To the Graduate Council:

I am submitting herewith a dissertation written by Jane Ellen Vaughn entitled "A Study of Tennessee Certification Standards for Trade and Industrial and Health Occupations Teachers." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Vocational-Technical Education.

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A STUDY OF TENNESSEE CERTIFICATION STANDARDS FOR TRADE AND INDUSTRIAL AND HEALTH OCCUPATIONS TEACHERS

A Dissertation

Presented for the

Doctor of Education

Degree

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Jane Ellen Vaughn

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ABSTRACT

The overall purpose of this study was to assess the adequacy of Tennessee's certification and employment policies for trade and industrial (T&I) and health occupations teachers and to make recommendations based on that assessment. To achieve this purpose, the study was divided into two separate and distinct segments: 1) a national study designed to provide a current state of the art relative to certification standards and employment policies in use in each of the 50 states and the District of Columbia and 2) a state survey of currently employed trade and industrial and health occupations teachers and their local directors and/or superintendents to assess the adequacy of Tennessee's present certification requirements as perceived by each respondent group.

Data from the national study was based on each state's written certification policy and on returned questionnaires from a designated contact person within each state. Data from the state study was based on returned questionnaires from selected teaching and administrative personnel within the state of Tennessee.

Measures of central tendency, crosstabulations, and correlations, where appropriate, were the statistical methods employed for analysis.

Analysis of data yielded the following results:

National Study: Trade and industrial and health occupations teacher certification was required in each of the 50 states and the District of Columbia at the secondary level but in only 30 states at

the postsecondary level. Although there were no substantial differences between trade and industrial and health occupations teachers relative to certification policies, there were notable differences at both levels relative to employment policy. Health occupations teachers were more often required to have licensure, a higher minimum educational level for employment, and possess fewer years' work experience.

Most states required both their T & I and health teachers to have a high school diploma, licensure in the occupational field, and three to five years of work experience to be employed. The majority of states did not require an occupational competency examination nor a preservice training program prior to employment.

The majority of states utilized a blanket type certification policy whereby all teachers were required to meet essentially the same certification criteria. Overall postsecondary teachers were required to earn fewer coursework credit hours for full certification and fewer renewal credits than were secondary teachers. The majority of states specified continued certification once full certification had been earned. Approximately one-fourth of the states had provisions for permanent certification.

State Study: Tennessee secondary teachers and their local directors indicated satisfaction with the present certification requirements. They did, however, indicate certain professional development needs that were not presently being met under those requirements. Postsecondary teachers and their superintendents were not supportive of required certification for postsecondary personnel. They did, however, indicate a need for the development of certain professional skills.

Tennessee certification and employment requirements appeared to be relatively well aligned with those summarized from the national data.

Based on these findings, the following recommendations for improvement in Tennessee's certification policy were made: 1) strengthening the preservice requirement; 2) requiring an occupational competency examination; 3) separation of T&I and health occupations certification requirements; 4) issuance of a one year temporary teaching certificate; 5) alteration of the requirements and the routes used in obtaining full certification; and 6) required certification for postsecondary personnel.

Recommendations for future studies were also made.

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CHAPTER I

INTRODUCTION

Vocational education has received increased emphasis as evidenced by legislation both at the federal and state level over the last 20 years. As a result, it has grown quickly in both student enrollment and program offerings, with the number of students enrolled having increased more than 300 percent during the last decade (AVA Fact Sheet, 1979). Moreover, the greatest growth during this period has been in the areas of trade and industrial (T & I) programs and in the allied health occupations fields (Burkett, 1976). This increased student enrollment has naturally provided a greater demand for teachers with occupational expertise in these two program areas. Moreover, Burkett predicts continued growth for these two areas.

This prediction has been exemplified in the State of Tennessee. Cheek (1976) projected that well over half of the vocational instructors needed in Tennessee by 1978 would be in the trade and industrial subject area. He attributed this to Tennessee's transition from an agrarian to an industrial state. Among the remaining service areas, the need for health occupations instructors also ranked high.

This rapid growth and expansion of vocational programs, not only in Tennessee but also nationally, has created many problems in the areas of planning, facility expansion and personnel development. In this latter area, problems concerning teacher recruitment and training appeared to be prevalent in areas of both secondary and postsecondary

vocational education throughout the United States (Ramp and Reeder, 1970).

To meet the increased demand for teachers of trade and industrial and health occupations programs, most states had adopted certification requirements that were different from those used with their academic subject teachers. The standard requirement for academic teacher certification at the secondary level was a baccalaureate degree in education. Trade and industrial and health occupations teacher requirements were different both at the secondary and post-secondary level in that the major emphasis was on occupational experience rather than educational accomplishment (Strong, 1971). In many states, certification of trade and industrial and health occupations teachers at the postsecondary level was not required at all (Ramp and Reeder, 1970).

In addition, requirements for vocational teachers were tailored by the individual states and were periodically adjusted to alleviate supply and demand problems (Ramp and Reeder, 1970). Certification requirements as a result varied widely from state to state.

Granted, occupational competence is a vital ingredient to successful vocational teaching. Equally significant, however, is the ability of the instructor to teach those occupational skills to students who have little or no background in the subject area. The development of teaching skills is presumed to be the purpose for establishing certain vocational teacher certification requirements. For this reason, it is of vital importance that certification and employment standards be sufficient to ensure that quality instruction results.

Statement of the Problem

To ensure that trade and industrial and health occupations teachers are both occupationally and pedagogically competent, states must periodically assess the adequacy of their certification and employment standards. An effective assessment must involve two phases: 1) a comparative analysis of a state's policy relative to the state of the art nationally and 2) an assessment of the adequacy of state certification and employment policies as perceived by the personnel within the state who are affected by those policies.

At present, there is a dearth of studies which might provide the breadth and depth necessary for a current and complete national picture of the certification requirements and employment policies for trade and industrial and health occupations teachers at both the secondary and postsecondary level. Data from previous studies were often incomplete and sketchy in important details thereby leaving comparisons among the studies limited at best. Moreover, in that the majority of available studies dealt primarily with secondary standards, much needed information on postsecondary certification was lacking.

Further, there were no studies available whereby secondary Tennessee trade and industrial and health occupations teachers and their directors expressed their opinions regarding the adequacy of present certification standards or their opinions toward needed competencies or policy change. In addition, little information was available on the attitudes held by Tennessee postsecondary teachers and their superintendents regarding certification.

As trade and industrial and health occupations education continues to expand, states must become aware of their responsibility

for providing qualified teachers. Periodic assessment of certification and employment standards is a critical part of this responsibility.

Purpose of the Study

The overall objectives of this study were: 1) to assess the adequacy of Tennessee's certification and employment requirements for trade and industrial and health occupations teachers, and 2) to make recommendations for needed improvement based on that assessment.

To achieve these objectives, the study became multi-faceted with several separate and distinct purposes. Thus, the specific purposes of this study were:

1) to provide a current and complete state of the art nationally which would serve not only as a standard for comparative assessment of Tennessee's certification and employment policies, but also as a basis upon which decisions regarding needed improvement could be made.

2) to assess the attitudes of presently employed Tennessee secondary trade and industrial and health occupations teachers and their local directors relative to the adequacy of the present certification and employment policies and to obtain their opinions regarding needed competencies and suggested changes.

3) to assess the attitudes of presently employed Tennessee postsecondary trade and industrial and health occupations teachers and their superintendents regarding needed teacher competencies and the need for teacher certification at the postsecondary level.

Research Questions

National study. To achieve the purpose of providing a current and complete state of the art nationally, information from all 50 states and the District of Columbia was sought relative to four areas: 1) the requirements for initial employment, 2) preservice requirements, 3) the requirements for full certification, and 4) renewal requirements for continued certification.

1. Regarding the requirements for initial employment of secondary and postsecondary trade and industrial and health occupations teachers, what was (were):

   a. the minimum educational level required for employment?
   b. the number of years of full time work experience required for employment?
   c. the extent and nature of options available in lieu of the work experience requirement?
   d. the nature of the use of the occupational competency exam?
   e. the extent to which licensure in the vocational field was required?

2. Regarding the preservice requirements of secondary and postsecondary trade and industrial and health occupations teachers, what was (were):

   a. the extent to which preservice programs were required?
   b. the period of time specified for this requirement?
   c. the nature of these requirements?

3. Regarding the requirements for full certification of secondary and postsecondary trade and industrial and health occupations teachers, what was (were):

   a. the nature of the plan leading to full certification?
   b. the length of the initial certification period?
   c. the amount of coursework required annually to gain full certification?
   d. the nature of the courses required for certification?
   e. the delivery system(s) for helping teachers meet these requirements?

4. Regarding the requirements for continued certification for secondary and postsecondary trade and industrial and health occupations teachers, what was:

   a. the extent to which renewal requirements existed?
   b. the renewal period for continued certification?
   c. the nature of the renewal requirements?

State study. To achieve the purpose of assessing the adequacy of the present certification and employment standards as perceived by Tennessee secondary trade and industrial and health occupations teachers and their local directors, the following information was sought. What was (were) their:

1. perceived value of Tennessee's present certification courses?
2. degree of satisfaction with regard to present certification requirements?

3. reactions to changing the credit hours required for certification?
4. reaction to having separate certification requirements for trade and industrial and health occupations teachers?
5. reaction to linking certification requirements to an Associate or Baccalaureate Degree program?
6. reaction to the requirement of an occupational competency examination?
7. perceived value of a list of specified teacher competencies?

To achieve the purpose of assessing the attitudes of post-secondary trade and industrial and health occupations teachers and their area school superintendents toward teacher certification for postsecondary personnel, the following information was sought. What was (were) their:

1. attitude toward requiring certification for postsecondary teachers?
2. attitude toward meeting certification requirements similar to those required of their secondary counterparts?
3. perceived value of the courses presently utilized in secondary teacher certification?
4. reaction to having separate certification requirements for trade and industrial and health occupations teachers?
5. reaction to linking certification requirements to an Associate or Baccalaureate Degree program?
6. reaction to the requirement of an occupational competency exam?

7. perceived value of a list of specified skill competencies?

To provide additional information relative to problems in the implementation of certification policy changes, Tennessee secondary local directors and postsecondary area school superintendents were asked to designate whether they thought any of the following changes would potentially create implementation problems:

1. requiring an Associate Degree or the equivalent as the minimum educational level for employment.
2. increasing the number of credit hours required to meet initial certification.
3. increasing the preservice requirements.
4. reducing the work experience requirement through substitution of the occupational competency exam.
5. use of an individualized professional development plan.
6. requiring an occupational competency exam in addition to the present certification requirements?
7. specifying an annual coursework requirement.

Rationale for the Study

What vocational teacher certification and employment requirements are and how they vary from state to state is information of great importance to those state department personnel, state vocational boards, and others who are responsible for establishing certification requirements. It is also important to teacher educators who must help implement such requirements and to vocational teachers who are affected by such requirements. It is imperative that vocational

educators, particularly teacher educators and personnel in decision making positions, be informed of the changing state of the art.

It is also significant to note that at the present time, due to the lack of uniformity in policy, certification reciprocity among the states is often difficult at best. Consequently, the results of this study could prove valuable to those concerned with developing a more unified, consistent, national certification policy.

Much of the information compiled and/or uncovered by this study should contribute answers to long standing problems in the field of vocational education. In November, 1968, the Office of Education (DHEW) sponsored a seminar concerned with trade and industrial teacher education and certification. Following reviews of teacher education programs and basic certification policies, conference participants identified several specific problem areas for which research was needed (Brandon, 1968). In the section defined as "Research Areas in Teacher Certification" the following questions were raised: What was/were: 1) the alternate routes to certification, 2) the occupational experience requirements for certification, 3) the certification time period provided for beginning teachers, 4) the standards used to assess occupational competency and professional efficiency of teachers, and 5) the criteria used in determining initial certification.

Concerns such as have been expressed above clearly indicated a need for studies which would provide a data base for solutions to these problems. A national study of present policies relative to these concerns was essential before valid solutions could be proposed. Moreover, state data were also needed in order to keep

specific recommendations for change in their proper perspective. To these ends, this study was directed.

Scope and Limitations

The national phase of this study was confined to the 50 states of the United States and the District of Columbia. It dealt only with the certification and employment policies relative to trade and industrial and health occupations instructors at the secondary and postsecondary level.

The state phase of this study was confined to the following groups who were employed in the state of Tennessee at the time of this study: 1) secondary trade and industrial teachers, 2) secondary health occupations teachers, 3) secondary local directors, 4) post-secondary trade and industrial teachers, 5) postsecondary health occupations teachers, and 6) postsecondary area school superintendents.

Definition of Terms

Secondary level of vocational education--specialized vocational education at the high school level, generally grades 9 through 12.

Postsecondary adult level of vocational education--specialized adult vocational education for those beyond the secondary level.

Full certification--a type of certification granted upon completion of a specified set of requirements. These requirements are predominantly professional education courses with the number of credit hours being set by each individual state. States, however, are free to specify additional criteria (such as an occupational competency exam, licensure, preservice, etc.) for full certification.

Temporary certification--a type of certification granted to teachers who have not met all of the requirements necessary for full certification.

Initial certification period--a specified period of time during which teachers holding a temporary certificate are required to complete a stated portion, or all, of the requirements necessary for full certification.

Continued certification--full certification that must be renewed on some basis.

Permanent (life) certification--full certification that does not have to be renewed once issued.

Employment requirements--a specified set of minimum requirements that an applicant must have prior to being considered for employment.

Preservice requirements--a short preparatory program given to teachers prior to entering the classroom.

Licensure--a permit to engage in an occupation gained by meeting predetermined qualifications and granted by a competent authority.

Blanket certification policy--a type of certification policy where the requirements are the same for all teachers.

Individualized certification policy--a type of certification policy where the requirements may vary among teachers depending upon their educational backgrounds and experience. Also referred to as an Individualized professional development plan.

Organization of the Study

The study consists of five chapters. The following chapter format was used:

Chapter I--contains the introduction, including the statement of the problem, the purposes of the study, research questions, rationale for the study, scope and limitations, definition of terms, and organization of the study.

Chapter II--contains a review of related literature including a view of the problem from a historical aspect, a review of certification studies, needs assessment studies, studies dealing with the adequacy of commonly used selection, employment, and certification standards, a review of postsecondary studies, and an overall summary.

Chapter III--contains the methodology used in the study to include the population and samples surveyed, development of the questionnaires, sources of data, data collection procedures and response rates, analysis of the data, and summary.

Chapter IV--contains the analysis of data relative to both the national study and the state study.

Chapter V--contains a summary of the procedures, the major findings which resulted from the analyzed data, and the conclusions which seemed warranted based on the findings. Finally, it contains recommendations for improvement in Tennessee certification and employment policies and recommendations for further study.

CHAPTER II

REVIEW OF LITERATURE

The research studies which are relevant for this review appear to fall into six basic categories: 1) an introduction to the problem; 2) the historical need for adequate teacher preparation; 3) previous national studies dealing with certification and employment standards; 4) studies concerning the professional development needs of vocational teachers; 5) studies dealing with the adequacy of commonly used selection, employment, and certification standards, and 6) a review of postsecondary studies.

The first category is important in that it describes the changing roles of the vocational teacher. The second category is significant in that it establishes adequate teacher preparation as being the historical foundation of quality vocational education programs and stresses the issue as being a problem of long standing. The third category is central to the problem in that through comparative analysis of previous national certification studies, trends reflecting the growth and development of the process can be detected. The fourth section provides an assessment of the professional development needs of vocational teachers and how well those needs are being met by the presently used preparatory programs. The fifth section extends the evaluation process to include studies relative to the adequacy of the various methods used in the selection, employment, and certification of vocational teachers. The sixth section provides an overview

relative to the needs of postsecondary vocational teachers. Finally, a summary coordinates the studies and their relationships and presents the patterns and trends relative to the development of vocational teacher education.

I. INTRODUCTION

Vocational education programs have increased greatly since the landmark Smith Hughes legislation of 1917. These early programs were essentially limited to the areas of agriculture, home economics, and trade and industrial occupations. Gradual program expansion occurred through subsequent legislation until the Vocational Education Act of 1963 (P.L. 88-210). This act mandated that training be made available for all occupations requiring less than a baccalaureate degree (Baker, 1977). The Vocational Education Amendments of 1968 (P.L. 90-576) and subsequent amendments have provided resources for further expansion and have earmarked funds for the expansion of programs for particular groups. Among the more notable is a legislative mandate to serve the disadvantaged and handicapped in vocational education. Legislation has also emphasized other program dimensions such as guidance and counseling, co-operative education, work study, job placement and follow-up, advisory committees, youth club activities, and the like (Strong, 1971). All of the above have placed new pressures and responsibilities on the occupational teacher.

Today's occupational teachers must know more than just job skills and basic teaching methodologies. They must be knowledgeable in peripheral teacher responsibilities, such as how to organize and use

an advisory committee, how to set up and manage youth clubs, how to conduct follow-up studies, and how to help vocational graduates find jobs, to mention only a few.

These peripheral responsibilities require specialized training that often is not included in teacher certification programs. Given such circumstances, occupational teachers are inevitably ill prepared to fulfill their total job responsibilities. Moreover, this inadequate preparation frequently leads to job frustration and job dissatisfaction on the part of the teacher. No doubt it contributes to the turnover rate among these teachers also.

In contrast with other vocational fields (such as agriculture, home economics, and office occupations) where the preparation of teachers is achieved through baccalaureate degree programs, trade and industrial teachers and teachers for the allied health areas are generally recruited from the occupational field. The main criterion for the selection of these teachers thus emphasizes occupational experience rather than completion of a baccalaureate degree. Often these teachers have had no formal training in the area of instructional methodology. Therefore, the initial thrust of certification requirements for trade and industrial and health teachers generally focuses on improving the teacher's effectiveness in the classroom (Strong, 1971).

II. THE HISTORICAL NEED FOR ADEQUATE TEACHER TRAINING

Early leaders in the field of vocational education saw adequate teacher training as a built-in quality control for trade and industrial education programs and therefore, an imperative priority in the development of vocational education. It was viewed as one of the

foundational blocks of the entire vocational movement as evidenced by the prevailing attitude that a vocational program could be no better than its teachers (Barlow, 1967).

Providing adequately trained vocational teaching personnel has been frequently mentioned as both a concern and a problem area. The National Society for the Promotion of Industrial Education (NSPIE) recognized this problem as early as 1913 (NSPIE Bulletin No. 19, 1914). The problem was again cited by Jarvis in 1917. In 1930, the Federal Board for Vocational Education published a comprehensive bulletin concerning the training of trade and industrial teachers (Bulletin No. 150). Although much growth had occurred since 1917, the Board pointed out that many state supervisors of trade and industrial education were not aware of their responsibilities in relation to teacher training and consequently used inadequate evaluation methods. The problem was again mentioned by Jones in 1947, by Dennis in 1951, by Bawden in 1954, and Wolansky in 1969.

III. PREVIOUS NATIONAL CERTIFICATION STUDIES

Early Recommendations for Vocational Teacher Certification

The first significant study on what vocational teacher certification should be was conducted by a committee within the National Society for the Promotion of Industrial Education (NSPIE) three years prior to the passage of the Smith Hughes Act (NSPIE Bulletin No. 19, 1914).

Upon analysis of existing state plans for certification of public school teachers, the NSPIE committee felt that differences in the requirements needed for trade and industrial teachers demanded not

only a new method for certifying vocational teachers, but also a separate and distinct certification pattern for vocational and non-vocational teachers.

The qualifications for a vocational shop teacher were designated to include a knowledge of the trade, equivalent to that of a skilled journeyman. Although a minimum number of years' work experience was not specified in the NSPIE report, it was stated that the applicant must have the knowledge of the technical method of the trade, together with a command of its drawing, mathematics, science, and art. It was recommended that the applicant have a general education not less than that represented by elementary school graduation or its equivalent, and that the age at the time of entering the teaching profession be not less than 25, nor more than 40 years.

The basis for certification recommended by the NSPIE was the use of an evaluation process which included four areas: 1) written examination, 2) credentials, 3) personal interview, and 4) practical demonstration. The committee defined credentials as verification of satisfactory work experience, evidence of previous schooling, personal statements of former teachers, and past teaching experience with apprentices, among other things.

Upon satisfactory findings relative to the above mentioned criteria, the NSPIE recommended that the State Board should then issue a probationary teaching license, endorsed in a specific trade area(s), for a period of <u>one year</u>. Renewal of the licensure would be based on: 1) a written recommendation of local authorities assuring satisfactory teaching experience during the probationary period, 2) reports on fitness by the traveling State Inspection Agent, 3) recommendation of

the instructor of the in-service training class as to class records, and 4) a written report by the candidates themselves summarizing their achievements and activities during the past year. Subsequent renewals of the license were recommended to be annually for the first five years, then every five years thereafter, with the renewal requirements being essentially the same as those specified for the first renewal.

A preservice and in-service program of teacher training was cited as a necessary requirement and several plans were outlined that were deemed "worth trying." They recommended that all vocational teachers receive preservice training along three lines: 1) the mechanics of teaching to include methods of teaching and shop organization and management, 2) practice teaching, and 3) a background of principles and theories of vocational education. As a part of the "after-training" or in-service program, the NSPIE commission stated that the school should require teachers to return to industry from time to time for trade skill updating.

Review of Early Studies

Perhaps one of the earliest national certification studies for trade and industrial teachers was done by Johnson (1934). He sent letters to State supervisors of trade and industrial education within the 48 states and the Territory of Hawaii requesting information relating to the trade experience, general education, and specialized training requirements for the certification of trade and industrial teachers. Answers were received from all but seven states.

For the all-day shop teachers, he found that they generally were required to have six to seven years' trade experience. A few

states permitted substituting education for a part of the work experience requirement. A little over half of the states specified "a good elementary education" as the minimum educational level required. Six states required a high school diploma, while a minimum educational requirement was not specified in nine states.

The five course areas most often mentioned as a requirement in the professional training of vocational teachers were, in order of frequency: Methods of Teaching, Job Analysis, Organization of Content, Classroom Management, and Philosophy of Trade and Vocational Education. Only three states reported the use of a trade competency examination.

Despite the importance of adequate vocational teacher preparation and the obvious contribution that periodic national studies made, the next major study of a national scope was not conducted until some 12 years following the Johnson study.

In 1946, Earhart conducted a national study on vocational teacher certification which was designed to analyze and compare the certification requirements, the necessary academic education, and the teacher-training pre-employment and in-service courses required of trade and industrial teachers.

The need for the study was prefaced by stating that the Office of Education required each state to submit revised state plans for vocational education every five years, thereby giving the states "ample opportunity to meet changing conditions and needs" (p. 8). To greatly facilitate the revision of state plans, Earhart felt that state directors and supervisors needed adequate reference materials disclosing the patterns followed by other states in certifying their vocational teachers. Her review of literature indicated "a regretable

dearth of materials dealing with comparisons of programs for trade and industrial teacher training and certification" (p. 14). Although printed state plans were available, she noted that they were not organized so that they were readily comparable among the states.

Certification and employment requirements were analyzed relative to trade experience, general education, and professional education. Earhart found that the trade experience requirement was generally two to three years (39 states) with a range from two years to eight years. Moreover, most states required a minimum of a high school diploma for employment as a trade and industrial teacher.

In determining the nature of the professional education courses required, Earhart was able to categorize all courses into 15 main categories: Administration, Conference, Construction and Analysis, History and Philosophy, Industry and Labor, Methods, Organization, Personnel Management, Psychology, Related Subjects, Shop Management, Supervision, Surveys, Tests and Measurements, and Vocational and Educational Guidance.

Earhart concluded that:

> Certification procedures revealed by the study vary greatly throughout the nation. For example, all states require some form of temporary certificate, but many states made no further provision for advanced certification. . . . Other states have a well developed and progressive certification program, with definite requirements for advanced certificates. . . . Still other states issue certificates that must be renewed from year to year (p. 131).

Review of More Recent Studies

One of the more recent national studies concerned with the basic certification requirements for trade and industrial education teachers

was conducted by Fagan (1968). Results of this study indicated that most states relied on teacher education courses provided through colleges and/or universities to achieve certification for trade and industrial teachers. Such courses were usually funded through state contract, with the universities providing either formal residence on-campus classes, or extension classes during the school year.

Fagan also found that:

1. Thirty-seven of the 45 states responding indicated high school graduation as the minimum level of formal education acceptable for beginning trade teachers.

2. Thirty-six states indicated that they had no preservice requirements before a tradesman entered the classroom. The remaining 11 states reported preservice requirements ranging from 12 to 40 clock hours (8 states) and 12 to 15 semester hours (3 states).

3. Twenty-nine states issued initial certificates that were valid for one year.

4. Certification renewal policies varied from satisfactory teacher performance on the job (6 states) to 1 to 30 semester hours of professional education coursework (32 states).

5. Twenty-five states issued permanent (life) certificates only for trade and industrial teachers who possessed a baccalaureate degree or higher.

A later study by Ramp and Reeder (1970) of trade and industrial teacher certification requirements at the secondary and postsecondary levels yielded additional information on certification requirements.

They found that:

1. Certification was required in all states for secondary trade and industrial teachers but for only 27 states at the postsecondary level.

2. The mean number of years of work experience required for secondary trade and industrial teachers was 3.5 with slightly less (3.4) being required of post-secondary teachers.

3. Preservice requirements for beginning teachers were required in only eight states for secondary teachers and in six states for postsecondary trade and industrial teachers.

4. Competency examinations for secondary level trade and industrial teachers were required in only three states.

5. The minimum educational level for beginning trade and industrial teachers, both secondary and postsecondary, was a high school diploma. No state required a baccalaureate degree for its secondary teachers although two states required it for their postsecondary trade and industrial teachers.

6. In an analysis of specified course requirements to meet certification, the course most often specified was "Methods of Vocational Teaching" while "Vocational Guidance" and "Tests and Measurements" were specified the least number of times.

General conclusions by Ramp and Reeder were that the most noticeable aspect of state certification requirements at both the secondary and postsecondary levels for trade and industrial teachers was the emphasis upon work experience as opposed to formal education for beginning teachers. The major trend appeared to be a requirement for occupational competence at the outset. Teaching competence was thus left to be developed on an in-service basis. Postsecondary teacher qualifications, when present, appeared to have been patterned after secondary teacher requirements in most states. Moreover, teacher qualifications at the postsecondary level tended to be less specific than the secondary requirements.

Resnick (1977) conducted a national study concerned with certification requirements of vocational personnel to serve as decision-making input for the state of Massachusetts. He found that non-degreed trade and industrial, health occupations, and technical teachers typically were required to demonstrate their occupational

proficiency through examinations, but were required to possess less academic credentials for initial employment as a teacher than were vocational teachers from other service areas.

Trade and industrial teachers were required to have approximately three and one-half years of work experience while health occupations teachers were required to have approximately three years. Distributive education, home economics, and agriculture teachers, on the other hand, were required to possess considerably less in the way of bonafide occupational experience.

Regarding the total semester hours of coursework required for full certification, trade and industrial teachers were required to have a mean of 61.8 semester hours while health occupations teachers were required to have a mean of 76.8 semester hours. Trade and industrial and health occupations teachers were also less likely to be required to have a bachelor's or master's degree for full certification than teachers from any of the other vocational service areas.

Trade and industrial education was the service area found most likely to require a trade competency examination (11 states required the exam while 5 states listed it as optional). Health occupations competency examinations were required in only one state. Most of the examinations administered were developed by the National Occupational Competency Testing Institute (NOCTI), although some states prepared their own competency examinations.

A national study on the certification requirements of secondary and postsecondary health occupations instructors was conducted by Lutz (1977). Her study revealed that in all but five states, health occupations certification requirements were included within the

certification requirements for trade and industrial teachers. The minimum education requirement ranged from a high school diploma plus professional training in the teaching area (the majority of states) to a baccalaureate degree in a very few states. Virtually all states required professional licensure in the field for their health occupations teachers. The work experience requirement was found to be approximately two and one-half years. Even though Lutz's study was done in the same year as the Resnick study previously discussed, she found three states that specifically required an occupational competency exam for their health occupations teachers. Resnick had found only one such state. In either case, the number of states with such a requirement was very small. Regarding preservice requirements, 26 states at the secondary level listed some minimal requirements. In general, she found that initial requirements for beginning teachers of health occupations programs nationwide included an average of 18 quarter hours of professional education coursework to be earned within the first three years of employment.

IV. PROFESSIONAL DEVELOPMENT NEEDS OF VOCATIONAL TEACHERS

Needs Assessment Studies

Hole and Cole (1977) assessed the educational needs of health occupations teachers in 1977 for Pennsylvania State University. The study had three main objectives: 1) to assess needs regarding professional competencies and interests in continuing education programs; 2) to examine teacher certification criteria; and 3) to offer recommendations for teacher preparation.

Based upon the responses of the participants and findings from similar studies, three recommendations were made. First, an educational program should be established which recognized the competency-based equivalency of health workers and that was designed specifically for health occupations teachers and administrators. Secondly, the different needs and backgrounds of health teachers should be considered in certification guidelines. Third, in-service education should bridge the gap between competencies needed and competencies already acquired. A significant result of this study was the development of both an undergraduate and graduate course list and degree program proposal for health occupations teachers at Pennsylvania State University.

Gorman (1978) conducted a study to examine the extent to which Ohio's In-Service Certification Program was meeting the professional needs of beginning trade and industrial teachers. A parallel purpose was to receive input from teachers to use as a basis for change in future in-service programs for trade and industrial teachers.

To accomplish this task, a list of instructional competencies emphasized during in-service programs was identified and grouped by teacher educators. The trade and industrial teachers ranked each competency as to its importance and the teacher educators ranked them as to the emphasis given during in-service programs.

Significant differences were found between the ratings of teachers and teacher educators in competencies from different categories. "Management," "Guidance," and "Student Vocational Organizations" were perceived as important by the teachers, while teacher educators indicated they tended to emphasize competencies

from the content categories entitled "Instructional Planning" and "Instructional Execution."

An earlier study (Competency-Performance Based Teacher Education for Vocational Technical Education, 1976) yielded somewhat similar results from vocational teacher educators. Participants in the study represented teacher educators and various vocational administrative and supervisory personnel from the different fields of vocational education. They were asked to prioritize 100 of the teaching competency modules developed by the Center for Vocational Education, Ohio State University, as to the importance of the module relative to beginning teachers.

The results indicated that those competencies categorized under "Instructional Planning" received the highest priority followed by those competencies categorized under "Instructional Evaluation," "Instructional Management," and "Instructional Execution."

A more recent study was sponsored by the South Carolina Department of Education (National Evaluation Systems, Inc., 1980). The major purpose of this study was to assess and contrast the perceptions of trade and industrial teachers and administrators regarding the skills needed by teachers to perform their functions. After 108 competencies were rated as to their importance, the participants were asked to specify the skills most needed for an in-service program.

Responses made with the greatest frequency were the need for training in the development of curriculum materials, approaches for handling student discipline, development of student motivation and initiative, and the development of public relations within the community and industry. Administrators placed a significantly greater

emphasis on the need for in-service training in the development of curriculum materials and in public relations within the community than did the trade and industrial teachers.

Participants were also asked to identify those skills necessary for preservice training. Methods for dealing with student behavior and disciplinary techniques received the most responses from both administrators and teachers. This was followed by classroom organization and management skills. The teachers also identified skills for dealing with disadvantaged students as a needed area for preservice training improvement.

Recommended Changes in Vocational Teacher Certification

According to Baker (1977), vocational teacher certification practices need reevaluating to provide for efficient transition from craftsman to teacher. He strongly emphasized the need for preservice education by stating that:

> The practice of placing teachers in the classroom before they even begin their in-service preparation must cease. Teacher education must develop short, intensive programs that can be completed in one, two, or three weeks prior to the opening of school (p. 41).

He also supported that idea of an individual professional development plan for certification. "Although state plans usually specify that teachers take certain courses, no sequence is mandated and there are no means for compensating for individual educational abilities" (p. 41).

Baker recommended that certification be made more flexible and that processes be devised that would allow for the individual differences inherent in the backgrounds of trade teachers. He further

felt that teacher education institutions and state agencies should act as the certifying body and that a local school should not be allowed to employ any teacher until preservice requirements had been met, occupational competency validated, and a systematic and individualized in-service program formulated. Then, continued certification would depend upon satisfactory performance on the job and upon continuation of the in-service program.

Terry and Young (1980) conducted a study to determine what strategies, content, procedures, etc., each state was using in their preservice program for beginning trade and industrial teachers who lacked formal preparation. The study found that 35 out of 39 states indicated a requirement for a preservice workshop. It should be noted, parenthetically, that this was not found to be the case with several other studies reported in this section (Fagan, 1968; Lutz, 1977; and Ramp and Reeder, 1970). These workshops ranged in length from 12 to 210 clock hours with a mean of 48.4 hours. The majority of state respondents (24) indicated that the workshops were conducted on the college campus and were joint ventures between the state and the college. College credit (average of 5.7 semester hours) was available for these workshops in 23 of the states. The most utilized content in these preservice activities was lesson planning, job analysis, shop organization, methods, grading, safety, and developing instructional objectives.

V. ADEQUACY OF COMMONLY USED SELECTION, EMPLOYMENT, AND CERTIFICATION STANDARDS

Use of the Occupational Competency Exam

As has been noted, the keystone for success in vocational teaching has historically been occupational competency. The assessment of this competency has long been a point of discussion with vocational educators. The idea of the use of occupational competency tests was first introduced in 1919 by the then U.S. Commissioner of Education, Philander P. Claxton. He called a conference of industrial education specialists to consider the implications of the Army trade tests which had been used so successfully in World War I. After careful consideration, the conference members felt that competency examinations would be of value in helping the state board of vocational education to select trade teachers, but felt they should be used in conjunction with other selective devices and not as the final measure (Barlow, 1967).

Almost 50 years later, state directors of vocational education held essentially the same opinion as did Commissioner Claxton's conference members. Kazanas and Kieft (1967) conducted a national study, part of which was concerned with the attitudes of state vocational directors toward the use of competency exams in the teacher certification process. Their analysis, both within states that did and within states that did not use the competency exam for certification purposes, revealed that the majority of state directors felt that occupational competency examinations should never be used as the sole means for certification. The directors felt, however,

that the exam could be useful as a part of a balanced certification program and that it could be used to diagnose the strengths and weaknesses of occupational teachers. Kazanas and Kieft found that actual work experience was considered by most state directors to be very important in the preparation and certification of trade and industrial teachers.

Because of lengthy work experience requirements specified by most states Kazanas and Kieft felt that many qualified individuals were unwilling to leave their present jobs for employment in lower paying vocational teaching positions. As a possible solution to this continuing shortage of occupational teachers, Kazanas and Kieft (1967) recommended that states consider reducing the work experience requirements for those who could successfully pass an occupational competency exam.

Subsequent studies by Ramp and Reeder (1970), Miller and Roehrick (1977), and Resnick (1977) have not provided any clear evidence that there has been any substantial increase in the use of trade competency exams by the states.

Significance of the Work Experience Requirement

In 1972, New York state changed its certification requirements for vocational teachers making it possible for individuals with minimal work experience (one year) to become certified to teach vocational subjects. To ascertain the effects of this change at the local school level, a study was conducted to determine the extent of hiring of trade and industrial and agriculture teachers under the revised requirements and to assess teacher performance as perceived by

their supervisors (Van Orman and King, 1978). The results of the study tended to show that supervisors regarded substantial vocational experience to be an essential pre-requisite to teaching, citing two years as a minimum amount of work experience needed. In general, the teachers surveyed were considered to perform well, although improvements were noted as being needed in the areas of classroom management and human relations skills.

In other related research, Kapes and Pawlowski (1974) found that years of occupational experience for the vocational teacher had little or no positive effect on student shop achievement. In fact, in some cases there was a negative relationship. Of the three teacher characteristics investigated in the study--industrial experience, teaching experience, and college credits--only the amount of college credits earned showed a significant positive relationship to student shop achievement.

Vocational Teacher Preparation

Welch and Garner (1976) conducted a comparative survey of "certificate vocational teachers" and "baccalaureate vocational teachers" in the state of Pennsylvania. The certificate vocational teachers consisted of individuals who had been recruited directly from the trades, deemed occupationally competent, and through an in-service program were provided with the necessary teaching methodologies. After 60 semester hours of credit had been received, they became certified. The second group, the baccalaureate vocational teachers, had been recruited from vocational technical schools or apprenticeship programs and through a five year program received 134

semester hours of college credit. Two of these five years were spent in a supervised on-the-job training program at the journeyman level.

On comparison of the two groups, Welch and Garner found that the certificate students were older (42.9 years as compared to 24.8 years) and possessed significantly more work experience than the baccalaureate students. Yet, they found little difference between the two groups on occupational competency examination scores. The baccalaureate group scored slightly higher on the written test and slightly lower on the performance test. However, the combined score yielded a difference of less than .1 percent.

Welch and Garner felt that primary emphasis must be placed on the vocational teacher education programs that prepare teachers for entrance into the classroom. They indicated that the baccalaureate degree program was superior in this regard, but that it was likely that some form of certificate program would be needed for the foreseeable future to compensate for a trade teacher shortage.

VI. REVIEW OF POSTSECONDARY STUDIES

As has been noted in previous studies, a substantial number of states do not require certification of their postsecondary vocational teachers. In the states that do have postsecondary certification, teacher qualifications appear to have been patterned after secondary teacher requirements (Lutz, 1977; Ramp and Reeder, 1970).

Cheney (1970) felt that the pedagogical competencies needed by postsecondary technical teachers varied considerably from those needed for secondary teachers. He attributed this to the higher level

objectives and the "differentness" of the students at the post-secondary level. Further, he felt that because of the rapid advances and changes in technology, which would ultimately require a more sophisticated technician, the secondary level of technical education would become more of a pretechnical nature. Thus, more students would pursue technical education at the postsecondary level, thereby increasing the demands for qualified technical instructors at that level.

Brown (1976) conducted a study of postsecondary technical teacher professional preparation. More than 600 technical teachers who were employed in Tennessee's postsecondary system of community colleges, technical institutes, and postsecondary area vocational schools were surveyed to gain information in three areas: 1) the teacher's background relative to professional educational preparation and training, 2) the content and priority of a list of specific knowledges and skills of professional teacher preparation, and 3) the desired content of teacher in-service programs. Brown found that the skills and knowledges viewed as "very necessary" or "necessary" by over two-thirds of the teachers were: Classroom Management, Curriculum Development, Diagnosis of Learning Problems, Performance Objectives, New Learning Activities, Selection of Teaching Methods, Testing and Evaluation, Developing Course Outlines, Directing Laboratory and Shop Activities, Using Individualized Instruction Techniques, Motivating Students and Student Interaction in Learning.

In addition, these teachers expressed enthusiasm for in-service training activities and felt that these activities would help them to become better teachers. Particular emphasis was placed upon such

in-service activities as: teaching demonstrations, instructional observations, assessment of new student abilities, university courses, and industrial employment.

In contrast, Storm (1976) viewed the educational needs of the postsecondary vocational instructor relative to technical upgrading. He concluded that educational program options, whereby technical upgrading would have at least as much value as courses dealing with educational methodologies, etc., would be highly desirable. He also felt that revisions in state certification requirements for post-secondary vocational teachers were necessary. Storm argued that:

> Presently, in most states, an electronics instructor can be recertified on the basis of completion of courses dealing with educational administration and supervision. The students of this instructor would be served far better if he were required to upgrade himself in his subject field instead (p. 8).

VII. SUMMARY

Certification of vocational teachers has been a significant issue for many decades. Initially, responsibility for establishing certification requirements was placed with the state boards for vocational education under the Smith Hughes Act of 1917 and that responsibility is still theirs today. Each state board established its own certification criteria and was free to alter its requirements when necessary. In fact, it appears that much of the variation in certification requirements that exists among the states can be attributed to the supply and demand of trade teachers. The continuing shortage of occupational teachers in many states no doubt has

significantly hampered efforts to develop meaningful certification requirements.

This review has uncovered several trends relating to the certification of secondary and postsecondary trade and industrial and health occupations teachers. First, there continues to be a strong emphasis placed on the occupational experience of the trade and industrial and health occupations teachers. And while there was ample research to support this work experience requirement, there was mounting evidence to suggest that years of occupational experience and success as a vocational teacher were not necessarily correlated. Second, while there appeared to be an increased use of examinations by states to validate trade teacher occupational competence, few states have made this a specific certification requirement. Third, preservice teacher education programs continued to be required in only a few of the states. Moreover, where such a requirement existed, it must be viewed as rather minimal in nature. Fourth, in-service teacher education requirements not only were substantial in many states but also appeared to be on the increase. Fifth, the typical delivery system for providing preservice and in-service certification courses continued to be through university-based teacher education programs. Moreover, while a few states appeared to be experimenting with competency-based certification requirements, individually planned certification programs for teachers, and the like, the methodologies currently being employed to certify trade and industrial and health occupations teachers must be viewed as traditional in nature.

Sixth, at the postsecondary level while many states had specific certification requirements for their trade and industrial and health

occupations teachers, there continued to be a sizable number of states that had no such requirements. Then too there was little indication in the literature that requirements for postsecondary occupational teachers, where they did exist, were substantially different from those specified for secondary occupational teachers, even though there was mounting evidence in the literature to suggest that such requirements ought to be different.

Thus, while there continues to be considerable face validity to the notions 1) that occupational teachers ought to be able to demonstrate that they are occupationally competent; 2) that they ought to receive some significant preparation prior to entering the classroom; 3) that they ought to be required to obtain considerable additional teaching skills through in-service professional development programs; and 4) that their professional development ought to be tailored to their individual needs; this literature review only provided partial and limited support for such notions. In that sense, the literature review has been somewhat disappointing.

Perhaps what has been most pronounced about this review of literature is the fact that changes in trade and industrial and health occupations teacher certification over the years have been minimal. Thus, even though federal legislative mandates and state department expectations have significantly expanded the responsibilities of the trade and industrial and health occupations teachers, there was little indication that certification requirements for these teachers had changed accordingly. A historical shortage of trade and industrial and health occupations teachers has certainly contributed to this lack of change in certification. Moreover, to the extent that

qualified occupational teachers continue to be in short supply, significant increases in the requirements for certification will be difficult to accomplish. Thus, to the extent that such changes are contemplated, a sensitivity to this shortage must be maintained.

CHAPTER III

METHODOLOGY

I. INTRODUCTION

To achieve the purposes of this study, two separate and distinct surveys were conducted: 1) a national survey (one questionnaire) and 2) a state survey (four questionnaires). The national survey was conducted to provide a current and complete state of the art relative to the certification of trade and industrial and health occupations teachers at the secondary and postsecondary levels. The state survey was conducted to assess the adequacy of Tennessee's certification and employment policies as viewed by those whom it affects, that is, the trade and industrial and health occupations teachers and their administrators.

This chapter presents the procedures used in the study. The sections in this chapter include the populations and samples, development of the questionnaires, sources of data, data collection methods and response rates, data analyses, and summary.

II. POPULATION

National Study Population

The population for this portion of the study included the state vocational directors or a representative spokesperson designated by the state vocational director from each of the 50 states of the

United States and the District of Columbia (hereafter reported as 51 states).

State Study Populations and Samples

The sample for the state surveys included a 10 percent random sample of secondary trade and industrial teachers (N = 112), a 50 percent random sample of secondary health occupations teachers (N = 71), a 70 percent convenience sample of secondary local directors (N = 110), a 15 percent random sample of postsecondary trade and industrial teachers (N = 69), a 50 percent random sample of post-secondary health occupations teachers (N = 39), and the total population of postsecondary area school superintendents (N = 28). The state Research Coordinating Unit assisted in the generation of each random sample and in generating mailing lists for each group.

III. QUESTIONNAIRE DEVELOPMENT

For the national segment of the study, a questionnaire was developed based on the objectives of the study and utilizing the information obtained from written state policies received from the initial request letter sent to state directors of vocational education.

For the state segment of the study four questionnaires were developed based upon the certification and employment policies presently used in the state of Tennessee and upon trends and/or innovations uncovered in the review of literature. A separate survey instrument was developed for each of the four respondent groups within the state.

All five of the questionnaires were submitted to a panel of experts for clarification and further revision and to insure that all relevant issues were addressed in the instruments. (All five survey instruments are included in Appendix A.)

This panel of experts was composed of 15 members representing the Division of Certification of the Tennessee State Department of Education, the Division of Vocational Education of the Tennessee State Department of Education, the State Board for Vocational Education, the State Advisory Council, the State Legislature, local vocational superintendents, local vocational directors, local trade and industrial and health occupations teachers, teacher educators, state supervisors of health occupations and trade and industrial education, Vocational Education Research personnel at the state level, and state program services and program evaluation personnel. This panel of experts was selected by the Tennessee State Director of Vocational Education.

IV. SOURCES OF DATA

The National Study

In the national study, a letter was sent to each state's director of vocational education. (All cover letters relative to this study are contained in Appendix B.) This letter explained the basic nature of the study and requested that: 1) a copy of the state's written policy on certification for trade and industrial and health occupations instructors at both the secondary and postsecondary level be sent to the researcher, and 2) that a contact person be designated to provide additional information not found in the written policy.

Upon receipt of each state's written policies, pertinent information was categorized for initial analysis. Subsequently, the national survey instrument previously described was developed and sent to each state's designated contact person accompanied by a cover letter describing the nature and the purpose of the study and requesting that he/she complete the enclosed questionnaire. For the non-respondents to the initial request, the questionnaire was mailed to the State Director for Vocational Education.

To gain supplementary information, a hand search was made of the state teacher certification policies on file at the Tennessee State Department of Education, Division of Teacher Certification.

The State Study

In the state of Tennessee study, a letter was sent to all secondary personnel identified through the selection process. The letter explained the nature of the study and stressed the importance of their participation. It was accompanied by a questionnaire and a pre-addressed return envelope. For postsecondary teachers, a letter and survey packet was sent to area school superintendents identifying the members of their faculties who had been selected for participation. This letter explained the nature of the study and sought their assistance in the distribution of the survey materials. The survey materials included in the packet were cover letters to teachers explaining the nature of the study and encouraging their participation, a copy of the questionnaire, and a pre-addressed return envelope. A separate letter was sent to the area school superintendents explaining the purpose of the study and the importance of their participation.

This letter was also accompanied by a questionnaire and a pre-addressed return envelope.

V. DATA COLLECTION AND RESPONSE RATE

Response rate from at least 70 percent of all survey groups was established on an a priori basis as the minimum criterion for conducting the study at the outset.

The National Study

The initial request to State Vocational Directors for the sending of the state's written certification policy yielded a response from 45 states. Four additional written policies were subsequently returned along with the questionnaire and two were obtained from the files at the Tennessee State Department, Division of Teacher Certification. Thus, written policies relating to certification were obtained from all 51 states.

The initial questionnaire mailout yielded 24 returns. A follow-up letter was mailed approximately three weeks after the initial mailout. This follow-up reminder provided 14 additional returns. For continued non-respondents, telephone calls to the designated contact persons were made in an effort to gather the needed information. This tactic provided nine additional returns. Thus, a total of 47 questionnaires was returned.

In summary, the data presented in this section of the study were obtained from the written policies of 51 states (100 percent) and from 47 returned questionnaires (94 percent).

The State Study

The initial request to Tennessee teachers and their administrative personnel yielded a response from 108 secondary teachers (60 percent), 80 secondary local directors (73 percent), 49 postsecondary teachers (45 percent), and 27 postsecondary superintendents (96 percent).

For secondary non-respondent teachers, follow-up letters accompanied by another questionnaire and a stamped pre-addressed return envelope were sent approximately four weeks after the initial mailout.

For the non-respondent postsecondary teachers, telephone calls were made to their superintendents seeking their assistance in encouraging their participating teachers to complete and return the questionnaire.

Follow-up procedures were not deemed necessary with the secondary local directors or the postsecondary area school superintendents.

The highest response rate was received from postsecondary area school superintendents (96 percent) while the lowest response rate was from postsecondary teachers (70 percent). The response rate was 74 percent from secondary local directors and 72 percent from secondary teachers.

VI. ANALYSIS OF DATA

The National Study

As written certification policies were received, each was carefully analyzed and the needed data were categorized and recorded

on master data sheets. These master sheets served as a partial data base on which the subsequent questionnaire was developed.

Upon receipt of the returned questionnaires, information based on both the written policy and the questionnaire was recorded on individual state "certification and employment policy information sheets." The data from these sheets were compiled and transposed on separate tally sheets for each research question. Measures of central tendency were then calculated for each separate question for each of the four teaching areas. Commonalities and differences within the limitations of the available data were noted for inclusion in the discussion.

The State Study

As questionnaires were received, each was coded for computer analysis. Any written comments were recorded for inclusion in the written analysis. The computer analysis included central tendency measures and crosstabulations. Correlations, where appropriate, between groups were hand calculated. Commonalities and differences within the limitations of the available data were noted for inclusion in the discussion.

VII. SUMMARY

The purpose of this chapter was to describe the methodologies utilized in gathering both the national and state data. All states and the District of Columbia were used in the national study and a sample of presently employed Tennessee teaching and administrative personnel was used in the state study. Questionnaires were developed

to accomplish the purposes of the study and were reviewed and revised by a panel of experts selected by the Tennessee State Director of Vocational Education.

Analysis of data for both studies consisted primarily of calculations of the measures of central tendency. Commonalities and differences within the limitations of the available data were organized for discussion in Chapters IV and V.

CHAPTER IV

ANALYSIS OF DATA

The overall purpose of this study was to assess the adequacy of Tennessee's certification and employment policies for trade and industrial and health occupations teachers and to make recommendations based on that assessment. To achieve this purpose, the study was divided into two separate and distinct segments: 1) a national study designed to provide a current state of the art relative to certification standards and employment policies in use in each of the 50 states and the District of Columbia (hereafter reported as 51 states), and 2) a state survey of currently employed trade and industrial and health occupations teachers and their local directors and/or superintendents to assess the adequacy of Tennessee's current requirements as perceived by each respondent group.

This chapter will analyze the data compiled from both the national and the state study. Each will be presented separately with its own introduction, data analysis, and summary.

I. NATIONAL STUDY

Introduction

Analysis of each state's written policy and information contained on returned questionnaires were the methods utilized to obtain information on certification requirements. The gathered data were limited to areas concerning trade and industrial (T & I) and health

occupations teachers both at the secondary and postsecondary levels. The questionnaire contained four major sections with each being subdivided into pertinent categories.

The first section dealt with the requirements for initial employment as vocational teachers. Areas categorized under this section were: 1) minimum educational level required for employment, 2) number of years of full time work experience required for employment (based on the minimum educational level), 3) options available in lieu of work experience requirements, 4) nature and extent of the use of the occupational competency exam for employment and/or certification purposes, and 5) extent to which licensure in the field was required.

The second section dealt with preservice requirements for new teachers. Categorized under this section were: 1) the extent to which preservice programs were required, 2) the period of time specified for this requirement, and 3) the nature of this preservice requirement.

The third section dealt with the requirements for meeting full certification. Areas categorized under this section were: 1) the nature of the certification plan, 2) the length of the initial certification period, 3) quarter hours of coursework required before full certification was granted, 4) minimum number of hours of course-work required per year, 5) nature of the coursework required for certification, and 6) delivery system(s) utilized to provide this coursework to teachers.

The fourth section dealt with the certification renewal requirements. Categorized under this section were: 1) the extent to

which renewal requirements existed, 2) the nature of the renewal requirements, and 3) the length of the renewal period during which these requirements were to be met.

Preface to Data Summary

To assist in a clearer interpretation of the data, a summary of terminology as it related to certification policy was indicated. The basis on which the data from this study should be interpreted is as follows: Most states do not require formal teacher training for their trade and industrial and health occupations teachers prior to employment. As a result, these teachers are required to gain the necessary teaching skills through in-service certification requirements. For new teachers, most states provide a temporary certification with a specified time period which permits teachers to be employed while working toward meeting the requirements for full certification. Upon meeting these requirements, the certification either becomes "permanent" with no renewal requirements or becomes a "continuing" certificate which must be periodically renewed. Permanent certificates, however, are granted in several states upon completion of a specified coursework requirement beyond that required for full certification.

The following data were based upon the written state policies from 51 states (100 percent response rate) and from 47 returned questionnaires (94 percent response rate).

Employment Policy

At the secondary level, of the 49 states on which information was specific enough to determine, 22 of them had essentially identical employment requirements for their trade and industrial and health

occupations teachers. The remaining 27 states had differences which focused on three major areas: Health occupations teachers were 1) required to have a higher minimum educational level (10 states), 2) required to have less work experience (13 states), and 3) required to be licensed (17 states).

At the postsecondary level, differences in employment policy between T & I and health teachers existed in 15 states. The differences were essentially the same as those listed for the secondary level.

Educational level. Table 1 summarizes the minimum educational level required for initial employment of trade and industrial and health occupations teachers at the secondary and postsecondary levels.

Table 1

Minimum Education Requirements

Requirement	Secondary		Postsecondary	
	T & I	Health*	T & I	Health*
High school diploma or the equivalent	47	35	36	27
High school diploma plus 45 quarter hours	1	1	0	0
Associate degree or the equivalent	0	8	0	3
Postsecondary--3 years	0	1	0	1
Baccalaureate degree	3	4	1	6
Total number of states	51	49	37	37

*Health occupations teachers were also required to be licensed in their occupational area.

Minimum educational levels required for employment purposes were predominantly a high school diploma (or the equivalent) for all groups.

Where an associate degree or three years of postsecondary training was specified, states applied that requirement for health occupations teachers only. States that specified a baccalaureate degree as the minimum were more likely to make that requirement for their health teachers, than for their trade and industrial teachers.

It should be noted that although most states listed a high school diploma as the minimum educational level for health occupations teachers at both levels, they also required licensure in the field. Advanced education in the form of special health training is generally required before licensure is granted. Therefore, the data relative to Table 1 should be interpreted with this information in mind.

Work experience. Table 2 provides a summary of the data relative to the minimum number of years work experience (based on the minimum educational level) required for employment of secondary and postsecondary trade and industrial and health occupations teachers.

The mean amount of work experience was approximately four years for all groups. Trade and industrial teachers at both levels had a slightly higher mean work requirement than did health occupations teachers. The range was from one to eight years and the mode was three years for health occupations teachers while the mode for trade and industrial teachers at both levels was six years of work experience.

Table 2

Years of Work Experience Required

Measures	Secondary		Postsecondary	
	T & I	Health	T & I	Health
Mean	4.3	3.5	4.4	3.9
Range	1-8	1-8	1-8	1-8
Mode	6	3	6	3
Number of states	51	49	33	34

For trade and industrial teachers, 19 states at the secondary and 9 states at the postsecondary level specified that either a part or all of the work experience requirement had to be at the "journeyman" or "senior employee" level. By the same token, four states required that the majority or all of the work experience requirement for health teachers be at the supervisory or hospital teaching level.

Options. Options in lieu of part of the stated work experience requirement were available in 37 states at the secondary level and in 27 states at the postsecondary level. Options were provided for all four teaching groups in 20 states. The remaining states specified options available to certain groups only, more often for trade and industrial teachers than for health occupations teachers.

The options specified most frequently were advanced education (34 states) followed by the occupational competency exam (19 states). Other options specified were licensure (3 states), student teaching (1 state), and industrial teaching (1 state).

Specialized vocational training in non-degree granting institutions as well as education in degree granting institutions, both qualified as advanced education. Although these options could reduce the work experience by approximately half, the states that provided them still required their teachers to have an average minimum of two years of bonafide work experience.

Satisfactory completion of an occupational competency exam could also be used to reduce the work experience requirement up to half the required amount. However, the states that specified this option also required an average of two years bonafide work experience in addition. Only one state allowed the occupational competency exam to substitute for all of the work experience requirement. Moreover, licensure could account for two-thirds of the work experience requirement in the three states that listed this as an option.

Data in Table 3 describe the extent and nature of the use of the occupational competency examination for employment and/or certification purposes. Results showed that an occupational competency exam was required in only a few states, although it was utilized as an option for work experience, coursework, or both, in the majority of them. In the states that did use the competency exam, they were more likely to use it as an option with their trade and industrial teachers than with their health occupations teachers. Six states indicated that they were planning to require the examination for their trade and industrial teachers in the near future. Four of those states were not presently using the exam in any capacity, while the other two were providing it as an option. Licensure would substitute for the exam requirement in three states.

Table 3

Use of the Occupational Competency Examination

Exam Usage	Number of States			
	Secondary		Postsecondary	
	T & I	Health	T & I	Health
Required	9	4	6	3
Not required and not used as an option	13	23	12	18
Not required but may be used in lieu of work experience requirements only	13	11	11	9
Not required but may be used in lieu of course-work requirements only	5	5	1	1
Not required but may be used as more than one option	5	2	2	1
May be required in some cases	2	1	1	1
Number of states using the competency exam in some way	34	23	21	15
Total number of states	47	46	33	33

States requiring the competency exam for employment generally stated that they would employ teachers who had not taken the exam providing it was completed prior to the end of the first year of teaching. Most often these states had a one year temporary certificate whereby completion of the competency examination was a part of the first year renewal requirements.

Although five states specified that the competency exam could be used in lieu of certification coursework, none of them specified the exact number of quarter hours for which they allowed substitution.

Licensure. Data in Table 4 summarize the extent to which licensure in the field was required for secondary and postsecondary trade and industrial and health occupations teachers.

Table 4

Licensure Requirement

Requirement	Number of States			
	Secondary		Postsecondary	
	T & I	Health	T & I	Health
Not required	15	1	12	0
Required in all areas where necessary to practice in the occupational field	32	45	22	34
Number of states	47	46	34	34

The majority of respondents indicated that licensure was required if available. Licensure for at least some of the health teaching areas was required by every respondent state with one exception. That state required licensure for their postsecondary health occupations teachers but not for their secondary teachers. No such consistency was found for licensure of T & I teachers.

The trade and industrial teaching areas most often specified as requiring licensure were cosmetology and barbering. A few states listed other areas such as aircraft mechanics, plumbing, radio and TV repair, and different areas in the construction trades. The health occupations teaching area consistently requiring licensure was nursing at the Registered Nurse level. Other health areas mentioned were radiation technology, dental assistant, medical technology, and respiratory therapy.

Preservice Requirements

Table 5 summarizes the extent to which preservice programs were required for new trade and industrial and health occupations teachers.

Preservice programs were required in only 43 percent of the states for secondary and 22 percent of the states for postsecondary teachers. However, while the term "teacher preservice program" implied the requirement of a preparatory program prior to entering the classroom, the nature of the responses indicated that, more often than not, the preservice program was conducted at some point during the first year of employment. A few states specified that the preservice program must be taken within the first six months. Only one state required their new secondary teachers to complete a nine week teaching

Table 5

Preservice Requirements

Measures	Length of Requirement (Clock Hours) Secondary	Postsecondary
Mean	53.6	61.8
Range	10 - 180	30 - 160
Median	36	45
Number of states requiring preservice programs	22	11
Total number of states	48	47

internship with an experienced occupational teacher during the first 18 weeks of employment.

Upon analysis of each state's written policy, it was found that approximately one-half of the states at both levels that had a preservice requirement actually counted the certification coursework taken during the first year as their preservice program. In some cases, certain courses such as Foundations of Vocational Education, Curriculum Development, Methods of Teaching, or Introduction to Vocational Education, were specified as the preservice/first year coursework requirement. The remaining half of the states at both levels provided a bonafide preservice program.

These "bonafide" preservice programs were more compact in content and generally shorter in length. The average length of these programs was 30 clock hours with a range of from 10 to 80 clock hours. The content appeared to be "survival" in nature containing primarily

the most needed content from methods of teaching, shop organization and management, and student evaluation. Some of the longer preservice programs included additional areas such as preparation and organization of instructional materials, the need for job analysis, application of learning theory, and human relations.

Certification Requirements

Data in Table 6 provide a summary of the nature of the certification plan utilized by states for certification of their trade and industrial and health occupations teachers at both the secondary and postsecondary levels.

The most widely used type of certification plan was the blanket policy whereby all teachers were required to meet the same certification criteria. At the secondary level, 65 percent of the states utilized this plan, while 41 percent utilized it at the postsecondary level. The individualized plan, where the quarter hours of coursework remained the same while the content could vary, was utilized by 25 percent of the states for their secondary teachers and by 14 percent of the states for their postsecondary teachers. The least popular plan was the totally individualized plan where both the amount of coursework required and the content could vary depending upon the background, education, and special needs of the individual. Only three states used this type of certification plan for secondary and/or postsecondary teachers.

State certification was required in all 51 states for trade and industrial and health occupations teachers at the secondary level, but only 30 states certified these same postsecondary teachers.

Table 6

Nature of the Certification Plan

Type of Certification Plan	Secondary		Postsecondary	
	No. of States	Percent	No. of States	Percent
Blanket Policy	33	65	20	41
Individualized Plan Same hourly requirement	13	25	7	14
Individualized Plan Variable hourly requirement	3	6	2	4
Combination Plan	2	4	1	2
Certification not required	0	0	19	39
Total	51	100	49	100

Of these 30 states that required postsecondary certification, 24 of them had certification requirements which were essentially identical to those required for their secondary teachers. In the remaining six states, the basic nature of the differences were: 1) the quarter hours of coursework required for certification were less for post-secondary teachers (5 states), and 2) permanent certification was available for postsecondary teachers, but not for secondary teachers (1 state). Parenthetically, it should be noted that in states where there was no certification or employment requirement specified, this should not be interpreted that such states have no requirements.

It only says that such requirements are not established at the state level, but are left to the local employing agency.

At the secondary level, of the 49 states on which information was specific enough to determine, 47 of them had essentially the same certification requirements for their trade and industrial and health occupations teachers. The only variance among these 47 states was the utilization of different courses for certification found in a few states. For example, health occupations teachers in some states were required to take Methods (as were trade and industrial teachers), but it was Methods for Teaching Health Occupations. At the postsecondary level, there were also no substantial differences within any state between the two teaching areas with regard to certification requirements.

Initial certification period requirements. Data in Table 7 provide a summary of the requirements to be completed during the initial certification period for both secondary trade and industrial and health teachers.

Table 7

Initial Certification Period and Educational Requirements

	Secondary			Postsecondary		
	N	Length of Initial Certification Period	Quarter Hours Required	N	Length of Initial Certification Period	Quarter Hours Required
Mean	49	2.4	13.7	29	2.2	10.4
Range	49	1-6	0-59	29	1-6	.2-21
Mode	24	1		15	1	

There was little difference between the levels with regard to the length of the initial certification period or between the amount of coursework to be completed during that initial period.

Only one state had no coursework requirement for its secondary trade and industrial teachers during the initial certification period. In that state, the certification period was four years with the only requirement for the first renewal being satisfactory teaching experience during that time.

Approximately one-half of the states at both the secondary and postsecondary levels required their teachers to earn quarter hours of coursework annually. All but three of those states (24 states secondary, 15 states postsecondary) had a one year temporary renewable certificate.

To compare the coursework requirements between the states that did specify an annual minimum and those that did not, calculations were made for the latter group (obtained by dividing the total number of quarter hours required during the initial certification period by its length).

The difference in the means, between the states that did require a yearly minimum of coursework and the states that did not, indicated that the total quarter hour requirement during the initial certification period was greater for states that specified a yearly minimum (6.6 for secondary; 5.7 for postsecondary) than for states that did not (5.1 for secondary; 3.8 for postsecondary).

Table 8 presents data relative to the total number of quarter hours of coursework required for full certification of secondary and

postsecondary trade and industrial and health occupations teachers and the time provided to obtain full certification.

Table 8

Requirements for Full Certification

Measure	Secondary		Postsecondary	
	Years Permitted for Full Certification	Quarter Hours Required	Years Permitted for Full Certification	Quarter Hours Required
Mean	5.7	35.9	5.6	29.3
Range	3-20	9-180	3-12	.2-105
Number of states	40	46	26	30

Although the time period allowed for meeting full certification requirements was not substantially different between the two levels, the coursework requirements for secondary teachers were considerably greater than for their postsecondary counterparts.

The upper range limits on Table 8 for secondary teachers were due to the standards of one state which required their secondary teachers to earn a baccalaureate degree (180 quarter hours) to receive full certification. On a one year temporary certificate, renewable upon completion of nine quarter hours per year, teachers were given 20 years in which to complete the degree requirement.

Nature of course requirements. Table 9 provides data relative to the nature of the courses utilized by states in certifying their

Table 9

Nature of Certification Coursework

Course	Number of States Requiring the Course (Rank)			
	Secondary		Postsecondary	
	T & I	Health	T & I	Health
Methods of teaching vocational subjects	45 (1)	44 (1)	27 (1)	27 (1)
History and philosophy of vocational education	42 (2)	41 (2)	26 (2)	26 (2)
Curriculum development	35 (4)	34 (3)	19 (5)	19 (3)
Job analysis	33 (5)	30 (5)	19 (4)	19 (4)
Shop organization and management	36 (3)	28 (6)	20 (3)	15 (6)
Tests and measurements	30 (6)	31 (4)	17 (6)	17 (5)
Other	43	42	25	25
Number of states responding	47	46	27	27

trade and industrial and health occupations teachers at the secondary and postsecondary levels. Overall results indicated that the course most frequently required for certification purposes was Methods of Teaching Vocational Subjects (#1), followed by History and Philosophy (#2), Curriculum Development (#3), Job Analysis (#4), Shop Organization and Management (#5), and Tests and Measurements (#6). The only notable difference among the groups was the third place ranking of Shop Organization and Management for trade and industrial teachers at both levels, while it ranked sixth for health occupations teachers.

Courses specified under "other" were grouped into 12 definable categories. If a course was mentioned by less than five states, it was placed into a category labeled "miscellaneous."

The category most frequently listed by respondents under "other" was Psychology (26 states) followed by Development of Instructional Materials (18 states), Vocational Guidance (13 states), Shop Safety (9 states), Youth Clubs (8 states), Career Education (6 states), Principles and Problems of Teaching and Coordination (6 states), Teaching the Handicapped and Disadvantaged (5 states), Cooperative Education (5 states), Teaching of Reading (5 states), and Administration and Supervision of Vocational Education (5 states). The "miscellaneous" category included such courses as Individualized Instruction, School Finance, Competency Based Education, and academic courses, among others. Only two states indicated that a sequencing of certification courses was required.

Several states had rather unique certification course requirements. Five states required their trade and industrial and health occupations teachers to complete a course in the "United States

Constitution." Three of these same states also required a course relating to their own state government. All five of these states specified that this requirement had to be completed prior to the end of the first year of teaching service. Other unique requirements included the taking and passing of a course in Safety and Industrial Hygiene and the possession of a valid First Aid Certificate (1 state) and the passing of an English proficiency examination prior to receiving continued certification (1 state).

Certification Renewal

Once requirements had been met for full certification, the certification either became permanent with no renewal requirements or continued with a maintenance renewal plan. The vast majority of states required that certification became "continued" once earned. The maintenance plan generally provided for a longer renewal period with less stringent requirements than did the initial plan to obtain full certification.

Data in Table 10 provide information relative to the length of the renewal period for secondary and postsecondary trade and industrial and health occupations teachers as well as the extent of coursework required during this renewal period.

Renewal requirements for continued certification to be earned during this period were based on three major areas: 1) professional education coursework, 2) occupational skill updating, and 3) satisfactory teaching experience. All states required at least one of these criteria for renewal with the majority of states specifying professional education coursework as their main criterion.

Table 10

Certification Renewal

Measure	Secondary		Postsecondary	
	Length of Renewal Period (Years)	Quarter Hours Required	Length of Renewal Period (Years)	Quarter Hours Required
Mean	4.9	10.5	5.0	8.4
Range	2-10	0-51	2-10	3-14
Mode	5	9	5	9
No. of states	41	38	24	20

Note: Permanent certification was granted upon completion of the requirements for full certification in 5 states at the secondary level and in 4 states at the postsecondary level.

Approximately 40 percent of the states specified satisfactory teaching experience as a criterion for renewal.

As was the case in obtaining full certification, secondary teachers were required to earn more renewal coursework credits than were postsecondary teachers. The length of the renewal period was approximately the same at both levels.

Renewal options. Several states specified options which were available to secondary and postsecondary teachers for part or all of the coursework renewal requirements. Table 11 provides a summary of the nature and availability of these options.

Options specified in lieu of coursework were generally available for both teaching areas at both levels. Both occupational skill

Table 11

Renewal Coursework Options

Measure	Occupational Skill Updating (Clock Hours)	Professional Development Activities (Clock Hours)
Mean	293	79.5
Range	60-640	30-120
No. of states	15	16

updating and professional development activities could generally be substituted for roughly three-fourths of the coursework requirements.

While several states specified occupational skill updating as an option either in lieu of, or in addition to, renewal coursework, no state made it a set renewal requirement. Even in the three states where it was required in addition to the renewal coursework, options such as workshops and/or occupational surveys could be used in lieu of occupational skill updating.

The professional development activities that could be substituted for renewal coursework included such activities as summer teacher workshops, professional meetings and conferences, industrial seminars and workshops, curriculum design and development projects, serving on a state evaluation team, and organized technical research, among others. One state even stated that foreign travel could substitute for up to five semester hours (100 percent) of renewal credit.

When asked to specify certification renewal courses, almost all states made reference to the list of courses they were requiring for full certification. Only three states required a coursework renewal greater than 18 quarter hours. In all three cases, certification became permanent upon completion of those renewal hours.

4
LTK theses -- Tech
81b.V283
88b.Y685
89b.G647
12-13
By Subject
THESIS
89b.G647
Thesis
84b.E928
73b.H558
84b.N524

tems. The delivery system for certification courses states at the secondary and 25 states at the post- irty-one states at the secondary level and 18 econdary level indicated total reliance on university r providing the required coursework. The remaining s indicated a combination system whereby university conjunction with the state department and/or the cy and/or "other" (usually industry) provided the .

tification. Permanent certification was available rial and health occupations teachers in 14 states el and in 10 states at the postsecondary level. it certification ranged from a minimum of 13.5 oral degree.

At the secondary level, four states granted permanent certification upon completion of less than 30 quarter hours of coursework, while one state required 48 quarter hours, another required 59 quarter hours, two states required an associate degree, four states required a Master's degree, and one state required a doctoral degree. One state specified that permanent certification would be granted upon completion

of the requirements for full certification but did not specify the total number of quarter hours required.

At the postsecondary level, five states granted permanent certification upon completion of less than 30 quarter hours of coursework, one state required 48 quarter hours, three states required a Master's degree, and one state required a doctoral degree.

Summary of the National Study

The purpose of this section was to analyze data obtained from 51 state policies and 47 questionnaires concerning the certification and employment policies of trade and industrial and health occupations teachers at the secondary and postsecondary level. This information was obtained to provide a state of the art on which to compare and evaluate the present certification requirements being utilized in Tennessee.

All 51 states required certification for their secondary trade and industrial and health occupations teachers, while only 30 states had this requirement at the postsecondary level.

Within the majority of states there were minimal differences between the two teaching areas and between the two levels with regard to certification requirements. However, approximately half of the states at both levels had differences in employment policy within their state. The majority of differences centered around health occupations teachers being required to possess a higher educational level, fewer years work experience, and licensure.

Most states required their teachers to have the minimum educational level of a high school diploma. The majority of states

specified options available in lieu of a part of the work experience requirement, primarily advanced education and having taken the occupational competency examination.

The occupational competency exam was required in only a few states and then more for trade and industrial than for health occupations teachers.

Licensure was required in virtually all states for at least some of the health occupations teachers. This requirement was not so consistently specified for trade and industrial teachers. The areas most often specified for licensure were nursing, cosmetology, and barbering.

Preservice programs for new teachers were required in slightly over one-third of the states at both levels. These programs were generally completed during the first year of teaching and were more often specific courses for certification renewal than bonafide preservice requirements.

Most states utilized a blanket certification policy for both levels, whereby all teachers were required to meet the same criteria. Virtually all states provided a temporary teaching certificate whereby teachers who had not met the criteria for full certification could become employed while working toward earning those requirements.

Approximately one-half of the states provided a one year renewable certificate. These states tended to require more coursework annually than those states that did not specify coursework to be completed on a yearly basis.

Secondary teachers were required to earn considerably more coursework hours for full certification than were postsecondary

teachers. The courses utilized for certification purposes were essentially the same for all states, with Methods of Teaching being the most utilized courses. Sequencing of these courses was, for all practical purposes nonexistent. University teacher educators were, by far, the principle group that provided these courses to teachers.

Once full certification was earned, most states provided a renewal period which was generally longer than the initial certification period. Moreover, coursework requirements were almost always less during subsequent renewal periods. Several states specified options, primarily occupational skill upgrading and workshop attendance, that teachers could use in lieu of part of the renewal coursework.

Permanent certification was available in approximately one-fourth of the states upon completion of a coursework requirement ranging from earning a minimal number of quarter hours (13-15) to earning a doctorate.

II. STATE STUDY

Introduction

Four separate survey instruments were developed and refined through input from the selected panel of experts. In each case, the appropriate questionnaire was subsequently mailed to one of the following respondent groups: 1) 183 secondary T & I and health occupations teachers, 2) 110 secondary local directors, 3) 108 postsecondary T & I and health occupations teachers, and 4) 28 postsecondary area school superintendents. As returns were received, the data were

coded for computer analysis. Any written comments were recorded for inclusion in the analysis of data.

Data gathered for this section of the study included all of the respondents': 1) perceived value of present certification courses, 2) reactions to separation of T & I and health occupations teacher certification, 3) reactions to linking certification requirements to an Associate Degree and Baccalaureate Degree programs, 4) reaction to an occupational competency examination requirement, and 5) perceived value of a list of specified teacher competencies.

In addition, secondary personnel were asked to specify how satisfied they were with the present certification requirements and how they felt about changing the number of credit hours required for certification.

Postsecondary personnel were asked their opinions regarding required certification for postsecondary teachers and how they felt regarding the use of secondary certification standards with post-secondary teachers.

To assist in the formulation of feasible recommendations for change in certification policy, secondary local directors and post-secondary area school superintendents were asked to indicate whether various specified proposed changes in certification requirements, if implemented, would be likely to cause problems.

The selected sample size and number and percentage of returns for each respondent group are presented in Table 12. The highest response rate was received from postsecondary area school superintendents (96 percent); the lowest response rate from postsecondary T & I and health teachers (70 percent).

Table 12

Adequacy of Tennessee's Present Certification Standards: Number of Respondents

	Size of Selected Sample	Number of Returns	Percent of Returns
Secondary T & I and health teachers	183	132	72
Secondary local directors	110	81	74
Postsecondary T & I and health teachers	108	76	70
Postsecondary superintendents	28	27	96

Perceived Value of Present Certification Courses

Table 13 presents data relating to the value of the presently required certification courses as perceived by secondary teachers and local directors. Local directors ranked Methods of Teaching as being of most value to both their T & I and health teachers. Health teachers also ranked this course highest in value. While secondary T & I teachers ranked this course high (they ranked it second), they felt School Shop Safety was the most important and most needed course for them.

Secondary trade and industrial teachers ranked School Shop Safety, Methods of Teaching, Shop Organization and Classroom Management, and Curriculum Building as the most important and most needed

Table 13

Value of Present Certification Courses As Perceived by Secondary Teachers and Local Directors

Courses	Secondary Teachers				Local Directors				Total Secondary Teachers	
	T & I		Health		T & I		Health			
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Methods	1.28	(2)	1.12	(1)	1.04	(1)	1.07	(1)	1.22	(1)
Curriculum	1.40	(4)	1.26	(2)	1.14	(3)	1.21	(3)	1.35	(2)
Shop Org./Mgt.	1.30	(3)	1.67	(3)	1.07	(2)	1.17	(2)	1.44	(4)
Shop Safety	1.21	(1)	1.71	(4)	1.18	(4)	1.58	(6)	1.40	(3)
Job Analysis	1.61	(5)	1.87	(6)	1.39	(5)	1.51	(5)	1.71	(5)
VICA/HOSA	1.86	(6)	1.74	(5)	1.61	(6)	1.47	(4)	1.81	(6)

T & I: $r = .94$; $p<.01$; Health: $r = .80$; $p<.05$.

Note: In that some respondents had not yet taken all of these courses, these results should be interpreted cautiously.

courses (Criterion: $\bar{x}$ 1.5).[1] Secondary health occupations teachers ranked Methods of Teaching and Curriculum as the two most important and needed courses for them.

Table 14 presents data relating to the value of present secondary certification courses as perceived by postsecondary teachers and area school superintendents.

[1]The scale used for secondary respondents ranged from one to three and a criterion mean of 1.5 was used as a cut off point for identifying highly ranked courses. The scale used with postsecondary respondents had a possible range of from one to four and thus, a criterion mean of 2.0 was used as a cut off point for identifying highly ranked courses for this latter group.

Table 14

Value of Present Certification Courses As Perceived By Postsecondary Teachers and Superintendents

	Postsecondary Teachers				Postsecondary Superintendents				Post-secondary Teachers Total	
	T & I		Health		T & I		Health			
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Methods	1.51	(2)	1.36	(1)	1.28	(1)	1.30	(1)	1.45	(1)
Curriculum	1.69	(3)	1.50	(2)	1.56	(4)	1.50	(3)	1.62	(2)
Shop Org./Mgt.	1.74	(4)	1.81	(3)	1.50	(2)	1.48	(2)	1.77	(4)
Shop Safety	1.50	(1)	2.07	(4)	1.52	(3)	1.74	(4)	1.71	(3)
Job Analysis	2.12	(5)	2.14	(5)	1.72	(5)	1.90	(5)	2.13	(5)
VICA/HOSA	3.19	(6)	3.46	(6)	3.58	(6)	3.47	(6)	3.29	(6)

T & I: $r = .97$; $p<.001$; Health: $r = .98$; $p<.001$.

Note: In that some respondents had not yet taken all of these courses, these results should be interpreted cautiously.

Postsecondary T & I teachers ranked School Shop Safety, Methods of Teaching, Curriculum Building, and Shop Organization and Classroom Management as the most important and most needed courses (Criterion: $\bar{X}$ 2.0). Postsecondary health occupations teachers ranked Methods of Teaching, Curriculum Building, and Shop Organization and Classroom Management as the most important and most useful courses for them.

Generally speaking, both secondary local directors and post-secondary superintendents agreed with the perceptions of their teachers regarding the importance and value of the presently required

certification courses. At the secondary level, a correlation of $r = .94$ ($p<.01$) was found to exist between the perceptions of T & I teachers and their local directors. Between secondary health teachers and local directors the correlation was $r = .80$ ($p<.05$). At the postsecondary level, the correlations between T & I and health teachers and their superintendents were $r = .97$ ($p<.001$) and $r = .98$ ($p<.001$), respectively.

The data presented in Tables 13 and 14 were further analyzed by separating the responses of those teachers who had completed a certification course from those who had not. Trade and industrial teachers at both levels, who had taken the certification courses, consistently ranked them as more valuable and more important than those who had not. With minor exceptions, this also held true for health teachers at both levels.

Satisfaction with Present Certification Requirements

Table 15 examines secondary T & I and health occupations teachers' and local directors' degree of satisfaction with present certification requirements. Both teachers and local directors appeared to be reasonably well satisfied with present certification requirements. Sixty-nine percent of the secondary T & I teachers expressed satisfaction with present certification requirements, while slightly fewer local directors (67 percent) and health teachers (63 percent) expressed this same degree of satisfaction. Nevertheless, it should be noted that a sizable percentage of respondents (34 percent) expressed some degree of dissatisfaction with these requirements.

Table 15

Satisfaction with Present Certification Requirements

Secondary	Extremely Satisfied	Satisfied	Dissatisfied	Extremely Dissatisfied
T & I Teachers	5%	64%	20%	11%
Health Teachers	4%	59%	31%	6%
Local Directors	4%	63%	28%	5%
Percentage Totals		66%	34%	

Secondary health teachers appeared to be more dissatisfied with requirements than their T & I counterparts (37 percent vs. 31 percent).

Reactions to Changing Credit Hour Requirement for Certification

When asked if the number of hours required for certification should be changed, the majority of all secondary respondent groups recommended that the number of hours required for certification be "left as is" (Table 16).

While a sizable percentage of local directors (35 percent) recommended that the number of hours be increased, a substantial percentage of T & I and health teachers (26 and 21 percent, respectively) recommended that the number of hours be decreased.

Table 16

Changing the Credit Hour Requirement for Teacher Certification

Secondary	Nature of Change		
	Increased	Decreased	Same
T & I Teachers	5%	26%	69%
Health Teachers	6%	21%	73%
Local Directors	35%	6%	58%

Separation of T & I and Health Certification

One thing is clear. When asked if T & I and health certification requirements should be separate and distinct from one another, the secondary health teachers had very strong feelings (91 percent) that their certification should be different from that of T & I teachers (Table 17). It did not seem to make too much difference to

Table 17

Separation of T & I and Health Teachers Certification Requirements

Respondent Group	Yes	No
Secondary T & I Teachers	42%	58%
Secondary Health Teachers	91%	9%
Secondary Local Directors	53%	47%
Postsecondary T & I Teachers	86%	14%
Postsecondary Health Teachers	81%	19%
Postsecondary Superintendents	58%	42%

either secondary T & I teachers or local directors. At the post-secondary level, both T & I and health teachers, as well as their area school superintendents, felt that these requirements should be separate and distinct from one another.

Linking Certification Requirements to Associate and Baccalaureate Degree Programs

At the secondary level, all three respondent groups felt that it would be reasonable (on a long term basis) to expect T & I and health occupations teachers to work toward an associate degree (Table 18). Fifty-nine percent of the secondary T & I teachers;

Table 18

Linking Certification Requirements to Associate and Baccalaureate Degree Programs

	Associate Degree		Baccalaureate Degree	
	Yes	No	Yes	No
Secondary				
T & I Teachers	59%	41%	35%	65%
Health Teachers	73%	27%	39%	61%
Local Directors	76%	24%	56%	44%
Postsecondary				
T & I Teachers	38%	62%	N/A	N/A
Health Teachers	N/A	N/A	52%	48%
Superintendents	36%	64%	36%	64%

73 percent of the health teachers; and 76 percent of the local directors, supported this notion.

Secondary teachers did not support the idea that they should be expected to work toward a baccalaureate degree although local directors tended to view this notion more favorably.

At the postsecondary level, T & I teachers did not think that they should be expected to work toward an associate degree and postsecondary health teachers had mixed feelings about whether they should be expected to pursue a baccalaureate degree. By a two to one margin, area school superintendents did not think it reasonable to expect either their T & I teachers to work toward an associate degree or their health teachers to work toward a baccalaureate degree (Table 18).

Occupational Competency Examination Requirement

As can be seen from Table 19, all respondent groups supported the notion of requiring an occupational competency examination as a part of Tennessee's certification requirements. At the secondary level, requiring an occupational competency examination was supported by 65 percent of the T & I teachers; 75 percent of the health teachers; and 72 percent of the local directors. At the postsecondary level, 70 percent of the T & I teachers, 59 percent of the health teachers, and 79 percent of the area school superintendents were supportive of an occupational competency examination requirement.

Requiring Postsecondary Teachers to Hold a Teaching Certificate

Postsecondary teachers and their superintendents were also asked whether they felt postsecondary teachers should be required to

Table 19

Requiring an Occupational Competency Examination

Respondent Groups	Secondary Yes	Secondary No	Postsecondary Yes	Postsecondary No
T & I Teachers	65%	35%	70%	30%
Health Teachers	75%	25%	59%	41%
Local Directors/ Superintendents	72%	28%	79%	21%

hold a teaching certificate. With the exception of health teachers who were split on the issue (52 percent supported; 48 percent opposed), the other respondent groups opposed this requirement. While one might expect postsecondary T & I teachers to be opposed to the notion of being required to hold a teaching certificate, which they were (62 percent opposed), it was surprising to find that 56 percent of the area school superintendents were also opposed to this notion. These data are presented in Table 20.

Expect Postsecondary Teachers to Meet Certification Requirements Similar to Their Secondary Counterparts

The postsecondary T & I teachers were about evenly split on whether they should be expected to meet certification requirements similar to those specified for secondary teachers. Fifty-six percent of the health teachers opposed the idea of being required to meet the secondary requirement of 27 quarter hours within a five year period.

Table 20

Expectations Regarding Postsecondary Teachers Holding a Teaching Certificate and Meeting Certification Requirements Similar to Secondary Teachers

Postsecondary	Hold Teaching Certificate		Certification Similar to Secondary	
	Yes	No	Yes	No
T & I Teachers	38%	62%	48%	52%
Health Teachers	52%	48%	44%	56%
Superintendents	44%	56%	58%	42%

Area school superintendents, on the other hand, tended to support the secondary certification plan for their postsecondary teachers (Table 20).

Importance and Value of Selected Teaching Competencies as Perceived by Secondary Teachers and Local Directors

Secondary respondents were provided with a list of 17 teacher competencies and were asked to rank each of them in terms of their perceived value (see Table 21).

In descending order, secondary T & I teachers ranked the following competencies as being most important and most needed (Criterion: $\bar{x} = 1.5$).

1. Student Motivation/Student Discipline
2. Work with an Experienced Teacher Prior to Entering the Classroom

Table 21

Importance of Selected Competencies as Perceived by Secondary Teachers and Local Directors

Competency	Secondary Teachers				Secondary Local Directors			
	T & I		Health		T & I		Health	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Std. Motiv./Discip.	1.32	(1)	1.30	(4)	1.19	(1)	1.18	(1)
Tests/Meas.	1.62	(5)	1.19	(1)	1.30	(2)	1.27	(2)
Update Tech. Skills	1.56	(3)	1.36	(7)	1.36	(3)	1.34	(3)
Work with Exp. Tch.	1.50	(2)	1.29	(3)	1.53	(9)	1.48	(8)
Survival Competencies	1.73	(8)	1.27	(2)	1.39	(4)	1.41	(5)
Human Relations	1.63	(6)	1.31	(5)	1.55	(10)	1.52	(9)
AV Aids	1.58	(4)	1.34	(6)	1.40	(5)	1.34	(3)
Pl. & Follow-up	1.86	(12)	1.62	(9)	1.46	(7)	1.43	(7)
Advisory Comm.	1.91	(14)	1.60	(8)	1.42	(6)	1.42	(6)
Comm. Skills-English	1.81	(11)	1.67	(11)	1.61	(11)	1.66	(11)
Disadv./Handicapped	1.70	(7)	1.77	(14)	1.49	(8)	1.52	(9)
First Aid	1.81	(10)	1.66	(10)	1.84	(15)	1.93	(15)
Math Skills	1.77	(9)	1.87	(16)	1.74	(12)	1.82	(13)
Prog. Evaluation	1.93	(15)	1.73	(12)	2.01	(17)	2.03	(17)
Parlim. Proc/LD Tech.	2.00	(16)	1.74	(13)	1.83	(14)	1.89	(14)
Co-oping Stds.	1.90	(13)	1.85	(15)	1.74	(12)	1.68	(12)
Hist./Phil. VE	2.05	(17)	2.06	(17)	1.89	(16)	1.95	(16)

T & I: $r = .75$; $p<.001$; Health: $r = .78$; $p<.001$.

Clearly, secondary T & I teachers saw a need to develop their skills at handling student motivation and student discipline problems. It was perceived as their biggest, most serious problem. Local vocational directors also saw this as the T & I teachers' most serious problem and the one with which they needed the most help. T & I teachers also felt that they could have been helped significantly if they had a chance to work with an experienced teacher in the same trade area before entering the classroom. It was ranked second most important. Local directors, however, didn't see this experience as being nearly so important or needed as their T & I teachers. They only ranked it ninth in importance.

While not viewed as quite so critical for T & I teachers, but still important, were the following: A need to update their technical skills; acquiring competencies in the development and use of audio-visual aids; and a need to develop increased competencies in the area of assessing student's laboratory and classroom performance (tests and measurements). Local directors ranked this latter area as the second most important set of competencies where their T & I teachers needed help.

One competency area not ranked very high by T & I teachers was in the use of vocational advisory committees. It was ranked 14th among the 17 listed competencies. However, local vocational directors saw this as a much more important area, ranking it 6th for their T & I teachers. Thus, local directors perceived their T & I teachers as needing more help in this area than did the teachers themselves.

Secondary Health teachers appeared to examine much more critically their own teacher competency needs. Using the same criterion as a cutoff ($\bar{x}$ = 1.5), Health teachers indicated a need for help in developing their competencies in the following areas:

1. Tests and Measurements
2. Survival Skills
3. Work with Experienced Teacher Prior to Entering the Classroom
4. Student Motivation/Student Discipline
5. Human Relations
6. Development and Use of Audio-Visual Aids
7. Updating Their Technical Skills

Thus, secondary health teachers felt that they needed the most help in the area of assessing student's laboratory and classroom performance. Local directors also saw this as a critical need for health teachers, ranking it second most important. Secondary Health teachers also felt that they could have benefited greatly if they had had some preservice teacher training (survival skills) and/or if they could have worked with an experienced teacher prior to entering the classroom. Learning how to handle unmotivated students and student discipline problems, developing human relations (counseling) skills, acquiring competencies in the development and use of audio-visual aids, and updating their technical competencies, were all seen as instructional skills that health teachers felt were very important and needed by them.

Local vocational directors were in strong agreement with the perceptions of both their T & I and health teachers (r = .75 and

.78, respectively; $p<.001$), ranking student motivation/discipline, tests and measurement, updating teacher technical skills, preservice teacher training, and use of audio-visual aids as all being important and needed by their T & I and health teachers. They felt more strongly than did their teachers that working with advisory committees and placement and follow-up skills were also important.

Importance and Value of Selected Teaching Competencies as Perceived by Postsecondary Teachers and Area School Superintendents

Postsecondary respondents were provided with a list of 18 teacher competencies and were asked to rank each of them in terms of their perceived value (see Table 22).

In descending order, postsecondary T & I teachers ranked the following competencies as being most important and most needed (Criterion: $\bar{x} = 2.0$).

1. Student Motivation/Student Discipline.
2. Updating Their Technical Skills
3. Tests and Measurements
4. Utilizing a Program of Work
5. Work with an Experienced Teacher Prior to Entering the Classroom

Quite surprisingly, postsecondary T & I teachers felt their primary need was to develop skills at handling student motivation and student discipline problems (the number one problem for secondary T & I teachers also). This was an unexpected finding in that postsecondary students enroll voluntarily and it is unclear why

Table 22

Importance of Selected Competencies as Perceived by Postsecondary Teachers and Superintendents

Competency	Postsecondary Teachers				Postsecondary Superintendents			
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Update Tech. Skills	1.59	(2)	1.48	(2)	1.27	(1)	1.32	(1)
Tests/Meas.	1.63	(3)	1.45	(1)	1.31	(2)	1.32	(1)
Std. Motiv./Disc.	1.44	(1)	1.62	(5)	1.58	(4)	1.68	(5)
Util. Prog. Work	1.67	(4)	1.59	(4)	1.50	(3)	1.55	(3)
Work with Exp. Tch.	1.89	(5)	1.59	(4)	1.58	(4)	1.59	(4)
Survival Competencies	2.23	(9)	1.74	(6)	2.00	(8)	2.09	(9)
AV Aids	2.13	(8)	1.93	(9)	2.00	(8)	2.00	(6)
Human Relations	2.09	(7)	1.86	(8)	1.96	(6)	2.00	(6)
Advisory Comm.	2.33	(13)	1.79	(7)	2.04	(10)	2.09	(9)
Disadv./Handi.	2.29	(11)	2.48	(13)	2.44	(16)	2.41	(15)
Pl. & Follow-up	2.06	(6)	2.57	(18)	2.04	(10)	2.14	(11)
Prog. Evaluation	2.30	(12)	2.14	(11)	2.08	(12)	2.09	(9)
Comm. Skills-English	2.38	(14)	2.10	(10)	2.00	(8)	2.14	(11)
Math Skills	2.38	(14)	2.24	(12)	2.11	(13)	2.27	(13)
First Aid	2.28	(10)	2.52	(15)	2.39	(15)	2.59	(16)
Hist./Phil. VE	2.47	(16)	2.52	(15)	2.23	(14)	2.27	(13)
Co-oping Stds.	2.78	(17)	2.52	(16)	2.84	(17)	2.91	(17)
Parlim. Proc/LD Tech.	2.89	(18)	2.55	(17)	2.92	(18)	2.91	(17)

T & I: $r = .93$; $p<.001$; Health: $r = .88$; $p<.001$.

unmotivated students who are discipline problems are retained in postsecondary area schools.

Postsecondary T & I teachers also felt that keeping up-to-date regarding their trade skills, developing better skills at evaluating their student's laboratory and classroom performance, developing and utilizing an organized program of work, and having the opportunity to work with an experienced teacher prior to entering the classroom were all important and valuable competencies to be developed.

Postsecondary health teachers, as with their secondary counterparts, again appeared to examine more critically their own teacher competency needs. In descending order, they identified the following nine competencies as important and valuable:

1. Tests and Measurement
2. Updating Their Technical Skills
3. Working with an Experienced Teacher Prior to Entering the Classroom
4. Utilizing a Program of Work
5. Student Motivation/Student Discipline
6. Survival Skills
7. Advisory Committees
8. Human Relations
9. Audio-Visual Aids

In terms of the needs of postsecondary health teachers, the most important competencies to be developed were perceived as being in the area of evaluation of student's laboratory and classroom performance (Tests and Measurement). (This was the number one need for secondary Health teachers also.) Postsecondary health teachers

also felt that it was vitally important to keep up-to-date in their technical skills. It ranked second in importance. Postsecondary Health teachers also felt that it would have been extremely useful and helpful if they had had a chance to work with an experienced teacher prior to entering the classroom. Additionally, developing skills in planning and utilizing an organized program of work; developing skills in handling unmotivated students and student discipline problems; developing some teaching competencies (survival skills) prior to beginning teaching; setting up and working with advisory committees; developing teacher counseling competencies in helping students solve problems (human relations); and developing skills with the use of audio-visual materials, were all cited as competencies that were important to, and needed by, postsecondary health teachers.

Postsecondary area school superintendents were in strong agreement with the perceptions of both their T & I and Health teachers ($r = .93$ and .88, respectively; $p<.001$), ranking updating of technical skills, tests and measurements, planning and utilizing a program of work, working with an experienced teacher prior to entering the classroom, student motivation/student discipline, use of audio-visual aids, and developing human relations (counseling) skills, all as being important and needed by their T & I and Health teachers.

Finally, it is interesting to call attention to some of the competency areas that were <u>not</u> perceived as being important and/or needed by teachers. At both the secondary and postsecondary levels, teachers, local directors, and area school superintendents were in strong agreement that understanding the history, philosophy, and principles under which vocational programs operate was not important

and/or needed. Also ranked low were first aid skills and skills in parliamentary procedure and conference leadership techniques (skills used extensively with youth club activities and with advisory committee operations), preparation for program evaluations, and skills in the co-oping of students. Not even such tasks as working with disadvantaged and handicapped students were ranked as very important and/or needed.

Problems Associated with Proposed Changes in Certification Requirements

Secondary local vocational directors and postsecondary area school superintendents were asked to indicate whether various proposed changes in certification requirements, if implemented, would be likely to cause problems (see Table 23).

Both respondent groups felt that requiring teachers to earn course credits annually and then monitoring, on a yearly basis the courses completed by teachers would not present any serious problems. They were similarly supportive of the notion of requiring an occupational competency exam and of utilizing an individualized professional development plan with their teachers. Although not in total agreement, none of these proposed changes were seen as likely to cause serious implementation problems by either local directors or area school superintendents.

Even though secondary local directors were supportive of the notion of linking certification requirements to an associate degree (see Table 18. page 78), they saw serious problems associated with requiring their T & I and health teachers to work toward such a

Table 23

Perceived Implementation Problems Associated with Various Suggested Changes in Certification Requirements

Suggested Change	Percent Who Viewed Change As Likely To Cause A Problem	
	Secondary Local Directors	Postsecondary Superintendents
Require an Associate Degree or the equivalent	80	88
Increase number of hours required to meet initial certification	55	72
Increased preservice requirement	45	44
Reduce work experience requirement by substituting an occupational competency exam	32	56
Individualized professional development plan	32	35
Require occupational competency exam in addition to present certification	32	28
Yearly course requirement	20	35

$R = .89$; $p<.05$.

degree. Area school superintendents also felt that requiring an associate degree would be likely to cause problems.

Likewise, both respondent groups felt that increasing the number of hours required to meet initial certification would cause problems.

While secondary local directors saw some value in substituting an occupational competency exam for at least some of the work experience requirement, postsecondary superintendents felt that this would cause problems. Finally, both respondent groups were about equally split on whether an increased preservice requirement would be likely to be difficult to implement.

Summary of the State Study

The purpose of this section was to analyze data relative to the adequacy of Tennessee's certification policy as viewed by the teaching and administrative personnel whom it affected. These data were obtained from 132 secondary trade and industrial and health teachers, 81 secondary local directors, 76 postsecondary trade and industrial and health teachers, and 27 postsecondary area school superintendents. All respondents were employed in Tennessee's public secondary and postsecondary adult area vocational school system at the time of the study.

The majority of secondary personnel were satisfied with the present Tennessee certification requirements, although a substantial percentage (34 percent) expressed some degree of dissatisfaction. This dissatisfaction was most pronounced with secondary health occupations teachers. Their dissatisfaction was expressed in their

lower perceived value of the presently required certification courses and in their overwhelming support (91 percent) for having certification requirements that were separate and distinct from those required for trade and industrial teachers.

The majority of both secondary teachers and their local directors felt the number of credit hours for certification should be "left as is." Local directors, however, did provide more support for increasing the requirements than did the teachers.

Both secondary teachers and their local directors were favorable toward the notion of linking certification requirements with an Associate degree program. Both groups of secondary teachers, however, were opposed to linking certification requirements to a Baccalaureate degree program.

Unlike their secondary counterparts, postsecondary T & I teachers did not support the idea of linking certification requirements to an Associate degree program. Postsecondary health teachers, however, were supportive of linking their certification requirements with a baccalaureate degree program. Surprisingly, their area school superintendents did not support the linking of certification requirements to either degree level for their teachers.

Postsecondary trade and industrial teachers as well as their area school superintendents were opposed to the notion of requiring certification for postsecondary teaching personnel. Postsecondary health teachers were split on the issue.

By a slight majority, postsecondary teachers opposed using certification requirements similar to those of their secondary counterparts. Area school superintendents, on the other hand, tended

to support this notion for their postsecondary teachers. Despite this opposition, postsecondary teachers gave importance rating to the presently required secondary certification courses that were similar to those given by secondary teachers.

A substantial majority of both secondary and postsecondary personnel supported the idea of requiring an occupational competency exam. Trade and industrial teachers provided the strongest support for the notion at the postsecondary level, while health teachers provided the strongest support at the secondary level.

Teachers at all levels have provided substantial data regarding various other experiences (either instead of, or in addition to present certification requirements) that they feel would help them to become better teachers. Thus, the list of competencies contained in Tables 21 and 22, pages 82 and 86, respectively, should prove useful in devising new certification experiences which are more relevant to the needs of teachers.

The majority of secondary local directors and area school superintendents felt that requiring an Associate degree as the minimum educational level for employment and increasing the number of credit hours required to meet initial certification would be difficult to implement. However, they felt implementing changes such as requiring an occupational competency exam, the utilization of an individualized professional development plan, and specifying an annual certification coursework requirement would not cause major problems. Secondary local directors felt the reduction of the work experience requirement for having taken and passed the occupational competency

exam would not be a problem to implement. However, postsecondary superintendents felt it would cause implementation problems at the postsecondary level. Finally, both respondent groups were about equally split on whether increasing the preservice requirements would be difficult to implement.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter includes a brief review of the study, the major findings which resulted from the analyzed data, and the conclusions which seemed warranted based on the findings. In addition, recommendations for improvement in Tennessee's teacher certification and employment policies are presented. Finally, recommendations for further research are given.

I. SUMMARY

The overall purpose of this study was to assess the adequacy of Tennessee's certification and employment policies for trade and industrial (T & I) and health occupations teachers and to make recommendations based on that assessment. To achieve this purpose, the study was divided into two separate and distinct segments: 1) a national study to provide a current state of the art on which to base a comparative assessment; and 2) a state survey of currently employed Tennessee teachers and their administrators to provide a basis on which to make an assessment of the adequacy of the state's present policy and to provide data upon which to make feasible recommendations for improvement.

To gather data for the national segment of the study, written state policies were requested from each state vocational director in the 50 states of the United States and the District of Columbia (hereafter referred to as 51 states).

A questionnaire was subsequently developed, then mailed to a contact person designated by each state's vocational director to provide additional information. These obtained data were based on information contained on each state's written certification policies and from 47 returned questionnaires (94 percent).

The data from the national study were categorized into four teaching areas: secondary trade and industrial teacher requirements, secondary health occupations teacher requirements, postsecondary trade and industrial teacher requirements, and postsecondary health occupations teacher requirements. The data were further grouped into four major areas: 1) requirements for employment, 2) preservice requirements, 3) requirements for full certification, and 4) renewal requirements for continued certification. Measures of central tendency were calculated for each section within each separate area grouping.

To gather data for the state segment of the study, questionnaires were developed and subsequently sent to selected samples of secondary trade and industrial and health occupations teachers, secondary local directors, postsecondary trade and industrial and health occupations teachers, and postsecondary area school superintendents. These four separate questionnaires were designed to assess the adequacy of the present certification policy utilized in Tennessee and to assess respondent attitudes toward suggested changes.

Responses were received from 132 secondary teachers (72 percent), 81 secondary local directors (74 percent), 76 postsecondary teachers (70 percent), and 27 postsecondary area school superintendents (96 percent).

As questionnaires were received from the state respondent groups, each was coded for computer analysis. The computer analysis included central tendency measures and crosstabulations. Correlations, where appropriate, were hand calculated.

II. FINDINGS

The findings from this study are reported in separate sections for purposes of clarity and comparison. These sections are: 1) findings from the national study, 2) comparative assessment of Tennessee's certification policy with national data, and 3) findings from the state study.

Findings from the National Study

The major findings obtained from an analysis of the national data were as follows:

1. Number of states requiring certification. All 51 states required certification for their secondary T & I and health occupations teachers, while only 30 states required these same teachers to be certified at the postsecondary level.

2. Difference between secondary T & I and health occupations teacher certification and employment requirements. Forty-seven (47) states had essentially identical certification requirements for the two teaching areas. Twenty-seven (27) states had differences between the two groups relative to employment policy. The nature of the differences in employment policy were: health occupations teachers were more often required to: 1) have a higher minimum educational level for employment (10 states); 2) required to have less work

experience (13 states); and 3) required to be licensed (17 states).

3. Differences between postsecondary T & I and health occupations teacher certification requirements. Out of the 30 states that required postsecondary certification, 15 specified differences between T & I and health teachers relative to employment policy. Those differences were essentially the same as those listed for the secondary level. No state at the postsecondary level was found to have substantial differences between the two teaching areas relative to certification requirements.

4. Differences between secondary and postsecondary certification requirements. Postsecondary teachers in 24 states were found to have essentially the same certification requirements as those required for secondary teachers. Five states had different employment requirements from those specified for secondary teachers. Those differences were primarily in the number of years of work experience required.

5. Minimum educational level required for employment. The high school diploma (or its equivalent) was the predominant minimum requirement for all groups. At the secondary level, 47 states made this requirement for their T & I teachers and 35 states for their health teachers. At the postsecondary level, 36 states required the minimum of a high school diploma for their T & I teachers and 27 states for their health teachers. (These educational minimums should be interpreted with caution, however, particularly relative to health occupations teachers. The majority of states also required licensure, which generally requires further education beyond the high school

level.) An Associate degree as the minimum educational level was required for health occupations teachers only in 8 states at the secondary level and in 3 states at the postsecondary level. No state required an Associate degree for T & I teachers at either level. A Baccalaureate degree was required by 3 states for secondary T & I teachers, 4 states for secondary health teachers, one state for post-secondary T & I teachers, and 6 states for postsecondary health teachers.

6. Work experience requirement. Trade and industrial teachers at both the secondary and postsecondary levels were required to have had slightly more work experience (4.3 years and 4.4 years, respectively) than were health occupations teachers (3.5 years, secondary and 3.9 years, postsecondary). The range for all four groups was from 1 to 8 years with the mode being 3 years for health teachers and 6 years for T & I teachers at both levels.

For T & I teachers, 19 states at the secondary and 8 states at the postsecondary level specified that either a part or all of the work experience requirement had to be at the "journeyman" or "senior employee" level. The mean number of years for this specification was approximately 2.5 years for both levels.

7. Options in lieu of part of the required work experience. Options of this nature were available in 37 states at the secondary level and in 27 states at the postsecondary level. Options were provided for all four teaching groups in 20 states. The remaining states specified options available to certain groups only, more often for T & I teachers than for health teachers.

The options specified most frequently were advanced education (34 states) followed by the occupational competency exam (19 states). Although these options could reduce the work experience requirement by approximately half, the states that provided these options still required their teachers to have an average minimum of two years of bonafide work experience.

8. Use of the occupational competency exam. The occupational competency exam was required in only a few states: 9 states for secondary T & I teachers, 4 states for secondary health teachers, 6 states for postsecondary T & I teachers and 3 states for postsecondary health teachers. It was, however, used as an option in lieu of part of the work experience and/or ccursework requirements, in the majority of them. At the secondary level, 34 states used the competency exam as an option for their T & I teachers and 23 states used it as an option for their health teachers. Twenty-one (21) states provided this option for their postsecondary T & I teachers and 15 states for their postsecondary health teachers.

9. Licensure requirement. The majority of states indicated that licensure, if available, was required for T & I and health teachers at both levels. Licensure for at least some of the health teaching areas was required by every respondent state at both the secondary and postsecondary level with one exception (N=46 and N=34, respectively). One state did not require licensure for their health teachers at the secondary level, but did for their postsecondary teachers. Thirty-two (32) states required licensure for at least some of their secondary T & I teachers, while 22 states made this a requirement at the postsecondary level.

The T & I teaching areas most often specified as requiring licensure were cosmetology and barbering. The health occupations teaching area consistently requiring licensure was nursing at the Registered Nurse level.

10. Preservice requirements. Preservice programs were required in 22 states at the secondary level (N=48) and in 11 states (N=47) at the postsecondary level. The mean length of these programs was 53.6 clock hours for secondary teachers and 61.8 clock hours for post-secondary teachers. Ranges between the two levels were 10 to 180 clock hours with the median being 36 clock hours at the secondary level and 45 clock hours at the postsecondary level.

Upon analysis of each state's written policy, it was found that approximately one-half of the states at both levels that specified a preservice requirement actually counted the certification coursework taken during the first year as their preservice program. The remaining half of the states could be said to provide a bonafide preservice program. The average length of these bonafide programs was 30 clock hours with a range of from 10 to 80 clock hours. Their content appeared to be "survival" in nature, containing primarily the most needed content from methods of teaching, shop organization and management, and student evaluation.

11. Nature of the certification plan. The most widely used type of certification plan was the blanket policy whereby all teachers were required to meet the same certification criteria. Sixty-five percent (33 states) at the secondary level (N=51) and 41 percent (20 states) at the postsecondary level (N=49) used this plan. The

individualized plans, with either the same or a variable hourly requirement, were utilized by the remainder of states.

12. Initial certification requirements. There was little difference between the levels with regard to the length of the initial certification period or between the amount of coursework to be completed during that period. Secondary teachers were required to earn 13.7 quarter hours of coursework in an average of 2.4 years, while postsecondary teachers were required to earn 10.4 quarter hours in an average of 2.2 years. The length of the initial certification period ranged from one to six years for both levels with the mode being one year (24 states at the secondary level and 14 states at the postsecondary level). The range of coursework requirements at the secondary level was from 0 to 59 quarter hours, while the range at the postsecondary level was from 6 clock hours to 21 quarter hours.

Approximately one half of the states at both the secondary and postsecondary level required their teachers to earn quarter hours of coursework annually. All but three of these states had a one year temporary renewable certification. A comparison of means, between the states that did require a yearly minimum of coursework and the states that did not, indicated that the total quarter hour requirement during the initial certification period was greater for states that specified a yearly minimum (6.6 for secondary; 5.7 for postsecondary) than for states that did not (5.1 for secondary; 3.8 for postsecondary).

13. Requirements for full certification. To obtain full certification, secondary teachers were required to earn an average of 35.9 quarter hours in 5.7 years. The range of quarter hours required was from 9 to 180 and the range of time permitted for completing these

requirements was from 3 to 20 years. At the postsecondary level, teachers were required to earn an average of 20.3 quarter hours in 5.6 years. Their range of coursework requirements was from 6 clock hours to 105 quarter hours. Their time frame to complete these requirements ranged from 3 to 12 years.

14. Nature of the coursework requirements. Overall results indicated that the course most frequently required for certification purposes was Methods of Teaching Vocational Subjects (#1), followed by History and Philosophy of Vocational Education (#2), Curriculum Development (#3), Job Analysis (#4), Shop Organization and Management (#5), and Tests and Measurements (#6). The only notable difference among the groups was the third place ranking of Shop Organization and Management for T & I teachers at both levels, while it ranked sixth for health occupations teachers.

15. Certification renewal requirements. Renewal requirements for continued certification were based on three major areas: 1) professional education coursework; 2) occupational skill updating; and 3) satisfactory teaching experience. The majority of states specified professional education coursework as their main criterion for renewal.

To renew their certification, secondary teachers were required to earn an average of 10.5 quarter of coursework every 4.9 years (N=40). The coursework requirement ranged from 0 to 51 quarter hours and the time frame ranged from 2 to 10 years. Postsecondary teachers were required to earn 8.4 quarter hours every 5.0 years (N=24) to renew their teaching certificate. Their coursework requirement ranged from 3 to 14 quarter hours and their renewal period ranged from 2 to 10 years.

Only three states required a coursework renewal greater than 18 quarter hours. In all three states, certification became permanent upon completion of these hours.

16. Options in lieu of renewal coursework. Several states specified options which were available to secondary and postsecondary teachers for all or part of the coursework renewal requirement. The most commonly specified options were: occupational skill updating in 15 states (mean of 293 clock hours, range of 60 to 640 clock hours) and professional development activities, such as workshops and seminars, in 16 states (mean of 79.9 clock hours, range of 30 to 120 clock hours). Options specified in lieu of coursework were generally available for both teaching areas at both levels and could be substituted for roughly three-fourths of the renewal coursework requirements.

17. Occupational skill updating requirement. While several states specified occupational skill updating as an option either in lieu of, or in addition to renewal coursework, no state made it a set renewal requirement. Even in the three states where it was required in addition to the renewal coursework, options such as workshops and/or occupational surveys could be substituted.

18. Renewal courses. When asked to specify certification renewal courses, almost all states made reference to the list of courses they were requiring and/or utilizing for initial full certification.

19. Permanent certification. Permanent certification was made available for T & I and health occupations teachers in 14 states at the secondary level and in 10 states at the postsecondary level. Criteria

for permanent certification ranged from a minimum of 13.5 quarter hours to an earned doctorate.

20. Delivery systems for certification coursework. Thirty-one states at the secondary level (N=43) and 18 states at the postsecondary level (N=25) indicated total reliance on university teacher educators for providing the required coursework to their teachers. The remaining states at both levels indicated a combination system whereby university teacher educators in conjunction with the state department and/or the local education agency and/or "other" (usually industry) provided the renewal requirements.

Comparative Assessment of Tennessee's Certification Policy with National Data

At the time of this study, Tennessee required certification for its secondary teachers only. If certification was required for any postsecondary personnel, it was a requirement imposed at the local school level and not as a mandate from the state.

Tennessee secondary trade and industrial and health occupations teachers were certified under the same policy with the requirements being identical for both groups. There were differences, however, in the employment policy.

The following list summarizes the comparative assessment of Tennessee's certification and employment requirements with the summative data from the national study:

1. Employment Policy

a. Minimum educational level. Tennessee was comparable to the other states with regard to requiring a high school diploma as the minimum educational level for employment.

b. Work experience requirement. Although Tennessee required slightly less work experience for their T & I teachers than the national average, the work experience they required at the journeyman level was comparable with the national average (2 years as opposed to 2.5 years). Tennessee also required slightly less work experience for their health occupations teachers (3 years as opposed to 3.5 years) than the national average.

c. Work experience options. Tennessee did not provide options (advanced education, completion of an occupational competency exam, or licensure) to reduce the work experience requirement. Yet, 37 other states provided these options to their teachers.

d. Licensure. Tennessee was comparable to the national data in that the state required licensure for all health occupations teachers and for some of the T & I teachers (cosmetology and barbering).

e. Occupational competency examination. Comparable with most other states, Tennessee did not require the occupational competency exam for its T & I or its health occupations teachers.

2. Preservice

Tennessee, unlike the majority of other states, required a preservice program of 10 clock hours for new teachers. However, when compared to the states which required preservice programs (N=22), Tennessee's clock hour requirement was considerably less (10 clock hours as opposed to 54 clock hours). Like most other states requiring a preservice program, it must be taken during the first year of employment.

3. Initial certification requirements

a. Nature of the certification plan. Tennessee was comparable with the majority of other states (65 percent) in providing a blanket type of certification policy whereby all teachers were required to meet the same certification criteria.

b. Initial certification period and educational requirements. Although Tennessee's initial certification period was twice as long as that represented by the national average (5 years as opposed to 2.4 years), the coursework requirements were twice as much also (27 quarter hours as opposed to 13.7 quarter hours).

c. Requirements for full certification. Tennessee teachers were required to earn approximately 4 quarter hours less for full certification than were teachers represented by the national data. Tennessee required 27 quarter hours in a five year period as opposed to the national average of 35.7 quarter hours in 5.7 years. (When national data are equated to a five year renewal period, the national average is 31.4 quarter hours.)

4. Renewal requirements for continued certification

Tennessee teachers, when compared with teachers represented in the national summary data, were required to earn fewer quarter hours (6 as opposed to 10.5) during approximately the same length renewal period (5 years as opposed to 4.9 years).

5. Permanent certification. In line with the majority of other states Tennessee did not grant permanent certification for its T & I or health occupations teachers.

6. Certification coursework. The 15 quarter hours of required courses in Tennessee were comparable to the most required courses

utilized by all other states with the exception of Tests and Measurements. Tennessee did not require this course, although it could be used as an elective for certification credit. (Nationally 31 states required this course for certification.)

7. Certification of postsecondary teachers. Unlike the majority of other states, Tennessee did not require postsecondary certification of T & I or health occupations teachers. Thirty (30) states have this requirement for their postsecondary personnel.

Findings from the State Study

Analysis of data from the questionnaires received from Tennessee teaching personnel and their administrators provided the following additional list of findings:

1. A substantial majority of both secondary teachers and their local directors were satisfied with the present certification policy utilized in the state of Tennessee. Further, a similar majority stated that they would prefer that the number of credit hours required for certification be "left as is."

2. Secondary health occupations teachers were less satisfied with certification than all other groups and provided strong support for having separate certification requirements from those specified for T & I teachers. Similarly, T & I teachers, in their comments, expressed concern that the wide divergence of needs among T & I teachers were not reflected in present state requirements. Postsecondary teachers, both T & I and health occupations, provided similar support for more individualization of requirements both between T & I and health and among T & I teachers.

3. The majority of secondary and postsecondary trade and industrial and health occupations teachers and their local directors and/or superintendents perceived the presently required certification courses as being valuable and useful. Trade and industrial teachers at the secondary level ranked School Shop Safety as being the most valuable course, followed by Methods of Teaching, Shop Organization and Management, and Curriculum Building. Secondary health occupations teachers ranked Methods of Teaching as the most valuable course, followed by Curriculum Building. Both groups of teachers expressed a need for skills in the area of Tests and Measurements. Local directors were in strong agreement with the perceptions of their secondary teachers regarding the value of the presently used certification courses.

4. Postsecondary T & I teachers ranked School Shop Safety, Methods of Teaching, Curriculum Building, and Shop Organization and Management as the most important and most needed courses for them. Postsecondary health occupations teachers ranked Methods of Teaching, Curriculum Building, and Shop Organization and Management as the most useful courses for them. Postsecondary superintendents tended to agree with the perceptions of their teachers regarding the value of certification courses presently used with secondary teachers.

5. All respondent groups at both the secondary and postsecondary levels supported the notion of teachers being required to take an occupational competency exam prior to or during the first year of employment.

6. All respondent groups at the secondary level supported the notion of linking certification requirements to an Associate degree

program. Secondary teachers were opposed to the idea of linking these requirements to a Baccalaureate degree program, while their local directors provided marginal support for this proposed requirement. At the postsecondary level, T & I teachers did not think they should be expected to work toward an associate degree and postsecondary health teachers had mixed feelings about whether they should be expected to pursue a baccalaureate degree. Postsecondary area school superintendents did not think it reasonable to expect either group of teachers to work toward either degree level.

7. Tennessee postsecondary trade and industrial teachers and their area school superintendents were opposed to the notion of required certification for postsecondary teaching personnel. Postsecondary health occupations teachers were split on the issue.

8. By the same token, both groups of postsecondary teachers were opposed to the idea of being expected to meet certification requirements similar to those required for secondary teachers. Area school superintendents, however, tended to support the notion of using similar requirements.

9. Competencies ranked as most important and most needed by secondary T & I teachers were those relating to: 1) student motivation and student discipline, and 2) working with an experienced teacher. Secondary health occupations teachers indicated that the following competencies were most needed: 1) tests and measurement, 2) survival skills, 3) working with an experienced teacher prior to entering the classroom, 4) student motivation/student discipline, 5) human relations, 6) development and use of audio-visual aids, and 7) updating their technical skills. Local vocational directors were in

strong agreement with both their T & I and health occupations teachers ($r = .75$ and $.78$; $p<.001$, respectively).

10. Competencies ranked as most important and most needed by postsecondary T & I teachers were: 1) student motivation/student discipline, 2) updating their technical skills, 3) tests and measurements, 4) utilizing a program of work, and 5) working with an experienced teacher prior to entering the classroom. Like secondary health teachers, postsecondary health teachers were more critical in identifying their needs. They identified the following competencies as being important and needed: 1) tests and measurements, 2) updating their technical skills, 3) working with an experienced teacher prior to entering the classroom, 4) utilizing a program of work, 5) student motivation/student discipline, 6) survival skills, 7) advisory committees, 8) human relations, and 9) audio-visual aids. Postsecondary superintendents were in strong agreement with the perceptions of both their T & I and health teachers ($r = .93$ and $.88$; $p<.001$, respectively).

11. The majority of secondary local directors and postsecondary area school superintendents felt that requiring an associate degree as the minimum educational level and increasing the number of credit hours required for initial certification would be difficult to implement. They did not feel, however, that requiring an occupational competency exam, having an annual certification coursework requirement or utilizing an individualized professional development plan would present serious implementation problems. Using the competency examination to reduce the required number of years of work experience was viewed as likely to be problematical by postsecondary superintendents if implemented. Secondary local directors, however, felt

this would be no problem with their secondary teachers. Both groups were about equally split on whether increasing the preservice requirement would cause implementation problems or not.

III. CONCLUSIONS

The following conclusions were derived from the findings of the national and state segments of this study:

1. Required certification for trade and industrial and health occupations teachers at the secondary level continues to show a strong predominance over required certification of those same teachers at the postsecondary level. Although this study revealed that 30 states presently require postsecondary certification, this was only a slight increase over the 27 states having this requirement a decade ago (Ramp and Reeder, 1970).

2. Where available, postsecondary certification for the majority of states appeared to have been patterned after the requirements specified for secondary certification. This conclusion had also been reported in an earlier study (Ramp and Reeder, 1970). Other studies (Cheney, 1970 and Storm, 1976) suggesting that there should be differences have apparently been virtually ignored by those responsible for establishing certification standards.

3. Certification as a requirement for Tennessee postsecondary teachers would not be well received, particularly by trade and industrial teachers and their superintendents. Despite this, postsecondary teachers did indicate a need for professional development activities in a variety of areas. This latter conclusion is supported by an earlier study by Brown (1976).

4. Nationally health occupations teachers were not likely to have certification requirements that were substantially different from those required for T & I teachers. The conclusion that the majority of states do not have separate certification requirements for these two groups tends to support the findings from an earlier study (Lutz, 1977). Based on data from the state survey, however, Tennessee health teachers see a very strong need for separate and distinct certification requirements. This overwhelming support tends to sanction the research done by Hole and Cole (1977) in Pennsylvania relative to the difference in perceived needs of health occupations teachers.

5. The minimum educational level of a high school diploma continues to be the predominant requirement for employment of both secondary and postsecondary T & I and health occupations teachers. The number of states requiring advanced education, such as an Associate degree or a Baccalaureate degree, as the minimum requirement has increased only slightly over the number of states requiring this in the past (Earhart, 1946; Fagan, 1968; Lutz, 1977; and Ramp and Reeder, 1970).

6. Health occupations teachers are more likely to be required to possess a higher minimum educational level than their T & I counterparts. Although data show that the majority of states require a high school diploma as the minimum educational level for health teachers, it should be noted that they also require these same teachers to be licensed in their occupational field. This implies advanced education beyond the high school level. This conclusion substantiates the results of the study done by Lutz (1977).

7. The number of years of work experience required for employment has increased only slightly over that required in previous years (Earhart, 1946; Lutz, 1977; Ramp and Reeder, 1970; and Resnick, 1977). This tends to support the continuing strong emphasis given to occupational competence since the inception of vocational education (Barlow, 1967). It also provides a contrast to studies which show no positive relationship between teaching success and the number of years of work experience (Kapes and Pawlowski, 1974; Van Orman and King, 1978; and Welch and Garner, 1976) or between the number of years of work experience and occupational competency (Kazanas and Kieft, 1967).

8. Options in lieu of part of the required work experience, primarily in the form of advanced education or having had the occupational competency exam, have now become an accepted practice in the majority of states, even though these options are not presently available to Tennessee teachers.

9. Only a few states specifically require an occupational competency exam despite the value of such examinations in assuring occupational competency and as an adjunct to the teacher selection process (Barlow, 1967 and Kazanas and Kieft, 1967). There is, however, an increased usage of the exam as an option for either work experience or coursework requirements.

10. If Tennessee implemented an occupational competency exam requirement, it would be well received by both secondary and postsecondary T & I and health occupations teachers and their administration.

11. Preservice programs are still required in a minority of states at both the secondary and postsecondary levels despite the

importance of this activity in adequately preparing occupational teachers (Baker, 1977 and Barlow, 1967). Concluding that preservice programs are not viewed as essential by the majority of states supports the conclusions of some earlier studies (Fagan, 1968 and Ramp and Reeder, 1970). These data, however, are in contrast to other studies (Lutz, 1977 and Terry and Young, 1980) which had reported a greater number of states having preservice programs for their new teachers. Part of the discrepancy lies in the fact that while many states claim that they have a preservice requirement, in fact most are allowing this requirement to be completed during the first year of employment. Moreover, many states count the coursework required for the first year's certification renewal as the preservice requirement.

12. The blanket type of certification policy whereby all teachers are required to meet essentially the same type of requirements continues to be the predominant certification plan nationally. This is true despite the fact that the literature indicates that there is a wide divergence of needs among T & I teachers and between T & I and health teachers at both the secondary and postsecondary levels (Baker, 1977 and Hole and Cole, 1977). Moreover, Tennessee teachers and their local directors and/or superintendents would support the use of an individualized certification plan.

13. Tennessee certification requirements appear to be relatively well aligned with those required nationally. State data indicate that Tennessee teachers would prefer the credit hour requirement to remain the same. Although they indicate basic satisfaction with the present policy, they also indicate that they would prefer some changes within the confines of that requirement.

14. Coursework required for certification purposes has not substantially changed over the years. The courses recommended at the inception of vocational education and those used throughout the years are essentially the same as those utilized today (Earhart, 1946; Johnson, 1934; NSPIE Bulletin No. 19, 1917; and Ramp and Reeder, 1970).

15. Despite the significance given to occupational competence (Kazanas and Kieft, 1967 and NSPIE Bulletin No. 19, 1917), occupational skill updating for teachers does not appear to be a significant priority in any state. Although it is widely used as an option for, or in addition to renewal coursework, it is apparently not viewed as a necessary requirement once the teacher has been employed.

16. There are competencies needed by Tennessee T & I and health occupations teachers that are not presently being provided.

17. Nationally, university teacher educators continue to be the predominant delivery system for providing coursework for certification to teachers. All states presently use this system. This conclusion tends to support the university as the major delivery system for certification coursework over the years (Fagan, 1968, and Report of the U.S. Panel of Consultants, 1963).

18. Fewer states are granting permanent certification on any basis. This gradual decline as noted from previous studies (Earhart, 1946 and Fagan, 1968) appears to be the result of the importance placed on teaching success as it relates to educational level (Kapes and Pawlowski, 1974 and Welch and Garner, 1976) and the importance of continued professional development (Baker, 1977).

IV. RECOMMENDATIONS

The results of this study clearly indicate that changes are needed in the certification requirement and teacher initial employment policies presently utilized in Tennessee. The findings and resulting conclusions indicate certain weaknesses within the present standards; teachers and administrators from within the state have provided support for a variety of changes.

It is on that basis that the following recommendations are made. It is recommended that:

1. A minimum of a four week preservice workshop should be provided for all new T & I and health teachers with two of those four weeks being before they enter the classroom. The two week workshop prior to entering the classroom would consist of group instruction, individual class presentations, and other activities deemed appropriate for the gaining of basic teaching skills. The subsequent two weeks of workshop would consist of one week of internship with an experienced teacher and one week (time equivalent) of individual assistance to the teacher in his/her own school setting. State regional specialists, teacher educators, and local directors should cooperatively plan and be responsible for conducting these workshops. Moreover, these workshops should focus on the most essential competencies relative to methods of teaching, shop safety, shop organization and classroom management, and tests and measurements.

2. Periodic, coordinated, visitations by state regional specialists and teacher educators to work with new teachers should be a part of the first year follow-up.

3. At least two half-day seminars should be held during the teacher's first year of employment for the purpose of permitting new teachers to share ideas, problems, and concerns and for helping them with these problems.

4. Every T & I and health teacher should be required to take an occupational competency examination prior to beginning teaching. Results should be used 1) as a screening device among multiple candidates for a teaching position and 2) to identify occupational strengths and weaknesses of newly employed occupational teachers and for planning subsequent skill updating experiences.

5. Occupational competency exams should be structured to ensure that teachers will be tested over the content they will be expected to teach. For a teacher of welding, the competency exam would be quite comparable with the occupation. However, in other vocational program areas, such as General Metals, General Building Trades, and secondary health occupations, among others, an examination which covers the content of the cluster of occupations consumed by the program title would need to be administered.

6. Certification requirements for health teachers should be designed to reflect their expressed needs and should not be linked to T & I requirements.

7. Professional development planning committees should be established and charged with the responsibility for planning the pre-service and inservice programs and experiences of T & I and health teachers. These professional development planning committees should be comprised minimally of the following individuals: 1) the T & I or

health occupations teacher; 2) the local vocational director or his/her designate; 3) the regional T & I or health supervisor; and 4) a teacher educator.

8. Each planning committee should be responsible for developing annual and individualized professional development goals for new teachers and for monitoring the progress of individual T & I and health teachers toward meeting these goals.

9. T & I and health occupations teachers in Tennessee should be initially certified for one year. This certificate should be renewable four times based on satisfactory completion of 6 quarter hours of coursework yearly.

10. The present 27 quarter hour coursework requirement should be increased to 30 hours, but that up to 6 credit hours of any of the following professional activities should be permitted as a part of this 30 hour requirement: 1) preservice workshops; 2) approved internships with an experienced teacher; and 3) workshops and other approved activities designed to upgrade the teacher's occupational skills.

11. Competencies relative to the following areas should be required for all new T & I teachers during the initial certification period: 1) Methods of Teaching; 2) School Shop Safety; 3) Shop Organization and Classroom Management; 4) Curriculum Development; and 5) Tests and Measurements. The Curriculum course should contain the essential elements of "Occupational Analysis" and the Shop Organization and Classroom Management course should deal with student motivation and student discipline problems.

12. Competencies relative to the following areas should be required for all new health occupations teachers during the initial certification period: 1) Methods of Teaching; 2) Curriculum Development; 3) Tests and Measurements; and 4) Shop Organization and Classroom Management. The Curriculum course should contain the essential elements of "Occupational Analysis" and the Shop Organization and Classroom Management course should deal with student motivation and student discipline problems.

13. Satisfactory completion of an occupational competency examination and/or the possession of at least one full year of advanced education relative to occupational skill development should be acceptable to substitute for up to one half of the occupational experience requirements of T & I and health occupations teachers.

14. Certification should be required for postsecondary teachers. However, postsecondary certification requirements should not be patterned after secondary standards, but should be based on the needs of postsecondary teachers.

Recommendations for Future Studies

The following recommendations for future studies are made:

1. A more extensive and comprehensive study should be conducted to identify the professional development needs of Tennessee postsecondary teaching personnel. Moreover, the differences in the needs between Tennessee secondary and postsecondary personnel should be considered in the preparation of any proposed certification guidelines for postsecondary teachers.

2. Studies to provide a current and complete state of the art nationally for certification and employment of vocational teachers should be periodically conducted to provide data on which to base the evaluation of individual state policies.

3. Studies should be periodically conducted within a state to determine the degree to which the present certification policy is meeting the needs of its teachers.

4. The notion of separate and distinct certification not only for health occupations teachers, but also for the various teachers within the area of trade and industrial education should be further investigated with studies relative to the individual needs and backgrounds of these various teachers and how certification can be individualized to meet these needs.

Concluding Remarks

Because of the wide divergence in the minimum standards, patterns of certification, terminology, and the like, this researcher found it almost impossible to devise a singular questionnaire that applied equally well to all states. That problem existed in spite of significant input from the panel of experts used in the study. This information is provided as a cautionary note to others who might undertake research of this nature.

Finally, an observation which appears to be warranted, even though not totally supported by the data, relates to the apparent lack of substantial change in certification over the years. There are at least two probable explanations for this state of affairs: 1) it may be that certification requirements are so well conceived that

significant changes are not needed, or 2) significant changes are needed but they are not being made. To the extent that the latter observation is correct, it is very likely to be related to a continuing shortage of qualified occupational teachers nationally. Consequently, any state which desires to make significant changes in certification policies must impact upon the supply and demand issue.

BIBLIOGRAPHY

BIBLIOGRAPHY

I. BOOKS AND JOURNALS

American Vocational Association Fact Sheet. What Is Vocational Education? American Vocational Association, 1970.

Baker, G. E. "From Craftsmen to Teachers." School Shop. Vol. 37, No. 2 (October, 1977), 40-41.

Barlow, M. L. History of Industrial Education in the United States. Peoria: Charles A. Bennet Co., 1967.

Bawden, W. T. "The Crisis of Vocational Education." Industrial Arts and Vocational Education. Vol. 43 (November, 1954), 295-99.

Brandon, G. L. "Trade and Industrial Education Research in Teacher Education and Certification Since 1963." R. M. Reese (Editor). Trade and Industrial Teacher Education and Certification: Report of a National Invitational Research Development Seminar. Ohio State University and North Carolina State University, November, 1968. (ED 025 644).

Brown, D. V. "Post Secondary Teachers of Technology: A Study of Educational Professional Preparation." Journal of Industrial Teacher Education. Vol. 13, No. 2 (Winter, 1976), 45-50.

Burkett, L. A. "A Look to the Future." American Vocational Journal. Vol. 51, No. 5 (May, 1976), 91-95.

Cheek, G. D. "State Legislature in Tennessee: A Reaction to Social Needs." Journal of Industrial Teacher Education. Vol. 13, No. 3 (Spring, 1976), 14-22.

Cheney, J. D. "Teacher Education for Post Secondary Programs." American Vocational Journal. Vol. 45, No. 3 (March, 1970), 26-28.

Competency-Performance Based Teacher Education for Vocational Educators. Recommended Modules--A Delphi Study. E.P.D.A. Subj. Project No. 12. U.S. Office of Education, 1976.

Dennis, L. H. "Current Problems in Vocational Education." Educational Outlook. Vol. 25 (January, 1951), 80-86.

Earhart, C. R. "Requirements for Vocational Teacher Training and Certification in Trades and Industries in the Various States and Territories." The Kansas State Teachers College Bulletin. Pittsburg, Kansas, 1946.

Fagan, B. T. "Basic Certification Requirements for Trade and Industrial Education." R. M. Reese (Editor). Trade and Industrial Teacher Education and Certification: Report of a National Invitational Research Development Seminar. Ohio State University and North Carolina State University, November, 1968. (ED 025 644).

Federal Board for Vocational Education. The Training of Teachers of Trade and Industrial Education. Bulletin No. 150, June, 1930.

Gorman, C. B. "Trade and Industrial Teacher's Perception of In-Service Instructional Competencies." Journal of Industrial Teacher Education. Vol. 15, No. 3 (Spring, 1978), 36-45.

Hole, F. M. and Cole, L. Assessment of Educational Needs for the Preparation of Health Occupations Education Teachers and Administrators in Pennsylvania. University Park: Pennsylvania State University. July, 1977. (ED 157 901).

Jarvis, C. D. Vocational Teachers for Secondary Schools. Department of the Interior, Bureau of Education. Bulletin 1917, No. 38, Washington: Government Printing Office, 1917.

Johnson, B. W. A Comparative Study of the Bases and Methods for Certification of Vocational Teachers (Limited to the Trade and Industries Field). United States Department of the Interior, Office of Education. Vocational Education Bulletin No. 172. Government Printing Office, Washington, D.C., 1934.

Jones, W. B. "A Little Learning Is A Dangerous Thing in Teacher Training." American Vocational Journal. Vol. 22, No. 10 (December, 1947), 26-27.

Kapes, J. T. and Pawlowski, V. Characteristics of Vocational Technical Instructors and Their Relationship to Student Shop Achievement. The Pennsylvania State University. Research Report, Vocational Development Study, Series Monograph, No. 17, University Park, Pennsylvania, 1974. (ED 092 858).

Kazanas, H. C. and Kieft, L. D. "The Case for Certification by Competency Exam." School Shop. Vol. 26 (January, 1967), 27-29.

Lutz, J. F. "A Survey of Certification Requirements for Secondary and Post Secondary Teachers of Health Occupations in the United States." Unpublished Master's Thesis, The University of Tennessee, Knoxville, 1977. (ED 170 559).

Miller, A. J. and Roehrick, R. R. The Certification of Vocational Educational Personnel: A Report of the AVA ad hoc Committee on Professional Standards. American Vocational Association. Washington, D.C., October, 1977. (ED 152 955).

National Evaluation Systems, Inc. South Carolina Trade and Industrial Educators' Needs Assessment: Final Technical Report. Columbia: Vocational Research Coordinating Unit, South Carolina Department of Education. March, 1980.

National Society for the Promotion of Industrial Education. The Selection and Training of Teachers for State Aided Industrial Schools for Boys and Men. Bulletin No. 19. February, 1914.

National Society for the Promotion of Industrial Education. The Selection and Training of Teachers for State Aided Industrial Schools. Bulletin No. 19 (Revised Edition). February, 1917.

Ramp, W. S. and Reeder, R. C. An Analysis and Synthesis of State Certification Requirements for Teachers of Secondary Trades and Industries and Post Secondary Trades and Technical Programs. Carbondale: Southern Illinois University. October, 1970. (ED 078 142).

Resnick, H. S. An Analysis of National Certification Requirements and Professional Development Standards for Vocational Education Personnel. Vol. III, Phase II of Professional Development Study for Massachusetts. Boston: Boston University. September, 1977. (ED 146 410).

Storm, G. State of the Art: In-Service Technical Upgrading of Post Secondary Vocational-Technical Instructors. National Conference on Personnel Development for Post Secondary Vocational and Technical Education Programs of Less Than Baccalaureate Degree. St. Louis, Missouri. January, 1976.

Strong, M. E. "Vocational Education: Training of Teachers." Vol. 9. In Lee C. Deighton (Editor). The Encyclopedia of Education. New York: Macmillan and The Free Press, 1971.

Terry, T. P. and Young, R. M. "National Patterns of Pre-Service Workshops for Trade and Industrial Teachers." Unpublished Manuscript, 1980. (Available from Thomas P. Terry, Auburn University, Auburn, Alabama, or Robert M. Young, University of Georgia, Athens, Georgia.)

U.S. Office of Education. Vocational Technical Education Annual Report: Fiscal Year 1968. HES 280:80008-68. U.S. Government Printing Office, Washington, D.C., 1970.

Van Orman, L. R. and King, D. H. A Survey of the Employment and Performance of Non-Traditionally Trained Teachers of Agriculture and Trade and Industries Education. Albany: New York State Education Department. January, 1978. (ED 173 661).

Welch, F. G. and Garner, C. W. "Occupational Experience: How Much Is Enough?" American Vocational Journal. Vol. 51, No. 9 (September, 1976), 34-35.

Wolansky, W. D. "The Need and the Opportunity." American Vocational Journal. Vol. 44 (September, 1969), 31-32.

II. STATE POLICY INFORMATION FOR VOCATIONAL CERTIFICATION OF TRADE AND INDUSTRIAL AND HEALTH OCCUPATIONS INSTRUCTORS

Alabama State Policy for Vocational Certification. State of Alabama, Department of Education, Montgomery, Alabama, 1979.

Alaska Digest of Requirements for Teacher Certification. State of Alaska, Department of Education, Juneau, Alaska, 1979.

Arizona Teacher Certificate Requirements R7-2-603. Arizona Department of Education, Phoenix, Arizona, 1979.

Arkansas Trade Certification. State of Arkansas, Department of Education, Little Rock, Arkansas.

California Designated Subjects Teaching Credential Information for Vocational Education. State of California, Sacramento, California.

Colorado Vocational Education Credentialing. Colorado State Board Division of Occupational Education. Denver, Colorado, 1979.

Connecticut Teacher Certification Requirements. Fourteenth Edition. State of Connecticut, Department of Education, Hartford, Connecticut, March, 1980.

Delaware Certification of Professional Public School Personnel. State Department of Public Instruction, Dover, Delaware, March, 1979.

Florida State Board of Education Rules, Section 6A-442. Department of Education, Tallahassee, Florida, 1976.

Georgia Vocational Teaching (V) Certificates, Section VI. State of Georgia, Department of Education, Atlanta, Georgia, 1977.

Hawaii: Summary of Certification Requirements. State of Hawaii, Department of Education, Honolulu, Hawaii, 1979.

Idaho Certificate Standards for Professional School Personnel. State of Idaho, Department of Education, Boise, Idaho, July, 1980.

Illinois Program for Evaluation, Supervision and Recognition of Schools, Document Number 1. State Board of Education, Springfield, Illinois, October, 1977.

Indiana Teacher Education and Certification Handbook (TEACH) Rules 46-47. Indiana State Board of Education, Indianapolis, Indiana, Fall, 1976.

Iowa State Plan for Vocational Education--Appendix J. State of Iowa, Department of Public Instruction, Des Moines, Iowa, 1980-82.

Kansas Certification Handbook. State of Kansas, State Board of Education, Topeka, Kansas, 1971.

Kentucky Teacher Certification Handbook, Chapter 24. State Board of Education, State Department of Education, Frankfort, Kentucky, November, 1976.

Louisiana Standards for State Certification of Vocational Technical Personnel--Part X. State of Louisiana, Department of Education, Baton Rouge, Louisiana, July, 1979.

Maine State Policy for Vocational Education. State of Maine, Department of Educational and Cultural Services, Augusta, Maine.

Maryland Requirements for Certification of Teachers. State of Maryland, Department of Education, Baltimore, Maryland.

Massachusetts Basic Requirements for Shop and Allied Health Occupations Applicants. The Commonwealth of Massachusetts, Department of Education, Boston, Massachusetts.

Michigan: Facts About Vocational Teacher Certification. Michigan Department of Education, Lansing, Michigan, April, 1979.

Minnesota Vocational Education Licensing Requirements. Minnesota Department of Education, St. Paul, Minnesota, July, 1980.

Mississippi Requirements for Vocational Technical Teacher Licensing. State of Mississippi, Department of Education, Jackson, Mississippi, January, 1980.

Missouri State Policy for Vocational Education. State of Missouri, Department of Elementary and Secondary Education, Jefferson City, Missouri, 1972.

Montana Board of Public Education Policies and Office of Public Instruction Administrative Procedures for Vocational Education in Montana: Appendix 1. State of Montana, Department of Public Instruction, Helena, Montana, 1977.

Nebraska State Policy for Vocational Education. Nebraska Department of Education, Lincoln, Nebraska, 1979.

Nevada Vocational Endorsements 391.670 - 301.770. Nevada Department of Education, Carson City, Nevada.

New Hampshire Certification Standards for Educational Personnel. New Hampshire State Board of Education, Concord, New Hampshire, July, 1974.

New Jersey State Policy for Vocational Education. State of New Jersey, Department of Education, Trenton, New Jersey.

New Mexico Regulations of the State Board of Education--Regulations No. 78-5 and 77-9. State of New Mexico, Department of Education, Sante Fe, New Mexico, October, 1977.

New York Amendments to the Regulations of the Commission of Education, Section 207 of Education Law. New York State Education Department, Albany, New York, 1978.

North Carolina Administrative Code, Section 2 H, Public Education-Public Instruction. North Carolina State Department of Education, Raleigh, North Carolina.

North Dakota Program Standards for Trade, Technical, and Health Education. State Board for Vocational Education, Bismarck, North Dakota.

Ohio Laws and Regulations Governing Teacher Education and Certification: Vocational Teacher Certification. State of Ohio, Department of Public Instruction, Columbus, Ohio, 1972.

Ohio Standards of the State Board of Education: Rules and Regulations for One Year Vocational Certificates. State of Ohio, Department of Public Instruction, Columbus, Ohio, 1972.

Oklahoma Vocational Teacher Certification. Oklahoma State Department of Vocational and Technical Education, Stillwater, Oklahoma, December, 1979.

Oregon Rules for Certification of Teachers, Specialists, and Administration--Addendum. Oregon State Board of Education, Salem, Oregon, January, 1980.

Pennsylvania Regulations: Certification for Vocational Education. Bureau of Vocational Education, Pennsylvania Department of Education, Harrisburg, Pennsylvania, January, 1973.

Rhode Island Requirements for Vocational Education Teachers. State of Rhode Island, Department of Education, Providence, Rhode Island.

South Carolina Revised Regulations for Trade and Industrial Certification. Office of Vocational Education, State Department of Education, Columbia, South Carolina, July, 1978.

South Dakota Secondary Personnel Qualifications for Programs Reimbursed Through the Division of Vocational Education. Division of Vocational Education, Pierre, South Dakota, February, 1979.

South Dakota Personnel Qualifications for Credentialing Post-Secondary Staff. Division of Vocational Education, Pierre, South Dakota, February, 1979.

Tennessee Regulations for Certification of Teachers. State Board of Education, Nashville, Tennessee, July, 1978.

Texas Education Agency Bulletin 753--Guidelines for School Personnel: Certification, Allocations, and Records. Texas Education Agency, Austin, Texas.

Utah Vocational Certification. Utah State Office of Education, Division of Curriculum and Instruction, Teacher Certification, Salt Lake City, Utah, April, 1979.

Vermont Regulations Governing the Certification of Educational Personnel. State of Vermont, Department of Education, Montpelier, Vermont.

Virginia Certification Regulations for Teachers and Qualifications for Administrative, Supervisory, and Related Instructional Positions. Commonwealth of Virginia, State Board of Education, Richmond, Virginia, January, 1978.

Washington Standards for Certification of Vocational Instructors, Chapter 180-77 WAC. State of Washington, Department of Public Instruction, Olympia, Washington, 1978.

Washington, D.C.: License VII--Career Development. Public Schools of the District of Columbia, Division of Career Development Programs. Washington, D.C., 1977.

West Virginia Minimum Requirements for the Licensure of School Personnel. West Virginia State Department of Education, Charleston, West Virginia, 1975.

Wisconsin Certification Standards for Teachers in Vocational Programs: Certification Code P.I. 3.03 (5). State of Wisconsin, Department of Public Instruction, Madison, Wisconsin, March, 1980.

Wyoming Rules and Regulations Governing Teacher Certification in the Public Schools. Wyoming State Department of Education, Cheyenne, Wyoming, March, 1979.

APPENDIXES

APPENDIX A

A NATIONAL SURVEY OF TRADE AND INDUSTRIAL
AND HEALTH OCCUPATIONS CERTIFICATION REQUIREMENTS

INITIAL CERTIFICATION AND EMPLOYMENT REQUIREMENTS

1. What is the name given to the initial certification for beginning Health Occupations and T & I teachers in your state?[1]

   For secondary teachers: _____

   For Post Secondary teachers: _____

2. Which of the following certification plans does your state use for its initial certification of T & I and Health occupations teachers?

Secondary	Post Secondary		
_____	_____	A.	General blanket policy where everyone has the same requirements.
_____	_____	B.	Individually planned certification requirements where the total number of quarter hours of coursework is the same for everyone (although content may vary.)
_____	_____	C.	Individually planned certification requirements where the total number of quarter hours of coursework required may vary with the individual (dependent upon individual qualifications, performance on competency exam or other assessments).
	_____	D.	Post secondary health occupations and T & I teachers are not required by the state to have certification. (please check below if applicable.)
			_____ Post secondary teacher requirements are determined by the local institution.
			_____ Post secondary teacher requirements are determined by the local education agency.
_____	_____	E.	Other. (Please specify) _____

   _____

3. Initial certification and/or employment requirements for secondary and post secondary T & I and Health occupations teachers. Please complete the following:

Secondary		Post Secondary		
T & I	Health	T & I	Health	
_____	_____	_____	_____	A. Length (in years) of the initial certification period.
_____	_____	_____	_____	B. Quarter hours of coursework required for initial certification.
_____	_____	_____	_____	C. Minimum number of quarter hours required per year.
_____	_____	_____	_____	D. Minimum educational level required for employment.
_____	_____	_____	_____	E. Years full time work experience required (based on the minumum educational level) for employment.
_____	_____	_____	_____	F.. Other. (please specify) _____

   _____

4. What options are available with,or in lieu of, work experience required for initial employment of health and T & I teachers? (Example: competency exam or advanced education beyond minimum requirements, etc.) Write none if no options are available.

   Secondary: T & I _____

   _____

   Secondary: Health _____

   _____

   Post Secondary: T & I _____

   _____

   Post Secondary: Health _____

   _____

[1] INITIAL CERTIFICATION - defined as the type of certification granted upon initial employment. Generally, during this period teachers are required to accomplish certain tasks (professional coursework, preservice, etc.) before being granted a continued type of certificate. This type certificate may be referred to as provisional, temporary, interim, conditional, and limited, among other titles.

5. Listed below are courses commonly required for certification. Place a check by those required, if any, by your state. For additional courses required that are not listed, please list in the space provided. (If your state has a preferential sequence, please number in order instead of using a check.)

Secondary		Post Secondary		
T & I	Health	T & I	Health	
____	____	____	____	Methods of Teaching Vocational Education
____	____	____	____	Shop Organization and Management
____	____	____	____	Job Analysis
____	____	____	____	Tests and Measurements
____	____	____	____	History and Philosophy of Vocatinal Education
____	____	____	____	Curriculum Development
____	____	____	____	Other (please specify) _____

_____

_____

6. How are these courses provided to T & I and Health occupations teachers? (Check all areas applicable.)

Secondary	Post Secondary	
_____	_____	A. By university teacher educators.
_____	_____	B. By the state department of education personnel.
_____	_____	C. By the local education agency.
_____	_____	D. Other. (please specify) _____

_____

7. Is an occupational competency examination required in your state for health occupations and T & I teachers?

Secondary		Post Secondary		
T & I	Health	T & I	Health	
____	____	____	____	Yes
____	____	____	____	No
____	____	____	____	Not required but may be used in lieu of part of the occupational experience requirements.
____	____	____	____	Not required but may be used in lieu of part of the required certification coursework.
____	____	____	____	May be required in some cases. (please specify) _____

_____

8. If licensure is available in a field of instruction, are health occupations and T & I teachers required to have it prior to employment?

Secondary		Post Secondary		
T & I	Health	T & I	Health	
____	____	____	____	No, licensure is not required.
____	____	____	____	Yes, licensure is required in all areas.
____	____	____	____	Yes, licensure is required in some areas.(please specify) _____

_____

PRESERVICE REQUIREMENTS

9. Are health and T & I teachers required to complete a preservice program prior to beginning teaching? (Preservice is defined as a short preparatory program given to teachers prior to entering the classroom)

Secondary		Post Secondary		
T & I	Health	T & I	Health	
____	____	____	____	No preservice program required prior to teaching.
____	____	____	____	Yes. (please specify number of quarter or clock hours in the space to the left)

CERTIFICATION RENEWAL REQUIREMENTS

10. What is the name of the certificate in your state that is necessary for continued employment of health and T & I teachers (see definition below) ?

For Secondary Teachers: _____

For Post Secondary Teachers: _____

11. What are the requirements in your state for the renewal of the continued certification cited in the above question (#12)? Complete the blanks that are applicable to your state. If there are no renewal requirements in your state, write none and skip the remainder of this section and move directly to question # 16.)

Secondary		Post Secondary		
T & I	Health	T & I	Health	
____	____	____	____	A. Number of years of satisfactory teaching experience during initial certification period.
____	____	____	____	B. Occupational skill updating (required time ____)
____	____	____	____	C. Number of Quarter hours in professional teacher education required during renewal period.
____	____	____	____	D. Other (please specify) _____

_____

12. What is the renewal period for continued certification in your state?

Secondary		Post Secondary		
T & I	Health	T & I	Health	
____	____	____	____	Length of renewal period (in years).
____	____	____	____	Not applicable - once initial certification requirements are met, the certificate becomes permanent.

_____

CONTINUED CERTIFICATION - defined as the type of certification granted after initial certification requirements have been completed. It is generally for a longer period of time than the initial certification and must be renewed on some basis (such as additional coursework, work experience, etc.). This type certificate may be referred to as standard, professional, regular, and continuing, among other titles.

13. Please specify the courses (course title and/or content), if any, required by your state to meet the above mentioned renewal requirements (# 11 C). Please list in preferential sequence, if any.

Secondary: T & I _____

_____

Secondary: Health _____

_____

Post Secondary: T & I _____

_____

Post Secondary: Health _____

_____

ADEQUACY OF PRESENT CERTIFICATION REQUIREMENTS
FOR SECONDARY T & I AND HEALTH TEACHERS

Teaching Area _____

1. Listed below are the courses currently required for certification. Please place a check by all of those you have completed.

_____ A. Methods and Materials of Teaching

_____ B. Shop Organization and Management

_____ C. Trade and Job Analysis

_____ D. Organization and Operation of VICA/HOSA

_____ E. School Shop Safety

_____ F. Curriculum Building

2. Listed below are the courses currently required for certification. Please rank each of these courses using the following scale:

1. Important and needed
2. Useful
3. Not important; not needed

_____ A. Curriculum Building

_____ B. School Shop Safety

_____ C. Organization and Operation of VICA/HOSA

_____ D. Trade and Job Analysis

_____ E. Shop Organization and Management

_____ F. Methods and Materials of Teaching

3. Are there other courses that you would like to see required instead of/or in addition to those listed above?

_____ yes Please specify: _____

_____ no _____

_____

4. Presently, minimum certification requirements for T & I and Health teachers require teachers to earn 27 quarter hours within a 5 year period. In your opinion, should the number of hours be:

_____ Increased

_____ Decreased

_____ Left the same

5. Given the fact that T & I and Health occupations teachers are increasingly being asked to do more of a variety of tasks, which of the following learning experiences do you feel would help you to do a better job as a professional teacher? (Please rank each item using the following scale.

1. Important and needed.
2. Useful
3. Not important; not needed

_____ A. Develop some teacher "survival competencies" prior to beginning teaching.

_____ B. Develop the teacher's specific competencies in administering First Aid to students. (A first aid course provided by the Red Cross, for example)

_____ C. Develop teacher competencies in working with disadvantaged and handicapped students in vocational programs.

_____ D. Develop teacher competencies in setting up and working with advisory committees.

_____ E. Develop teacher competencies in dealing with the placement and follow-up of graduates.

_____ F. Develop teacher competencies in the evaluation of vocational students' laboratory and classroom performance (test construction).

_____ G. Develop teacher competencies relating to helping students solve problems (human relations) and assisting them in coping with everyday situations.

_____ H. Develop teacher competencies relating to the "co-oping" of vocational students.

_____ I. Develop teacher competencies on how to prepare for program evaluations (state, regional, national, etc.).

_____ J. Develop the teacher's understanding of the history, philosophy, and principles under which vocational programs operate.

_____ K. Develop improved teacher communication skills. (English)

_____ L. Develop improved teacher Mathematics skills.

_____ M. Develop teacher competencies in the use of the visual aids.

_____ N. Develop teacher competencies in parliamentary procedure, and conference leadership skills.

_____ O. Develop teacher competencies by providing the opportunity for them to work with an experienced teacher in the same area before entering the classroom.

_____ P. Develop teacher competencies by providing the opportunity for them to periodically update their technical skills.

_____ Q. Develop teacher competencies in dealing with student motivation and student discipline problems.

6. How satisfied are you with present certification requirements?

_____ Extremely well satisfied

_____ Satisfied

_____ Dissatisfied

_____ Extremely dissatisfied

7. Describe briefly below what changes, if any, you would make in the present certification requirements.

_____

_____

8. Would it be reasonable to expect all T & I and Health teachers (on a long range basis) to work toward an associate degree or its equivalent?

_____ yes Comments: _____

_____ no _____

9. Would it be reasonable to expect all T & I and Health teachers (on a long range basis) to work toward a baccalaureate degree or its equivalent?

_____ yes Comments: _____

_____ no _____

10. Would it be useful to require all T & I and Health teachers to take a trade competency examination (performance as well as written) to insure that they know their trade area?

_____ yes Comments: _____

_____ no _____

11. In your opinion, should T & I and Health Occupations teacher certification requirements be separate and distinct from one another?

_____ yes Comments: _____

_____ no _____

Thank you for your cooperation.

SECONDARY LOCAL DIRECTORS: ADEQUACY OF PRESENT
CERTIFICATION REQUIREMENTS FOR T & I AND HEALTH TEACHERS

Official Title _____

1. Listed below are the courses currently required for certification. Please rank each of these courses (for T & I and Health Occupations teachers) using the following scale:

   1. Important and needed
   2. Useful
   3. Not important; not needed

T & I Teachers	Health Teachers	
_____ A.	_____ A.	Curriculum Building
_____ B.	_____ B.	School Shop Safety
_____ C.	_____ C.	Organization and Operation of VICA/HOSA
_____ D.	_____ D.	Trade and Job Analysis
_____ E.	_____ E.	Shop Organization and Management
_____ F.	_____ F.	Methods and Materials of Teaching
_____ G.	_____ G.	Are there other courses that you would like to see required instead of/ or in addition to those listed above? Please specify:

   1. _____
   2. _____
   3. _____

2. Presently, minimum certification requirements for T & I and Health teachers require teachers to earn 27 quarter hours within a 5 year period. In your opinion, should the number of hours be:

   _____ Increased

   _____ Decreased

   _____ Left the same

3. How satisfied are you with present certification requirements for T & I and Health Occupations teachers?

   _____ Extremely well satisfied

   _____ Satisfied

   _____ Dissatisfied

   _____ Extremely dissatisfied

   Comments: _____

   _____

4. Would it be reasonable to expect non-degreed T & I and Health teachers (on a long range basis) to work toward an Associate degree or its equivalent?

   _____ Yes Comments: _____

   _____ No _____

5. Given the fact that T & I and Health occupations teachers are increasingly being asked to more of a variety of tasks, which of the following learning experiences do you feel would help teachers professionally? Please rank each item using the following scale.

1. Important and Needed
2. Useful
3. Not important; not needed

T & I Teachers	Health Teachers	
_____ A.	_____ A.	Develop some teacher "survival competencies" prior to beginning teaching.
_____ B.	_____ B.	Develop the teacher's specific competencies in administering First Aid to students. (A First Aid course provided by the Red Cross, for example.)
_____ C.	_____ C.	Develop teacher competencies in working with disadvantaged and handicapped students in vocational programs.
_____ D.	_____ D.	Develop teacher competencies in setting up and working with advisory committees.
_____ E.	_____ E.	Develop teacher competencies in dealing with the placement and follow-up of graduates.
_____ F.	_____ F.	Develop teacher competencies in the evaluation of vocational student's laboratory and classroom performance (test construction).
_____ G.	_____ G.	Develop teacher competencies relating to helping students solve problems (human relations) and assisting them in coping with everyday situations.
_____ H.	_____ H.	Develop teacher competencies relating to the "co-oping" of vocational students.
_____ I.	_____ I.	Develop teacher competencies on how to prepare for program evaluations (state, regional, national, etc.)
_____ J.	_____ J.	Develop the teacher's understanding of the history, philosophy, and principles under which vocational programs operate.
_____ K.	_____ K.	Develop improved teacher communication skills. (English)
_____ L.	_____ L.	Develop improved teacher mathematics skills.
_____ M.	_____ M.	Develop teacher competencies in the use of visual aids.
_____ N.	_____ N.	Develop teacher competencies in parliamentary procedure, and conference leadership techniques.
_____ O.	_____ O.	Develop teacher competencies by providing the opportunity for new teachers to work with an experienced teacher in the same subject area before entering the classroom.
_____ P.	_____ P.	Develop teacher competencies by providing the opportunity for them to periodically update their technical skills.
_____ Q.	_____ Q.	Develop teacher competencies in dealing with student motivation and student discipline problems.

6. Would it be reasonable to expect non-degreed T & I and Health teachers (on a long range basis)to work toward a Baccalaureate degree of its equivalent?

_____ Yes Comments: _____

_____ No _____

7. Would it be useful to require T & I and Health Occupations teachers to take an occupational competency examination (performance as well as written) to insure that they know their trade area?

_____ Yes Comments: _____

_____ No _____

8. In your opinion, should T & I and Health Occupations teacher certification requirements (professional education coursework) be separate and distinct from one another?

_____ Yes Comments: _____

_____ No _____

If any of the following changes in certification requirements for T & I and Health instructors hired after December, 1980, were made, what problems if any, do you forsee?

A. Increase the number of hours required to meet initial certification.

_____ No Problem Comments: _____

_____ problem _____

B. Require an Associate degree (or the equivalent).

_____ No Problem Comments: _____

_____ problem _____

C. Reduce the number of years work experience required if instructors satisfactorily complete an occupational competency exam.

_____ No Problem Comments: _____

_____ problem _____

D. Require an occupational competency exam in addition to present certification requirements.

_____ No Problem Comments: _____

_____ problem

E. Require the number of certification hours to be left essentially the same but tailor the course requirements to each individual (Individualized Professional Development Plan).

_____ No problem Comments: _____

_____ problem _____

F. Require a certain number of course hours to be taken <u>each year</u> rather than cumulatively over a period of 5 years.

_____ No Problem Comments: _____

_____ problem _____

G. Increase pre-service teacher education requirements (prior to employment).

_____ No Problem Comments: _____

_____ problem _____

Thank you for your cooperation.

SURVEY OF POSTSECONDARY T & I AND HEALTH INSTRUCTORS
REGARDING THEIR OPINIONS ON PROFESSIONAL DEVELOPMENT NEEDS

Teaching Area: _____

1. In your opinion, should area school Trade and Industrial and Health Occupations instructors be required to hold a teaching certificate?

   _____ yes Comments: _____

   _____ no _____

2. Please place a check by all of the courses listed below that you have completed.

   _____ A. Methods and Materials of Teaching

   _____ B. Shop Organization and Management

   _____ C. Trade and Job Analysis

   _____ D. Organization and Operation of VICA/HOSA

   _____ E. School Shop Safety

   _____ F. Curriculum Building

   _____ G. Other: _____

   _____

3. Please rank each of the courses listed below based on their usefulness to you by using the following scale:

   1. Important and absolutely essential
   2. Important
   3. Useful, but not a high priority
   4. Not important; not needed

   _____ A. Curriculum Building

   _____ B. School Shop Safety

   _____ C. Organization and Operation of VICA/HOSA

   _____ D. Trade and Job Analysis

   _____ E. Shop Organization and Management

   _____ F. Methods and Materials of Teaching

4. Are there other courses that would be more useful to you instead of/ or in addition to those listed above?

   _____ yes Please specify: _____

   _____ no _____

5. Given the fact that area school T & I and Health occupations teachers are increasingly being asked to do more of a variety of tasks, which of the following learning experiences do you feel would help you to do a better job as a professional teacher? (Please rank each item using the following scale)

1. Important and absolutely essential
2. Important
3. Useful, but not a high priority
4. Not important; not needed

_____ A. Develop some teacher "survival competencies" (perhaps taken from some of the secondary certification course content) prior to beginning teaching.

_____ B. Develop the teacher's specific competencies in administering First Aid to students. (A first aid course provided by the Red Cross, for example).

_____ C. Develop teacher competencies in working with disadvantaged and handicapped students in vocational programs.

_____ D. Develop teacher competencies in setting up and working with advisory committees.

_____ E. Develop teacher competencies in dealing with the placement and follow-up of graduates.

_____ F. Develop teacher competencies in the evaluation of vocational student's laboratory and classroom performance (test construction).

_____ G. Develop teacher competencies relating to helping students solve problems (human relations) and assisting them in coping with everyday situations.

_____ H. Develop teacher competencies relating to the "co-oping" of vocational students.

_____ I. Develop teacher competencies on how to prepare for program evaluations (state, regional, national, etc.).

_____ J. Develop the teacher's understanding of the history, philosophy, and principles under which vocational programs operate.

_____ K. Develop improved teacher communication skills. (English)

_____ L. Develop improved teacher Mathematics skills.

_____ M. Develop teacher competencies in the use of the visual aids.

_____ N. Develop teacher competencies in parliamentary procedure, and conference leadership skills.

_____ O. Develop teacher competencies by providing the opportunity for them to work with an experienced teacher in the same area before entering the classroom.

_____ P. Develop teacher competencies by providing the opportunity for them to periodically update their technical skills.

_____ Q. Develop teacher competencies in dealing with student motivation and student discipline problems.

_____ R. Develop teacher competencies in planning and utilizing a program of work.

6. Presently, secondary T & I and Health teachers are required to earn 27 quarter hours within a 5 year period. Would it be reasonable to expect postsecondary area school T & I and Health instructors to meet a similar certification requirement?

_____ yes

_____ no

7. In your opinion, should State Area Vocational-Technical School Trade and Industrial and Health Occupations teachers be required to complete the same courses currently required for secondary certification?

_____ yes Comments: _____

_____ no _____

8. Would it be reasonable to expect all postsecondary T & I and Health teachers (on a long range basis) to work toward an Associate degree (T & I) or a baccalaureate degree (Health)?

_____ yes Comments: _____

_____ no _____

9. Would it be useful to require all postsecondary T & I and Health teachers to take an occupational competency examination (performance as well as written) prior to employment to insure that they know their trade area?

_____ yes Comments: _____

_____ no _____

10. If certification was required for postsecondary teachers, in your opinion, should T & I teacher certification requirements be separate and distinct from Health teacher certification requirements?

_____ yes Comments: _____

_____ no _____

Thank you for your cooperation.

AREA VOCATIONAL-TECHNICAL SCHOOL SUPERINTENDENTS OPINIONS
REGARDING THE PROFESSIONAL DEVELOPMENT NEEDS OF T & I AND HEALTH TEACHERS

Official Title _____

1. In your opinion, should Trade and Industrial and Health Occupations instructors in State Area Vocational-Technical Schools be required to hold a teaching certificate?

   _____ yes Comments: _____

   _____ no _____

2. Please rank each of these courses (for area school T & I and Health Occupations teachers) using the following scale:

   1. Important and absolutely essential
   2. Important
   3. Useful but not a high priority
   4. Not Important; not needed

T & I Teachers	Health Teachers	
_____ A.	_____ A.	Curriculum Building
_____ B.	_____ B.	School Shop Safety
_____ C.	_____ C.	Organization and Operation of VICA/HOSA
_____ D.	_____ D.	Trade and Job Analysis
_____ E.	_____ E.	Shop Organization and Management
_____ F.	_____ F.	Methods and Materials of Teaching
_____ G.	_____ G.	Are there other courses that you would like to see T & I and Health teachers take instead of/or in addition to those listed above? Please specify.

   1. _____
   2. _____

3. Presently, minimum certification requirements for secondary T & I and Health teachers require teachers to earn 27 quarter hours within a 5 year period. In your opinion, would it be reasonable to expect area school T & I and Health instructors to meet a similar requirement?

   _____ yes Comments: _____

   _____ no _____

4. Would it be reasonable to expect non-degreed postsecondary T & I and Health teachers (on a long range basis) to work toward an associate degree (T & I) or a baccalaureate degree (Health)?

   _____ yes Comments: _____

   _____ no _____

5. Given the fact that area school T & I and Health teachers are increasingly being asked to do more of a variety of tasks, which of the following learning experiences do you feel would help teachers professionally? Please rank each item using the following scale.

1. Important and absolutely essential.
2. Important.
3. Useful but not a high priority.
4. Not important; not needed.

T & I Teachers	Health Teachers	
_____ A.	_____ A.	Develop some teacher "survival competencies" (perhaps taken from some of the certification course content) prior to beginning teaching.
_____ B.	_____ B.	Develop the teacher's specific competencies in administering First Aid to students. (A First Aid course provided by the Red Cross, for example.)
_____ C.	_____ C.	Develop teacher competencies in working with disadvantaged and handicapped students in vocational programs.
_____ D.	_____ D.	Develop teacher competencies in setting up and working with advisory committees.
_____ E.	_____ E.	Develop teacher competencies in dealing with the placement and follow-up of graduates.
_____ F.	_____ F.	Develop teacher competencies in the evaluation of vocational student's laboratory and classroom performance (test construction).
_____ G.	_____ G.	Develop teacher competencies relating to helping students solve problems (human relations) and assisting them in coping with everyday situations.
_____ H.	_____ H.	Develop teacher competencies relating to the "co-oping" of vocational students.
_____ I.	_____ I.	Develop teacher competencies on how to prepare for program evaluations (state, regional, national, etc.).
_____ J.	_____ J.	Develop the teacher's understanding of the history, philosophy, and principles under which vocational programs operate.
_____ K.	_____ K.	Develop improved teacher communication skills. (English)
_____ L.	_____ L.	Develop improved teacher mathematics skills.
_____ M.	_____ M.	Develop teacher competencies in the use of visual aids.
_____ N.	_____ N.	Develop teacher competencies in parliamentary procedure, and conference leadership techniques.
_____ O.	_____ O.	Develop teacher competencies by providing the opportunity for new teachers to work with an experienced teacher in the same subject area before entering the classroom.
_____ P.	_____ P.	Develop teacher competencies by providing the opportunity for them to periodically update their technical skills.
_____ Q.	_____ Q.	Develop teacher competencies in dealing with student motivation and student discipline problems.
_____ R.	_____ R.	Develop teacher competencies in planning and utilizing a program of work.

6. Would it be useful to require area school T & I and Health teachers to take an occupational competency examination (performance as well as written) prior to employment to insure that they know their occupational area?

_____ yes Comments : _____

_____ no _____

7. If certification was required for postsecondary instructors, in your opinion, should T & I teacher certification requirements be separate and distinct from Health teacher requirements?

_____ yes Comments: _____

_____ no _____

8. If any of the following certification requirements for postsecondary T & I and Health instructors were implemented, what problems, if any do you forsee?

A. Increase the number of hours required to meet initial certification.

_____ No problem Comments: _____

_____ problem _____

B. Require an associate degree (or equivalent).

_____ No problem Comments: _____

_____ problem _____

C. Reduce the number of years of work experience required if instructors satisfactorily complete a trade competency exam.

_____ No Problem Comments: _____

_____ problem _____

D. Require a trade competency exam in addition to present certification requirements.

_____ No problem Comments: _____

_____ problem _____

E. Require the number of certification hours to be left essentially the same but tailor course requirements to each individual (Individualized Professional Development Plan).

_____ No problem Comments: _____

_____ problem _____

F. Require a certain number of course hours to be taken <u>each year</u> rather than cumulatively over a period of 5 years.

_____ No problem Comments: _____

_____ problem _____

G. Increase pre-service teacher education requirements (prior to employment).

_____ No problem Comments: _____

_____ problem _____

Thank you for your cooperation.

APPENDIX B

The Tennessee State Board for Vocational Education in conjunction with the University of Tennessee is conducting a study concerned with the development of alternative training and certification models for its trade and industrial and health occupations teachers. To establish a state of the art, certification policy information is being requested from each state.

We are requesting that you send information concerning your state's written policy on certification for trade and industrial and health instructors at the secondary and postsecondary levels. Additional information not found in your state policy may be needed for our study. For this reason, we ask that you designate a contact person with whom we may request follow-up information.

In the space provided would you please designate the contact person and return this letter along with your state certification policies for health and T & I teachers to:

Jane Vaughn
Department of Industrial Education
Room 4, Henson Hall
The University of Tennessee
Knoxville, TN 37916

Designated Contact Person

Name _____
Address _____
Phone _____

Your cooperation in this effort is greatly appreciated.

Sincerely,

Dear Vocational Teacher:

We need your help! The Tennessee State Board for Vocational Education in conjunction with the University of Tennessee is sponsoring a project concerned with the certification of its secondary Trade and Industrial and Health Occupations teachers and with the professional development needs of its postsecondary area school T & I and Health teachers.

Included in the project is an assessment of how postsecondary T & I and Health Occupations teachers feel about the need for professional development and how they view present secondary teacher certification requirements in relation to their needs.

Not all teachers will be surveyed. Therefore, your input is vital to the success of this project. You can be sure that your responses will be kept strictly confidential.

Would you please take a few minutes and fill out the enclosed survey form and then return it to me as soon as possible? I have included a pre-addressed return envelope for your convenience.

Thank you very much for your cooperation.

Sincerely,

Enclosure

The Tennessee State Board for Vocational Education in conjunction with the University of Tennessee is sponsoring a project concerned with the certification of its secondary Trade and Industrial and Health education teachers and with the professional development needs of its postsecondary teachers.

Included in the project is an assessment on how state area school superintendents, among others, feel about the need for the professional development of their area school T & I and Health teachers and how they view present secondary teacher certification requirements in relation to the needs of these teachers.

Your input is vital to the success of this project. You can be sure that your responses will be kept strictly confidential.

Will you please fill out the enclosed survey form and return it to me as soon as possible. I have included a pre-addressed envelope for your convenience.

Thank you very much for your cooperation.

Enclosure

The Tennessee State Board for Vocational Education in conjunction with the University of Tennessee is sponsoring a project concerned with the certification of its secondary Trade and Industrial and Health Occupations teachers and with the professional development needs of its postsecondary teachers.

Included in the project is an assessment of how postsecondary area school T & I and Health Occupations instructors feel about the need for professional development and how they veiw present secondary teacher certification requirements in relation to their needs.

The following instructors under your employ have been randomly selected to participate in this project:

We would appreciate your assistance in distributing the enclosed questionnaire to these instructors. Needless to say, postsecondary teacher input is a vital part of our study. We would appreciate any encouragement you could give your instructors to respond.

Thank you very much for your cooperation.

Sincerely,

Enclosures

As I am sure you are already aware, the Tennessee State Board for Vocational Education in conjunction with the University of Tennessee is sponsoring a project concerned with the certification of its Trade and Industrial and Health education teachers. Included in this project is an assessment on how Local Directors, among others, feel about present certification requirements. Your input is vital to the success of this project. You can be sure that all responses will be kept strictly confidential.

Would you please fill out the enclosed survey form and return it to me as soon as possible? I have included a pre-addressed return enveloped for your convenience.

Thank you very much for your cooperation.

Sincerely,

Enclosure

Our project staff would like to thank you for agreeing to serve as your state's contact person in our study dealing with certification policy for health and T & I teachers. We did receive your state's written policy and have done some preliminary analysis. However, in attempting to do a comparative study among states, we have found information lacking in certain areas. For this reason, we are asking that you complete the enclosed questionnaire to provide a basis for uniformity in response.

We are requesting information in four areas - the requirements for employment, preservice requirements, the requirements for full certification and the renewal requirements for continued certification.

Please note that our study deals with both secondary and post-secondary health and T & I teachers. If you did not send your state's written policy for postsecondary health and T & I teachers, we would appreciate your including it along with the completed questionnaire.

If you would like a summary of our final report, please indicate below and return this letter along with the completed questionnaire.

Your cooperation in this effort is greatly appreciated.

Sincerely,

Enclosure

_____ Please send a summary of the results of the study upon completion.

Dear Vocational Teacher:

We need your help! The Tennessee State Board for Vocational Education in conjunction with the University of Tennessee is sponsoring a project concerned with the certification of its Trade and Industrial and Health Occupations teachers.

Included in the project is an assessment of how T & I and Health Occupations teachers, among other, feel about present certification requirements.

Not all teachers will be surveyed. Therefore, your input is vital to the success of this project. You can be sure that your responses will be kept strictly confidential.

Would you please take a few minutes and fill out the enclosed survey form and then return it to me as soon as possible? I have included a pre-addressed return envelope for your convenience.

Thank you very much for your cooperation.

Sincerely,

Enclosure

APPENDIX C

YEARS OF WORK EXPERIENCE REQUIRED

State	Secondary T & I	Secondary Health	Postsecondary* T & I	Postsecondary* Health
Alabama	7	1	3	1
Alaska	4		N/C	N/C
Arizona	3	3		
Arkansas	4	4	4	4
California	5	5	5	5
Colorado	5	5	5	5
Connecticut	3 to 8			
Delaware	6	6	6	6
District of Columbia	7	7	7	7
Florida	6	6	6	6
Georgia	2	2	2	2
Hawaii	2	2	N/C (7)	N/C (3)
Idaho	8	8	8	8
Illinois	1	1	1	1
Indiana	3	2	N/C (3)	N/C (3)
Iowa	3	3	3	3
Kansas	2	2	2	2
Kentucky	4	4	4	4
Louisiana	4	2	6	2
Maine	6	3	N/C	N/C
Maryland	5	5	N/C (1)	N/C (1)
Massachusetts	6	3	6	3
Michigan	2	2	N/C	N/C
Minnesota	4	3	3	3
Mississippi	2	2	2	2
Missouri	3	3	3	3
Montana	5	5	5	5
Nebraska	2	2	2	2
Nevada	8	8	3	8
New Hampshire	4	4	N/C	N/C
New Jersey	6	3	N/C	N/C
New Mexico	5	5	5	5
New York	4	4	N/C	N/C
North Carolina	5	3	N/C	N/C
North Dakota	4	4	4	4
Ohio	7	7	7	7
Oklahoma	2	2	N/C	N/C
Oregon	4	4	N/C	N/C
Pennsylvania	6	6	N/C	N/C
Rhode Island	6	3	N/C (6)	N/C (3)
South Carolina	6	4	N/C	N/C
South Dakota	5	3	5	3
Tennessee	2	3	N/C	N/C
Texas	5	2	N/C	N/C
Utah	6	6	6	6
Vermont	6	1		2
Virginia	2	2		
Washington	3	3	3	3
West Virginia	6	2	6	3
Wisconsin	1	1	7	7
Wyoming	2	2	N/C	N/C

* N/C - No certification required. The states with numbers in parentheses beside the N/C are those states that have employment requirements at the state level, but do not have certification requirements for postsecondary teachers.

MINIMUM EDUCATIONAL LEVEL

State	Secondary T & I	Secondary Health	Postsecondary T & I *	Postsecondary Health *
Alabama	1	3	1	5
Alaska	5		N/C	N/C
Arizona	1	1	1	1
Arkansas	1	1	1	1
California	1	1	1	1
Colorado	1	1	1	1
Connecticut	1			
Delaware	1	1	1	1
District of Columbia	1	1	1	1
Florida	1	1	1	1
Georgia	1	1	1	1
Hawaii	1	1	N/C (1)	N/C (5)
Idaho	1	1	1	1
Illinois	1	3	1	3
Indiana	1	1	N/C (1)	N/C (1)
Iowa	1	1	1	1
Kansas	1	1	1	1
Kentucky	1	1	1	1
Louisiana	1	4	1	4
Maine	1	3	N/C	N/C
Maryland	1	1	5	5
Massachusetts	1	5	1	5
Michigan	5	5	N/C	N/C
Minnesota	1	3	1	1
Mississippi	1	1	1	1
Missouri	1	1	1	1
Montana	1	1	1	1
Nebraska	1	1	1	1
Nevada	1	1	1	1
New Hampshire	1	1	N/C	N/C
New Jersey	1	1	N/C	N/C
New Mexico	1	1	1	1
New York	2	2	N/C	N/C
North Carolina	1	3	N/C (1)	N/C (1)
North Dakota	1	3	1	3
Ohio	1	1	1	1
Oklahoma	1	1	N/C	N/C
Oregon	1	1	N/C	N/C
Pennsylvania	1	1	N/C	N/C
Rhode Island	1	5	1	5
South Carolina	1	3	N/C	N/C
South Dakota	1	3	1	3
Tennessee	1	1	N/C (1)	N/C (1)
Texas	1	1	N/C	N/C
Utah	1	1	1	1
Vermont	1	1		5
Virginia	1	1		
Washington	1	1	1	1
West Virginia	1	1	1	1
Wisconsin	5	5	1	1
Wyoming	1	1	N/C	N/C

* N/C - No certification required. The states with numbers in the parentheses beside the N/C are those states that have employment requirements at the state level but do not have certification requirements.

LEGEND: 1 - High School Diploma; 2 - High School Diploma plus 45 quarter hours; 3 - Associate Degree; 4 - 3 years of Postsecondary education; 5 - Baccalaureate Degree.

LICENSURE REQUIREMENT

State	Secondary T & I	Secondary Health	Postsecondary* T & I	Postsecondary* Health
Alabama	2	1	3	1
Alaska	3		N/C	N/C
Arizona	3	1		
Arkansas	3	1	3	1
California	2	2	2	2
Colorado	2	2	2	2
Connecticut				
Delaware	1	1	1	1
District of Columbia	1	1	1	1
Florida	1	1	1	1
Georgia	1	1	1	1
Hawaii	3	3	N/C (3)	N/C (1)
Idaho	3	2	3	2
Illinois	1	1	1	1
Indiana	1	1	N/C (2)	N/C (2)
Iowa	3	1	3	1
Kansas	3	1	3	1
Kentucky	1	1	1	1
Louisiana	1	1	1	1
Maine		1	N/C (2)	N/C (2)
Maryland	2	2	N/C (3)	N/C (2)
Massachusetts	2	1	2	1
Michigan	1	1	N/C	N/C
Minnesota		1		1
Mississippi	3	1	3	1
Missouri	2	2	2	2
Montana	1	1	1	1
Nebraska	1	1	1	1
Nevada	1	1	1	1
New Hampshire	3	1	N/C	N/C
New Jersey	1	1	N/C	N/C
New Mexico	2	2	2	2
New York	1	1	N/C	N/C
North Carolina	2	1	N/C (3)	N/C (2)
North Dakota	3	1	3	1
Ohio	1	1	1	1
Oklahoma	2	2	N/C	N/C
Oregon	3	2	N/C	N/C
Pennsylvania	2	2	N/C (2)	N/C (2)
Rhode Island	1	1	N/C	N/C
South Carolina	1	1	N/C	N/C
South Dakota	3	2	3	2
Tennessee	2	1	N/C (2)	N/C (1)
Texas	2	1	N/C	N/C
Utah	2		2	
Vermont	3	1		2
Virginia				
Washington	1		1	
West Virginia	3	1	3	1
Wisconsin	1	1	1	1
Wyoming	2	2	N/C	N/C

*N/C - No Certification required. The states with numbers in the parentheses beside the N/C are those states that have employment requirements at the state level but do not have certification requirements.

LEGEND: 1 - Certification is required in all areas; 2 - Certification is required in some areas; 3 - Certification is not required in any area.

QUARTER HOURS REQUIRED DURING THE
INITIAL CERTIFICATION PERIOD

State	Secondary T & I	Secondary Health	Postsecondary* T & I	Postsecondary* Health
Alabama	0	30		
Alaska			N/C	N/C
Arizona	7.5	7.5	.2	.2
Arkansas	13.5	13.5	13.5	13.5
California	13.5	13.5	13.5	13.5
Colorado	6	6	6	6
Connecticut	9			
Delaware	9	9	9	9
District of Columbia	9	9	9	9
Florida	4.5	4.5	4.5	4.5
Georgia	10	10	10	10
Hawaii			N/C	N/C
Idaho	3	3	3	3
Illinois				
Indiana	9	9	N/C	N/C
Iowa	12	12	12	12
Kansas	6	6	6	6
Kentucky	9	9	9	9
Louisiana	4.5	4.5	4.5	4.5
Maine	9	18	N/C	N/C
Maryland	9	9	N/C	N/C
Massachusetts	18	18	18	18
Michigan	15	15	N/C	N/C
Minnesota	6	6	6	6
Mississippi	9	9	4.5	4.5
Missouri	30	30	30	30
Montana	33	33	33	33
Nebraska	18	18	12	12
Nevada	9	9	9	9
New Hampshire	variable	variable	N/C	N/C
New Jersey	59	59	N/C	N/C
New Mexico	9	9	9	9
New York	not applicable	not applicable	N/C	N/C
North Carolina	27	22.5	N/C	N/C
North Dakota	21	21	21	21
Ohio	6	6	6	6
Oklahoma	24	24	N/C	N/C
Oregon	6	6	N/C	N/C
Pennsylvania	27	27	N/C	N/C
Rhode Island	9	9	N/C	N/C
South Carolina	36	36	N/C	N/C
South Dakota	4.5	4.5	4.5	4.5
Tennessee	27	27	27	27
Texas	9	9	N/C	N/C
Utah	9	9	9	0
Vermont	variable	variable	N/C	N/C
Virginia	18	18		
Washington	3	3	3	3
West Virginia	7.5	7.5	7.5	7.5
Wisconsin	4.5	4.5	9	9
Wyoming	6	6	N/C	N/C

* N/C - No certification required

LENGTH (IN YEARS) OF THE INITIAL
CERTIFICATION PERIOD

State	Secondary T & I	Secondary Health	Postsecondary * T & I	Postsecondary * Health
Alabama	4	3	2	2
Alaska			N/C	N/C
Arizona	1	1	2	2
Arkansas	6	6	6	6
California	5	5	5	5
Colorado	1	1	1	1
Connecticut	3			
Delaware	1	1	1	1
District of Columbia	2	2	2	2
Florida	1	1	1	1
Georgia	1	1	1	1
Hawaii			N/C	N/C
Idaho	1	1	1	1
Illinois	1	1	1	1
Indiana	2	2	N/C	N/C
Iowa	6	6	6	6
Kansas	1	1	1	1
Kentucky	1	1	1	1
Louisiana	1	1	1	1
Maine	2	4	N/C	N/C
Maryland	1	1	N/C	N/C
Massachusetts	3	3	3	3
Michigan	6	6	N/C	N/C
Minnesota	2	2	2	2
Mississippi	1	1	1	1
Missouri	6	6	6	6
Montana	5	5	5	5
Nebraska	3	3	3	3
Nevada				
New Hampshire	1	1	N/C	N/C
New Jersey			N/C	N/C
New Mexico	1	1	1	1
New York			N/C	N/C
North Carolina	1	1	N/C	N/C
North Dakota	4	4	4	4
Ohio	1	1	1	1
Oklahoma	2	2	N/C	N/C
Oregon	1	1	N/C	N/C
Pennsylvania	3	3	N/C	N/C
Rhode Island	1	1	N/C	N/C
South Carolina	6	6	N/C	N/C
South Dakota	1	1	1	1
Tennessee	5	5	N/C	N/C
Texas	1	1	N/C	N/C
Utah	2	2	2	2
Vermont	1	1	N/C	N/C
Virginia	5	5		
Washington	1	1	1	1
West Virginia	1	1	1	1
Wisconsin	3	3	2	2
Wyoming	1	1	N/C	N/C

* N/C - No certification required

QUARTER HOURS REQUIRED FOR
FULL CERTIFICATION

State	Secondary T & I	Secondary Health	Postsecondary* T & I	Postsecondary* Health
Alabama	18	72	63	62
Alaska			N/C	N/C
Arizona	67.5	67.5	.2	.2
Arkansas	13.5	13.5	13.5	13.5
California	13.5	13.5	13.5	13.5
Colorado	9	9	9	9
Connecticut	54			
Delaware	90	90	90	90
District of Columbia	45	45	45	45
Florida	30	30	30	30
Georgia	30	30	30	30
Hawaii			N/C	N/C
Idaho	12	12	12	12
Illinois	36	36	36	36
Indiana	78	78	N/C	N/C
Iowa	12	12	12	12
Kansas	12	12	12	12
Kentucky	105	105	105	105
Louisiana	22.5	22.5	22.5	22.5
Maine	18	18	N/C	N/C
Maryland	27	27	N/C	N/C
Massachusetts	18	18	18	18
Michigan	27	27	N/C	N/C
Minnesota	15	15	15	15
Mississippi	36	36	36	36
Missouri	30	30	30	30
Montana	33	33	33	33
Nebraska	18	18	13.5	13.5
Nevada	9	9	9	9
New Hampshire	variable	variable	N/C	N/C
New Jersey	59	59	N/C	N/C
New Mexico	27	27	27	27
New York	45	45	N/C	N/C
North Carolina	27	22.5	N/C	N/C
North Dakota	21	21	21	21
Ohio	24	24	24	24
Oklahoma	24	24	N/C	N/C
Oregon	12	12	N/C	N/C
Pennsylvania	54	54	N/C	N/C
Rhode Island	180	180	N/C	N/C
South Carolina	36	36	N/C	N/C
South Dakota	45	45	45	45
Tennessee	27	27	27	27
Texas			N/C	N/C
Utah	18	18	18	18
Vermont	variable	variable	N/C	N/C
Virginia	18	18		
Washington	18	18	18	18
West Virginia	30	30	30	30
Wisconsin	51	51	45	45
Wyoming	90	90	N/C	N/C

* N/C - No certification required

TIME PERIOD (IN YEARS) FOR
FULL CERTIFICATION

State	Secondary T & I	Secondary Health	Postsecondary T & I *	Postsecondary Health *
Alabama		8		
Alaska			N/C	N/C
Arizona	9	9	2	2
Arkansas	6	6	6	6
California	5	5	5	5
Colorado	2	2	2	2
Connecticut				
Delaware	10	10	10	10
District of Columbia				
Florida	8	8	8	8
Georgia	3	3	3	3
Hawaii			N/C	N/C
Idaho	4	4	4	4
Illinois				
Indiana			N/C	N/C
Iowa	6	6	6	6
Kansas	2	2	2	2
Kentucky	12	12	12	12
Louisiana	5	5	5	5
Maine	4	4	N/C	N/C
Maryland	3	3	N/C	N/C
Massachusetts	3	3	3	3
Michigan	9	9	N/C	N/C
Minnesota	5	5	5	5
Mississippi	4	4	9	9
Missouri	6	6	6	6
Montana	5	5	5	5
Nebraska	3	3	3	3
Nevada				
New Hampshire	3	3	N/C	N/C
New Jersey			N/C	N/C
New Mexico	3	3	3	3
New York	not applicable	not applicable	N/C	N/C
North Carolina	4	3	N/C	N/C
North Dakota	4	4	4	4
Ohio	6	6	6	6
Oklahoma	2	2	N/C	N/C
Oregon	2	2	N/C	N/C
Pennsylvania	6	6	N/C	N/C
Rhode Island	20	20	N/C	N/C
South Carolina	6	6	N/C	N/C
South Dakota	10	10	10	10
Tennessee	5	5	N/C	N/C
Texas			N/C	N/C
Utah	4	4	4	4
Vermont	5	5	N/C	N/C
Virginia	5	5		
Washington	9	9	9	9
West Virginia	5	5	5	5
Wisconsin			10	10
Wyoming	10	10	N/C	N/C

* N/C - No certification required

COURSEWORK REQUIREMENTS (QUARTER HOURS)

DURING THE RENEWAL PERIOD

State	Secondary T & I	Secondary Health	Postsecondary* T & I	Postsecondary* Health
Alabama	4.5	4.5	N/C	N/C
Alaska	7.5	7.5		
Arizona	9	9	9	9
Arkansas	Becomes permanent upon completion of full certification			
California	9	9	9	9
Colorado				
Connecticut	9	9	9	9
Delaware	7.5	7.5	7.5	7.5
District of Columbia	Becomes permanent upon completion of full certification			
Florida	10	10	10	10
Georgia				
Hawaii	6	6	6	6
Idaho				
Illinois	9	9	N/C	N/C
Indiana	9	9	9	9
Iowa	6	6	6	6
Kansas	9	9	9	9
Kentucky	Becomes permanent upon completion of full certification			
Louisiana	9	9	N/C	N/C
Maine	9	51	N/C	N/C
Maryland	3	3	3	3
Massachusetts			N/C	N/C
Michigan	9	9	9	9
Minnesota	9	9	9	9
Mississippi	4.5	4.5	4.5	4.5
Missouri				
Montana	workshops- time not specified		Becomes permanent	
Nebraska				
Nevada	50 clock hours	50 clock hours	N/C	N/C
New Hampshire	Becomes permanent		N/C	N/C
New Jersey	12	12	12	12
New Mexico	45	45	N/C	N/C
New York	9	9	N/C	N/C
North Carolina				
North Dakota	14	14	14	14
Ohio	4.5	7.5	N/C	N/C
Oklahoma	12	12	N/C	N/C
Oregon	27	27	N/C	N/C
Pennsylvania	36	36	N/C	N/C
Rhode Island	9	9	N/C	N/C
South Carolina	6	6		
South Dakota	6	6	N/C	N/C
Tennessee	Becomes permanent		N/C	N/C
Texas	9	9	9	9
Utah	9	9	N/C	N/C
Vermont	9	9		
Virginia	6	6	6	6
Washington	9	9	9	9
West Virginia			9	9
Wisconsin	5	5	N/C	N/C
Wyoming				

* N/C - No Certification required

LENGTH (IN YEARS) OF THE
RENEWAL PERIOD

State	Secondary T & I	Secondary Health	Postsecondary T & I *	Postsecondary Health *
Alabama	8	5	8	8
Alaska	2	2	N/C	N/C
Arizona	6	6	6	6
Arkansas	6	6	6	6
California	Becomes permanent upon completion of full certification			
Colorado	5	5	5	5
Connecticut				
Delaware	10	10	10	10
District of Columbia	5	5	5	5
Florida	Becomes permanent upon completion of full certification			
Georgia	3	3	3	3
Hawaii			N/C	N/C
Idaho	5	5	5	5
Illinois				
Indiana	4	4	N/C	N/C
Iowa	6	6	6	6
Kansas	3	3	3	3
Kentucky	5	5	5	5
Louisiana	Becomes permanent upon completion of full certification			
Maine	5	5	N/C	N/C
Maryland	5	5	N/C	N/C
Massachusetts	2	2	2	2
Michigan			N/C	N/C
Minnesota	5	5	5	5
Mississippi	5	5	5	5
Missouri	5	5	5	5
Montana				
Nebraska	7	7	Becomes permanent	
Nevada	5	5	5	5
New Hampshire	3	3	N/C	N/C
New Jersey	Becomes permanent		N/C	N/C
New Mexico	4	4	4	4
New York	5	5	N/C	N/C
North Carolina	5	5	N/C	N/C
North Dakota	5	5	5	5
Ohio	4	4	4	4
Oklahoma	5	5	N/C	N/C
Oregon	5	5	N/C	N/C
Pennsylvania	4	4	N/C	N/C
Rhode Island	6	6	N/C	N/C
South Carolina	5	5	N/C	N/C
South Dakota	3	3	3	3
Tennessee	5	5	N/C	N/C
Texas	Becomes permanent		N/C	N/C
Utah	5	5	5	5
Vermont	5	5	N/C	N/C
Virginia	5	5		
Washington	5	5	5	5
West Virginia	5	5	5	5
Wisconsin	5	5	5	5
Wyoming	5	5	N/C	N/C

* N/C - No certification required

VITA

Jane Ellen Vaughn was born in Martin (Weakley County), Tennessee on September 27, 1946. She attended elementary school in Gleason, Tennessee and completed junior and senior high school in Paris, Tennessee. She was graduated from E. W. Grove High School, Paris, Tennessee in 1964. The following September, she entered The University of Tennessee at Martin and graduated with a Bachelor of Science in Secondary Education in 1968.

She taught junior high school science and mathematics from 1968 until 1973 for Memphis City Schools, Memphis, Tennessee. In 1974 she transferred to the Vocational Division of Memphis City Schools where she taught an adult vocational program for veterinary technicians until she entered the doctoral program at The University of Tennessee, Knoxville in September of 1979.

She began her Master's degree program in 1972 and received a Master of Arts in Teaching in August 1976 from Memphis State University. She then enrolled in the graduate off-campus program of The University of Tennessee, Knoxville where she received her vocational teacher certification in 1979.

She is a member of the Phi Kappa Phi Honor Society, Pi Lambda Theta, Phi Delta Kappa, and Omicron Tau Theta Fraternities, American Vocational Association, Tennessee Vocational Association, Tennessee Health Occupations Association and the Association of Tennessee Registered Animal Technicians.