4.9 indicates who or what has primary responsibility in deciding the subject-matter competencies (if any) necessary for teachers of deaf and hard of hearing students. The largest number of respondents (92 percent) indicated that decisions were largely made by faculty members responsible for specific subject-matter areas. Respondents also mentioned that subject-matter decisions were made by program faculty, advisory committees and principals from schools for the deaf.

Table 4.9Decision Making Regarding Subject-Matter

Primary responsibility for making subject-matter related decisions	Respondents that indicated "yes"	
	#	%
Faculty responsible for specific subject-matter area (n=37)	34	92
State Department of Education (n=35)	29	83
Department Curriculum Committee (n=35)	15	43
Other (n=12)	9	75

Programs were asked whether their students were required to choose an age group within which to train. The results to this question is presented in Table 4.10. Over half (58 percent) of the programs indicated that they did indeed require their students to focus on a specific age group.

Table 4.10Choice of Age-Specific Specialization

Students must choose to specialize with a specific age group		
	#	%
Yes	22	58
n=38		

The subject-matter areas in which methods courses were required for both elementary and secondary major students is shown in Table 4.11. At both the elementary and secondary levels, the largest number of programs specified *methods* requirements in *English (Reading and Writing)* and *Math*. This included 94% of the valid respondents for

English and 84 percent for *Math* at the elementary level and 89 percent for *English* and 63 percent for *Math* at the secondary level. The general number of credit hours required in each subject-matter area, at both levels, ranged from 1-6 with a mean requirement of 2 credit hours. *English (Reading/Writing)* alone required a greater number of hours at both levels, with a mean of 7 credit hours at the elementary level and 4 credit hours at the secondary level.

Table 4.11

Required Methods Courses

Subject-Matter Areas	# of programs (N)		Percentage of programs requiring methods courses		Percentage of programs that reported credits		Total number of credits required					
							Min		Max		Mean	
							Ele	Sec	Ele	Sec	Ele	Sec
English: Rdg/Writing	32	19	94	89	78	68	1.5	1.5	24	9	7	4
Math	31	16	84	63	61	44	1	1	6	6	3	2
Science	29	15	76	53	59	33	0.5	0.5	6	6	2	2
Social Studies	26	15	73	53	54	33	0.5	0.5	6	6	2	2

Of the valid responses at the secondary level, 14 (70 percent) of the respondents indicated that their students were required to select a specific subject-matter concentration area. Programs were also asked whether secondary major students were required to have a degree in the subject matter area (s) in which they will teach in the future. Less than half

(47 percent) indicated that this was a requirement.

Respondents were asked to indicate the licensure exams that their pre-service teachers were required take. The results are summarized in Table 4.12. Also indicated is whether or not students must pass these exams prior to graduation or prior to certification/licensure. The *Praxis I (PPST)* test was most commonly required by programs. An average of 58 percent of programs required pre-service teachers to take the *PPST* series of tests including reading, writing and math. Fewer programs required students to take subject-matter specific sub-tests of the *Praxis II* exam. The sub-test most frequently taken under *Praxis II* was *Teaching Deaf and Hard of Hearing*, with 37 percent of the respondents indicating that this was a requirement for their students. Seventeen percent of the programs required the *Special Education* sub-test and only one program required the *Audiology* sub-test. None of the other sub-tests was required under *Praxis II*. Five programs required state specific competency tests. The CBEST, MSAT, core battery of the NTE, LAST (Liberal Arts and Science Test), Content Speciality Test (CST) and Assessment of Teaching Skills-Writing (ATS-W) were other tests that programs required. Two programs required the performance assessment test of *Praxis III*. Eight programs indicated that students must pass these exams before graduating, and 23 programs stated that students had to pass these exams before they could seek certification/licensure.

Table 4.12Licensure Exams

Required licensure exams for pre-service teachers	N	Percentage of programs that required tests
PRAXIS I (PPST)		
Reading	26	58
Writing	26	58
Math	26	58
PRAXIS II (NTE)		
Teaching deaf and hard of hearing	27	37
Special Education	23	17
Audiology	20	5
Biology and General Science	20	0
English Language/Literature	20	0
Mathematics	20	0
Speech Language Pathology	20	0
PRAXIS III (Performance Assessment)	22	9
Students must pass these exams:		
before certification/licensure	30	77
before graduation	23	35

Tables 4.13 through 4.17 summarize the results of a series of items that suggested ways in which subject-matter issues may be addressed within teacher preparation programs. Respondents were presented with several different ways of addressing subject-matter and asked to indicate the importance of each practice and the frequency of its implementation, separately. In Table 4.13, the highest percentage of responses showed a direct relationship between the importance of a factor to a respondent and the frequency with which it was practiced in the program. The highest agreement (importance = frequency) was found with regard to addressing subject matter by *discussions during*

student teaching (81 percent of responses). Where importance did not match frequency, it often exceeded it. This was true of all practices in this category except *required course work* where more respondents (15 percent) indicated that they implemented subject-matter related coursework requirements in their programs despite not believing as strongly in the importance for its inclusion (5 percent). Respondents identified other ways of addressing subject matter including integration of subject-matter topics with deaf education methods courses, independent research in subject-matter areas, masters level projects and by means of curriculum development related coursework.

Table 4.13Ways of Addressing Subject-Matter in Programs

Ways to address subject matter	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Discussions at field placements	72%	21%	7%
Required course work	80%	5%	15%
Subject matter seminars	76%	16%	8%
Discussions during student teaching	81%	19%	0%

Well over half of the responses show high agreement between the importance of a practice and its application. This is demonstrated in Table 4.14. Seventy-eight percent of respondents pointed out that student teaching was an important time for assessing the subject-matter knowledge of students. Importance exceeded frequency in all of the practices in this category. Additional ways of assessing subject matter included the use of comprehensive exams, transcripts of prior arts and science courses, child assessment courses, research projects, use of journals and class participation, classroom ethnography, and evaluations from mentor teachers.

Table 4.14Ways of Addressing Subject-Matter in Programs

Ways to address subject matter	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Quizzes and tests	61%	25%	14%
Classroom projects	62%	31%	7%
Face to face conferences	50%	39%	11%
Student teaching	78%	15%	7%
Portfolios	58%	27%	15%

As shown in Table 4.15, there is high agreement at both the elementary (96 percent) and secondary (83 percent) levels that the subject matter competence of supervising faculty was something that should be considered when assigning faculty to supervise student teaching assignments. Programs indicated that they did take this into consideration when planning for supervision activities.

Table 4.15Ways of Addressing Subject-Matter (Consideration of Supervising Faculty's Subject-Matter Backgrounds)

Ways to address subject matter (Subject-matter competence of university faculty is considered for student teaching supervision)	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Elementary level	96%	0%	4%
Secondary level	83%	6%	11%

Eighty-five percent of the respondents at the elementary level and 82 percent at the secondary level believed that it was important to consider the subject-matter specialization of student teachers when deciding practicum/student teaching placements. Table 4.16 also demonstrates that belief in the importance of this practice exceeded the frequency of its actual implementation and use in programs, at both the elementary and secondary levels. No respondents ranked frequency higher than importance.

Table 4.16

Ways of Addressing Subject-Matter (Consideration of Student Teachers' Subject-Matter Specializations)

Ways to address subject matter (student teacher subject matter specializations is considered when deciding practicum/student teaching placements)	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Elementary level	85%	15%	0%
Secondary level	82%	18%	0%

As shown in Table 4.17, almost an equal number of respondents (78 percent at the elementary level and 77 percent at the secondary level) believed that it was important to consider the subject-matter specializations of cooperating teachers when deciding student teacher placements. While most respondents indicated that this was in fact practiced in their programs, a smaller number at both levels did not, despite believing in the importance of the practice.

Table 4.17

Ways of Addressing Subject-Matter (Consideration of Cooperating Teachers' Subject-Matter Backgrounds)

Ways to address subject matter (cooperating teacher subject matter specializations is considered when assigning student teacher placements)	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Elementary level	78%	15%	7%
Secondary level	77%	18%	5%

In questions to programs about how they ensured/maintained the subject-matter competence of their faculty, it was reported that faculty either read journals from various professional subject-matter organizations and/or had degrees in the areas they taught. Table 4.18 summarizes the results of a series of 5 statements that respondents were asked to rate (on a scale of 1 through 7 where 1='least frequently and 7='most frequently') according to how best they described their programs. Most programs reported that their deaf education faculty read professional journals from various subject-matter organizations (median=6; mean=5.34). The second highest median ranking of 5 (mean=4.47) indicated that deaf education faculty frequently held degrees/and or certification in the academic subjects taught in the schools and/or attended subject-matter related professional meetings (4.68). Meeting with the liberal arts faculty occurred least frequently, with a comparatively low median ranking of 3 (mean=3).

Table 4.18Ways to Maintain Faculty Subject-Matter Competence

Factor		Least Frequently		In-Between			Most Frequently		Median	Mean
		1	2	3	4	5	6	7		
Read professional journals of subject-matter organizations (n=36)	#	1	1	2	5	5	13	8	6	5.34
	%	3	3	6	16	14	36	22		
Have degrees and/or certification in academic subjects taught in the schools (n=38)	#	8	4	1	4	2	8	11	5	4.47
	%	21	11	3	11	5	21	28		
Attend subject-matter related professional meetings (n=36)	#	2	3	1	11	5	7	6	5	4.68
	%	6	8	3	33	14	19	17		
Attend conferences of subject-matter organizations (n=37)	#	3	4	2	10	3	10	4	4	4.44
	%	8	11	5	30	8	27	11		
Meet regularly with the liberal arts faculty (n=36)	#	10	8	4	6	3	4	1	2	3
	%	28	22	11	17	8	11	3		

Undergraduate Program Survey Results

As with the graduate level programs, the undergraduate programs presented here are representative of the number, size and geographical location of deaf education teacher preparation programs across the United States. Table 4.19 describes the size of deaf education teacher preparation programs with 2 being the median number of faculty members whose primary responsibility is working in deaf education and 12 being the median number of students who graduated in the 1995-96 year.

Table 4.19

Program Size

	# of faculty												
	1	2	3	4	8	10							
# of programs	6	6	4	1	1	1							
Range	1-10												
Median	2												
Mean	2.7												
	# of students												
	0	5	7	8	9	10	12	13	15	20	23	25	33
# of programs	1	1	2	1	1	2	2	2	2	1	1	1	1
Range	0-33												
Median	12												
Mean	13												

Table 4.20 shows the organization of programs and describes their geographical location.

Table 4.20

Program Organization

Program Organization	Number of Programs
Semester	19
Quarter	0
State Approved	
Yes	18
No	1
Geographic Location	
North East	3
Mid West	5
South	11
West	0

Respondents were asked to rank order their perception of the importance of 10 competencies according to their significance for teachers of deaf and hard of hearing students. Despite being asked to rank order the competencies according to their perceived importance, where 1='most important' and 10='least important', some respondents gave the same rating to several items.

The number of undergraduate program individuals who rated each of the 10 competencies as 'most important' is shown in Table 4.21. The highest number of individuals rated both *Teaching Methods* (31 percent) and *Subject-Matter Knowledge* (31 percent) as being most important for teachers of deaf and hard of hearing students.

Assessment Procedures received second place with 13 percent of the respondents giving it the highest rating. *Subject-matter Pedagogy, Simultaneous Communication, ASL and Oral/Aural Competencies* were all rated equally low with only 6 percent of the respondents stating that these were important competencies for teachers of deaf and hard of hearing students to possess. Three competencies, including *English Print Literacy, Knowledge of Deaf Culture, and Multicultural Awareness* were not ranked by any of the respondents as being ‘most important’ for teachers of deaf and hard of hearing students.

Table 4.21

Number of Individuals Rating Each Competency as ‘Most Important’

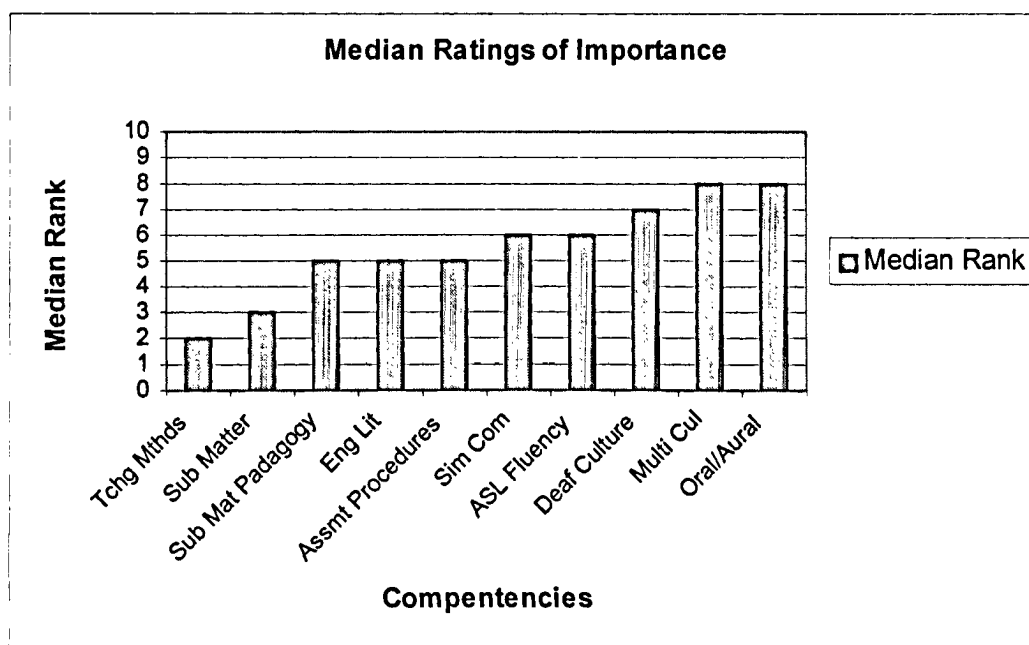
Competencies	Individuals who rated it #1	
	#	%
Teaching Methods	5	31
Subject-Matter Knowledge	5	31
Assessment Procedures	2	13
Subject Matter Pedagogy	1	6
Simultaneous Communication	1	6
ASL	1	6
Oral/Aural Competencies	1	6
English Print Literacy	0	0
Knowledge of Deaf Culture	0	0
Multicultural Awareness	0	0

Median scores calculated for each factor in order to reflect the type of response where respondents assigned the same ranking to each competency, are displayed in Figure 4.3. *Teaching Methods* (median=2; mean=2.61) and *Subject-matter Knowledge*

(median=3; mean=3.08) continue to have the highest mean ranking. *Assessment Procedures* drops from third place to fifth place with a median ranking of 5 (mean=5.21) and *Oral/Aural Competencies* and *Multicultural Awareness* received the lowest ranking of all the competencies (medians of 8). *English Print Literacy* that was not rated as 'most important' by any of the respondents in Table 4.21 now receives fourth place with a median of 5 and a mean ranking of 4.74.

Figure 4.3

Median Ratings of Importance for Each Factor



In a series of four statements that attempted to ascertain the professional beliefs of respondents, subject-matter was reported as an important competency for teachers of deaf and hard of hearing students. Table 4.22 summarizes the professional belief statements of those who responded to the survey. On a scale of 1-7, with 1='strongly disagree' and 7='strongly agree', respondents were asked to indicate the degree to which they agreed or disagreed with a list of four professional belief statements. A

high median ranking of 6 supported the belief that the subject-matter training of teachers of deaf and hard of hearing students should be the same as that of hearing students. This was consistent with the high ranking that was given to subject-matter in Tables 4.21 and Figure 4.3. In fact, a low median ranking of 1 showed that respondents clearly disagreed that competence in subject-matter for teachers of the deaf and hard of hearing could not be expected just because of the low incidence of the deaf and hard of hearing population. With a median of 4, respondents however were less sure of whether teachers of the deaf and hard of hearing should have regular education credentials prior to enrolling in the deaf education teacher preparation program. A median of 5 indicated that the significance of the role of the Council on Education of the Deaf (CED) in determining subject-matter standards was clearer among the respondents of undergraduate programs than graduate program respondents.

Table 4.22Professional Belief Statements

Professional Belief Statements	Strongly Disagree		Neutral			Strongly Agree		Median	Mean
	1	2	3	4	5	6	7		
The subject-matter training of teachers of the deaf and hard of hearing should be the same as that of teachers of hearing students (n=19)	0	5	0	11	16	37	31	6	5.73
Teachers of the deaf and hard of hearing should have regular education credentials prior to enrolling in our program (n=19)	16	11	16	21	10	10	16	4	3.94
The Council on Education of the Deaf (CED) should specify, by age and specialization taught, the necessary competencies for certification (n=19)	11	5	5	26	21	21	11	5	4.47
It is not practical in a low incidence population to require subject-matter competence in teachers (n=19)	63	16	0	11	5	0	5	1	2

Most teacher preparation undergraduate programs appear to prepare their students to work primarily in *self-contained* classroom settings. Table 4.23 shows the roles most frequently assumed by graduates following their preparation at programs across the country. On a scale of 1-6, with 1 indicating ‘most frequently’ and 6 indicating ‘least frequently’, programs were asked to indicate, based on the teaching positions most or least frequently assumed by their graduates, the school placement/environment for which they primarily prepare their students. Over half of the respondents (63 percent) indicated that they prepared their students primarily to work in self-contained classrooms. A much smaller number of 3 programs (17 percent) indicated that they primarily prepared their students for itinerant teacher roles.

Only one program each indicated that students were primarily prepared to work in resource rooms, residential, mainstream or day school settings.

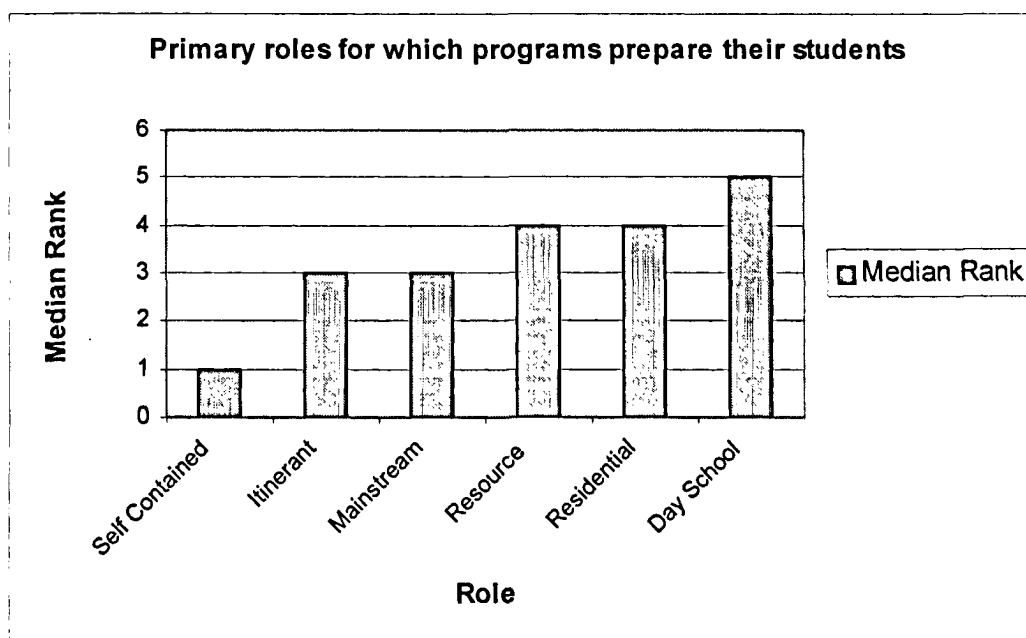
Table 4.23

Primary Roles for Which Programs Prepare Their Students

Role	Programs that rated this #1	
	#	Percentage
Self contained	12	63
Residential	3	17
Resource	1	5
Mainstream	1	5
Itinerant	1	5
Day school	1	5
		n=19

Median ranks were also computed in order to show the number one rankings (Figure 4.4). *Self-Contained* classrooms continued to lead the others with a median of 1 (mean=2.07). The *Itinerant* role improved to hold second place with a median of 3 (mean=3.23). *Residential* school settings (median=4; mean=3.60) dropped from second place to share the fourth place with *Resource* rooms (median=4; mean=3.60). *Day schools* was the placement for which students were least prepared (median=5; mean=4.5).

Figure 4.4

Median Ratings of Importance for Each Factor

The use of *Transcripts* was reported by the highest number of programs as the primary means of assessing the subject-matter competence of new students. Table 4.24 presents a summary of the ways in which teacher preparation programs attempted to ensure that new students had at least basic subject-matter knowledge. With the exception of two programs, respondents reported the use of at least one measure to screen new students. *Transcripts* were used by the largest number of programs (14 programs or 78 percent). In second place was the use of the *General Knowledge Test on the NTE* with 26 percent (5 programs) indicating that they used this as a screening measure. Of the programs that reported the use of the NTE, none reported the actual scores required. Two programs indicated that they did not use any measure to assess the subject-matter competence of new students. A little under half the programs (9) indicated that they used more than one screening measure. In addition, other programs reported the use of the Texas Assessment of Skill

Proficiencies Exam (TASP); the Basic Skills Test; the CLAST; the ACT; the SAT and interviews to screen prospective students.

Table 4.24

Subject-Matter Assessment of New Students

Assessment of subject-matter competence	# of programs that indicated 'yes'	% of programs
Transcripts (n=18)	14	78
General Knowledge Test on the NTE (n=16)	5	26
Multiple Subjects Assessment (MSAT) (n=14)	1	7
Other (n=14)	8	57

Several undergraduate programs required that students have at least some subject-matter course work prior to entering the teacher preparation program. Table 4.25 shows the areas in which course work is required and the number of pre-requisite credits required in each area. Four respondents indicated that no pre-requisite course work was required for entry to the program. *Math*, *English (Reading/Writing)* and *Science* were reported most frequently, with 82 percent of the programs reporting that course work was required in these areas. This was followed by *Literature* (80 percent of programs) and *Social Studies* pre-requisites was reported by 71 percent of the programs. Specific credit requirements was not reported by all the respondents. Of those that did report the credit hour requirements, 3-12 credits were required in *Math* (mean of 5.88), 6-12 credits in *English (Reading/Writing)*; mean of 7.50), and 3-15 in *Science* (mean of 8.58). *Social Studies* had a higher range with credit requirements ranging from 3-21 hours with a mean of 9 credit hours. *Literature* had a lower range

of credit requirements (3-6) with a mean of 4 credit hours.

Table 4.25

Subject-Matter Pre-requisites

Subject-matter areas	Number of programs (N)	Programs that require pre-requisites		Programs that reported how many credits are required		Number of credits required		
		#	%	#	%	Min	Max	Mean
		#	%	#	%			
Math	17	14	82	12	71	3	12	5.88
English: Rdg/Wrtg	17	14	82	12	71	6	12	7.50
Science	17	14	82	12	71	3	15	8.58
Social Studies	17	14	71	11	65	3	21	9
Literature	15	12	80	10	67	3	6	4.20

Respondents were asked to indicate who made decisions regarding subject-matter for their programs. Table 4.26 shows that the largest number of programs (82 percent) indicated that curriculum decisions around subject-matter competencies necessary for teachers of deaf and hard of hearing students was made by the faculty responsible for specific subject-matter areas. Seventy-eight percent of the respondents also reported that decisions regarding subject-matter was made by the deaf education faculty; determined by the Council on Education of the Deaf; and by the employers. Twelve respondents (71 percent) reported that it was their respective state department of education that made these decisions.

Table 4.26Decision Making Regarding Subject-Matter

Primary responsibility for making subject-matter related decisions	Respondents that indicated "yes"	
	#	%
Faculty responsible for specific subject-matter area (n=17)	14	82
State Department of Education (n=17)	12	71
Department Curriculum Committee (n=14)	7	50
Other (n=9)	7	78

The results of the question that asked whether undergraduate programs require students to choose an age group within which to train are presented in Table 4.27. Less than half the programs (42 percent) indicated that they required their students to focus on a specific age group.

Table 4.27Choice of Age-Specific Specialization

Students must choose to specialize with a specific age group		
	#	%
Yes	8	42
n=19		

Required methods and subject-matter courses at the elementary level and required subject-matter courses at the secondary level are presented in Table 4.28. There was a greater number of programs at the elementary than the secondary level that required methods courses in their programs of study. A large number of undergraduate teacher preparation programs indicated that they did not offer

secondary level specialization in their programs. Several (47 percent) of the respondents did not indicate the subject-matter coursework required in their programs. The subject-matter area in which the largest number of programs specified methods requirements, both at the elementary and secondary levels, was *English (Reading/Writing)*. This included all (100 percent) of the valid respondents at the elementary level and secondary levels. Methods courses in *Math, Science and Social Studies* at the elementary level were required by almost the same number of programs with 17 programs requiring Math and 16 programs each requiring Science and Social Studies. At the secondary level, nine out of ten (90 percent) respondents indicated that their programs required methods courses in *Math, Science and Social Studies*. The general number of credit hours required in each subject-matter area, at both levels, ranged from 1-6 with a mean requirement of 3 credit hours. *English (Reading/Writing)* alone required a greater number of hours at both levels, with a mean of 7 hours at the elementary level and 4 hours at the secondary level. *Subject-matter* courses at the elementary level was required by less than half of the programs (47 percent or 9 programs). The general number of credits required in each subject-matter area ranged between 3-12 with a mean of 7 required credits.

Of the valid responses at the secondary level, 8 (42 percent) of the respondents indicated that their students were required to select a specific subject-matter concentration area. Programs were also asked whether secondary major students are required to have a degree in the subject-matter area(s) in which they will teach in the future. Only one respondent indicated that this was indeed a requirement.

Table 4.28

Required Methods and Subject-Matter Courses

Elementary Level (Methods Courses)					
Subject-Matter	Programs that reported credits requirements		Number of credits required		
			Min	Max	Mean
	#	%			
English: Rdg/Wrtg (n=18)	18	100	3	36	7.28
Math (n=18)	17	94	.66	12	3.60
Science (n=18)	16	89	.66	12	3.60
Social Studies (n=16)	16	100	.66	6	2.6
Elementary Level (Subject-Matter Courses)					
Subject-Matter	Programs that reported credit requirements		Number of Credits Required		
			Min	Max	Mean
	#	%			
English: Rdg/Wrtg (n=11)	9	82	3	12	7
Math (n=11)	10	91	3	12	5.20
Science (n=11)	9	82	3	15	8.33
Social Studies (n=11)	9	82	3	12	7.67

Secondary Level							
Subject-Matter	Programs that Require Methods Courses		Programs that Reported Credit Requirements		Number of credits required		
	#	%	#	%	Min	Max	Mean
English: Rdg/Wrtg (n=11)	11	100	11	100	.75	6	3.89
Math (n=10)	9	90	9	90	.66	6	2.60
Science (n=10)	9	90	9	90	.66	6	2.60
Social Studies (n=11)	9	82	9	82	.66	3	2.27

Respondents were asked to indicate the licensure exams their pre-service teachers were required to take and whether they must pass these exams prior to graduation or before certification/licensure. The results are summarized in Table 4.29 and shows that the PRAXIS I (PPST) was the test most commonly required by programs. An average of 56 percent of the programs required their pre-service teachers to take the Reading; Writing; and Math sections of the PPST test. Considerably fewer numbers of programs required their students to take the PRAXIS II tests. In fact only 2 sub-tests were even mentioned; *Teaching Deaf and Hard of Hearing* sub-test required by 7 programs (41 percent) and the *Special Education* sub-test required by 1 program. Two respondents indicated that their programs required the tests stipulated by the state and one program indicated that it's students had to take the state administered EXCET test. The largest number of programs (16; 88 percent) indicated that students must pass these exams prior to seeking certification/licensure and 6 (46 percent) programs indicated that these tests were required prior to graduating from the program.

Table 4.29

Licensure Exams

Required Licensure Exams for Pre-Service Teachers	N	Percentage of programs that required tests
PRAXIS I (PPST)		
Reading	16	56
Writing	16	56
Math	16	56
PRAXIS II (NTE)		
Teaching deaf and hard of hearing	17	41
Special Education	13	8
Audiology	12	0
Biology and General Science	12	0
English Language/Literature	12	0
Mathematics	12	0
Speech Language Pathology	13	0
PRAXIS III (Performance Assessment)	12	17
Students must pass these exams:		
before certification/licensure	18	88
before graduation	13	46

Respondents from undergraduate programs were presented with a series of items that suggested various ways for addressing subject-matter. They were asked to indicate the importance of each practice and the frequency of it's implementation, separately, in their programs. Tables 4.30 through 4.34 summarizes the responses to this question. In Table 4.30, the majority of the responses documented a direct relationship between how important a factor was deemed by a respondent and the frequency with which it was practiced in the program. The highest agreement (importance = frequency) was found with regard to addressing subject matter by means of *required course work* and *discussions at field placements* (86 percent of

responses each). Where importance did not match frequency, it always exceeded it.

Table 4.30

Ways of Addressing Subject-Matter in Programs

Ways to address subject matter	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Discussions at field placements	86%	7%	7%
Required course work	86%	7%	7%
Subject matter seminars	72%	21%	7%
Discussions during student teaching	72%	21%	7%

As indicated in Table 4.31, with 73 percent of the valid responses for undergraduate programs, *student teaching* appeared to not only be what individuals regarded an important time to address subject-matter but was in fact the most commonly used means of addressing subject-matter related content with student teachers. When importance did not equal frequency of practice, it exceeded it. One respondent added that subject-matter was addressed in the program during two terms of required practicum work, prior to student teaching.

Table 4.31

Ways of Addressing Subject-Matter in Programs

Ways to address subject matter	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Quizzes and tests	47%	33%	20%
Classroom projects	47%	47%	6%
Face to face conferences	64%	29%	7%
Student teaching	73%	27%	0%
Portfolios	50%	29%	21%

As shown in Table 4.32, there is high agreement at both the elementary (93 percent) and secondary (82 percent) levels that the subject-matter competence of supervising faculty should be considered when making supervisory assignments at the time of student teaching. Programs indicated that they did take this into consideration when planning for supervision activities.

Table 4.32

Ways of Addressing Subject-Matter in Programs (Consideration of Supervising Faculty's Subject-Matter Backgrounds)

Ways to address subject matter (Subject-matter competence of university faculty is considered for student teaching supervision)	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Elementary level	93%	7%	0%
Secondary level	82%	18%	0%

Eighty percent of the respondents at the elementary level and 69 percent at the secondary level believed that it was important to consider the subject matter specialization of student teachers when deciding practicum/student teaching placements. As demonstrated in Table 4.33, frequency of actual application exceeded the value held for the practice, at the elementary level. At the secondary level, the recognition of the importance of allowing student teachers to practice teach in particular subject-matter areas was greater than the actual practice of making such placements possible.

Table 4.33

Ways of Addressing Subject-Matter (Consideration of Student Teachers' Subject-Matter Specializations)

Ways to address subject matter (student teacher subject matter specializations is considered when deciding practicum/student teaching placements)	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Elementary level	80%	6%	14%
Secondary level	69%	23%	8%

Undergraduate programs were asked whether they considered cooperating teachers' subject-matter specializations when assigning student teacher to various placements. Table 4.34 shows that respondents believed and practiced this concept, with 80 percent of valid responses at the elementary level and 69 percent at the secondary level.

Table 4.34

Ways of Addressing Subject-Matter (Consideration of Cooperating Teachers' Subject-Matter Backgrounds)

Ways to address subject matter (cooperating teacher subject matter specializations is considered when assigning student teacher placements)	Importance = Frequency	Importance exceeds Frequency	Frequency exceeds Importance
Elementary level	80%	14%	6%
Secondary level	69%	23%	8%

Coordinators representing undergraduate programs that prepare teachers of the deaf and hard of hearing were asked how their individual programs ensured that departmental faculty were subject-matter competent. It was reported that faculty

members either held degrees/certification in the areas they taught or read journals from various professional organizations. Table 4.35 summarizes the results of a series of 5 statements that respondents were asked to rate (on a scale of 1 through 7 where 1='least frequently' and 7='most frequently') according to how best the statements described the faculty in the various programs. With a median ranking of 6 (mean=4.89), the largest number of programs indicated that faculty had degrees/certification in the subject-matter areas in which they taught. The second highest median ranking of 5 (mean=4.72) indicated that faculty read professional journals from various subject-matter organizations. With a median ranking of 3 (mean=3.78), participating in conferences of subject-matter organizations was the least common avenue used to ensure the subject-matter competence of department faculty.

Table 4.35

Ways of Maintaining Subject-Matter Competence

Factor		Least Frequently		In-Between			Most Frequently		Media n	Mean
		1	2	3	4	5	6	7		
Read professional journals of subject-matter organizations (n=18)	#	2	2	1	2	3	3	5	5	4.72
	%	11	11	6	11	17	17	27		
Have degrees and/or certification in academic subjects taught in the schools (n=19)	#	4	1	0	3	0	2	9	6	4.89
	%	21	5	0	16	0	11	47		
Attend subject-matter related professional meetings (n=19)	#	5	3	1	2	2	2	4	4	3.81
	%	26	16	5	10	11	11	21		
Attend conferences of subject-matter organizations (n=19)	#	4	2	4	2	2	1	4	3	3.78
	%	8	11	5	30	8	27	11		
Meet regularly with the liberal arts faculty (n=18)	#	21	11	21	11	11	5	20	4	3.63
	%	33	6	6	16	12	16	11		

Summary of Responses to the Open-Ended Survey Questions

In addition to the closed responses, the survey included two open-ended questions:

1. How can we prepare teachers of deaf and hard of hearing students to be subject-matter competent?
2. What are the barriers or problems we face in preparing subject-matter competent teachers of deaf and hard of hearing learners?

Below are two separate summaries of insights offered by teacher educators and/or coordinators of the various deaf and hard of hearing education teacher preparation programs. The first summary includes responses from coordinators of graduate level teacher preparation programs. This is followed by a summary of responses from coordinators of undergraduate level deaf and hard of hearing teacher preparation programs.

Graduate Level Teacher Preparation Programs

When coordinators of graduate level teacher preparation programs were asked how teachers of deaf and hard of hearing students could be prepared to be subject-matter competent, respondents offered a range of suggestions that touched upon current certification practices, professional development, the need for greater collaborative efforts, and a need for establishing more stringent prerequisites for admission to graduate level programs.

It was suggested that strict admission screening procedures for graduate programs would support the preparation of subject-matter competent teachers. At least seven

individuals suggested that an undergraduate degree in a subject-matter area be made a prerequisite for admission to the graduate training program. Two others recommended that students have a general education background prior to admission.

Graduate level program coordinators offered various suggestions of ways to include subject-matter coursework in teacher preparation curricula. These recommendations ranged from the idea of allotting 36 hours to focus on a subject-matter area to requiring a minimum of 5 semester hours each in the areas of math, science and social studies. A substantial number of programs agreed that teacher preparation programs ought to pay more attention to subject-matter areas. While the importance of requiring subject-matter specializations for certification at the secondary level was noted, the need for subject-matter specialists at the elementary level was also emphasized. It was recommended that subject-matter and age level specializations be considered when determining student teaching placements. The use of program 'electives' for subject-matter related coursework was proposed as one way to make room for subject-matter in the curriculum.

Several individuals indicated that the responsibility for controlling the quality of subject-matter training should be assumed at the undergraduate level. The need to make better use of teacher preparation programs and liberal arts studies at the undergraduate level was stated.

Coordinators of graduate level programs raised several concerns with regard to issues around certification. Respondents suggested that it was becoming increasingly

important to work with the state departments to change current certification requirements.

A suggestion was made to create and adhere to a national certification standard that required students to be certified in both general and deaf and hard of hearing education.

The need for on-going training and professional development opportunities by means of workshops, in-service training and teleconferences, was suggested. It was recommended that larger institutions such as Gallaudet University and the National Technical Institute of the Deaf extend their outreach activities to all teachers. Mention was made of the need to make scholarships available for teachers so they could utilize training opportunities. A recommendation for the Council on Education of the Deaf to offer Continuing Education Units was made, in order to allow teachers to continually upgrade their skills.

Graduate program coordinators highlighted the need for establishing greater collaborative relationships with professionals in general education and with individuals who worked in a variety of settings. Teaming with subject-matter specialists and teachers in the public schools would strengthen the quality of subject-matter presentation to deaf and hard of hearing learners. While those interviewed acknowledged the importance for teachers to 'know' and the need for teacher preparation programs to focus more on subject-matter preparation, some coordinators believed that 'subject-matter should not be worshiped for subject-matter's sake.' Instead they suggested that the focus instead should be directed at understanding the processes of subject-matter, how master teachers perform and for providing teachers with the necessary tools to convey subject-matter. One

program coordinator indicated that it was difficult to expect teachers to be subject-matter competent. Yet another said, 'A bag of tricks was not enough for teachers.'

Coordinators of graduate programs were asked what they believed were the barriers to preparing subject-matter competent teachers of deaf and hard of hearing learners. At least half the respondents believed that the problem lay at the undergraduate level of preparation. Undergraduate programs were seen to lack sufficient breadth and depth in their preparation of teachers. The practice of awarding certification at the Baccalaureate level was seen to be a problem.

Over forty-percent of the respondents felt that the short duration of teacher preparation programs, in light of the curricular demands, was a significant barrier to accommodating and adequately addressing subject-matter. This problem was exacerbated by the fact that students were not required to have subject-matter backgrounds prior to admission to graduate level programs. Further, there was a reluctance on the part of students to commit to a long program of study. The need to address the needs of a diverse population of people, including those individuals with various kinds and degrees of hearing loss, deaf and hard of hearing individuals with disabilities, varied communication approaches and changing educational trends, resulted in increased curricular demands that competed for time in the curriculum with subject-matter coursework. Coordinators pointed out that it was unrealistic to expect teachers to be certified in everything. There were few incentives for teachers and it would be unreasonable to demand so much from them without substantially increasing their salaries.

Blame was also placed on individuals at the state departments and the university teacher preparation programs. State regulations were not sufficiently stringent; the state limited the number of credit hours that could be used for general education course work and individuals reported that there was a lack of consistency in establishing subject-matter related guidelines. The practice of certifying teachers from pre-K through high school further compromised the ability of programs to prepare subject-matter competent teachers. By not establishing strong subject-matter related guidelines and standards, The Council on Education of the Deaf did little to improve the preparation of teachers. Universities were perceived by some as being more committed to generic kinds of preparation of its students and focused on general education courses rather than specific subject-matter coursework. Universities were also inclined to try and graduate students in the shortest time possible by limiting the number of credits in various programs of study. The teacher preparation curriculum itself placed too much emphasis on traditional deaf education courses, methods of teaching and courses such as language, speech training and audiology, leaving little time for subject-matter training.

One of the greatest barriers to preparing subject-matter competent teachers is the nature and reality of the current job market. There was always a shortage of teachers, thereby making it possible for individuals to get teaching positions, regardless of whether they had a subject-matter specialization. Furthermore, the need in rural areas was not for specialists but for generalists who could teach everything.

While one individual pointed out that there were no visible barriers to preparing

subject-matter competent teachers, others indicated that teachers of the deaf and hard of hearing were frequently not subject-matter competent because subject-matter was not valued by the field and was therefore not a high priority. One coordinator felt that society in general was less knowledgeable than in the past and the quality of students entering university education programs was not what it used to be. Another felt that there was too much focus on the *amount* of subject-matter knowledge necessary for teachers, purporting that sometimes the ‘strongest’ teachers had minimal subject-matter preparation.

Undergraduate Level Teacher Preparation Programs

Similar to the graduate level teacher preparation programs, respondents placed a great deal of responsibility on the teacher preparation programs themselves. While at least five program coordinators mentioned that teacher preparation programs should require stronger liberal arts competencies of students, others suggested more specifically to align undergraduate programs with either elementary or secondary level specializations. Students wanting to be certified at the secondary level should have a subject-matter area of concentration. A teaching certificate in either elementary or secondary education should be a pre-requisite for admission to graduate level deaf education programs. To establish subject-matter competence, it was suggested that students be required to take Praxis tests in the chosen subject-matter areas. Once again the use of electives for subject-matter coursework was proposed as a way to accommodate subject-matter in undergraduate programs.

In addressing standards and certification issues, respondents indicated that one

way to ensure subject-matter competence in teachers was to require certification in both general education and deaf and hard of hearing education. It was critical that students in the program have a substantial number of hours which focused on a specific subject-matter area. However two individuals felt that this was not a practical expectation at the undergraduate level. A national movement towards certification at the Masters level alone was recommended instead. The Council on Education of the Deaf was criticized for not playing a more active role in setting new standards, specifying subject matter competencies for teachers and influencing states to change certification requirements. One coordinator indicated that CED should not interfere and universities and colleges should be allowed to make their own decisions. On-going professional development activities coupled with scholarships and a concerted effort to foster a practice of on-going learning were other suggestions offered by coordinators for preparing more subject-matter competent teachers.

Barriers to preparing subject-matter competent teachers presented by coordinators of the undergraduate teacher preparation programs largely echoed those indicated by their colleagues in the graduate programs. Barriers delineated included the state's certification practices, limited time with multiple responsibilities and the fact that jobs were easily available, regardless of the subject-matter competence of individuals. Frustration was expressed at the lack of leadership from CED in setting subject-matter related standards. Respondents of undergraduate programs pointed out that teachers of the deaf and hard of hearing could not be all things to all children. The difficulty of preparing subject-matter

competent teachers at the undergraduate level was presented.

Interviews with Teacher Educators/Program Coordinators

Deaf education teacher preparation programs across the country were surveyed in order to determine the extent to which subject-matter was emphasized in their programs and to document the barriers and facilitators to preparing subject-matter competent teachers of deaf and hard of hearing learners. Following an analysis of the survey data, eight programs (four graduate and four undergraduate) were selected for further interviews. These eight programs were selected based upon the fact that out of all the survey respondents, they appeared to offer a relatively higher or relatively lower amount of subject-matter related coursework in their programs of study. Of the four graduate programs selected, two indicated relatively lower subject-matter requirements and two had relatively higher subject-matter requirements for their students. Similarly, of the four undergraduate programs selected, two programs indicated relatively lower subject-matter requirements while the other two had relatively higher subject-matter requirements in their programs of study.

All interviewees were asked to respond to several specific and broad questions. They were asked to describe how subject-matter requirements were built into their programs, explain the requirements for entry to the program, tell how subject-matter deficiencies of some students was handled, clarify the nature of the relationship between the deaf education faculty and the liberal arts faculty, and describe how students demonstrated subject-matter competence. Interviewees were also asked to discuss, in more detail, some of the factors they had delineated as being barriers to preparing subject-

matter competent teachers, to comment on some of their professional beliefs and offer suggestions for facilitating the subject-matter preparation of future teachers of deaf and hard of hearing learners.

Results of these semi-structured interviews are presented below, in two separate narratives. The first narrative describes the findings from interviews with the chairpersons/coordinators of first graduate and then undergraduate programs that had relatively lower subject-matter requirements in their programs of study. The second narrative summarizes the findings from interviews with chairpersons/coordinators of graduate programs followed by undergraduate programs that had relatively higher subject-matter requirements in their programs of study.

Graduate and Undergraduate Programs with Relatively Lower Subject-Matter Requirements

Graduate programs with relatively lower subject-matter requirements

Respondents from graduate programs that had relatively lower subject-matter requirements were asked to describe the entry requirements to their programs. They reported that all that was basically required was for students to have a bachelor's degree, with or without education related coursework. If students did not have a background in education, they were asked to take a few classes to make up these deficits, frequently courses in speech and education (reading). The second program added that additional coursework was required only when an entering student showed deficiencies in English. Deficiencies in other subject-matter areas were more likely to be overlooked. One

program indicated that students were admitted to the program if they had an overall grade point average of at least 2.8. Student transcripts were not reviewed to note specific subject-matter deficits. Eighteen hours of general education and 18 hours of deaf education were required by a program in order to meet teaching certification requirements. While there were two required methods courses, no science, math or other subject-matter area coursework was offered. Program coordinators pointed out that options existed for students to take additional subject-matter electives, but they were not required.

Within the programs, subject-matter did not appear to be a priority. When asked how students demonstrated competence in subject-matter, one individual indicated that students had to take an in-house test that was created by every instructor who had taught a course. The second program coordinator said that students had to take a test created by the state; one that touches on math and English to some extent but pays little attention to other subject-matter areas. Since a majority of the programs had indicated in the survey that student teaching was an important time to assess the subject-matter knowledge of its students, programs were asked how this was managed by their respective programs. Supervision was conducted largely by an individual who was a classroom teacher and had a background in deaf education. It was also reported that the cooperating teacher was the person primarily responsible for monitoring the student teacher; the university faculty merely visited to get an update on the student's progress. The subject-matter backgrounds of the student teachers and their supervisors matched only on occasion.

Since respondents to the initial survey had commented on the influence of the state on the subject-matter preparation of teachers, programs were asked to comment on their relationship with the state departments, particularly the success or frustration they have met with in working with them. One interviewee indicated that working with the state was easy, primarily because the state never interfered. Once the program had been initially approved, the state reportedly assumed that everything was running well and virtually left teacher educators alone to run their respective programs. The second individual commented that the state worked well with the program. Any time the state proposed changes, committees were formed and the university program would be invited to participate. Changes have been made in the past, with traditional courses being removed from the curriculum to make room for courses such as sign communication.

Interviewees of both the graduate programs listed several factors that they believed acted as barriers to preparing subject-matter competent teachers. One of the program coordinators expressed frustration over the state's broad K-12 certification practice. This person believed that subject-matter preparation would improve considerably if the state required students to declare specific subject-matter areas of interest and make decisions regarding the age group with which they were interested in working. Frustration was expressed at the lack of leadership from the state. Program size reportedly posed its own challenges. Since most teacher preparation programs are small, they do not have the luxury of making differentiations in courses of study and levels of specialization. Concern was expressed that enrollments would decrease if the requirements were increased.

Program coordinators also acknowledged the reality of the job market and the fact that the demand for teachers always exceeded the supply. As a result, programs felt pressured to graduate students quickly. Even when students sometimes get through the cracks and arrive at graduate level programs with backgrounds in criminal justice and other non-education related majors, states certify them in order to meet the demand. The teacher preparation curriculum itself did not facilitate the preparation of subject-matter competent teachers.

Teacher preparation curricula were also often outdated and overloaded with traditional speech and audiology courses. One interviewee believed that the priorities in teacher education were all wrong because programs were largely run by hearing individuals who were not planning appropriately for the people they were teaching.

When asked about the potential influence or role of the Council on Education of the Deaf, a respondent from one program remarked that CED was completely “worthless.” The person went on to explain that CED required no continuing education, did not advocate for minority teachers, took close to six months to process a membership application and had little influence with the state. The head of the second program was more ambiguous and while the individual said the state did not recognize CED, the program got re-accredited by the state by virtue of the fact that it had CED certification. Later this individual indicated that CED should not determine subject-matter for certification rather the Council on Exceptional Children (CEC) which deals with disabilities over a wider range should take on this responsibility. When the reason for this

was pursued, the individual was not sure anymore whose responsibility subject-matter should be.

Despite the fact that both the program coordinators represented programs that had relatively lower subject-matter requirements, they both believed that deaf education students should have the same subject-matter knowledge as that of their general education peers. When asked how the problem of poor/insufficient subject-matter preparation could be tackled, one program coordinator indicated that the issue had to be tackled at the undergraduate level since there were too many things to be accomplished at the graduate level. The second program head believed that subject-matter could be more of a priority if certification in deaf education at the undergraduate level was stopped and everyone was required to obtain a degree in general education followed by special topics at the M.A. level. The program coordinator believed that students should be made to declare a subject-matter major.

It was suggested by the program coordinators that professional development activities in the field should focus more on subject-matter areas and continue to be made available even after graduation. Finally it was pointed out that if employers demanded teachers that had specific subject-matter expertise, then universities and states would be forced to change the structure of their programs and certification requirements. As long as the market hired 'anybody', the quality and subject-matter competence of teachers would not improve.

Undergraduate programs with relatively lower subject-matter requirements

The next few paragraphs will present a summary of the dialogue with representatives of undergraduate deaf education programs that indicated relatively lower subject-matter requirements in their programs. In answering questions about the current state of subject-matter preparation in their programs, interviewees admitted that there was not enough attention being paid to subject-matter preparation. Both program coordinators also indicated that the responsibility for subject-matter preparation lay almost entirely with the liberal arts faculty and not with the deaf education department. The latter department was responsible for all the methods courses in the program. Interviewees reported that there was no professional or working relationship with the liberal arts faculty members and that faculty in both departments worked quite separately. In fact one of the program coordinators was unsure about how the hours for various requirements broke down in the program and the number of hours that actually focused on subject-matter preparation.

In response to the question of how students demonstrated subject-matter competence in various subject-matter areas, the responsibility was seen to be that of the liberal arts faculty members. With regard to testing, one coordinator believed that tests like the Praxis I and II were unfair and did not deal with the reality of the diversity of philosophical orientations in the field of deaf and hard of hearing education. Instead, this program had a 'terminal test' of student teaching to see how well students could work in actual contexts. The second program indicated that the program had no special tests or

ways to ensure subject-matter competency but that they were in the process of instituting a home-made test to screen students for subject-matter at the junior level.

Supervision during student teaching was primarily done by the cooperating teacher concerned. While the supervisor's subject-matter background frequently did not match the areas in which the students were teaching, it was believed that the supervisor had enough of 'general' knowledge to make good judgements about subject-matter.

One of the undergraduate program coordinators who was interviewed reported that the primary focus of the program was to prepare instructional specialists at the elementary level. Throughout the conversation, the individual continually referred to subject-matter in terms of instructional strategies. The assumption was that teachers of the deaf and hard of hearing were instructional, not curriculum, specialists and served as experts in meeting the needs of the special population. The particular individual indicated that students in the program were primarily prepared to work in public school. It was believed that subject-matter preparation was important only when teachers were being prepared for work in residential school settings. The person continued to explain that a decision was made to drop secondary level certification in the program since it was not seen that there was sufficient differentiation between elementary and secondary levels of preparation. Overall, both programs reported preparing their students with a broad base of knowledge because there were limited jobs in particular subject-matter areas. The second program coordinator indicated that if students showed an interest in teaching at the high school level, it was recommended, not required, that they minor in a subject-matter

area.

In addressing the barriers to preparing subject-matter competent teachers, the state department was one of the first things mentioned. Not only did the state have minimal requirements but under the existing politics, if there was a small program certifying teachers at different levels, it was highly likely that, regardless of the quality of preparation, the state would not cut it down. Certification at the undergraduate level was another barrier to preparing subject-matter competent teachers. Universities exacerbated the situation because of their goal to prepare students in the shortest time possible. Further, it was reported that implementing change at the university level invariably took a very long time.

The CED was seen to be little support and believed to have 'no punch.' One program coordinator made reference to the immaturity and poor caliber of students entering the programs today and cited this, along with the charge to prepare under-represented populations, as an obstacle to preparing subject-matter competent teachers. The nature of the job market, and the ease with which a teaching position could be secured, left little reason for adding subject-matter requirements to the program. Finally, the apparent 'free reign' of the faculty to run their programs and the minimal checks on their functioning, compromised the quality of preparation within the programs.

Although both the programs had relatively lower subject-matter requirements, program coordinators still believed that teachers of the deaf and hard of hearing should have the same subject-matter competence as general education teachers. They did not,

however, think that students should be required to have a general education degree or a subject-matter specialization. It was seen that focusing on subject-matter at the undergraduate level and methodology at the graduate level would increase the subject-matter competence of teachers.

Greater collaborations with elementary and high school programs around subject-matter was suggested. One program coordinator felt very strongly that national organizations in the field should recognize subject-matter and offer subject-matter related workshops at their meetings. The person explained that it was too expensive and inconvenient to have to attend deaf and hard of hearing professional conferences and then attend separate meetings to pursue subject-matter related training. The 'mom and pop' mentality of professional development was criticized. In other words, consultants from subject-matter organizations should be used for in-service training instead of always depending on expertise from the residential schools for the deaf and hard of hearing. A recommendation was made for the Association of College Educators Deaf and Hard of Hearing (ACEDHH) to take the lead and assume the leadership for teacher preparation. The CED would serve as a forum to discuss and share the proposed ideas among stakeholders.

Graduate and Undergraduate Programs with Relatively Higher Subject-Matter Requirements

While all four graduate programs faced more or less similar realities with regard to state stipulations, hiring practices and other limitations, programs with higher subject-matter requirements appeared to have higher expectations and tackled the barriers they faced more proactively than the others. The next few paragraphs will summarize the results of interviews conducted with two graduate programs and two undergraduate programs that had relatively higher subject-matter requirements in their respective programs.

Graduate programs with relatively higher subject-matter requirements

The representative of the first graduate program explained that most of the students in the program were graduates of the university's undergraduate deaf and hard of hearing education program. Thus, much of the quality control around subject-matter preparation was accomplished at the undergraduate level. Students at the undergraduate level were required to declare an elementary or secondary level of specialization. Once this was determined, the deaf education component was added. A total of 156 hours plus student teaching was required at the undergraduate level; much more than the 125 credit hours stipulated by the university. Fifteen credits of electives were built in to the graduate level program and students met with their advisors to determine the gaps in their preparation. In other words, subject-matter courses could be taken as electives. The reality however was that students showed more interest in literacy courses than in science

or mathematics.

The second graduate level teacher preparation program coordinator explained that students in the program were required to have at least 36 hours in a subject-matter area. If they had deficiencies, a program of study was created to help them make up these requirements. If all the required courses had not been completed, students would graduate with only a deaf education certificate and could not be issued specific subject-matter area certification. The program coordinator however pointed out that this rarely occurred since students were strongly encouraged and provided with the necessary support to become certified in a subject-matter area.

As far as entry requirements were concerned, both programs expected that students entering the program would have sufficient subject-matter or a teaching certificate in education. One coordinator explained that exceptions were sometimes made and admission was granted with the expectation that the existing deficiencies would be remedied. The second program appeared more confident of their ability to recruit students with subject-matter backgrounds. This program had clear goals and strategies for making up subject-matter area deficiencies.

Interviewees were asked how they determined whether or not their students were subject-matter competent. One program reported the use of a normed test (a required state test for certification). This particular state was also reportedly in the process of developing a skills test for students to take at the end of the course of study. Presently, the only procedure for demonstrating competence was by way of transcripts. The second

program said that its students demonstrated subject-matter competence by taking the Content Specialty test.

When asked to comment on certification practices in the state, the representative of one program said that it was ludicrous to think that it was possible to train a teacher to be competent to teach K-12 grades. If students in the program wanted this general certification, they were required to take additional coursework. Respondents believed that deaf education majors should have the same subject-matter knowledge as the students in general education programs. However one program coordinator said that it was not practical to expect students to come to graduate school with all the pre-requisite coursework completed. Rather, it was easier to anticipate deficiencies and be prepared with a plan to rectify them. There was agreement with the other programs regarding the barriers imposed by the state and the loopholes that allowed students without education backgrounds to enter graduate level programs. There was optimism however that collaborative efforts could be established with the state. As one program coordinator indicated, the state was “wonderful” and was “very supportive”.

Representatives of both graduate programs were asked for their insights regarding perceived barriers to preparing subject-matter competent teachers. Easy employment, regardless of the quality of preparation, was a major barrier. Another obstacle was that frequently the state and the university’s expectations and requirements did not match. Further, because of the competition in recruiting students to programs, universities feared that, if they increased their requirements, their programs would be unattractive to

students. One of the coordinators also pointed out that graduate programs often assumed that subject-matter had been included as part of the undergraduate, general education preparation. This assumption was only as good as the programs that graduated these students.

Program coordinators expressed mixed feelings about the CED. While programs acknowledged that the standards were good standards, they said that the state did not care about CED certification. It was costly to maintain CED certification and given that it does not serve a practical purpose, students were not encouraged to maintain it.

If change in the subject-matter preparation for teachers of the deaf and hard of hearing is to occur, according to one individual, it would have to take place on a national scale. It was proposed that certification at the undergraduate be stopped. The forty-five hours used in the undergraduate program for certification related coursework could then be used to support subject-matter knowledge training. The need for elementary level teachers to be subject-matter competent was considered crucial. While these teachers may not need the same depth as secondary level subject-matter teachers, they must have at least some basic coursework in the various subject-matter areas.

Undergraduate Programs with relatively higher subject-matter requirements

The two undergraduate programs with higher subject-matter requirements were asked to describe how subject-matter was dealt with in their respective programs. One program indicated that students were required to take a 4x12 arrangement i.e. twelve general education hours in each of four areas including English, math, science and social

studies. While the program possessed the flexibility to assign course hours in any way it chose, the choice was made to stay within the 4X12 parameters since it was a good way to keep track of the hours. The second program had more rigorous requirements for students preparing to teach at the elementary level. The focus however turned out to be largely on reading and language rather than on mathematics, science or social studies.

There was no established procedure for determining the subject-matter competence of students in the programs. A state test was required by one program but it did not cover subject-matter areas per se. Students were exempted from taking the Praxis I test if they met a certain GPA. There were options for taking Praxis II but no incentives for students to take the subject-matter related sub-tests. One individual purported that tests do not show what students know. The second coordinator was unsure of whether or not there were required tests for students. Student teaching was an important time for assessing the subject-matter of teachers. Student teaching placements often matched the students' interests but it was seldom possible to match subject-matter backgrounds and interests of the supervisor with those of the students. The programs did not see this as being a problem since the cooperating teacher was given the primary responsibility for the student and the university faculty largely coordinated the student teaching experience.

Both individuals who were interviewed agreed that there were several factors that served as obstacles to preparing subject-matter competent teachers. First, there was the challenge of having too many things to do in too short a period of time. The state only allowed 124 hours in the program. This was clearly not enough time to include a subject-

matter focus. Secondly, there were no incentives to become subject-matter competent. Finances were frequently an issue, and students want to graduate quickly. An abundance of jobs made it possible for programs to get away with generic, relatively short periods of training. Consequently, the quality of preparation frequently did not matter. Small enrollment numbers made it difficult to make differentiations in age levels and concentration of preparation.

The question of values was also raised. It was suggested that since most university personnel have backgrounds in general deaf education, the importance of subject-matter was not valued. Traditional beliefs that everything will fall in place once deaf children are taught to speak further detracts from making subject-matter an integral part of the curriculum.

In brainstorming for potential solutions to facilitate the subject-matter preparation of teachers, one coordinator suggested that the focus of preparation at the university should be dictated by best practices and research rather than by the job market. Both interviewees believed that the subject-matter preparation of teachers of the deaf and hard of hearing should be no different from that of their general education peers. A suggestion was made to require dual majors, though this might take an additional year of school. Elimination of K-12 certification practices was recommended in order to allow students to enter graduate programs with eligibility for a teaching certificate in a subject-matter area.

In defense of the teacher preparation programs, one of the coordinators indicated

that programs could not be all things to all people. Instead it was suggested that high school teachers come out of programs like the National Technical Institute for the Deaf; a program geared to preparing teachers in subject-matter areas. The same person went on to say that individual students should also take charge and independently seek out the courses required for certification in a subject-matter area of interest. Finally, a large part of the responsibility, it was stated, rests with the employers who hired the teachers. If employers raised the bar and expected teachers to be subject-matter competent, then this would have a positive domino effect on teachers and programs.

Interviews with Two Experts in the Field of Deaf and Hard of Hearing Education

The findings from the content analysis and the data from the initial survey was summarized and presented to two experts in order to obtain their insights about what teacher educators in the field reported regarding the subject-matter preparation of teachers of deaf and hard of hearing learners. Both expert consultants, one deaf and one hearing, hold leadership positions in the field of deaf and hard of hearing education and have an established interest in the subject-matter preparation of teachers.

In analyzing the data gathered from the experts, it was clear that they agreed with a number of the barriers that had already been identified by coordinators of the graduate and undergraduate programs. In addition, the presence of larger, more deep-seated obstacles was revealed. Implications were discussed and potential suggestions for preparing subject-matter competent teachers of deaf and hard of hearing learners were offered.

Deaf education was described as being very 'set in its ways.' As one individual put it, deaf education is "...like layers of fog; dense and heavy." The person continued to explain how, historically, the focus of deaf and hard of hearing education has primarily been on three areas; speech, English and hearing loss. As a result, critical areas such as subject-matter have been ignored. Much of the present day teacher training was seen to be based on a subtractive model whereby adding traditional courses such as speech and audiology to the curriculum resulted in 'taking away' from, rather than adding to, the value of the curriculum. Certification practices such as K-12 certification interfered with

the preparation of subject-matter competent teachers. While some of the teacher educators suggested that dual certification may be one way to prepare more subject-matter competent teachers, one of the experts did not think this was a realistic option. The individual felt that it was impossible to provide a degree in deaf education with any real respect for general education and subject-matter without the undergraduate program becoming at least a 6 year program. The suggestion instead was to focus on general education and subject-matter at the undergraduate level and professional specialization at the masters level.

There was criticism for the Council on Education of the Deaf. It was explained that while CED was trying to do more for subject-matter, its great emphasis on certification did not allow it to make subject-matter a priority. Further, the CED's concern was largely over the early childhood, elementary and middle school levels. There was less concern regarding high school teachers and a tendency to assume that "somehow things would be taken care of for them." The expert however said that this responsibility could not be shirked. Rather, it was the responsibility of the field to take on this charge.

The reality of the market and issues of demand and supply interferes with the subject-matter preparation of teachers. The experts pointed out that while programs could have a nice-looking set of requirements which included subject-matter, if demand was greater than supply, employers would offer the positions and teachers would accept them, regardless of whether or not the requirements had all been met. They noted that it was this great demand for teachers of the deaf and hard of hearing which has led to the

practice of emergency credentialing, a system that in low socio-economic areas, areas with cultural and linguistic diversity and in special education, defeats the very goal for an equal and fair curriculum. However, the reality was that if states increased the requirements for teachers in order to address the issues around their inadequate preparation, programs would become too long and thus less attractive to individuals. The lack of a critical mass of deaf and hard of hearing students in any one location made it financially less feasible to hire subject-matter specialists, leading to the expectation that teachers become experts in everything, an impossible expectation. The lack of monetary incentives was also presented as a barrier to preparing subject-matter competent teachers. One of the experts believed that when the demand for qualified math teachers was high but the supply was low, schools should be willing to pay higher salaries and hire qualified teachers instead of compromising on the quality to save dollars.

It was clear to the experts that the problem of subject-matter preparation was a systemic and multifaceted one. Responsibility did not lie with the teacher preparation programs alone. Superintendents and school principals carried equal culpability for setting high standards in their hiring practices. Hiring an elementary teacher with generic preparation to fill a vacancy for a high school subject-matter specialist was one way that schools continue to discount the importance of subject-matter competence.

The attitudes and expectations of the teacher educators who prepared future teachers of the deaf and hard of hearing is a major factor that has a profound influence on the quality of preparation offered at training programs. As one expert pointed out, as far

as the teacher educators were concerned, their programs were preparing student teachers to work in the future with a population that could not read beyond the third grade level. If this was the limited expectation, then the question of preparing future teachers of deaf and hard of hearing learners to be subject-matter competent does not even arise. The expert believed that if all deaf and hard of hearing children were successful, then teacher preparation programs would be forced to raise the bar and address more than just basic training in their programs. The individual indicated that for now, there were only a few 'stars' and these students were invariably sent off to mainstream programs for subject-matter related coursework. The expert felt strongly about this practice and indicated that it was happening because teacher preparation programs did not prepare teachers of the deaf and hard of hearing to be competent in subject-matter areas. The attitude that 'someone else (the general education programs) would take care of subject-matter undermines the contention that teachers of the deaf and hard of hearing should be subject-matter competent. Both experts emphasized the need for teacher preparation programs to take responsibility for preparing its student teachers to teach in subject-matter areas.

In continuing the above discussion, the experts pointed to the low expectations and minimal requirements for entry into deaf and hard of hearing education graduate level teacher preparation programs while that the subject-matter requirements for entry to general education training programs was a lot more stringent. As a result, special education was frequently the 'escape valve' for students who could not meet the general education requirements. The experts continued to explain how these low expectations for

deaf and hard of hearing teachers was widely prevalent in mainstream settings where deaf and hard of hearing education was viewed under the 'special education' umbrella. While center schools often required that subject-matter teachers be certified in specific subject-matter areas, teachers of the deaf and hard of hearing in mainstream programs were only required to hold a special education certificate. The problem is intensified by the fact that most deaf and hard of hearing students are in mainstream settings.

While focusing on the issue of expectations, the experts made reference to the attitudes and personal values of the teacher educators themselves. In order for change to occur, those bringing about the change should see themselves as powerful and believe they have the ability to do things differently. Unfortunately, as one expert pointed out, there is a lot of learned helplessness in education and it is almost as if those in charge had "adopted the characteristics of the population they work with." When this happens, the individual explained, the locus of control would be interpreted as being outside of the control of the individual. When individual teacher educators believe this, they tend not to assume responsibility for initiating change.

The experts pointed out that there appeared to be much spoken value for subject-matter and the need for preparing subject-matter competent teachers. The commitment to making subject-matter a priority was however not as apparent. The problem they believed seemed to lie "between the ears" of the people at the universities and at the schools. Most teacher educators had generalist degrees or degrees in deaf education. As a result, they were less likely to value the need for subject-matter expertise. The real barriers were seen

to be in the thinking of individuals, who continued to function and do things out of the same 'box'.

The very nature of teaching and the multiple variables and 'hard to define' qualities that go into making a good teacher, posed its own dilemmas. Deaf and hard of hearing education has always relied on 'gut decisions' in hiring teachers. On one level an expert supported this by agreeing that possessing numerous credentials did not necessarily mean that an individual was a good teacher. The individual said that if the choice came down to choosing a math teacher who was an expert in the area but did not communicate well over a person who was not quite as subject-matter competent but was a good communicator, the latter would be the person of choice. The former would build a wall and learning would not occur. The second expert agreed that there were characteristics critical to teaching that could not be defined by a certificate. The problem however was that deaf education only paid attention to the hard to define characteristics at the expense of developing competence in subject-matter. This was contrasted with mainstream programs that endorsed the idea of subject-matter but missed out on the social and linguistic values of teaching. A balanced perspective was necessary.

The general survey data and the interview data from the eight program coordinators indicated that professional development was regarded as being one way to address the problem of preparing subject-matter competent teachers. The experts however did not believe that professional development could be counted upon to remedy the problem of poor subject-matter preparation for several reasons. First, there was no

comprehensive plan for professional development for teachers. Rather, professional development was a 'hit and miss' activity that was available sometimes and not at other times. Professional development activities also tended to focus heavily only on mathematics and reading, since these were the two areas commonly reflected in published test scores. It was rare to see professional development activities related to science, literature or social studies. Another problem with depending on professional development activities to bolster subject-matter knowledge was that teachers frequently assumed that learning stops once their degrees are obtained. It was also thought that teachers were frequently not encouraged to be self-analytical and did not, as a result, effectively assess their needs and pursue the knowledge and skills they required to function effectively. Thus it was seen to be necessary to make subject-matter an integral part of the teacher preparation program of study.

Given the challenges that teacher educators face in preparing subject-matter competent teachers, the experts were asked to offer their insights for ways to address the issues effectively. A key theme that came up in the ensuing discussion was the need for greater collaborations between faculty in deaf and hard of hearing teacher preparation programs and their peers in general education. The experts pointed out that while the problem of subject-matter competence of teachers in general education was far from resolved, general education had been through several reform movements and had moved gradually from a period of resistance to gradual accommodation. The experts admitted that to say 'just follow general education,' was a simplistic answer. However they believed

that professionals in the field of deaf and hard of hearing education could learn from the changes and reforms that had taken place.

When presented with the comments of some teacher educators that their programs were too small to allow for subject-matter differentiations, the experts urged faculty in deaf and hard of hearing teacher preparation programs to seek to affiliate themselves with their peers in the liberal arts departments. The rationale was that general education programs had larger numbers of students and therefore had the luxury of hiring subject-matter specialists. Students from the deaf and hard of hearing departments would benefit if they were encouraged to observe social studies classes or attend mathematics workshops. In response to programs that said it was unfair to expect the same standards of all preparation programs because of differing philosophical approaches in the field, one of the experts suggested the use of technology; to bring people and information together.

Another barrier that the experts discussed was the fact that faculty in deaf and hard of hearing teacher preparation programs tended to carry an 'expert model' image. Rather than separating themselves it was suggested that teacher educators move towards a more collaborative model that allowed for partnering and sharing of expertise with the general education faculty. Both experts pointed out that an added benefit of these collaborative efforts was that by modeling collaboration student teachers would come to appreciate its value.

In interviews with some of the graduate and undergraduate programs, program coordinators indicated that with the information explosion, it was impossible to prepare

teachers to be specialists. One of the experts agreed that there was the danger of losing the 'big picture' if people became overly concerned about becoming specialists. This person pointed out that credential after credential would not help to guarantee competence. There was agreement between the experts that there exists a core of knowledge that everybody must have. Mathematical knowledge was used to illustrate this point. The person explained that there was a basic core of knowledge that included mathematical functions such as addition, subtraction and multiplication. Teachers however needed to be able to function beyond this basic level and be able to work with fractions, percentages and other mathematical applications. It was recommended that specializations in teaching calculus or trigonometry should be available as an option, but not be made a requirement.

The experts also referred to the way in which subject-matter was taught in teacher preparation programs. One individual believed that teacher preparation programs did not facilitate the understanding of subject-matter concepts. Instead, the focus was on imparting factual knowledge that was in turn memorized by students. There was little dialogue with the student teachers and this often resulted in limited understanding of subject-matter related concepts. The same students were often overwhelmed when they found themselves in a classroom faced with teaching mathematical concepts which they had no real understanding of themselves.

In closing, one of the experts explained that there were four parts to the puzzle for ensuring subject-matter competence in teachers including the university, school principal,

CED and the state. If teacher educators at the university believed that subject-matter was important, then they would have to initiate change. If a school principal believed that subject-matter was important, then s/he must stop hiring sub-standard teachers. If CED thought it was not possible to provide a comprehensive, quality program at the Baccalaureate level, then they must stop certifying programs at the undergraduate level. Finally, states should take the initiative to eliminate programs at the undergraduate level. In looking at the entire puzzle, it seemed to this expert that the best hope for change lay with school principals and university program faculty. If these individuals acted on their convictions, change could happen. It was explained that the CED was unlikely to change, since half its votes came from Baccalaureate level programs. State law was unlikely to change because of the traditionally paternalistic attitude towards special education. If the Conference of Educational Administrators Serving the Deaf encouraged principals and superintendents to act on their beliefs, this would impact the subject-matter preparation of teachers. For purposes of illustrating how this could happen, the expert explained how one principal with high expectations for his/her math teachers could encourage teachers at the school to take college level mathematics courses. A requirement could be established for all teachers to be certified in mathematics by the end of five years.

While certification may not always fairly determine who was qualified and who was not, one of the experts indicated that standards and requirements could serve as a beacon and help individuals to set goals for what needed to be achieved. The experts were aware that if standards were followed blindly and rigidly, good teachers would be

lost. They said instead that standards should be used as a beacon to give direction for preparing subject-matter competent teachers. While the goal for the field should be to follow the standards, both individuals cautioned that exceptions should be made for those who clearly brought special qualities as teachers but did not have the required subject-matter backgrounds. These individuals should not be overlooked but rather supported to obtain the subject-matter training they needed.

The problem as one expert explained, was that the beacon was currently suppressed or non-existent and the field had little direction on how to prepare teachers to become subject-matter competent. In other words, by continuing to focus only on 'gut decisions,' the exception was the rule. The challenge was to switch these two around.

In closing, the experts warned that programs should not become overwhelmed with trying to initiate change too quickly. They advised that it was important to start small, with individual programs and schools making decisions to make subject-matter a priority. They believed that mandating change on a national level to make subject-matter a priority would be a frustrating endeavor. It was suggested that problems should be brought down to the level of the people and that individual programs should do what they believed was right. The experts encouraged programs and individuals to keep persevering, to think 'out of the box' and not to listen to the 'must nots.' As one expert put it, "the race is a marathon and not a sprint. It is important to stay focused."

CHAPTER V

DISCUSSION

The purpose of this study was to document the current status of subject-matter preparation in the field of deaf and hard of hearing education. Through use of a survey and semi-structured interviews, teacher educators and experts in the field were asked to indicate the current status of subject-matter preparation at their respective university teacher preparation programs and indicate the real or perceived barriers to preparing subject-matter competent teachers.

This chapter will present conclusions to the study based upon the results. Implications and recommendations for future research will be offered.

Following an analysis of the survey and interview data, several issues emerged. These preliminary findings were presented to two experts in the field of deaf and hard of hearing education during an open-ended discussion of the results and implications. Their comments and insights contributed to this discussion. Broadly stated, the following factors influence the subject-matter preparation of teachers:

1. A lack of consistency in addressing subject-matter in teacher preparation programs for the deaf and hard of hearing.
2. The role of state agencies, certification boards and individuals responsible for making curricular decisions within teacher preparation programs.
3. The reality of the market and the demand for teachers of the deaf and hard of hearing and the effects of considering deaf and hard of hearing education under the

umbrella of 'special education.'

A Lack of Consistency in Addressing Subject-Matter in Programs that Prepare Teachers of the Deaf and Hard of Hearing

Teacher preparation programs showed a great deal of variability with regard to: the primary focus of their programs; admission criteria for students; requirement that students become specialized to work with a specific age level; prerequisites for subject-matter and methodology related coursework; and measures used to determine the subject-matter competence of students.

Admission Requirements

- Absence of an objective way to assess the subject-matter qualifications of students.
- Variability in admission requirements in the different subject-matter areas.

Programs varied greatly in their expectations about subject-matter competency for beginning teachers. This was especially apparent in graduate level teacher preparation programs. Transcripts were used by all graduate and undergraduate program coordinators to screen for subject-matter. However there appeared to be no 'cut off' points or indicators to objectively determine the subject-matter qualifications of students. While a majority of survey respondents checked off the various subject-matter boxes on the survey to indicate that their programs required prerequisite work in English, mathematics, social studies, science and literature, only a handful reported the actual number of credit hours required in each of these areas. Coursework in English (Reading and Writing) appeared to

be a requirement in all programs. Deficiencies, if any, were noted and students were required to take additional reading or composition classes. Deficiencies in other subject-matter areas were addressed less frequently. Some program coordinators recommended additional coursework to students who wanted to specialize in secondary education. Others recommended that 'elective' courses be used for subject-matter. These however remained 'recommendations.'

There was no systematic effort to ensure that students possessed a basic core of subject-matter knowledge. It was not uncommon for programs to admit students with only weak subject-matter backgrounds. Only two program coordinators reported that they anticipated that students would have subject-matter deficiencies and were prepared to address these deficiencies. Others programs indicated that they required 'additional coursework.' Only one program demonstrated a strong subject-matter component. The teacher educator in this program expected new students to have basic competence in subject-matter. This program set clear subject-matter objectives and graduating students were required to demonstrate competence in a subject-matter area. However this was the exception. Overall, teacher preparation programs did not explicitly and clearly articulate their expectations around subject-matter. This is a significant problem.

Age Level Specializations

- State licensure is primarily generic (K-12). The training of teacher preparation programs reflects this generic approach.
- It is critical to differentiate between elementary and secondary level specializations.

While fifty-eight percent of graduate program respondents and forty-two percent of undergraduate program representatives indicated that students were required to focus on specific age levels, expectations in programs around subject-matter did not appear to reflect this. Methodology and subject-matter coursework requirements in both graduate and undergraduate level programs was higher at the elementary than the secondary level. This broad base of preparation likely attests to the generic nature of teacher preparation in the field of deaf and hard of hearing education. One rationale for preparing students with this broad base of knowledge was the perception that job opportunities for specialists were limited. Another teacher educator did not see sufficient differentiation between the elementary and secondary levels of preparation and gave up the program's secondary level certification. When asked whether students graduated with a degree in a subject-matter area, less than half the graduate programs and only one undergraduate program reported students with degrees in subject-matter areas.

Secondary level teachers require competence in subject-matter areas (Nash and Castle, 1980). A national sample of elementary and secondary teachers reported that while many skills were fundamental for all teachers there were different skills for the two

levels (Luckner, 1991). The special education literature also indicated that the programming goals for elementary and secondary levels should be significantly different (Mueller, 1976). General education has expressed concern over the declining number of teachers at the secondary level with degrees in subject-matter areas (Report of the Panel for National Educational Goals, 1995). In a survey of almost one hundred teacher educators in the field of deaf and hard of hearing education, 90 percent supported the idea that subject-matter be considered a part of the certification process; a smaller percentage supported the use of standards to certify people by age level and specialization (Lytle, 1992b). In a separate study of administrators of residential and public school programs, support was shown for the belief that teachers of the deaf and hard of hearing should have the same subject-matter competency required for teachers of hearing students (residential: 95 percent; public schools: 89 percent). There was less support for the idea that teachers of deaf and hard of hearing high school students should pass state or national teachers' exams in the subjects they teach (residential: 86%; public school: 73%) (Lytle & Rovins, 1997). It is also not evident that these values are reflected in hiring and placement practices in the schools.

Subject-Matter and Methodology Course Requirements

It is apparent that there is little emphasis in deaf and hard of hearing education teacher preparation programs with regard to subject-matter preparation, at both the graduate and undergraduate levels. This is very different from the reforms in general education. In undergraduate programs that prepare teachers of the deaf and hard of

hearing, an average of 1-6 credit hours of coursework is offered in methodology. At the secondary level, only 47 percent of the respondents indicated that methodology related coursework was required in mathematics, English and science. As far as subject-matter was concerned, only 47 percent of the programs included a subject-matter component. This number dropped to forty two percent at the secondary level. In graduate programs, the average number of methods courses required in the various subject-matter areas was between one and six. It is imperative that teachers of the deaf and hard of hearing be trained in both regular education content and professional knowledge regarding deafness. The need for this is emphasized by Hinders (1995).

Focus of Preparation

- Programs primarily prepared students for work in self-contained settings.
- Teachers must be prepared to maximize achievement in all settings.

In response to the question, 'For which role does your program prepare teachers?,' fifty-nine percent of the teacher educators at the graduate level and sixty-three percent of those at the undergraduate level reported that training was primarily for teaching in 'self-contained classrooms.' In the Annual Report to Congress (2000) of where most deaf and hard of hearing students are served, it was noted that fifty-five percent of students were served in the regular class and resource room and only twenty-six percent were served in separate classes.

Subject-matter preparation was considered to be important in programs that primarily prepared teachers to work in self-contained and residential school settings.

Though the survey data indicated that most teacher preparation programs prepared teachers to work in self-contained classrooms, teacher educators explained that subject-matter was not a priority in their programs because the focus of training was on preparing students for work in mainstream settings. The premise was that teacher educators in the deaf and hard of hearing departments would prepare the 'deafness experts' who in turn would collaborate with general education colleagues to teach subject-matter areas. This dependence on general education colleagues to offer the more challenging coursework for deaf and hard of hearing learners causes deaf and hard of hearing teacher preparation programs to take less responsibility for preparing their students to be subject-matter competent.

In a presentation at the 1990 International Congress on Education of the Deaf, Moores (1990) anticipated that, with the increasing trend towards mainstreaming, teacher preparation programs would be forced to address subject-matter issues more closely. On the contrary, deaf and hard of hearing teacher preparation programs have taken less responsibility for the subject-matter preparation of its teachers. Programs with a greater subject-matter focus appeared to plan their curricula on the premise that students should be prepared to teach in a variety of settings. As Kluwin and Moores, 1985 cited in Moores, 1996) state:

“The prerequisites for success, then, do not appear to be limited to an integrated versus a self-contained classroom or to a day versus a residential setting. The major components appear to be teachers trained in academic content areas, high expectations, presentation of large amounts of content.....If we are to maximize academic achievement of deaf children in all settings, we must supply them with the best possible learning environment within each setting.”

While the reality may be that different settings draw upon different types of expertise, the fact remains that deaf and hard of hearing students have the right to subject-matter competent teachers all the time, regardless of their setting. Future teachers should be prepared with the skills and knowledge necessary to work effectively in different educational settings.

Demonstrating Competence in Subject-Matter

- Teacher preparation programs do not have an objective and consistent way to assess the subject-matter competence of students.
- There is a reluctance to use standardized tests to demonstrate subject-matter competence.

Teacher preparation programs varied greatly in how they assessed the subject-matter competence of their students. While some programs had no established means of assessing subject-matter competence, others used state-stipulated certification tests and ‘home made’ tests. State tests largely measured competence only in English and basic mathematics. Yet there appeared to be no urgency, on the part of programs, to ensure

competence in the other subject-matter areas.

A reluctance to use standardized tests like the Praxis II was based on the fact that these tests were too expensive and did not truly measure subject-matter knowledge. One program coordinator believed that tests like the Praxis II were not fair to the diverse philosophical orientations of deaf and hard of hearing teacher preparation programs. A rationale for this assumption was not offered and it is unclear how the inclusion of subject-matter would counter the philosophical ideals of a teacher preparation program. The objection reinforces a comment made by one of the experts that teacher educators tend to think within the 'boxes' of their separate realities. Based on their own beliefs, experiences and priorities, teacher educators tend to accept certain responsibilities and relegate other critical pieces of the curriculum, like subject-matter to those in general education. Meanwhile in general education, the NPBTS Board was interested in assessing the quality not only of teachers' mastery of general education but also of the subjects they taught (Carnegie Forum, 1986).

The Role of State Agencies, Certification Boards and Individuals Responsible for Making Curricular Decisions within Teacher Preparation Programs

The value awarded to subject-matter and the likelihood of subject-matter related coursework being included in teacher preparation programs' curricula appeared to depend greatly on the decisions made by state agencies, certification boards and teacher educators of the university programs.

State Agencies and Certification

- State agencies promoted the generic preparation of teachers of the deaf and hard of hearing.
- Granting deaf and hard of hearing education certification at the undergraduate level does not give programs the time to prepare subject-matter competent teachers.

Certification requirements varied greatly by state, but most states used K-12 certification (Serwatka, Venn, & Shreve, 1984). This promoted a more generic type of teacher preparation that focused on the elementary level. Programs were therefore less likely to graduate students who were competent in subject-matter areas and equipped to teach secondary level deaf and hard of hearing students (Bursuck & Epstein, 1986).

One of the reasons given by program coordinators for the minimal focus on subject-matter preparation was that states limited the number of general education hours in the curriculum. An overwhelming majority of survey respondents and interviewees, including the experts, pointed out the impossibility of preparing teachers to be subject-matter competent and ready for professional deaf and hard of hearing education certification in a four year undergraduate program. Those with decision-making authority at the state level appeared to defer to the experts in special education. Teacher educators in turn placed the blame on the states and their policies. Instead of raising the bar and requiring subject-matter specializations for teachers of the deaf and hard of hearing, the focus at the state levels was largely on general education reform.

Interviews with teacher educators indicated that there were no visible barriers to working with the state agencies. While some program coordinators indicated that there was little contact with their state departments, others had positive experiences and had been included in state level committees and advisory boards. It appears that a positive climate exists for dialogue between university programs and state department officials. Every effort must be made to bring issues about subject-matter to the table and work towards making subject-matter an integral part of the deaf and hard of hearing teacher preparation curriculum.

Council on Education of the Deaf

- The CED has not set clear subject-matter standards for teachers of deaf and hard of hearing learners
- Teacher educators in the field of deaf and hard of hearing education are ambivalent about the leadership role of the CED

The CED is the organization that sets standards for teachers of deaf and hard of hearing learners. In 1985, the COED expressed concern over the state of deaf and hard of hearing education and acknowledged that the existing standards were unacceptable. It recognized that it was impossible to prepare teachers to teach at all levels and required specialized training at different levels. Despite these findings, the CED has done little to nothing to change the status of subject-matter preparation for teachers of the deaf and hard of hearing. The CED presently calls for only a 36-hour requirement and an additional 6 hours of practical work for provisional certification for teachers; a period of study that

simply cannot adequately accommodate a subject-matter focus (Pagliaro, 1998). The CED standards continue to largely focus on methodology. The one statement that makes reference to subject-matter does not clearly delineate subject-matter standards for deaf and hard of hearing teacher preparation.

The CED is composed of representatives from six constituent organizations and is 'only as strong as the commitment of its members.' It was very clear from the survey and interview data that there was a lot of dissatisfaction regarding CED. The CED had a poor track record for efficiency, limited concern for continued professional development and lacked the leadership needed for setting higher standards. Teacher educators appeared unsure of what the scope of CED's leadership should be. While there was a desire on some level for CED to take leadership in determining subject-matter standards, there was also a sense of hopelessness that this could ever be accomplished. When respondents were asked, on a scale of 1-7, whether CED should take leadership in deciding the subject-matter competencies for teachers of the deaf and hard of hearing, those who responded to the graduate survey offered a neutral (4) response. Undergraduate programs responded with a median of 5. With the prevailing mistrust, the Council should re-examine its purposes and roles, take on the challenge and risk of setting high standards, be consistent with its charge and objectively determine the scope and strength of its leadership.

Teacher Educators/Program Coordinators of Deaf and Hard of Hearing Programs

- The priorities of teacher educators has a profound impact on the subject-matter preparation of students.
- There is high spoken value for subject-matter competence for teachers of the deaf and hard of hearing.
- There is an absence of explicitly stated requirements for subject-matter coursework in programs.
- Teacher preparation programs' curricula need to be re-visited and priorities re-organized.
- There is little contact between the faculty in the deaf and hard of hearing teacher preparation programs and the liberal arts faculty at the university.
- Collaborative relationships can greatly increase the impact of deaf and hard of hearing teacher preparation programs.

On a scale of 1-7, with seven indicating the highest score, teacher educators of graduate and undergraduate programs showed a strong conviction that the subject-matter competencies of teachers of the deaf and hard of hearing should parallel that of their general education peers (Medians of 5 and 6 respectively). This support for subject-matter was also seen in the results of a survey sent to administrators in residential school programs and the public schools. Ninety-five percent of administrators in the residential programs and eight-nine percent of those in the public school programs, supported this belief (Lytle & Rovins, 1997). A median ranking of 5 (graduate programs) and a median

of 4 (undergraduate programs) indicated that teacher educators showed less support for the idea that teachers should have a degree in a subject-matter area prior to enrolling in the program.

One of the reasons why some programs had higher subject-matter related requirements was because the teacher educators in those programs were convinced of the importance of subject-matter and made its inclusion a priority. They anticipated that new students would have subject-matter deficiencies and developed a plan to deal with this. These programs also set aside a specific number of credit hours for subject-matter preparation. These hours were not negotiable. In two other programs, despite the restriction around the number of general education hours available, the coordinators recognized the value of subject-matter and encouraged students to use their elective credit hours for subject-matter related coursework. The coordinator of an undergraduate program increased the overall requirements of the program to 156 credit hours, a number well over the university's required minimum hours for graduation. Thus it is apparent that when teacher educators were convinced of the value of subject-matter, they found ways to incorporate this into the curriculum. Most teacher educators have backgrounds in deaf education and this may be one reason that subject-matter was frequently not a priority. Teacher educators have the potential to impact the values and choices of the students in their programs. While the current focus of students is largely on literacy-related coursework, these priorities could be re-defined if teacher educators encouraged a subject-matter focus.

The degree to which subject-matter was valued, or not, in a program was apparent in the way subject-matter requirements were managed. In the absence of explicitly stated subject-matter requirements, teacher preparation programs for the deaf and hard of hearing had the tendency to show a great deal of flexibility in drawing up programs of study for students. One teacher preparation program for the deaf and hard of hearing undertook a reform effort to increase the subject-matter requirements in the program. This was done by mandating a liberal arts curriculum and requiring a 24-hour subject-matter concentration. It was found however that this program offered only one course in mathematics. Subject-matter courses were waived for deaf education majors in order to accommodate general education classes. Finally, this program allowed any liberal arts major, including music, philosophy and religion, to satisfy the 24-credit hour focus at the elementary level (Shroyer and Compton, 1992). Clearly while there was an attempt to make subject-matter requirements explicit, there was not a similar commitment to adhere to these same requirements.

“Too much to do in too little time,” was a reason commonly offered by teacher educators for not including a greater subject-matter focus in their programs. In general, deaf and hard of hearing education teacher preparation curricula continue to be crammed with unnecessary courses including speech and auditory sciences. There is the need to move away from a pathological view of deafness and re-think curricular priorities for deaf and hard of hearing children. Random decisions should not be made. Instead it is imperative to ensure that both professional knowledge and subject-matter competency is

grounded in a solid foundation of pedagogical training (Schulman, 1986).

Teacher educators frequently viewed themselves as the deafness experts and limited their influence to this area. Subject-matter preparation was frequently delegated to the liberal arts faculty. Such a stance caused teacher educators in the deaf and hard of hearing department to assume little to no responsibility for the subject-matter preparation of their students. It may be this attitude that results in the expectation that the academically 'bright' deaf and hard of hearing students would receive their subject-matter coursework from the general education subject-matter teachers in the mainstream classrooms; rather than from teachers of the deaf and hard of hearing. Faculty in the deaf and hard of hearing departments did not confer with the liberal arts faculty and had little association with them. This kind of detachment does not serve the needs of future teachers well. A combined effort to work together and create a curriculum that best meets the overall needs of future teachers of the deaf and hard of hearing can serve to give the field the well-prepared teachers it so desperately needs. Further, the modeling of collaborative behaviors would have a positive impact on future teachers.

Teacher educators listed several factors that served as barriers to preparing subject-matter competent teachers. One of these barriers referred to the small size of most deaf and hard of hearing teacher preparation programs. Teacher educators indicated that this small program size did not allow for age and subject-matter differentiations to be made within programs. Resources in a small program for offering subject-matter options to students was limited, including the availability of subject-matter faculty. Interestingly,

aside from a few remarks by the experts, the idea of collaborating and working with colleagues as a team was seldom mentioned by the teacher educators. This, despite the fact that most current major educational reforms called for meaningful and extensive collaborating. As Inger (1993) indicated, tasks that have the potential to overwhelm individuals or programs working in isolation become more manageable and doable when working as a team. Subject-matter cuts across philosophical and other programmatic barriers. Sharing resources and expertise with the liberal arts faculty can greatly increase the impact and reach of deaf and hard of hearing teacher preparation programs.

The Reality of the Job Market, the Demand for Teachers of the Deaf and Hard of Hearing and the Result of Low Expectations

The results of this study indicate that there are a number of different factors that relate to the subject-matter preparation of teachers of deaf and hard of hearing learners. Teacher educators indicated that one of the major barriers in preparing subject-matter competent teachers was the lack of incentives for teachers to be subject-matter competent. There was a constant demand for teachers of the deaf and hard of hearing and to meet this demand, anybody with deaf education certification was hired to teach, regardless of whether or not they possessed a subject-matter specialization. This willingness on the part of teacher educators to graduate students who are not subject-matter competent, the readiness of state departments to certify individuals who do not display subject-matter competence and the inclination of potential employers to hire individuals regardless of their subject-matter competence, all contribute to the problem of teachers of the deaf and

hard of hearing lacking competence in subject-matter areas.

Historically, subject-matter has not been a priority in deaf and hard of hearing education. The focus has primarily been on language and communication issues/competencies and teachers have not been required to be subject-matter specialists. The simple question then arises that if teachers have weak subject-matter backgrounds, how can deaf and hard of hearing students develop a strong subject-matter foundation? The cycle of low expectations impacts the quantity and quality of education that deaf and hard of hearing learners receive and resulted in the continued poor achievement of deaf and hard of hearing learners. Historically, the failure of deaf and hard of hearing learners was perceived as the result of inherent inadequacies within the children themselves. The competence and preparation of their teachers, and the likely effects of these, was seldom considered. Poor performance has resulted in low expectations and restricted curricula. As Johnson, Liddel & Erting (1989) explain,

“Thus, the public image of an educator of deaf children is one of a highly skilled....who is ‘helping’ deaf people achieve something greater than they would otherwise have been able to. At the same time the educator is presented as one who is limited in what he or she can do by the inherent limitations of deaf people. As a result, the system itself is not subject to criticism and has been allowed to exist without expectations of success.”

Clearly, based on research that points to the normal cognitive functioning of deaf and hard of hearing individuals, these low expectations and the consequences they have on the

preparation of deaf and hard of hearing learners and those who teach them, are wholly unacceptable. IDEA 97 has shifted the emphasis of provision of services to children with disabilities from placement to access to the general education curriculum. Deaf and hard of hearing learners have the right to access this general education curriculum. A lack of skill, literacy and training disenfranchises people and does not allow for their full participation in society (National Commission on Excellence in Education, 1983). Deaf and hard of hearing learners should not be denied a fair and comprehensive education.

Conclusion

The problem of poor subject-matter preparation of teachers of deaf and hard of hearing is not the burden of any one individual, group, agency or organization. Instead the responsibility lies with various parts of the larger system; individuals at the state department; certification agencies and professional organizations and their decisions; the priorities of those at the universities; teacher educators and their values; and those who employ teachers of the deaf and hard of hearing and the importance they affix to competence in subject-matter.

While certification and mandates may not help, setting standards and goals for the subject-matter preparation of teachers can help offer direction to the field and those who prepare its teachers. The hallmark of a quality profession was said to be its ability and its willingness to establish a set of standards that relate to performance and practice (Heller, 1983). With established standards, teachers can set clear goals and work towards meeting these goals (Diez, Richardson & Pearson, 1994). As one of the experts explained, there is

a need for a beacon in the field, to guide and direct individuals towards preparing subject-matter competent teachers.

Implications

Several implications can be drawn from the results of the survey and from interviews with both the teacher educators and experts. These are presented below:

Pre-Service Training

1. The critical components of a strong subject-matter curriculum must be delineated. This effort should be jointly coordinated by the Council on Education of the Deaf (CED) and the Association of College Educators Deaf and Hard of Hearing (ACEDHH) and accomplished with input from representatives from the various subject-matter related national organizations. The sequence and duration of various courses of study must be specified as well as their place in the overall curriculum.

Current teacher education curricula must be re-visited and priorities re-shaped based upon sound principles of subject-matter and pedagogy.

Deaf and hard of hearing teacher preparation programs should establish clear goals, objectives and timelines for implementing a subject-matter component in their programs.

2. Teacher educators should inculcate early habits in pre-service teachers to value subject-matter. This can be done by encouraging pre-service teachers to attend meetings and workshops in general education subject-matter areas; encouraging

- membership in national subject-matter organizations; encouraging the reading of professional literature of subject-matter organizations; and supporting attendance at national subject-matter organizations' conferences.
3. Teacher educators should stay current with readings in major publications of various subject-matter areas, attend subject-matter related workshops and conferences.
 4. Consideration should be given to increasing the current duration of preparation programs by including a fifth year for professional coursework in undergraduate programs and including mandatory seminars and workshops by means of summer institutes.
 5. Programs should seek ways to increase subject-matter instruction in existing courses; for example, integrate more subject-matter into methods courses. Carefully integrated arts and science and education courses have the potential to augment subject-matter comprehension in pre-service teachers without dramatically increasing the number of credit hours in a program.
 6. Teacher educators should engage in writing grants and seeking funds to support their own professional development and students' participation in subject-matter related activities and events.
 7. Teacher preparation programs should not grant admission to students at the graduate level who do not show evidence of sufficient subject-matter. A written contract must be created with those students who have subject-matter deficiencies,

stating that all the necessary coursework will be completed.

8. Deaf and hard of hearing teacher preparation programs must require students to focus on a specific subject-matter area. Students at the secondary level must have at least thirty six hours of preparation in a subject-matter area of choice.

Collaborations

9. Greater collaboration must be facilitated between teacher educators in the deaf and hard of hearing department and the liberal arts faculty. Joint meetings should result in establishing mutual goals, clear expectations for reciprocity, ideas for partnerships and collaborative work, and sharing of resources.
10. Teacher educators and CED should open lines of communication with the state departments and present to them the importance of subject-matter and the need for reform.

Administration

11. The university administration must make it feasible for teacher educators in the deaf and hard of hearing department to collaborate with the liberal arts faculty by allowing flexibility in scheduling; providing the necessary resources and supporting professional development activities. Administrators should also encourage, acknowledge, and demonstrate that they value these collaborative relationships.
12. School administrators should only hire qualified individuals to teach various positions. At the elementary level teachers should have deaf education and at least

twelve hours of subject-matter related coursework in English, mathematics, science and social studies. At the secondary level teachers should have deaf education as well as certification in the subject-matter area in which they intend to teach.

13. Teacher educators should be given incentives to become involved with subject-matter preparation. This be done by the administration supporting attendance to subject-matter organizations' conferences; recognition for efforts to create awareness of the importance of subject-matter and participation in activities that encourages a greater focus on subject-matter in the curriculum.

State Departments

14. The practice of K-12 certification in deaf and hard of hearing education by the states should stop.
15. Professional certification in deaf and hard of hearing education following a four-year undergraduate training program should stop. States should consider certifying or licensing graduates of four year programs with a provisional license that becomes professional after demonstration of subject-matter competency in the classroom (whether demonstration is in such entry year programs, additional coursework, portfolios, or other means).
16. State departments and university teacher educators should confer and clearly delineate expectations and responsibilities to ensure the subject-matter competence of teachers.

Professional Agencies

17. Professional agencies in the field of deaf and hard of hearing education such as the CED, ACEDHH, CEASD and CAID should recognize the importance of subject-matter competence in teachers and make subject-matter related issues a priority.

Conferences and meetings of national organizations in the field of deaf and hard of hearing education should be used as active forums to discuss and promote subject-matter issues and needs as they relate to the preparation of teachers of the deaf and hard of hearing.

Professional Development

18. Professional development activities should not be limited to activities offered by individuals in the field of deaf and hard of hearing education but include presentations and training from representatives of various subject-matter agencies.
19. National organizations such as CAID and ACEDHH should include subject-matter related issues in its pre-conference training sessions and subject-matter tracks during the conference. This will indicate a respect for subject-matter and provide for professional development opportunities for teacher educators.

Future Research

1. A study to document the differences between programs that attack the problem of subject-matter and those that seemingly accept the problem and status quo.
2. A longitudinal study to examine the relationship between student achievement and competent instruction (in subject-matter areas).
3. Follow-up studies with program graduates to document the effectiveness of their training and the needs, as they relate to subject-matter preparation.

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Appendix A
Graduate and Undergraduate Surveys

Deaf Education Teacher Preparation (Graduate Program Survey)

1. Please rank order the following competencies according to their importance for teachers of deaf and hard-of-hearing children (1 = most important . . . 2 3 4 5 6 7 8 9 . . . 10 = least important)
- | | |
|--|---|
| <p>_____ Multicultural Awareness</p> <p>_____ Knowledge of Teaching Methods</p> <p>_____ Knowledge of Assessment Procedures</p> <p>_____ Knowledge of Deaf Culture</p> <p>_____ Subject-matter knowledge</p> | <p>_____ English Print Literacy</p> <p>_____ American Sign Language Fluency</p> <p>_____ Oral/Aural Competencies</p> <p>_____ Simultaneous Communication</p> <p>_____ Subject-matter pedagogy</p> |
|--|---|
2. The number of students who graduated from your program last year is: _____
3. The number of faculty whose primary responsibility is working in deaf education is: _____
4. Is your program state approved? Yes No
5. For which role(s) does your program prepare teachers? Rank order according to the teaching position most frequently or least frequently assumed by graduates:
(1 = most frequently . . . 2 3 4 5 . . . to 6 = least frequently)
- | | |
|---|---|
| <p>_____ Mainstream classroom</p> <p>_____ Self-contained classrooms</p> <p>_____ Residential Schools</p> | <p>_____ Resource rooms</p> <p>_____ Day School</p> <p>_____ Itinerant position</p> |
|---|---|
6. How is your school organized? Semester system Quarter system
7. The subject-matter competence of students entering your program is assessed by:
- | | Yes | | No |
|--|--------------------------|----------------------|--------------------------|
| Prior teaching experience in subject-matter area | <input type="checkbox"/> | | <input type="checkbox"/> |
| Degree in subject-matter area | <input type="checkbox"/> | | <input type="checkbox"/> |
| Transcripts | <input type="checkbox"/> | | <input type="checkbox"/> |
| | | <u>Minimum Score</u> | |
| Graduate Record Exam (GRE) | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| Multiple Subjects Assessment (MSAT): | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| General Knowledge Test on the NTE: | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| Other: _____ | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
8. Pre-requisite course work in your program is required in:
- | <u>Area</u> | | <u># of credits</u> | |
|--------------------------|--------------------------|---------------------|--------------------------|
| English: Reading/Writing | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| Math | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| Science | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| Social Studies | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| Literature | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
- Students in your program must:
9. Choose an age specific specialization area Yes No

10. Take methods courses in the following areas:

Elementary Majors:

<u>Area</u>	<input type="checkbox"/>	<u># of credits</u>	<input type="checkbox"/>
English: Reading/Writing	<input type="checkbox"/>	_____	<input type="checkbox"/>
Math	<input type="checkbox"/>	_____	<input type="checkbox"/>
Science	<input type="checkbox"/>	_____	<input type="checkbox"/>
Social Studies	<input type="checkbox"/>	_____	<input type="checkbox"/>

Secondary Majors:

Choose a subject matter concentration	<input type="checkbox"/>	<input type="checkbox"/>
Have a degree in the area(s) they will teach:	<input type="checkbox"/>	<input type="checkbox"/>

Take methods courses in the following areas:

<u>Area</u>	<input type="checkbox"/>	<u># of credits</u>	<input type="checkbox"/>
English: Reading/Writing	<input type="checkbox"/>	_____	<input type="checkbox"/>
Math	<input type="checkbox"/>	_____	<input type="checkbox"/>
Science	<input type="checkbox"/>	_____	<input type="checkbox"/>
Social Studies	<input type="checkbox"/>	_____	<input type="checkbox"/>

In the following section please indicate the relative importance of each item to your program and the relative frequency with which your program uses/practices the concept listed.

On a scale of 1 - 7, circle your response for each of the following:

(1 = least important or least frequent . . . 2 3 4 5 6 . . . 7 = most important or most frequent)

	Least Imp.	Neutral	Most Imp.	Least Freq.	In-Between	Most Freq.
11. Your program addresses subject-matter in the following ways:						
Discussions at field placements	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Required course work	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Subject-matter seminars	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Discussions during student teaching	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Other (specify): _____	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
12. The subject-matter knowledge of your students is assessed by:						
Quizzes and tests	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Classroom projects	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Face to face conferences	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Student teaching	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Portfolios	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Other (describe): _____	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
13. Subject-matter competence of university faculty in your program is considered for student teaching supervision:						
Elementary level	1 2 3 4 5 6 7			1 2 3 4 5 6 7		
Secondary level	1 2 3 4 5 6 7			1 2 3 4 5 6 7		

		Least			Most			Least			Most				
		Imp.	Neutral	Imp.	Freq.	In-Between	Freq.	Freq.	In-Between	Freq.	In-Between	Freq.			
14.	Student teacher subject-matter specialization in your program is considered when deciding practicum/ student teaching placements at the:														
	Elementary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Secondary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7
15.	Cooperating teacher subject-matter specialization is considered when assigning student teacher placements at the:														
	Elementary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	Secondary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7
16.	The persons who decide what subject matter competencies (if any) are necessary for teachers of the deaf and hard-of-hearing are:														
						Yes					No				
	Faculty responsible for specific subject-mater area					<input type="checkbox"/>					<input type="checkbox"/>				
	Department curriculum committee					<input type="checkbox"/>					<input type="checkbox"/>				
	State Department of Education					<input type="checkbox"/>					<input type="checkbox"/>				
	Other (specify): _____					<input type="checkbox"/>					<input type="checkbox"/>				
17.	Licensure exams your pre-service teachers must take:														
	Praxis I (PPST) Reading					<input type="checkbox"/>					<input type="checkbox"/>				
	Writing					<input type="checkbox"/>					<input type="checkbox"/>				
	Math					<input type="checkbox"/>					<input type="checkbox"/>				
	Praxis II (NTE) Audiology					<input type="checkbox"/>					<input type="checkbox"/>				
	Biology and General Science					<input type="checkbox"/>					<input type="checkbox"/>				
	English Language/Literature					<input type="checkbox"/>					<input type="checkbox"/>				
	Mathematics					<input type="checkbox"/>					<input type="checkbox"/>				
	Teaching deaf and hard-of-hearing					<input type="checkbox"/>					<input type="checkbox"/>				
	Speech-Language Pathology					<input type="checkbox"/>					<input type="checkbox"/>				
	Special Education					<input type="checkbox"/>					<input type="checkbox"/>				
	Praxis III (Performance Assessment)					<input type="checkbox"/>					<input type="checkbox"/>				
18.	Students in your program must pass these exams:														
	before they graduate					<input type="checkbox"/>					<input type="checkbox"/>				
	before they obtain certification/licensure					<input type="checkbox"/>					<input type="checkbox"/>				
19.	University faculty in your <u>deaf education</u> program can best be described by the following:														
	Have degrees and/or certification in academic subjects taught in the schools					1	2	3	4	5	6	7			
	Attend subject-matter related professional meetings					1	2	3	4	5	6	7			
	Read professional journals of subject-matter organizations					1	2	3	4	5	6	7			

19. (Continued)

University faculty in your deaf education program can best be described by the following:

	Least Frequently		In-Between			Most Frequently	
Attend conferences of subject-matter organizations	1	2	3	4	5	6	7
Meet regularly with the liberal arts faculty	1	2	3	4	5	6	7
Your Professional Belief Statements	Strongly Disagree		Neutral			Strongly Agree	
20. The subject matter training of teachers of deaf and hard-of-hearing students should be the same as that of teachers of hearing students	1	2	3	4	5	6	7
21. It is not practical in a low incidence population to require subject-matter competence in teachers	1	2	3	4	5	6	7
22. Teachers of the deaf and hard-of-hearing should have regular education credentials prior to enrolling in our program	1	2	3	4	5	6	7
23. The Council on Education of the Deaf (CED) should specify, by age and specialization taught, the necessary subject-matter competencies for certification.	1	2	3	4	5	6	7

Please share your thoughts and ideas regarding the following two questions:

24. How can we prepare future teachers of deaf and hard-of-hearing students to be subject-matter competent?
25. What are the barriers or problems we face in preparing subject-matter competent teachers of deaf and hard-of-hearing learners?

Thank you.

Deaf Education Teacher Preparation (Undergraduate Program Survey)

1. Please rank order the following competencies according to their importance for teachers of deaf and hard-of-hearing children (1 = most important . . . 2 3 4 5 6 7 8 9 . . . 10 = least important)

<p>_____ Multicultural Awareness</p> <p>_____ Knowledge of Teaching Methods</p> <p>_____ Knowledge of Assessment Procedures</p> <p>_____ Knowledge of Deaf Culture</p> <p>_____ Subject-matter knowledge</p>	<p>_____ English Print Literacy</p> <p>_____ American Sign Language Fluency</p> <p>_____ Oral/Aural Competencies</p> <p>_____ Simultaneous Communication</p> <p>_____ Subject-matter pedagogy</p>
--	---

2. The number of students who graduated from your program last year is: _____
3. The number of faculty whose primary responsibility is working in deaf education is: _____

4. Is your program state approved? Yes No

5. For which role(s) does your program prepare teachers? Rank order according to the teaching position most frequently or least frequently assumed by graduates:
(1 = most frequently . . . 2 3 4 5 . . . to 6 = least frequently)

<p>_____ Mainstream classroom</p> <p>_____ Self-contained classrooms</p> <p>_____ Residential Schools</p>	<p>_____ Resource rooms</p> <p>_____ Day School</p> <p>_____ Itinerant position</p>
---	---

6. How is your school organized? Semester system Quarter system

7. The subject-matter competence of students entering your program is assessed by:

	Yes	No
Transcripts	<input type="checkbox"/>	<input type="checkbox"/>
		<u>Minimum Score</u>
General Knowledge Test on the NTE:	<input type="checkbox"/>	<input type="checkbox"/>
Multiple Subjects Assessment (MSAT):	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>

8. Pre-requisite course work in your program is required in:

<u>Area</u>		<u># of credits</u>
English: Reading/Writing	<input type="checkbox"/>	_____ <input type="checkbox"/>
Math	<input type="checkbox"/>	_____ <input type="checkbox"/>
Science	<input type="checkbox"/>	_____ <input type="checkbox"/>
Social Studies	<input type="checkbox"/>	_____ <input type="checkbox"/>
Literature	<input type="checkbox"/>	_____ <input type="checkbox"/>

Students in your program must:

9. Choose an age specific specialization area Yes No

10. Take the following courses:

Elementary Majors: Area	Methods Courses			Subject-Matter Courses		
	Yes	#of credits	No	Yes	# of credits	No
English: Reading/Writing	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Math	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Science	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Social Studies	<input type="checkbox"/>	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>

Secondary Majors:

- Choose a subject matter concentration Yes No
- Have a degree in the area(s) they will teach: Yes No

Take methods courses in the following areas:

Area	# of credits		
English: Reading/Writing	<input type="checkbox"/>	_____	<input type="checkbox"/>
Math	<input type="checkbox"/>	_____	<input type="checkbox"/>
Science	<input type="checkbox"/>	_____	<input type="checkbox"/>
Social Studies	<input type="checkbox"/>	_____	<input type="checkbox"/>

In the following section please indicate the relative importance of each item to your program and the relative frequency with which your program uses/practices the concept listed.

On a scale of 1 - 7, circle your response for each of the following:

(1 = Least Important or Least Frequent . . . 2 3 4 5 6 . . . 7 = Most Important or Most Frequent)

11. Your program addresses subject-matter in the following ways:	Least Imp.			Neutral				Most Imp.			Least Freq.							In-Between							Most Freq.																	
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Discussions at field placements	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Required course work	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Subject-matter seminars	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Discussions during student teaching	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Other (specify): _____	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7

12. The subject-matter knowledge of your students is assessed by:	Least Imp.			Neutral				Most Imp.			Least Freq.							In-Between							Most Freq.										
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Quizzes and tests	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Classroom projects	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Face to face conferences	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Student teaching	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Portfolios	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Other (describe): _____	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7

13. Subject-matter competence of university faculty in your program is considered for student teaching supervision:	Least Imp.			Neutral				Most Imp.			Least Freq.							In-Between							Most Freq.										
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Elementary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Secondary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7

		Least Imp.		Neutral			Most Imp.		Least Freq. In-Between				Most Freq.				
14.	Student teacher subject-matter specialization in your program is considered when deciding practicum and student teaching placements at the:																
	Elementary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7		
	Secondary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7		
15.	Cooperating teacher subject-matter specialization is considered when assigning student teacher placements at the:																
	Elementary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7		
	Secondary level	1	2	3	4	5	6	7	1	2	3	4	5	6	7		
16.	The persons who decide what subject matter competencies (if any) are necessary for teachers of the deaf and hard-of-hearing are:																
									Yes						No		
	Faculty responsible for specific subject-matter area								<input type="checkbox"/>						<input type="checkbox"/>		
	Department curriculum committee								<input type="checkbox"/>						<input type="checkbox"/>		
	State Department of Education								<input type="checkbox"/>						<input type="checkbox"/>		
	Other (specify): _____								<input type="checkbox"/>						<input type="checkbox"/>		
17.	Licensure exams your pre-service teachers must take:																
	Praxis I (PPST) Reading								<input type="checkbox"/>						<input type="checkbox"/>		
	Writing								<input type="checkbox"/>						<input type="checkbox"/>		
	Math								<input type="checkbox"/>						<input type="checkbox"/>		
	Praxis II (NTE) Audiology								<input type="checkbox"/>						<input type="checkbox"/>		
	Biology and General Science								<input type="checkbox"/>						<input type="checkbox"/>		
	English Language/Literature								<input type="checkbox"/>						<input type="checkbox"/>		
	Mathematics								<input type="checkbox"/>						<input type="checkbox"/>		
	Teaching deaf and hard-of-hearing								<input type="checkbox"/>						<input type="checkbox"/>		
	Speech-Language Pathology								<input type="checkbox"/>						<input type="checkbox"/>		
	Special Education								<input type="checkbox"/>						<input type="checkbox"/>		
	Praxis III (Performance Assessment)								<input type="checkbox"/>						<input type="checkbox"/>		
18.	Students in your program must pass these exams:																
	before they graduate								<input type="checkbox"/>						<input type="checkbox"/>		
	before they obtain certification/licensure								<input type="checkbox"/>						<input type="checkbox"/>		
									Least Frequently					In-Between			
																Most Frequently	
19.	University faculty in your <u>deaf education</u> program can best be described by the following:																
	Have degrees and/or certification in academic subjects taught in the schools								1	2	3	4	5	6	7		
	Attend subject-matter related professional meetings								1	2	3	4	5	6	7		
	Read professional journals of subject-matter organizations								1	2	3	4	5	6	7		
									Least							Most	

19. (Continued)	Frequently		In-Between		Frequently		
University faculty in your <u>deaf education</u> program can be best described by the following:							
Attend conferences of subject-matter organizations	1	2	3	4	5	6	7
Meet regularly with the liberal arts faculty	1	2	3	4	5	6	7
Your Professional Belief Statements	Strongly Disagree			Neutral			Strongly Agree
20. The subject matter training of teachers of deaf and hard-of-hearing students should be the same as that of teachers of hearing students	1	2	3	4	5	6	7
21. It is not practical in a low incidence population to require subject-matter competence in teachers	1	2	3	4	5	6	7
22. Teachers of the deaf and hard-of-hearing should have regular education credentials prior to enrolling in our program	1	2	3	4	5	6	7
23. The Council on Education of the Deaf (CED) should specify, by age and specialization taught, the necessary subject-matter competencies for certification.	1	2	3	4	5	6	7

Please share your thoughts and ideas regarding the following two questions:

24. How can we prepare future teachers of deaf and hard-of-hearing students to be subject-matter competent?

25. What are the barriers or problems we face in preparing subject-matter competent teachers of deaf and hard-of-hearing learners?

Thank you.