A TASK INVENTORY OF TECHNICAL TEACHERS IN OKLAHOMA

Ву

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CHAPTER I

INTRODUCTION

During the past three decades occupational education has continued to expand very rapidly. Along with this expansion of occupational education in general has gone a corresponding expansion in occupational teacher education.

In the years following World War II and even into the decade of the sixties, the typical occupational teacher came into the field with little or no formal teacher education. During the past fifteen years the situation has changed until now many occupational teachers enter the field with at least a baccalaureate degree. Indeed, in some institutions bachelors degrees are presently considered minimal qualifications for beginning teachers.

During the same time that the demand for degreed teachers was developing there also was growing pressure from students, government, and the general public for more relevancy and accountability in education as a whole. All of these trends have led teacher educators in occupational education to become more concerned with what are often called performance-based or competency-based teacher education programs. Such programs might be loosely described as being based on identified good teaching behaviors. Margaret

Lindsay (1973) gives a more detailed definition:

The process of designing a competency-based program of initial teacher education requires specifying in advance expected outcomes in terms of competencies to be demonstrated by graduates of the program, developing learning opportunities and environments expected to facilitate students' progress toward specified outcomes, and constructing and using evaluating procedures and instruments directly relevant to the stated competencies (p. 181).

The complex process of designing this type of curriculum is exacting and expensive, but more and more institutions are attempting it. There are now about one hundred programs in varying stages of development and many more institutions are considering them.

Statement of the Problem

The first step in developing a performance-based program is to identify the various tasks that teachers do in carrying out their jobs. It is somewhat paradoxical that in professional education, which is heavily research oriented, relatively little is known about what teachers actually do on the job.

The purpose of this study is that of identifying tasks that teachers perform. Specifically the study seeks to answer two questions:

- 1. What are some of the tasks that occupational teachers perform in their professional role?
- 2. How much relative time is devoted to each of these tasks?

The results of the study could be useful in planning occupational teacher education programs and as a basis for identifying desirable teacher performance.

CHAPTER II

REVIEW OF LITERATURE

Competency-based or performance-based instruction has received rather extensive exposure in the literature. As a result literally hundreds of references could be compiled. Rather than attempt a comprehensive coverage, it seems advisable to consolidate this review into relatively few categories.

Perhaps the first category should involve the definition of the terms. The literature varies from quite broad definitions such as found in Webster's New World Dictionary (1966) which defines competency as being "functional adequacy", to quite detailed ones as was the case with Lindsay (1973) previously cited. Other examples could include Houston and Howsam (1972) who specified that such training involved:

- (1) specification of learner objectives in behavioral terms;
- (2) specification of the means for determining whether performance meets the indicated criterion levels;
- (3) provision for one or more modes of instruction pertinent to the objectives, through which the learning activities may take place;
- (4) public sharing of the objectives, criteria, means of assessment, and alternative activities;
- (5) assessment of the learning experience in terms of competency criteria; and

(6) placement on the learner of the accountability for meeting the criteria (p. 32).

And, perhaps, Briggs (1972) who said that it involved an effort to:

- (1) improve the quality of new teachers being produced as well as those being upgraded.
- (2) move from a "norm-referenced" to a "criterion-referenced" method of assessment and evaluation of prospective and in-service teacher achievement,

(3) provide for a more realistic approach to teacher certification, and

(4) incorporate accountability into teacher education programs—accountability in terms of dollar investments, time investments, and the affective and efficient utilization of institutional facilities and teacher educator talent (p. 2).

All of these various definitions would seem to have what amounts to a common element. That element being:

- (1) To identify specific performance desired.
- (2) To develop a training program which prepares the individual to do the desired performance.
- (3) Evaluation based on how well (functionally adequate) the individual is able to carry out the performances.
 In this study only the first of these points was considered.

A second category found within the literature would seem to address the question: Is competency-based (or performance-based) education a promising path for occupational teacher education to pursue? One need not look far to find the answer implicit in the literature. Gail Myers (1969) provides the answer that typifies current publications:

"Let's look at our staffing needs in terms of the job to be done with students, -- "(p. 19).

Such calls for relevancy are repeated throughout the literature. It is likely that anyone who reads anything at all in the field of teacher education has encountered the call for competency-based or performance-based teacher education as expressed by Myers.

Additional examples are expressed by Cotrell and Miller (1969).

---if teachers are to be trained to fill the present and emerging classroom needs of vocational and technical programs, they must be trained relative to the pedagogical and technical skills needed in that occupational area, and not according to dictates of past traditions in professional education (p. 26).

or similarly, Meisner (1970):

It seems imperative that we as professional educators in vocational education seek to identify commonalities rather than uniquenesses, for without this base, curricular models or prototypes (core or comparable) will be just another "idea" resulting in little if any change(p. 82).

In some cases the literature not only calls for competency-based or performance-based teacher education, but goes on to point out that data on which to base such education is often not available to teacher educators. A comment in the Ohio State <u>Centergram</u> (1974) is representative:

Teacher educators have not had access to a systematic analysis of vocational teacher roles. As a result vocational teacher education programs are often basically subject-matter centered rather than performance centered, with the accompanying risks of teaching non-functional skills, and relying on questionable evaluation procedures. Further, teacher educators have not generally been able to work flexibly with individual teacher needs. Instead, they have been forced to follow a prescribed course-by-course sequence for both preservice and in-service teacher preparation regardless of the individual teacher's

actual level of knowledge and competence. Finally, in many institutions, resources which might be applied to individual student needs are being absorbed in providing teacher education courses within each vocational service area (i.e., agricultural, business and office, distributive, home economics, health occupations, and trade and industrial), even though most vocational teacher professional competencies are common to all areas (p. 1).

Assuming the need to be established, one can address the question: How can desired teacher performance (or competency) best be identified? The literature seems to be divided between two different techniques. The first and most popular is that of asking various respondents to rate the "importance" of items to the occupation. This technique has been used by Cotrell, et al. (1972) aimed at:

Identifying performance requirements of teacher-coordinators, the substance of the study, constituted Phase II of the project "Model Curricula for Vocational and Technical Teacher Education." The project was designed to develop, demonstrate, and test performance-based teacher education curricula in collaboration with an institution of higher education.

The purpose of the study was to determine the pedagogical performance requirements of teacher-coordinators of cooperative programs in off-farm agricultural, distributive, wage-earnings home economics, office occupations, special needs, and trade and industrial education. Specific objectives of the study were: 1) to identify the pedagogical competencies (performance elements) required for teacher-coordinators of the six vocational programs studied, and 2) to determine which performance elements were common to a majority of the six programs and which were unique to one of a few of the programs.

The pedagogical performance requirements of teacher-coordinators of cooperative programs were obtained through introspection and interview techniques of occupational analysis. Via a mailed instrument, a 300-member national task force of outstanding teacher-coordinators (50 from each

program) rated the performance elements to determine the degree of importance of each of the elements for each of the programs. The task force subsequently identified the common, mixed and unique performance elements. A follow-up conference was held with a representative random sample of the task force to interpret and verify the ratings, which resulted in confirmation of the performance elements and interpretation of some of the task force ratings which were unclear.

Through the occupational analysis, 385 performance elements were identified. Ratings of the importance of these elements by the 300-member national task force resulted in classifying 91.8 percent of the performance elements as common requirements of the six programs. Only 5.45 percent of the elements were classified mixed, i.e., important in two to four of the programs. Less than one percent (.77 percent) were found to be unique (important to one of the six programs).

It was concluded that performance requirements were very similar for teacher-coordinators of all six secondary-level vocational cooperative education programs (Abstract).

Using a similar approach DeVaughan (1974) asked:

... students, teachers, administrators, business and industry people, state department curriculum staff and professional personnel development council members in Oklahoma to rate a list of identified competencies as to their importance for teachers of vocational and technical education. Specifically, students and teachers were asked to rate the competencies as to importance for teachers in their teaching field whereas the other groups were asked to rate the competencies as to their importance for all teachers of vocational and technical education.

The data for the study were collected via mailouts except for the distributive education and
agriculture students and industrial arts teachers, all of whom were admistered the questionnaires during meetings of their respective
groups. The data from the questionnaires were
key-punched for computer processing. The frequency and percentage response to each item
were computed for each of the groups. Also a
mean rating was computed for each item by

groups. In addition, a composite mean rating was computed for each item.

All teacher and student groups rated a majority of the 92 competencies as important or higher, thus establishing a core of common competencies. Further analysis revealed that all student and teacher groups rated 24 of the same competencies as being very important (Abstract).

Among other types of analyses DeVaughan ranked the competencies rated as being in the top ten percent by the various groups. The following is the order of ranking developed from the ratings by technical education teachers in Oklahoma.

| Rank | Competency |
|------|---|
| 1 | Select and develop instructional content for lessons, units and courses. |
| 2 | Evaluate one's own techniques and meth- ods of teaching. |
| 3 | Identify competencies needed for stud- ents to possess to enable them to enter an occupational skill. |
| 4 | Acquire new occupational skills, know- ledge and competencies to keep pace with technological advancements. |
| 5 | Organize the sequence of learnings tasks. |
| 5 | Direct laboratory experiences. |
| 5 | Form a variety of testing methods, both objective and subjective. |
| 6 | Use demonstrations in the learning experiences. |
| 6 | Establish the evaluative criteria for lessons, units and courses. |
| 6 | Define the operating rules and res- ponsibilities for the learner and the teacher. |

6 Practice professionalism with school personnel and others (p. 54).

Kinzer (1971) also studied information elements appropriate for inclusion in a teacher education program for technical teachers in Oklahoma. Briefly, he attempted to:

--- identify specific information elements which are appropriate for inclusion in introductory professional education courses for technical The information elements were identteachers. ified through the use of personal discussions, a pilot study, and a panel of experts. Four groups of educators were employed to rate each information element as to its relative importance for inclusion in an introductory professional education course. Group one consisted of selected Oklahoma State Department of Vocational-Technical Education personnel. Group two consisted of program administrators from selected technical institutes, junior colleges, senior colleges, and area vocational-technical schools. Technical teachers with more than two years teaching experience in a technical specialty comprised group three. Group four was composed of technical teachers with two years teaching experience or less in a technical specialty. A group consensus index value was computed for each information element. The Kendall Coefficient of Concordance was used to measure the degree of agreement among the four groups.

Findings and Conclusions: Respondents considered the information elements that were identified as a result of this study important in the professional preparation of technical teachers. administrators from the Oklahoma State Department of Vocational-Technical Education tend to rate the identified information elements generally as more important in the preparation of technical teachers than did the program administrators, experienced classroom teachers, and new technical teachers. The information elements identified in this study were ordered from most important to least important for purposes of inclusion and emphasis in an introductory professional education course as rated by the respondents to the opinionaire (Abstract).

Kinzer too ranked his results based on rated importance.
His ranking was as follows:

- 1. The role of the technician.
- 2. The impact of technological changes on technical education.
- 3. Content and structure of programs.
- 4. The role of the State Department of Vocation-al-Technical Education.
- 5. Student population to be served by technical education.
- 6. Employment forecasts for technicians.
- 7. Federal legislation that affects technical education.
- 8. Job placement of technical students.
- 9. Current employment trends in the United States.
- 10. The relationship of technical education to other areas of occupational education.
- 11. The relationship of technical education to engineering and science education.
- 12. Industrial experience requirements for technical teachers.
- 13. Technical student characteristics.
- 14. Educational philosophies.
- 15. Required education courses for technical teachers.
- 16. Student follow-up.
- 17. The relationship of technical education to non-engineering occupations.
- 18. The cooperative programs in technical education.
- 19. Historical development of technical education in the U.S.
- 20. Sources of technicians.
- 21. U.S.O.E. curriculum guidelines.
- 22. Historical changes in the composition of the labor force.
- 23. Student selection.
- 24. Institutions offering technical education.
- 25. The relationship of industrial arts to technical education(p. 42).

An alternative approach to identifying performance elements is that of the task inventory. In its essence, a task inventory involves having job incumbents respond in two ways to a list of occupational tasks. Firstly, the incumbents respond yes or no to the question: Do you perform this task? Then the incumbents rate the relative amount of time spent performing each task compared to all of the other tasks performed.

The use of this technique (task inventory) was developed for use in the United States Air Force and has been applied to the analysis of literally hundreds of Air Force occupations over the past fifteen years. Several reports have been released by the Air Force describing the technique starting with Morsh et al. (1961) and continuing to the most recent Christal (1973). The technique involves:

- (1) Identifying duties assigned to or expected of an occupational incumbent.
- (2) Identifying the tasks which constitute satisfactory performance of the duty.
- (3) Administering the task inventory to successful job incumbents.
- (4) Analyzing the incumbent reports to identify appropriate training experiences.

The task inventory technique has been applied to a number of civilian occupations by various investigators.

Among the recent efforts is that of Terry and Evans (1973) who used it to study dental auxiliary occupations.

The validity and reliability of the task inventory technique has been verified repeatedly be several branches of the Armed Forces. The U.S. Air Force (1972) report being one example which dealt with jet engine mechanics. In all cases this type of occupational analysis has been determined to be functionally dependable. It was chosen as the technique to be employed in this study.

CHAPTER III

METHODOLOGY

This study was conducted among selected post secondary occupational teachers in Oklahoma. The method used involved four distinct steps. Those steps were:

- (1) Selection of the respondents.
- (2) Development of the instrument.
- (3) Collection of the data.
- (4) Analysis of the results.

Each of these steps will be described in some detail in the following paragraphs.

Definitions

Before examining the steps used in developing the study it is worthwhile to define several terms used in the study.

Competency: The amount by which an individual's performance of desirable tasks exceeds the minimum acceptable level of performance.

Competency-based or Performance-based instruction: While there are differing opinions as to the precise meanings of these terms, in this study they are both taken to mean instruction based on identified desirable performance of specific tasks to an acceptable level of competency.

Task: A work operation which is necessary to the performance of a duty.

Duty: A collection of operations which constitute a major part of a job. Specific duties used in this study are listed in Table II.

Affirmative response: A response indicating that a respondent does perform the task in question.

Selection of the Respondents

There are 23 post secondary nonproprietary institutions in Oklahoma which offer occupational programs. Except as noted below all of the physical science related faculty members of these institutions were included in the study. The single exception involved an institution which did not award associate of science degrees to its' graduates. To avoid a situation in which this unique institution would disproportionately influence the results the representation from it was arbitrarily limited to fifty respondents.

The institutions involved and the respondent representation from each is given in Table I.

The results of this selection procedure rendered a total of one hundred seventy one teacher respondents.

Development of the Instrument

The study instrument was developed initially from a review of the literature dealing with teacher performance surveys. Nine duty areas were selected and items from several studies were reworded to fit the task inventory format. The principal studies from which items were used included: Cotrell et al. (1971), Terry et al. (1972) and DeVaughn (1974).

TABLE I

THE INSTITUTIONS INVOLVED AND THE NUMBER OF RESPONDENTS FROM EACH

| | Institution | Sample Sige |
|--|---|---|
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 6 17 | Institution O.S.U. School of Technology N.E. Okla. A&M College N. Okla. College Oscar Rose Jr. College Seminole Jr. College S. Okla. City Jr. College Tulsa Jr. College W. Okla. State College E. Okla. State College Murray State College Sayre Jr. College Bethany Nazarine College Southwestern College Southwestern College Cos.U. Technical Institute Langston University Carl Albert Jr. College Connors State College | Sample Size 23 10 7 7 1 4 10 2 13 7 1 1 2 14 2 14 2 |
| 18 19 20 21 22 23 | El Reno Jr. College N.E. Okla. State Univ. N.W. Okla. State Univ. S.E. Okla. State Univ. Cameron Univ. Okla. State Tech | 14 2 1 2 1 1 2 3 7 50 Total 171 |

In selecting tasks and classifying them under duties the definition of a task given by Morsh et al. (1961) was used:

"one of the work operations that constitutes a logical and necessary step in the performance of a duty (p. 7)."

TABLE II

THE DUTIES AND THE NUMBER OF TASKS
ASSOCIATED WITH EACH ONE

| | Duty | No. of Tasks |
|-----------|---|--|
| 123456789 | Preparing for Instruction Executing Instruction Evaluating Instruction Administering Instructional Services Managing Equipment and Facilities Providing Student Services Participating in Professional Development Developing Instructional Programs Participating in Non-Instructional Activities Total | 27 30 29 22 20 20 18 20 14 |

The literature on conducting task inventories suggests that in order to be reasonably comprehensive an occupational inventory should include between 200 and 600 tasks. It was judged by the investigator that 200 tasks were enough to identify the occupation and yet few enough to allow a reasonable return rate in this study.

The completed instrument was reviewed by five members of the Oklahoma State University Occupational Teacher Education faculty and three other experienced occupational teachers to insure clarity and appropriateness.

The final instrument as used is given in Appendix A.

Collection of the Data

Upon completion of the study instrument the occupational Director (or Dean) of each selected institution was contacted by phone to ask for assistance in distributing and collecting the instruments to and from the teachers involved. It was felt that this means of data collection would help in assuring a reasonable return rate. All of the Directors (and Deans) agreed to cooperate as requested.

The instruments together with appropriate cover letters (see Appendix B) were mailed to the Directors (or Deans) in mid-October, 1974. Subsequent follow-up telephone calls were made as needed to encourage prompt returns.

By mid-November, 1974 the returns were considered to be complete.

Analysis of the Data

Upon receipt of the returns from the various participating institutions the data was encoded, keypunched, and stored on magnetic tape.

With the raw data available for machine processing a considerable variety of analysis possibilities arose. For the purposes of this study a combination of four possible ways to summarize the returns was chosen.

First, a simple frequency count was made of the number of responses to each task and the results were ranked. Such a ranking tended to identify tasks performed by the greatest number of teachers.

Secondly, the total relative time spent was determined for each task and the results ranked. This ranking tended to reveal those tasks that teachers reported spending the most time performing.

Thirdly, the weighted frequency was determined by taking the product of the number responding to each task and
the total relative time spent on that task. Ranking this
product tended to indicate the overall importance of the
task to the occupation.

Lastly, the mean relative time spent on each task was determined by taking the quotient of the total relative time spent on the task and the number of respondents who reported performing the task. The results of the calculations were then ranked. This ranking tended to reveal the relative time spent on a task by a typical teacher who did in fact perform it.

Comparisons between these four rankings lead to conclusions about the relative emphasis that occupational teachers placed on the various tasks.

Assumptions

Applying this analysis approach did require that several assumptions be made. Notably:

(1) It was assumed that each respondents' preceptions of the various tasks and the relative time scale would be sufficiently alike that the responses could be summed.

- (2) It was assumed that the sums of the responses would be at least ordinal in nature and could be ranked.
- (3) It was assumed that the rank of a response sum would be to some extent related to the emphasis that occupational teachers place on the task.

For the purposes of this study these assumptions were accepted as being reasonable.

Limitations

In many cases investigators assume that identifying elements or tasks constitutes identifying competencies. No such assumption is made in this study. Tasks identified as being performed by the occupational teachers in this study are not assumed to be the most desirable ones. Moreover no assumption is made regarding the level of performance required to assure teaching competency. The principle limitation on the study is that no inference can be made regarding competency from either the reports that a task is performed or from the reported relative time spent performing it.

Richard
TinneLL

CHAPTER IV

RESULTS

Return Rates

One hundred seventy one post-secondary occupational teachers in 23 Oklahoma institutions were asked to complete a task inventory (see Appendix A) during October, 1974. By mid-November 142 returns had been received representing 18 of the institutions. Individual return examination revealed four returns which were not fully completed. These returns were excluded leaving 138 or 80.7 percent of the initial 171 teachers.

The five institutions which failed to return the instruments had a combined occupational faculty of seven teachers. That is, the five institutions represented four percent of the total number of respondents.

Return Results

Upon receipt of the instruments the number of teachers responding that they performed the task was counted for each task. The sums ranged from four to 132 responses.

Similarly, the total relative time spent performing each task was calculated for each task using the weighting system:

| not done | 0 |
|---------------|---|
| very little | 1 |
| below average | 2 |
| about average | 3 |
| above average | 4 |
| very much | 5 |

The total relative time spent on each task was determined by summing the relative times indicated by the respondents. The mean relative times were then calculated by dividing the total relative time by the number of respondents who reported that they performed the task. Both of the calculations were done for each task in the inventory. The mean relative time spent on individual tasks ranged from 1.25 to 4.0 and the range of the total relative times was from five to 483 weighting units.

The product of the total number of respondents reporting that they performed the task and the total relative time reported spent on each task was also computed. These products ranged from 20 to over 60,000.

The results of these calculations on a task by task basis are given in Table III.

The number of zero, one, two, three, four and five relative time responses were also calculated for the tasks.

The results ranged from:

| Weight | No. of Responses |
|--------|------------------|
| 0 | 134 |
| 1 | 3 |
| 2 | 1 |
| 3 | 0 |
| 4 | 0 |
| 5 | 0 |

for the task with the least number of affirmative responses

(an affirmative response being one indicating that respondent did perform the task being considered) to:

| Veight | No. of Responses |
|--------|------------------|
| 0 | 6 |
| 1 | 17 |
| 2 · | 32 |
| 3 | 56 |
| 4 | 22 |
| 5 | 5 |

for the task with the largest number of affirmative responses.

Response Rankings

The rankings of the results as a whole would be lengthy. Consequently in this chapter only the rankings of those tasks in the top and bottom decile of each of the four methods are given.

The top ten percent of the ranking of the number of respondents who indicate that they performed the task is given in Table IV. Also shown are those tasks which appeared in the bottom ten percent of the ranking of the number of teachers who responded that they performed the tasks.

Table V shows the top and bottom decile rankings of the relative time spent on the tasks. Similarly, Table VI gives the rankings of the product of the number responding affirmatively and the total relative time reported for the top and bottom decile of tasks. The mean relative time spent on the respective tasks provide an indication of the tasks which take the most time of teachers who perform them.

Table VII shows these rankings of the mean relative times.

TABLE III
THE DATA FOR EACH TASK

| I Preparing For Instruction | | | | | | | | | |
|--|-----------|------------|---------|-----|--|--|--|--|--|
| | Responses | Total Time | Product | Mea | | | | | |
| Develop student safety procedures | 91 | 215 | 19565 | 2.3 | | | | | |
| 2 Identify library resources | 102 | 212 | 21624 | 2.0 | | | | | |
| Identify resource persons | 58 | 123 | 7134 | 2.1 | | | | | |
| . Identify terminal evaluative criteria | 79 | 226 | 17654 | 2.8 | | | | | |
| Maintain an instructional materials file | 113 | 342 | 38646 | 3.0 | | | | | |
| Make mimeograph masters | 65 | 158 | 10270 | 2.1 | | | | | |
| 7 Make photo (thermo) copy masters | 64 | 145 | 9280 | 2.2 | | | | | |
| Make spirit duplicator masters | 54 | 132 | 7132 | 2.1 | | | | | |
| Make visual aids | 105 | 275 | 28875 | 2.0 | | | | | |
| Operate a mimeograph machine | 43 | 81 | 3483 | 2. | | | | | |
| Operate a photo (thermo) copy machine | 58 | 130 | 7540 | 2. | | | | | |
| Operate a spirit duplicator | 48 | 111 | 5328 | 2. | | | | | |
| Organize lesson plans | 124 | 440 | 54560 | 3. | | | | | |
| Plan field trips | 95 | 213 | 20235 | 2. | | | | | |
| Prepare lecture outlines | 128 | 433 | 55424 | 3. | | | | | |
| Select course content | 124 | 428 | 53072 | 3. | | | | | |
| 7 Select student projects | 115 | 375 | 43125 | 3. | | | | | |
| Select text books | 112 | 298 | 33376 | 2. | | | | | |
| 9 Select training packages | 65 | 165 | 10725 | 2. | | | | | |
| Select visual aids | 114 | 302 | 34428 | 2. | | | | | |
| Set up demonstrations | 122 | 370 | 45140 | 3. | | | | | |
| 2 Set up laboratory equipment | 105 | 322 | 33810 | 3. | | | | | |
| Write course objectives | 123 | 348 | 42804 | 2. | | | | | |
| Write laboratory exercises | 102 | 313 | 31926 | 3. | | | | | |
| Write lesson objectives | 104 | 301 | 31304 | ź. | | | | | |
| 6 Write student handout sheets | 124 | 371 | 46004 | ã. | | | | | |
| 7 Write unit objectives | 89 | 245 | 21805 | 2. | | | | | |

II Executing Instruction

| _ | Coordinate a commention comb | 28 | 70 | 21.01 | 0.55 |
|-----|---|------|-----------|---------------|------|
| | Coordinate a cooperative work program | | 78 305 | 2184 | 2.79 |
| | Demonstrate manipulative skills | 95 | 305 | 28975 | 3.21 |
| | Derive mathematical equations | 77 | 214 | 16478 | 2.78 |
| | Direct group discussions | 90 | 260 | 23400 | 2.89 |
| · 5 | | 35 | . 86 | 3010 | 2.46 |
| 6 | Direct student skill practice | 111 | 387 | 42957 | 3.49 |
| 7 | Direct student project work | 102 | 359 | 36618 | 3.52 |
| 8 | Employ oral questioning | 117 | 376 | 43992 | 3.21 |
| 9 | Give homework assignments | 119 | 352 | 41888 | 2.96 |
| 10 | Give lectures | 127 | 473 | 60071 | 3.72 |
| 11 | Give students assistance in laboratory | 117 | 459 | 53703 | 3.92 |
| | Implement rules of acceptable condut | 109 | 290 | 31610 | 2.66 |
| 13 | Implement safety procedures | 97 | 263 | 25511 | 2.71 |
| 14 | Present lessons through problem solving | 119 | 411 | 48909 | 3.45 |
| 15 | Present lessons using analogies | 81 | 249 | 20169 | 3.07 |
| 16 | Present lessons using audio tape | 44 | 95 | 418Ó | 2.16 |
| | Present lessons using filmstrips | 59 | 137 | 8083 | 2.32 |
| | Present lessons using flip charts | . 29 | 66 | 1914 | 2.28 |
| | Present lessons using models | 69 | 190 | 13110 | 2.75 |
| | Present lessons using photo slides | 53 | 135 | 7155 | 2.55 |
| 21 | Present lessons using video tape | 24 | 59 | 1416 | 2.46 |
| 22 | Present lessons with a shall-beard | 126 | 483 | 60858 | |
| | Present lessons with a chalkboard | 83 | 189 | | 3.83 |
| ~? | Present lessons with motion pictures | | | 15687 | 2.28 |
| | Present lessons with overhead projector | 104 | 314 | 32656 | 3.02 |
| | Present principles by demonstration | 112 | 375 | 42000 | 3.35 |
| 26 | | 113 | 452 | 51076 | 4.00 |
| 27 | Supervise field trips | 84 | 181 | 15204 | 2.15 |
| | Teach evening classes | 74 | 230 | 17020 | 3.11 |
| | Teach extension classes | 18 | 51 | 918 | 2.83 |
| 30 | Work problems before class | 113 | 384 | 4 3392 | 3.40 |

TABLE III (Continued)

III Evaluating Instruction

| | III Evaluating | Instruction | on | | |
|----|--|------------------|-------------------|----------------------|--------------|
| 1 | Administer written tests | 131 | 411 | 53841 | 3.14 |
| _ | Analyze tests for reliability | 89 | 233 | 20737 | 2.62 |
| 3 | Analyze tests for validity | 94 | 248 | 23312 | 2.64 |
| | Check graduate performance with employer Conduct drop-out studies | 81 50 | 207 110 | 16767 5500 | 2.56 |
| | Determine final grades | 130 | 430 | 55900 | 3.31 |
| | Devise laboratory performance tests | 92 | 278 | 25576 | 3.02 |
| | Formulate case-study problems | 39 | 91 | 3549 | 2.33 |
| | Formulate completion test questions Formulate essay test questions | 112 95 | 312 246 | 34944 23370 | 2.79 2.59 |
| | Formulate multiple choice questions | 91 | 241 | 21931 | 2.65 |
| | Formulate multiple choice questions | 110 | 311 | 34210 | 2.83 |
| | Formulate tech-math problems | 76 96 | 225 | 17100 23232 | 2.96 |
| | Formulate true-false questions Grade homework assignments | 110 | 242 339 | 37290 | 2.52 3.08 |
| | Grade laboratory reports | 91 | 301 | 27391 | 3.31 |
| | Grade student projects | 107 | 378 | 40446 | 3.53 |
| | Grade students class performance | 111 120 | 372 403 | 41292 48360 | 3.35 3.36 |
| | Grade written tests Have advisory committee evaluate courses | 67 | 170 | 11390 | 2.54 |
| | Have students evaluate course content | 90 | 215 | 19350 | 2.39 |
| | Have students evaluate teacher | 95 | 235 | 22325 | 2.47 |
| 23 | Obtain program evaluation from graduates | 70 | 173 | 12110 | 2.47 |
| | Prepare progress charts Rate other teachers | 51 25 | 128 63 | 6528 1575 | 2.51 2.52 |
| | Serve on self-study committees | 50 | 128 | 6400 | 2.56 |
| | Use a self-evaluation form | 43 | 111 | 4773 | 2.58 |
| | Write lesson objectives | 103 | 297 | 30591 7701 | 2.88 |
| 27 | Write student evaluation criteria | 51 | 151 | 7701 | 2.70 |
| | IV Administering Inst | ructional : | Services | | |
| 1 | Assign students to classes | 69 | 206 | 14214 | 2.99 |
| | Attend faculty meetings | 131 37 | 385 67 | 50435 2479 | 2.94 1.81 |
| 7 | Collect fees Coordinate teaching in several programs | 50 50 | 147 | 7350 | 2.94 |
| | Handle petty cash | 24 | 36 | . 864 | 1.50 |
| | Identify prospective teachers | 47 | 109 | 5123 | 2.32 |
| | Interview prospective employees Maintain attendance records | 45 116 | 105 340 | 4725 39440 | 2.93 |
| | Maintain counseling records | 51 | 130 | 6630 | 2.55 |
| | Maintain financial records | 22 | 55 | 1210 | 2.50 |
| | Maintain follow-up records | 51 | 130 124 | 6630 5456 | 2.55 |
| | Maintain placement records Maintain purchasing records | 44 50 | 143 | 7150 | 2.86 |
| | Make teaching assignments | 42 | 123 | 5166 | 2.93 |
| 15 | Plan the budget | 42 | 119 | 4998 | 2.83 |
| | Prepare class schedules | 73 | 203 159 | 14819 9381 | 2.78 2.69 |
| | Prepare promotional brochures Prepare recruiting materials | 59 63 | 177 | 11151 | 2.81 |
| | Prepare travel claims | 62 | 129 | 7998 | 2.08 |
| | Recruit new students | 107 | 286 | 30602 | 2.67 |
| | Specify teacher qualifications Supervise other teachers | 38 42 | 90 121 | 3420 5082 | 2.37 2.88 |
| 22 | V Managing Equipme | | | , | |
| | | | | | |
| | Administer laboratory clean-up Arrange for equipment storage | 8 5 82 | 227 206 | 19295 16892 | 2.67 2.51 |
| | Conduct the inventory | 92 | 241 | 22172 | 2.62 |
| 4 | Control environment (light, heat, etc.) | 76 | 188 | 14288 | 2.47 |
| | Evaluate available facilities | 67 | 174 | 11658 | 2.60 |
| | Maintain equipment Manage a tool room | 98 34 | 305 87 | 29890 2958 | 3.11 2.56 |
| | Order instructional supplies | 108 | 300 | 32400 | 2.78 |
| 9 | Order laboratory equipment | 92 | 248 | 22816 | 2.70 |
| | Plan long range equipment needs | 82 53 | 220 | 18040 7526 | 2.68 |
| | Prepare equipment budgets Recommend library purchases | 53 89 | 142 200 | 7526 17800 | 2.68 2.25 |
| | Repair damaged equipment | 92 | 271 | 24932 | 2.95 |
| 14 | Review building construction plans | 47 | 115 | 5405 | 2.45 |
| | Schedule student laboratory time Select audio-visual equipment | 79 61 | 219 148 | 17301 | 2.77 |
| | Select audio-visual equipment Select classrooms | 37 | 86 | 9028 318 2 | 2.43 |
| 18 | Solicit contributions from industry | 34 | 83 | 2822 | 2.44 |
| | Select laboratory (shop) space | 25 | 58 | 1450 | 2.32 |
| 20 | Write equipment specifications | 71 | 179 | 12709 | 2.52 |

TABLE III (Continued)

VI Providing Student Services

| 1 Administer counseling tests | 12 | 20 | 240 | 1.67 |
|---|-----------|---|--|--|
| 2 Administer placement tests | 17 | 36 | 612 | 2.12 |
| 3 Advise students about employment | 118 | 357 | 42126 | 3.03 |
| 4 Advise students about further education | 114 | 321 | 36594 | 2.82 |
| 5 Advise students with personal problems | 114 | 265 | 30210 | 2.32 |
| 6 Advise students with personal problems | 122 | 336 | 40992 | 2.75 |
| 7 Assess student academic ability | 74 | 205 | 15170 | 2.77 |
| 8 Assist students in getting financial aids | 72 | 162 | 11664 | 2.25 |
| 9 Conduct counseling sessions | 50 | 148 | 7400 | 2.96 |
| 10 Conduct a graduate follow-up program | 44 | 122 | 5368 | 2.77 |
| 11 Conduct home visits | 13 | | | |
| 12 Contact prospective employers | 74 | | | |
| | | | | 1.84 |
| 14 Interview prospective students | | | | 2.60 |
| | | | | |
| | 37 | | | |
| | 46 | | | |
| | | | | |
| 19 Set student selection criteria | 22 | | | |
| 20 Write letters of recommendation | 103 | 241 | 24823 | 2.34 |
| 12 Contact prospective employers 13 Evaluate student selection data 14 Interview prospective students 15 Place graduates with employers 16 Provide disciplinary action 17 Provide placement services 18 Select students for the program 19 Set student selection criteria | | 25 200 35 211 194 69 130 56 49 241 | 325 14800 665 17091 13580 2553 5980 1400 1078 24823 | 2.60 2.77 1.86 2.83 2.24 2.23 |

VII Participating in Professional Development

| 1 | Assist new teachers | 87 | 219 | 19053 | 2.52 |
|----|---|-----|-------|--------------|------|
| 2 | Attend professional meetings | 127 | 335 | 42545 | 2.64 |
| 3 | Conduct research | 43 | 101 | 4343 | 2.35 |
| 4 | Participate in professional organizations | 119 | . 307 | 36533 | 2.58 |
| 5 | Participate in research studies | 46 | 92 | 4232 | 2.00 |
| 6 | Participate in seminars | 95 | 220 | 20900 | 2.32 |
| 7 | Practice new specialty skills | 78 | 209 | 16302 | 2.68 |
| 8 | Read professional journals | 132 | 366 | 48312 | 2.77 |
| 9 | Read text books | 130 | 412 | 53560 | 3.17 |
| | Read technical journals | 121 | 363 | 43923 | 3.00 |
| 11 | Serve as an officer of an organization | 62 | 161 | 9982 | 2.60 |
| 12 | Take college courses | 101 | 292 | 29492 | 2.89 |
| | Take correspondence courses | 15 | 28 | 420 | 1.87 |
| | Take short courses | 66 | 138 | 9108 | 2.09 |
| | Visit other schools | 97 | 222 | 21534 | 2.29 |
| | Work in industry | 45 | 114 | 513 0 | 2.53 |
| | Write professional articles | 26 | 48 | 1248 | 1.85 |
| 18 | Write technical journal articles | 23 | 41 | 943 | 1.78 |

VIII Developing Instructional Programs

| 1 | Adapt occupational surveys to local needs | 33 | 77 | 2541 | 2.33 |
|----|---|----|-----|-------|------|
| 2 | Analyze occupational clusters | 31 | 64 | 1984 | 2.06 |
| 3 | Assess relevancy of program offerings | 72 | 195 | 14040 | 2.71 |
| Ĩ. | Conduct occupational needs surveys | 35 | 80 | 2800 | 2.29 |
| Ś | Determine staff and faculty requirements | 39 | 97 | 3783 | 2.49 |
| 6 | Establish program goals | 71 | 196 | 13916 | 2.76 |
| 7 | Examine curricula of other schools | 85 | 217 | 18445 | 2.55 |
| ġ | Identify appropriate program content | 79 | 233 | 18407 | 2.95 |
| ğ | Identify entry level skills | 58 | 150 | 8700 | 2.59 |
| 1Ó | | 51 | 129 | 6579 | 2.53 |
| | Meet with advisory committees | 92 | 218 | 20056 | 2.37 |
| | Organize advisory committees | 56 | 137 | 7672 | 2.45 |
| | Plan advisory committee meetings | 55 | 135 | 7425 | 2.45 |
| | Read curriculum research reports | 60 | 122 | 7320 | 2.03 |
| | Read vocational education needs surveys | 83 | 185 | 15355 | 2.23 |
| | Select programs to be offered | 41 | 118 | 4838 | 2.88 |
| 17 | Sequence courses within the program | 76 | 208 | 15808 | 2.74 |
| | Serve on a curriculum committee | 18 | 130 | 6240 | 2.71 |
| | Write program objectives | 66 | 172 | 11352 | 2.61 |
| ŽÓ | Write proposals for funding | 23 | 62 | 1426 | 2.70 |
| | · · · · · · · · · · · · · · · · · · | | | | |

TABLE III (Continued)

IX Participating in Non-Instructional Activities

| 1 | Assist with institutional maintenance | 58 | 142 | 8236 | 2.45 |
|----|--|-----|-----|-------|------|
| 2 | Attend civic club meetings | 63 | 150 | 9450 | 2.38 |
| 3 | Attend school related social functions | 117 | 304 | 35568 | 2.60 |
| | Chaperon student activities | 79 | 189 | 14931 | 2.39 |
| | Collect money for charities | 33 | 67 | 2211 | 2.03 |
| 6 | Collect tickets at school activities | 15 | 31 | 465 | 2.07 |
| 7 | Drive a school bus | 4 | 5 | 20 | 1.25 |
| 8 | Participate in community activities | 90 | 248 | 22320 | 2.76 |
| | Prepare news releases | 32 | 73 | 2336 | 2.28 |
| 10 | Sell activities tickets | 10 | 17 | 170 | 1.70 |
| 11 | Serve on committees | 101 | 270 | 27270 | 2.67 |
| 12 | Sponsor student clubs | 72 | 220 | 15840 | 3.06 |
| 13 | Visit with other teachers | 110 | 339 | 37290 | 3.08 |
| 14 | Work as a consultant | 47 | 118 | 5546 | 2.51 |

These are but a relatively few of the many ways that the results of this study could be presented. They are adequate however for the purposes of this study. Some of the conclusions and recommendations which can be derived from these data will be presented in the following chapter.

TABLE IV

TOP AND BOTTOM DECILE OF THE RANKING OF THE NUMBER OF RESPONDENTS WHO REPORTED PERFORMING EACH TASK

| | Duty - Task | Number Responding | Per Cent |
|--|--|---|--|
| VII-8 III-1 IV-2 VII-9 III-6 I-15 VII-2 II-10 II-22 I-13 I-16 I-26 I-23 VI-6 I-21 VII-10 III-19 III-19 III-19 III-14 VII-4 | Read professional journals Administer written tests Attend faculty meetings Read text books Determine final grades Prepare lecture outlines Attend professional meetings Give lectures Present lessons with a chalkboard Organize lesson plans Select course content Write student handout sheets Write course objectives Advise students with scholastic problems Set up demonstrations Read technical journals Grade written tests Give homework assignments Present lessons by problem solving Participate in prof. organizations | | 95.7992280039991 94.22.0039991 94.800222 95.7992280039991 95.7992280039991 95.7992280039991 95.7992280039991 |
| II-1 VII-17 III-25 V-19 VI-18 II-21 IV-3 | Coordinate a cooperative work prog Write professional articles Rate other teachers Select laboratory (shop space) Select students for the program Present lessons using video tape Collect fees Write proposals for funding Write technical journal articles Maintain financial records Set student selection criteria Evaluate student selection data Teach extension classes Administer placement tests Take correspondence courses Collect tickets at school activitie Conduct home visits Administer counseling tests Sell activities tickets Drive a school bus | ram 28 26 25 25 25 24 24 23 23 22 19 18 17 15 | 20.3 18.8 18.1 18.1 17.4 17.4 16.7 15.9 13.0 10.4 10.9 7.2 9 |

TABLE V

TOP AND BOTTOM DECILE OF THE RANKING OF THE TOTAL RELATIVE TIMES REPORTED SPENT ON EACH TASK

| | Duty - Task | Total Relative Time |
|--|---|---|
| II-6 IV-2 II-30 III-17 II-8 I-17 II-25 | Present lessons with a chalkboard Give lectures Give students assistance in laboratory Supervise student laboratory work Organize lesson plans Prepare lecture outlines Determine final grades Select course content Read text books Present lessons through problem solvin Administer written tests Grade written tests Direct student skill practice Attend faculty meetings Work problems before class Grade student projects Employ oral questioning Select student projects Present principles through demonstrati Grade students class performance | 452 440 433 430 428 412 411 403 387 385 378 376 375 |
| III-25 VIII-20 II-21 V-19 VI-18 IV-10 II-29 VI-19 | Analyze occupational clusters Rate other teachers Write proposals for funding Present lessons using video tape Select laboratory (shop) space Select students for the program Maintain financial records Teach extension classes Set student selection criteria Write professional articles Write technical journal articles Administer placement tests Handle petty cash Evaluate student selection data Collect tickets at school activities Take correspondence courses Conduct home visits Administer counseling tests Sell activities tickets Drive a school bus | 64 63 62 55 55 55 55 44 43 33 33 22 20 75 |

TABLE VI

TOP AND BOTTOM DECILE OF THE RANKING OF THE PRODUCTS
OF THE NUMBER OF AFFIRMATIVE RESPONDENTS AND THE
TOTAL RELATIVE TIME SPENT ON THE TASKS

| | Duty - Task | Product |
|--|---|--|
| II-22 II-10 III-6 I-15 I-13 III-1 III-11 VII-9 I-16 II-26 IV-2 III-14 III-19 VII-8 I-26 I-21 II-8 VII-10 II-30 I-17 | Grade written tests Read professional journals Write student handout sheets Set up demonstrations Employ oral questioning Read technical journals | 60858 60071 55900 55424 553760 53760 53076 53076 50435 48312 439960 439960 439926 439926 43125 |
| V-19 VIII-20 II-21 VI-18 VII-17 IV-10 VI-19 VII-18 II-29 VI-5 | Rate other teachers Select laboratory (shop) space Write proposals for funding Present lessons using video tape Select students for the program Write professional articles Maintain financial records Set student selection criteria Write technical journal articles Teach extension classes Advise students with personal problems Evaluate student selection data Administer placement tests Collect tickets at school activities Take correspondence courses Conduct home visits Administer counseling tests | 1914 1575 1450 1426 1416 1400 1248 1210 1078 943 943 9665 420 425 240 170 20 |

TABLE VII

TOP AND BOTTOM DECILE OF THE RANKING OF THE REPORTED MEAN RELATIVE TIME SPENT PERFORMING EACH TASK

| | Duty - Task | Mean Time |
|--|--|--|
| II-22 II-10 I-13 III-7 II-6 I-16 II-14 II-30 I-15 III-18 III-19 III-6 III-17 III-2 III-8 | Supervise student laboratory work Give students assistance in laboratory Present lessons with a chalkboard Give lectures Organize lesson plans Grade student projects Direct student project work Direct student skill practice Select course content Present lessons through problem solving Work problems before class Prepare lecture outlines Grade students class performance Grade written tests Determine final grades Grade laboratory reports Select student projects Demonstrate manipulative skills Employ oral questioning Read text books | 4.00 3.00 3.00 3.00 3.00 3.00 3.00 3.00 |
| VI-2 VII-14 I-2 VIII-2 IX-6 VIII-14 IX-5 VI-11 I-10 VII-13 VI-16 VII-17 VI-13 IV-3 VII-18 IX-10 VI-1 IV-5 | Analyze occupational clusters Collect tickets at school activities Read curriculum research reports Collect money for charities Conduct home visits Operate a mimeograph machine Take correspondence courses Provide disciplinary action Write professional articles Evaluate student selection data Collect fees Write technical journal articles | 2.12 2.12 2.09 2.007 2.006 2.03 1.887 1.887 1.885 1.881 1.70 1.677 1.525 |

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The two questions with which this study dealt were cited in Chapter I as being:

- 1. What are some of the tasks that occupational teachers perform in their professional role?
- 2. How much relative time is devoted to each of these various tasks?

In the following pages these questions are considered in relationship to the results received and a number of conclusions about them are suggested. Also, several recommendations which grew out of the study are proposed.

The teacher representation selected for the study included 23 institutions and 171 potential respondents. Based on the 138 useful returns from 18 institutions representing approximately 80 percent of both the institutions and the respondents, it was concluded that this choice was adequate for the purposes of the study. The use of these respondents in subsequent studies can be recommended.

The techniques used in developing the instrument for this study were similar to those revealed by a review of the literature. Nine duty areas and 200 tasks were included. Two principle problems were encountered in administering the

instrument. These were:

- 1. Several respondents commented that the relative time scale used was difficult to understand fully. Specifically, they expressed some confusion regarding what constituted an "average" relative time spent on a task.
- 2. Some of the task statements were ambiguous. For instance, task II-3 "work problems before class" could be read as; work problems prior to class, or work problems in front of the class.

In spite of these problems it was concluded that the instrument as used was adequate for the purposes of the study. It is recommended that if the instrument is to be used in subsequent studies an attempt should be made to resolve the problems cited.

Data collection was achieved by working through the occupational Director (or Dean) at the participating institutions. Based on the return of over 80 percent of the instruments it was concluded that this technique was adequate for the purposes of the study.

The relatively high return rate makes it possible to suggest that this data collection method might be used successfully in subsequent studies of this type.

The returns reflected some affirmative responses to all of the 200 tasks included in the study. It can be concluded, therefore that the 200 tasks used were to varying

degrees appropriate. However, since the number of affirmative responses to a particular task varied from less than three percent to over 95 percent it can be concluded that the appropriateness varies from task to task. It is therefore recommended that if the same instrument is to be used in a subsequent study, consideration be given to deleting or replacing all or part of the tasks in the lowest decile.

The decision to delete a task could be made on the basis of a low ranking in: The number of teachers who perform it, the relative time they spend doing it, or any combination of these things. Similarly, the decision to replace a task could be made on the same basis as deletion. Choosing appropriate tasks with which to make replacements would be more difficult. Replacement tasks would need to be separately validated to insure that they were indeed potentially higher ranking ones. There would be little value in replacing low ranking tasks with other low ranking tasks.

The tasks identified as being in the highest decile of each of the four ranking methods showed considerable overlap. The top 20 in all four rankings includes only 32 tasks. Of these 32 tasks, eight appear in the top decile of all four rankings, eight appear in three rankings, seven in two rankings and nine appear in only one of the rankings. In as much as five of these nine appear in the table indicating the number of respondents who report doing the tasks (Table IV), one could conclude that it is the least effective of the rankings for identfying potentially important tasks.

Table VIII shows all of the tasks found in the highest deciles and the various rankings in which they appear.

TABLE VIII

TASKS IN THE TOP DECILE RANKINGS GIVEN
IN TABLES IV, V, VI AND VII

| | Duty - Task | Appe IV | ars V | in VI | Table VII |
|-----------------|---|------------|----------|----------|--------------|
| I-13 | Organize lesson plans | X | Χ | Х | X |
| I - 15 | Prepare lecture outlines | λ | X | X | X |
| I - 16 | Select course content | X | X | X | X |
| I-17 | Select student projects | | X | X | X |
| I-21 | Set up demonstrations | X | | X | |
| I-28 | Write course objectives | X | | 7.5 | |
| I - 26 | Write student handout sheets | X | | X | 7.7 |
| II-2 | Demonstrate manipulative skills | | τr | | X |
| II-6 | Direct student skill practice | | X | | X X |
| II-7 II-8 | Direct student project work | | Х | X | X |
| II - 9 | Employ oral questioning Give homework assignments | X | Λ. | Λ | Λ |
| II - 10 | Give lectures | X | X | X | X |
| II-11 | Give students assistance in lab | A | X | X | X |
| II-14 | Present lessons by problem solving | X | X | X | X |
| II-22 | Present lessons with a chalkboard | X | X | X | X |
| II - 25 | Present principles by demonstration | | X | | |
| II-26 | Supervise student laboratory work | | X | X | X |
| II - 30 | Work problems before class | | X | X | X |
| III-1 | Administer written tests | X | X | X | |
| III-6 | Determine final grades | X | X | X | |
| III - 16 | Grade laboratory reports | | | | X |
| III - 17 | Grade student projects | | X | | X |
| III - 18 | Grade student class performance | | X | | X |
| III - 19 | Grade written tests | X | X | X | X |
| IV-2 | Attend faculty meetings | X | X | X | |
| VI-6 | Advise students with scholastic | 7.7 | | | |
| urr o | problems | X | | | |
| VII-2 | Attend professional meetings | $_{ m X}$ | | | |
| VII-4 VII-8 | Participate in prof. organizations | X | | X | |
| VII0 | Read professional journals Read text books | X | Х | X | X |
| VII-10 | Read technical journals | X | Λ | X | Λ . |
| ^ TT-TO | TOUR COLLITIONE TOUR HATE | 47 | | 12 | |

In as much as the four methods are dependently related, such overlap is to be expected. From this table it can be concluded that Duties I, II, III and VII (that is; Preparing for instruction, Executing instruction, Evaluating instruction and Participating in professional development) demand the greatest amount of the teachers' attention.

Similarly, the lowest decile tasks are given in Table IX. As was the case with the top decile, the four ranking methods agree quite well.

In this listing 31 tasks are required to list the bottom 20 in all four rankings. Ten of these appear in each of the four rankings while eight appear in three of the rankings, three are in two of the rankings and ten tasks appear in only one ranking. Seven of these latter ten tasks appear only in the table (Table VII) which gives the mean relative time spent by those who perform the tasks. On this basis one could conclude that this ranking (mean relative time) is the least effective of the four in identifying potentially unimportant tasks. Duty area VI, Providing student services, would seem to be one requiring the least attention with certain individual tasks from all the other areas also receiving little attention.

While there is little precedent for doing so, one could conclude that those tasks which appear in the top or bottom decile of all four ranking methods were of particular significance. Doing so, results in a listing of what could be called the most and least emphasized tasks teachers perform.

TABLE IX

TASKS IN THE BOTTOM DECILE RANKINGS GIVEN IN TABLES IV, V, VI AND VII

| | Duty - Task | Appe IV | ars V | in VI | Table VII |
|---|---|-------------|-------------|-------------|--------------|
| I-2 I-3 I-10 II-1 | Identify library resourses Identify resourse persons Operate a mimeograph machine Coordinate a cooperative work | | | | X X X |
| TT 10 | program | X | | τr | |
| II-18 II-21 II-29 III-25 IV-3 | Present lessons using flip charts Present lessons using video tape Teach extension classes Rate other teachers Collect fees | X X X | X X X | X X X | X |
| IV-5 IV-10 V-19 | Handle petty cash Maintain financial records Select laboratory (shop) space | X X | X X X | X X | X |
| VI-1 VI-2 VI-5 | Administer counseling tests Administer placement tests Advise students with personal | X | X | X | X X |
| VI-11 VI-13 VI-16 | problems Conduct home visits Evaluate student selection data Provide disciplinary action | X | X X | X X | X X X |
| VI-18 VI-19 VII-13 VII-14 | Select students for the program Set student selection criteria Take correspondence courses Take short courses | X X X | X X X | X X | X X |
| VII-17 VII-18 VIII-2 | Write professional articles Write technical journal articles Analyze occupational clusters | X | X X X | X | X X |
| • | Read curriculum research reports Write proposals for funding Collect money for charities Collect tickets at school | X | X | X | X |
| IX-7 IX-10 | activities Drive a school bus Sell activities tickets | X X X | X X X | X X X | X X X |

The following are the lists which arise from such a conclusion. These lists are not ranked and do not imply the importance of the task.

Most Emphasized Tasks

- 1. Read text books
- 2. Select course content
- 3. Organize lesson plans
- 4. Prepare lecture outlines
- 5. Present lessons with a chalkboard
- 6. Give lectures
- 7. Present lessons through problem solving
- 8. Grade written tests

Least Emphasized Tasks

- 1. Administer counseling tests
- 2. Evaluate student selection data
- 3. Conduct home visits
- 4. Administer placement tests
- 5. Take correspondence courses
- 6. Write professional articles
- 7. Write technical journal articles
- 8. Sell activities tickets
- 9. Collect tickets at school activities
- 10. Drive a school bus

An inference that can be drawn from these lists is that occupational teachers place primary emphasis on doing those things which contribute directly to classroom instruction and the least emphasis on those things which support

instruction only peripherally. The content of the lists of the most and least emphasized tasks would seem to lend support to the idea that the task inventory technique is an appropriate one to use in studying teacher occupations. It is a commonly held belief that occupational teachers do in fact spend much of their time on the kind of tasks which appear in the most emphasized tasks list and very little on the kinds in the least emphasized tasks list.

The tasks which appear in three out of the four top decile of rankings:

- 1. Select student projects
- 2. Work problems before class
- 3. Supervise student laboratory work
- 4. Give students assistance in laboratory
- 5. Employ oral questioning
- 6. Administer written tests
- 7. Determine final grades
- 8. Attend faculty meetings

represent much the same kind of activities as do the most emphasized tasks. That is, they are almost exclusively tasks associated directly with instruction or in direct support of instruction. The single possible exception being "attend faculty meetings" which might be preceived as being in direct support of instruction or possibly as being directed toward some other kind of activity.

Similarly, the tasks which appear in two of the four top decile rankings also reflect an emphasis on instruction:

- 1. Read technical journals
- 2. Read professional journals
- 3. Write student handout sheets
- 4. Set up demonstrations
- 5. Direct student skill practice
- 6. Grade student class performance
- 7. Grade student projects

Even among those tasks that appear in only one out of the four top decile rankings the emphasis would seem to be primarily on direct involvement with instruction. To be found in this category are:

- 1. Write course objectives
- 2. Present principles by demonstration
- 3. Demonstrate manipulative skills
- 4. Direct student project work
- 5. Give homework assignments
- 6. Grade laboratory reports
- 7. Advise students with scholastic problems
- 8. Attend professional meetings
- 9. Participate in professional organizations
 This conclusion drawn from these listings is that occupational teachers, as a whole, place almost all of their emphasis, in terms of the four ranking methods used, on those activities very closely associated with actual instruction.

The tasks which appear in the lowest decile of the rankings do not reflect a central theme but are spread among the various duties. There is therefore little need to

summarize the tasks in this category further.

It should be noted that the conclusions drawn above differ to some extent from the findings of DeVaughn and Kinzer cited in Chapter II. In both instances they attempted to identify competencies of a broader nature than the tasks identified in this study. However, it should be kept in mind that both of the previous studies attempted to identify items preceived as being important to teaching while the purpose of this study was to identify tasks reported as actually being performed by technical teachers and the relative time spent performing them. It would be surprising if the two approaches produced the same results.

The differing results from the two approaches do however focus attention on an important point. That point being that desirable teacher competencies are not well defined nor easily identified. Neither preceived importance nor reported performance effectively identify either desired performance or the level of performance rquired for functional adequacy (competency) in effective teaching.

It is therefore recommended that additional research in the area of the functional adequacy of occupational teachers be carried out before wide spread attempts are made to establish competency-based or performance-based teacher education curricula.

During the conduct of the study the question was raised as to whether or not the results would remain invariant during the school year. If they do not, then serious questions can be raised as to the value of a single task inventory in identifying appropriate content for performance based (competency-based) teacher education programs.

It is certainly conceivable that teachers may place major emphasis on planning instruction at the start of a semester or term; on executing instruction as they get into the semester or term; and on student evaluation near the end of the semester or term. If this is the case, then a task inventory taken at any one of these times could be heavily influenced by these shifts in emphasis. While the possible existence of this influence was recognized no attempt was made in this study to explore it. It is therefore recommended that further consideration be given to investigating this question.

Overall, it is worth noting again that the results of this study differed considerably from those of DeVaughn and even more so from those of Kinzer. Part of the reason for the differences undoubtedly lies in the differences in approach. The differences do however emphasize the need to define "competency-based" or "performanced-based" teacher education more exactly in terms of how it is to be identified.

Returning to the original questions addressed by the study; it is concluded that tasks which teachers perform can be (and some were) identified using the techniques employed herein. Moreover, while exact time requirements can not be established using these techniques, relative times spent in

performing the tasks can be (and were) identified.

However, no claim is made that this study has identified ed either desirable teacher performance or the level of performance needed to be an effectively competent occupational teacher.

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APPENDIX A

THE INSTRUMENT

task inventory

OCCUPATIONAL EDUCATION



technical education

forward

moving

PURPOSE OF THE INVENTORY

THIS TASK INVENTORY IS DESIGNED TO HELP IDENTIFY THE KINDS OF TASKS THAT OCCUPATIONAL TEACHERS DO ON THEIR JOBS AND THE RELATIVE TIME THEY SPEND DOING THEM. SUCH INFORMATION CAN BE VERY HELPFUL IN PLANNING TRULY RELEVANT TEACHER EDUCATION PROGRAMS.

GENERAL INSTRUCTIONS

COMPLETING THE INVENTORY FORM IS VERY EASY AND IT REQUIRES LESS THAN ONE-HALF HOUR TO DO. FIRST FILL IN THE PROFESSIONAL INFORMATION REQUESTED ON PAGE TWO. THEN READ THE INSTRUCTIONS AND EXAMINE THE EXAMPLE ON PAGE THREE. THE INSTRUCTIONS WILL TELL YOU HOW TO PROCEED WITH THE REMAINDER OF THE INVENTORY.

LASTLY, PLEASE RETURN THE WHOLE BOOKLET PROMPTLY.

000194

PROFESSIONAL INFORMATION

| HECK THE TYPE OF INSTITUTION THAT | YOU WORK FOR |
|---|----------------------------------|
| COMMUNITY-JUNIOR COLLEGE | |
| - | |
| VOCATIONAL SCHOOL | |
| TECHNICAL INSTITUTE | |
| 4 YEAR COLLEGE (OR UNIV.) | |
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| HECK ALL OF THE DEGREES THAT YOU | HOLD AND GIVE THE MAJOR SUBJECTS |
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| CERTIFICATE | HOLD AND GIVE THE MAJOR SUBJECTS |
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CAREFULLY READ EACH OF THE TASK STATEMENTS AND PLACE A CHECK MARK (\checkmark) IN THE CULUMN LABELED CHECK FOR EACH TASK WHICH YOU PERFORM ON YOUR PRESENT JOB.

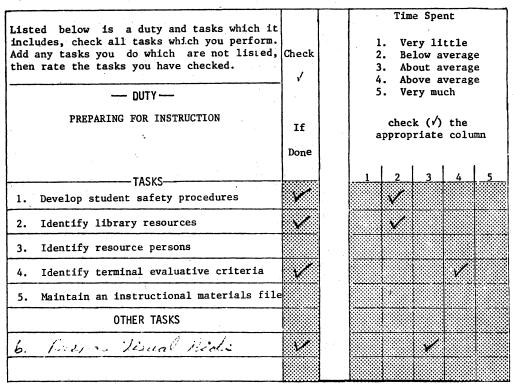
AFTER CHECKING ALL THE TASKS WHICH YOU PERFORM, RATE ONLY THE TASKS YOU HAVE CHECKED BY PLACING A CHECK MARK (√) IN THE APPROPRIATE COLUMN LABELED TIME SPENT.

TIME SPENT MEANS THE <u>RELATIVE TIME</u> YOU SPEND ON THE TASK YOU ARE RATING, COMPARED WITH THE TIME YOU SPEND ON EACH OF THE OTHER TASKS YOU DO. IT DOES NOT IMPLY THE IMPORTANCE OF THE TASK TO YOUR JOB. SOME VERY IMPORTANT TASKS TAKE LITTLE TIME WHILE SOME UNIMPORTANT ONES REQUIRE A LOT OF TIME.

AT THE END OF ANY SECTION WRITE IN AND RATE ANY TASKS YOU DO WHICH ARE NOT LISTED.

EXAMPLE:

OCCUPATIONAL EDUCATION TASK INVENTORY



Please rate by TIME SPENT rather than importance of task

OCCUPATIONAL EDUCATION TASK INVENTORY

| Listed below is a duty and tasks which it | | Time Spent | | | | | | |
|---|---------|--|---------------|-------|----------|-----|--|--|
| includes, check all tasks which you perform. Add any tasks you do which are not listed, then rate the tasks you have checked. | Check | 1. Very little 2. Below average 3. About average 4. Above average 5. Very much | | | | | | |
| — DUTY — | | 5 | . Ve | ry mu | ıch | | | |
| PREPARING FOR INSTRUCTION | If | a | chec pprop | | the colu | ımn | | |
| | Done | | | | | | | |
| TASKS——— | ******* | 1 | 2 | 3 | 4 | 5 | | |
| 1. Develop student safety procedures | | | | | | | | |
| 2. Identify library resources | | | | | | | | |
| 3. Identify resource persons | | | | | | | | |
| 4. Identify terminal evaluative criteria | | | | | | | | |
| 5. Maintain an instructional materials file | | | | | | | | |
| 6. Make mimeograph masters | | | | | | | | |
| 7. Make photo (thermo) copy masters | | | | | | | | |
| 8. Make spirit duplicator masters | | | | | | | | |
| 9. Make visual aids | | | | | | | | |
| 10. Operate a mimeograph machine | | | | | | | | |
| 11. Operate a photo (thermo) copy machine | | | | | | | | |
| 12. Operate a spirit duplicator | | | | | | | | |
| 13. Organize lesson plans | | | | | | | | |
| 14. Plan field trips | | | | | | | | |
| 15. Prepare lecture outlines | | | | | | | | |
| 16. Select course content | | | | | | | | |
| 17. Select student projects | | | | | | | | |
| 18. Select text books | | | | | | | | |
| 19. Select training packages | | | | | | | | |
| 20. Select visual aids | | | | | | | | |

Please rate by TIME SPENT rather than importance of task

5

Please rate by TIME SPENT rather than importance of task

| Listed below is a duty and tasks which it includes, check all tasks which you perform. Add any tasks you do which are not listed, then rate the tasks you have checked. —— DUTY—— EXECUTING INSTRUCTION |] | Time Spent 1. Very little 2. Below average 3. About average 4. Above average 5. Very much check (/) the appropriate column | | | | | | |
|--|---|--|---|---|---|---|--|--|
| TASKS—— | | 1 | 2 | 3 | 4 | 5 | | |
| 1. Coordinate a cooperative work program | | | | | | | | |
| 2. Demonstrate manipulative skills | | | | | | | | |
| 3. Derive mathematical equations | | | | | | | | |
| 4. Direct group discussions | | | | | | | | |
| 5. Direct programmed instruction | | | | | | | | |
| 6. Direct student skill practice | | | | | | | | |
| 7. Direct student project work | | | | | | | | |
| 8. Employ oral questioning | | | | | | | | |
| 9. Give homework assignments | | | | | | | | |
| 10. Give lectures | | | | | | | | |
| 11. Give students assistance in laboratory | | | | | | | | |
| 12. Implement rules of acceptable conduct | | | | | | | | |
| 13. Implement safety procedures | | | | | | | | |
| 14. Present lessons through problem solving | | | | | | | | |
| 15. Present lessons using analogies | | | | | | | | |
| 16. Present lessons using audio tape | | | | | | | | |
| 17. Present lessons using filmstrips | | | | | | | | |
| 18. Present lessons using flip charts | | | | | | | | |
| 19. Present lessons using models | | | | | | | | |
| 20. Present lessons using photo slides | | | | | | | | |

Please rate by TIME SPENT rather than importance of task

7

OCCUPATIONAL EDUCATION TASK INVENTORY

| Listed below is a duty and tasks which it includes, check all tasks which you perform. Add any tasks you do which are not listed, then rate the tasks you have checked. —— DUTY—— EXECUTING INSTRUCTION | 1 1 | | Time Spent 1. Very little 2. Below average 3. About average 4. Above average 5. Very much check (/) the appropriate column | | | | | | | |
|---|------|---|--|---|---|----|-----|--|--|--|
| | Done | | _ | | | ١. | 1 _ | | | |
| TASKS 21. Present lessons using video tape | | | _1 | 2 | 3 | 4 | | | | |
| 22. Present lessons with a chalkboard | | į | | | | | | | | |
| 23. Present lessons with motion pictures | | | | | | | | | | |
| 24. Present lessons with overhead projector | | | | | | | | | | |
| 25. Present principles by demonstration | | | | | | | | | | |
| 26. Supervise student laboratory work | | | | | | | | | | |
| 27. Supervise field trips | | | | | | | | | | |
| 28. Teach evening classes | | | | | | | | | | |
| 29. Teach extension classes | | | | | | | | | | |
| 30. Work problems before class | | | | | | | | | | |
| OTHER TASKS | | | | | | | | | | |
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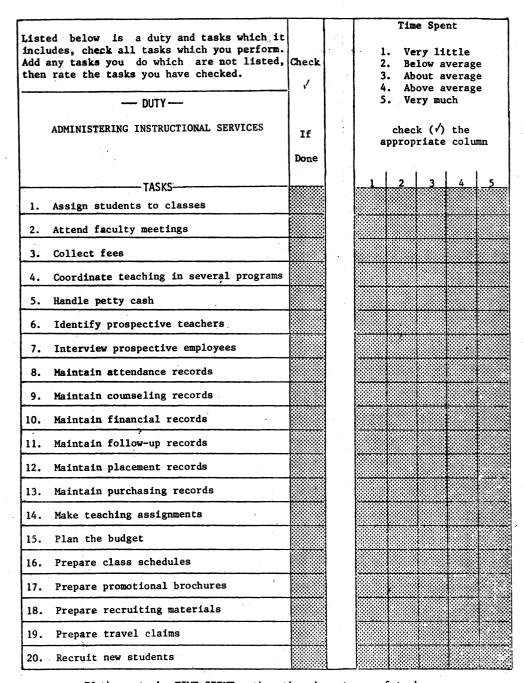
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| includes, check all tasks which you perform. Add any tasks you do which are not listed, then rate the tasks you have checked. | Check ,/ | F Po Sect 1 | 2 3 4 | . Be . Ab | low a out a ove a | ttle verag verag verag | ge | | | | | |
| DUTY | | | . 5 | . Ve | ry mu | ich | | | | | | |
| EVALUATING INSTRUCTION | Ιf | | а | | k (√) riate | the colu | mn | | | | | |
| | Done | | | 1 1 1 1 | | | | | | | | |
| TASKS | ******* | | 1 | 2 | 3 | 4 | 5 | | | | | |
| 1. Administer written tests | | | | | | | | | | | | |
| 2. Analyze tests for reliability | | | | | | | | | | | | |
| 3. Analyze tests for validity | | | | | | | | | | | | |
| 4. Check graduate performance with employer | | | | | | | | | | | | |
| 5. Conduct drop-out studies | | | | | | | | | | | | |
| 6. Determine final grades | | | | | | | | | | | | |
| 7. Devise laboratory performance tests | | | | | | | | | | | | |
| 8. Formulate case-study problems | | | | | | | | | | | | |
| 9. Formulate completion test questions | | | | | | | | | | | | |
| 10. Formulate essay test questions | | | | | | | | | | | | |
| 11. Formulate matching test questions | | | | | | | | | | | | |
| 12. Formulate multiple choice questions | | | | | | | | | | | | |
| 13. Formulate tech-math problems | | | | | | | | | | | | |
| 14. Formulate true-false questions | | | | | | | | | | | | |
| 15. Grade homework assignments | | | | | | | | | | | | |
| 16. Grade laboratory reports | | | | | | | | | | | | |
| 17. Grade student projects | | | | | | | | | | | | |
| 18. Grade students class performance | | | | | | | | | | | | |
| 19. Grade written tests | | | | | | | | | | | | |
| 20. Have advisory committee evaluate courses | | | | | | | | | | | | |

Please rate by TIME SPENT rather than importance of task

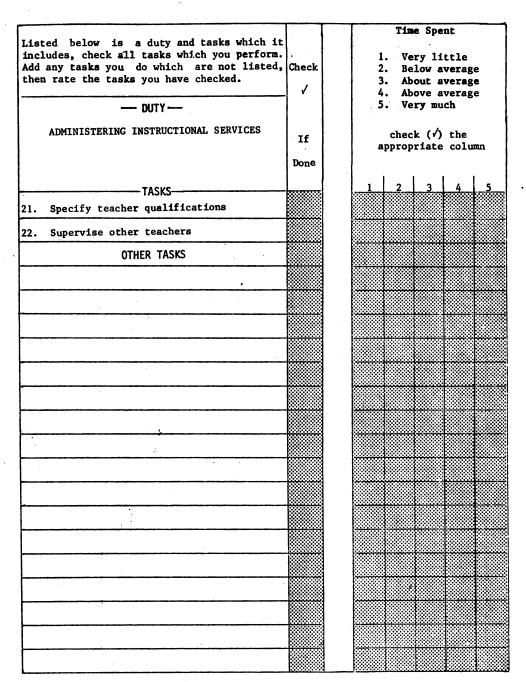
OCCUPATIONAL EDUCATION TASK INVENTORY

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| TASKS | | | 2 | 3 | 4 | 5 | | | | |
| 21. Have students evaluate course content | | | | | | | | | | |
| 22. Have students evaluate teacher | | | | | | | | | | |
| 23. Obtain program evaluation from graduate | :8 | | | | | | | | | |
| 24. Prepare progress charts , | | | | | | | | | | |
| 25. Rate other teachers | | | | | | | | | | |
| 26. Serve on self-study committees | | | | | | | | | | |
| 27. Use a self-evaluation form | | | | | | | | | | |
| 28. Write lesson objectives | | | | | | | | | | |
| 29. Write student evaluation criteria | | | | | | | | | | |
| OTHER TASKS | | | | | | | | | | |
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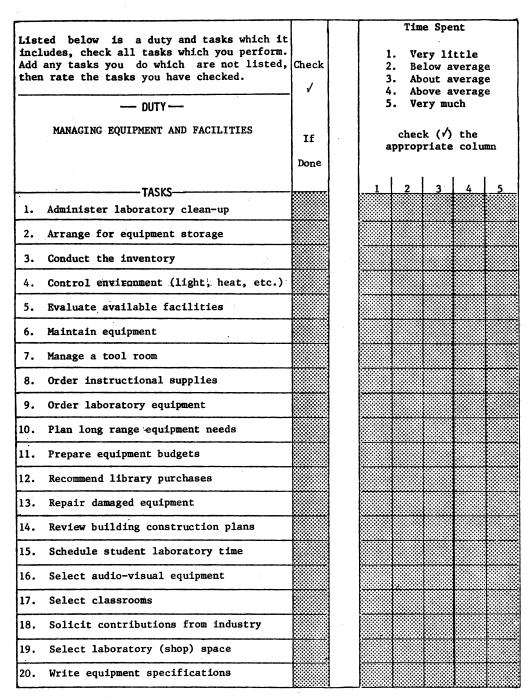
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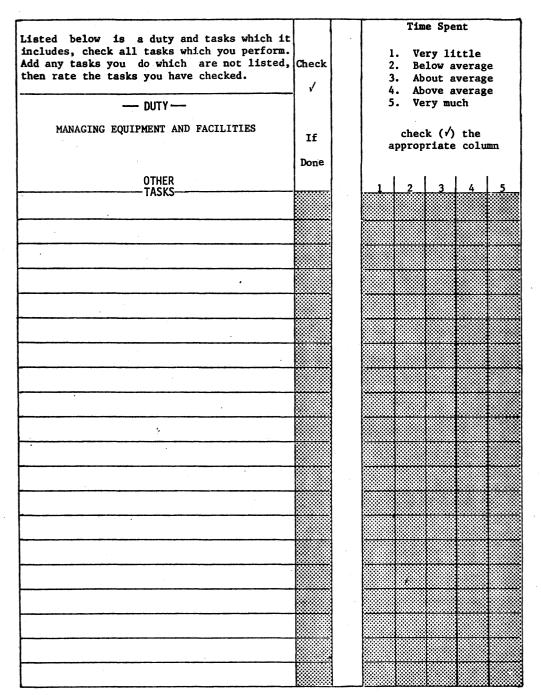
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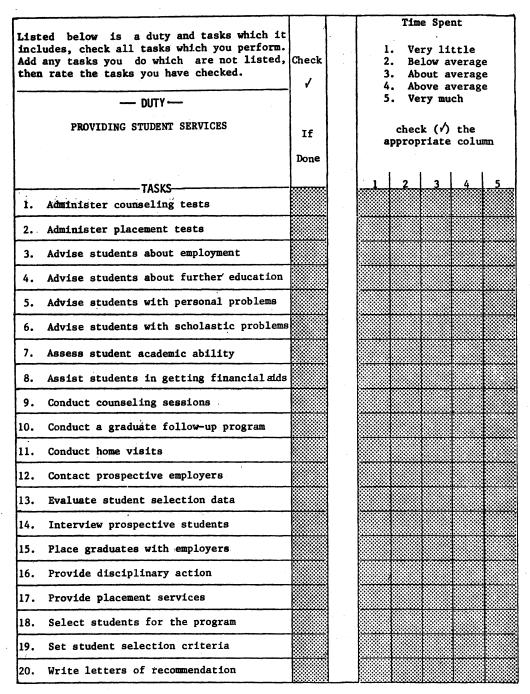
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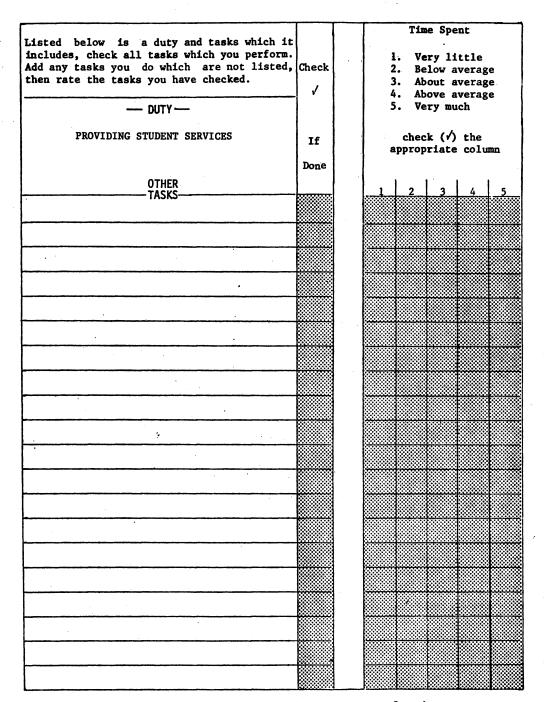
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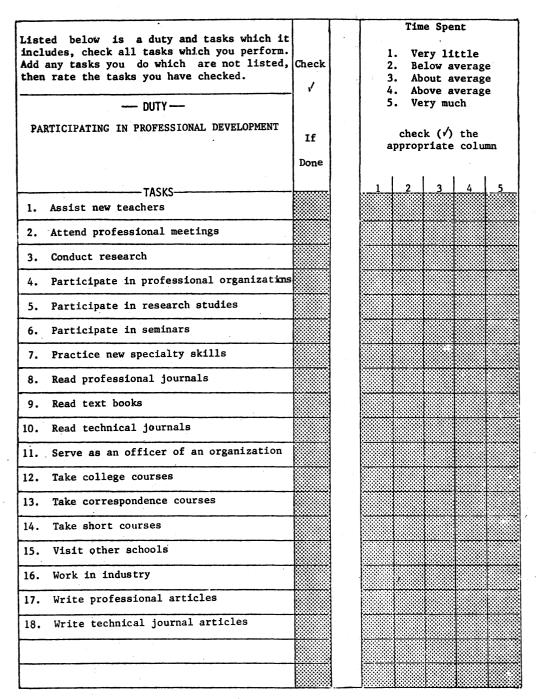
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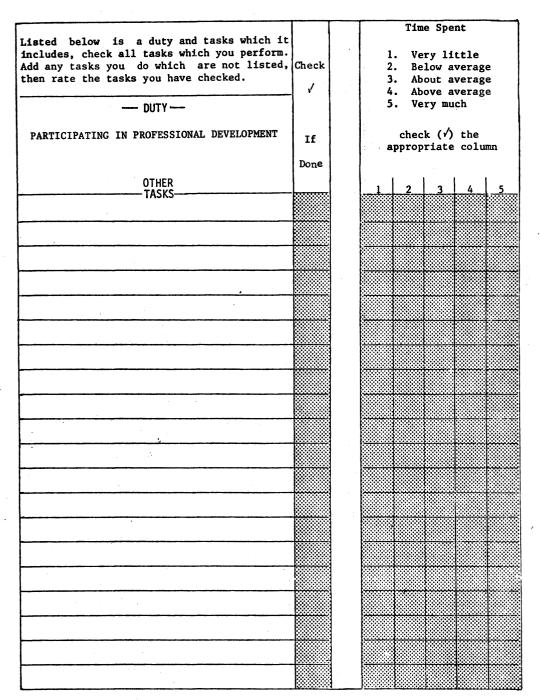
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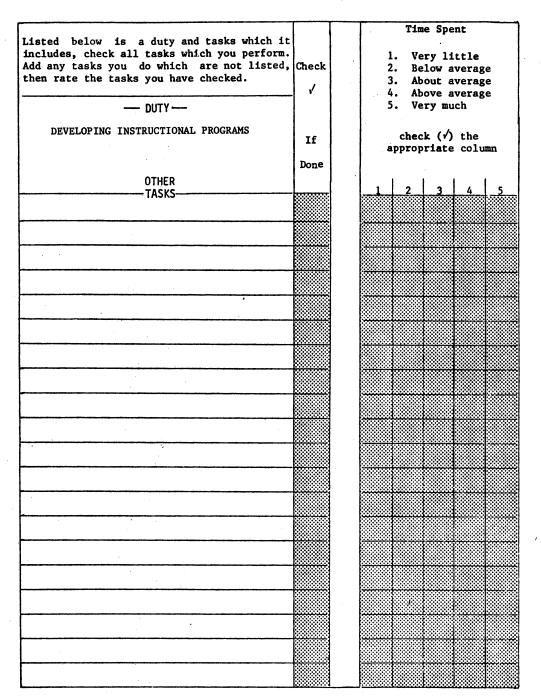
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Please rate by TIME SPENT rather than importance of task

| Listed below is a duty and tasks which it includes, check all tasks which you perform. Add any tasks you do which are not listed, then rate the tasks you have checked. —— DUTY—— DEVELOPING INSTRUCTIONAL PROGRAMS | 1 1 | 1. Very little 2. Below average 3. About average 4. Above average 5. Very much check (/) the appropriate colum | | | | | | |
|---|------|--|--|--|--|---------|--|--|
| TASKS | Done | appropriate column | | | | | | |
| 1. Adapt occupational surveys to local needs | | | | | | | | |
| 2. Analyze occupational clusters | | | | | | | | |
| 3. Assess relevancy of program offerings | | | | | | | | |
| 4. Conduct occupational needs surveys | | | | | | | | |
| 5. Determine staff and faculty requirements | | | | | | | | |
| 6. Establish program goals | | | | | | | | |
| 7. Examine curricula of other schools | | | | | | | | |
| 8. Identify appropriate program content | | | | | | | | |
| 9. Identify entry level skills | | | | | | | | |
| 10. Make job analyses | | | | | | | | |
| 11. Meet with advisory committees | | | | | | | | |
| 12. Organize advisory committees | | | | | | | | |
| 13. Plan advisory committee meetings | | | | | | | | |
| 14. Read curriculum research reports | | | | | | | | |
| 15. Read vocational education needs surveys | | | | | | | | |
| 16. Select programs to be offered | | | | | | | | |
| 17. Sequence courses within the program | | | | | | | | |
| 18. Serve on a curriculum committee | | | | | | | | |
| 19. Write program objectives | | | | | | | | |
| 20. Write proposals for funding | | | | | | | | |
| Zu. witte proposate for tanging | | | | | | | | |

Please rate by TIME SPENT rather than importance of task



Please rate by TIME SPENT rather than importance of task

| Listed below is a duty and tasks which it includes, check all tasks which you perform. Add any tasks you do which are not listed, then rate the tasks you have checked. —— DUTY—— PARTICIPATING IN NON-INSTRUCTIONAL ACTIVITIES | Check ,⁄ | | 3 4 5 | ge ge ge | | | |
|--|-------------|-----|-------------|----------------|-----|-----|-----|
| | | | _ | | 1 _ | i . | 1 - |
| TASKS | | | ******** | <u>2</u> | 1 3 | | |
| 1. Assist with institutional maintenance | | | | | | | |
| 2. Attend civic club meetings | | | | | | | |
| 3. Attend school related social functions | | , | | | | | |
| 4. Chaperon student activities , | | | | | | | |
| 5. Collect money for charities | | | | | | | |
| 6. Collect tickets at school activities | | | | | | | |
| 7. Drive a school bus | | | | | | | |
| 8. Participate in community activities | | | | | | | |
| 9. Prepare news releases | | | | | | | |
| 10. Sell activities tickets | | * . | | | | | |
| 11. Serve on committees | | | | | | | |
| 12. Sponsor student clubs | | | | | | | |
| 13. Visit with other teachers | | | | | | | |
| 14. Work as a consultant | | | | | | | |
| OTHER TASKS | | | | | | | |
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Please rate by TIME SPENT rather than importance of task

APPENDIX B

COVER LETTERS



OKLAHOMA STATE UNIVERSITY · STILLWATER

Department of Technical Education Classroom Building 406 (405) 372-6211, Ext. 6287

74074

October 16, 1974

Name Institution Address City, State, Zip Code

Dear (Name):

Enclosed are the task inventory booklets that J. D. Wilhoit discussed with you a short time ago.

We would sincerely appreciate it if you would distribute them to the appropriate faculty members. As you will note in the cover letter attached to each booklet, the faculty members are instructed to return them to you after completion. To make getting them back to us more convenient we are also enclosing a stamped return envelope.

We very much appreciate your help in collecting this data and hope it isn't overly troublesome.

Cordially,

Donald S. Phillips Head, Technical Education Oklahoma State University

Enclosures



OKLAHOMA STATE UNIVERSITY . STILLWATER

Department of Technical Education Classroom Building 406 372-421; Ext. 6287

74074

October 16, 1974

Professor (Individual's Name) School of Technology Oklahoma State University

Dear Professor (Last Name):

We need your help! We are conducting a study that we believe you will find interesting and helpful to your profession. We are attempting to assemble and validate a list of jobs and tasks performed by professional occupational teachers.

The information we are seeking will be used in two current projects being conducted by J. D. Wilhoit and Dick Tinnell. We will use this information to revise existing teacher education curricula in order to improve the quality of training programs being offered for persons in our profession.

What we are asking for is a little of your time, and the results of your experience on the job; to review the enclosed task inventory for occupational teachers. Only you can tell us whether these lists are complete and accurate.

Please fill out the brief professional information page and follow the directions for checking and rating the tasks on the list. You will notice that the inventory booklet is numbered. The number is only for our use in follow-up and in accounting for the booklets. Your name will be held in the strictest confidence and will not be associated with the results.

We are depending on you to provide us with the necessary information for improving our teacher education program. Please complete the inventory TODAY and return it in the enclosed campus envelope.

It will take you about one-half hour.

Very sincerely,

Donald S. Phillips Head, Technical Education Oklahoma State University

Enclosures

ATIV

Richard William Tinnell

Candidate for the Degree of

Doctor of Education

A TASK INVENTORY OF TECHNICAL TEACHERS IN OKLAHOMA Thesis:

Higher Education Major Field:

Biographical:

Personal Data: Born in Lawton, Oklahoma, January 31, 1934, the son of Mr. and Mrs. J.M. Tinnell.

Education: Graduated from high school in Oklahoma City, Oklahoma, in 1953; graduated from the Oklahoma State University, Technical Institute in 1955 with an Associate Degree in Electronics; received a Bachelor of Science from Oklahoma State University in 1963 with a major in Technical Education; completed requirements for the Master of Science degree in Technical Education in August, 1969.

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