

COMPETENCIES FOR INSTRUCTORS OF THE
NEEDLE TRADES

By

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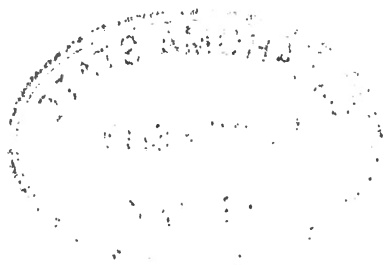
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CHAPTER I

INTRODUCTION

Competency-based education has been developed to individualize learning through evaluation and identification of distinct goals. Acceptance of this instructional theory has been widespread due to favorable findings of recent research on the concept. Traditional teacher training is one area that has been modified by implementing competency-based education. Houston (1976, p. 1) indicates, where competency-based instruction has been adopted by professional education programs, that educators are "more likely to teach relevant objectives if their best efforts have served to specify the most appropriate approximation of the model professional."

According to the American Home Economics Association (1974, p. 1) "there are strong indications that competencies are becoming a major basis for determining the effectiveness of professional programs in assessing the professional's job performance." Administrators desiring to adopt competency-based education have been able to use the extended research and testing models that have occurred in similar institutions. Knowledge and teaching tasks essential for individual programs need to be identified and evaluated by experts in the specific area.

In home economics education a number of areas exist where teaching competencies have not been identified. The needle trades are one such

area where competency-based teacher education could be readily implemented. Teacher education for needle trades has occurred at the college level in home economics, or within industry through job experience.

Drawbaugh (1977) indicated that

vocational educators operate almost wholly in a world separate from that of industrial trainers; it is therefore important that they understand the differences as well as similarities between the two worlds. If the resources of one are to complement those of the other, the differences and similarities of the two become significant factors (p. 27).

Identification of the competencies for teacher education as seen by the occupational (or vocational) and industrial instructors will be a basis for implementing competency-based teacher education.

Purpose

The purpose of the study is to identify and compare the competencies needed to teach the needle trades as prioritized by instructors of needle trades in occupational programs and in industry. The information obtained will be used to make recommendations to the Clothing, Textiles and Merchandising Department for developing a unit on needle trades to be offered at Oklahoma State University.

Objectives

The specific objectives of the study are as follows.

1. To identify a list of entry-level competencies for needle trades instructors based on responses of occupational and industrial instructors.

2. To compare competencies needed to teach the needle trades as viewed by instructors in occupational education and instructors in industry.

3. To develop priority rankings among the identified competencies.

4. To make recommendations from the prioritized list of competencies for a needle trades unit at Oklahoma State University.

Hypotheses

The following null hypothesis will be tested:

H_1 : There will be no significant difference between the rating of competencies listed for teaching the needle trades by industrial instructors and occupational instructors.

Assumptions

Certain assumptions are acknowledged for the course of the study and are listed as follows.

1. Competency-based education is a viable means of teacher education.

2. Competencies needed can be accurately identified by professional instructors in the field of needle trades.

Limitations

Participants in the study are limited to the instructors in Oklahoma who are teaching or supervising needle trades instruction in occupational education or in a selected number of industrial plants. The time for the study is limited to the 1979-80 academic year.

Definitions

The following definitions of terms are used in the study.

Competency - "An attitude, behavior, skill, or understanding demonstrated by a participant at a specified performance level" (American Home Economics Association, 1974, p. 4).

Instructor - One who imparts knowledge to another by supervision and direction (Collier, p. 15).

Needle Trade Occupations - Occupations concerned with laying out, marking, and cutting materials; handsewing or machine sewing parts of mass produced products, such as ready-to-wear apparel; fitting and stitching made-to-measure garments and accessories (U.S. Department of Labor, 1977, p. 770).

Occupational Education - An organized sequence of learning experiences consisting of vocational theory, practice, and skill for students on a regular or systematic basis (State Department of Education, 1978, p. 15).

Profession - A calling requiring specialized knowledge and often long and intensive academic preparation (Webster's New World Dictionary, 1979).

Skills - Logically related set of observable actions which contribute to a job objective (Clothing, Apparel and Textile Services, 1974, p. 8).

Vocational and Technical Education - That part of a person's education that trains him to make a contribution to his own well being and to society through training for success in employment. It is more than training for a job, but it does not equal preparation for a profession (Fleck, 1966, p. 22).

CHAPTER II

REVIEW OF LITERATURE

The study deals with competency-based teacher education for instructors of the needle trades. Four major areas were reviewed and discussed: competency-based teacher education; occupational (or vocational) education; the needle trades industry; and the research design technique.

Competency-Based Teacher Education

Educators have been studying the need for competency-based teacher education (CBTE) for a number of years. This developed out of a need for program accountability and evaluation of educators (American Home Economics Association [AHEA], 1974; Harris and Finch, 1976; Miller and Roehrich, 1978). The evaluation of teachers as professionals seemed to be of widespread concern. Harris and Finch noted that the methods of instruction were in a period of change with earlier innovations spurring the development of CBTE to meet the demands of accountability for cost-effective schooling and relevance. They discussed the dissatisfaction that existed with programs in colleges for teacher education. The trend for education in the 1970's seemed to be more field-oriented, which allowed teachers the opportunity to actually work in the area in which they were preparing to instruct. The basis for competence was in the actual learning and doing of that task (Hamilton and Fardig, 1976).

Miller and Roehrich (1978) discussed the professional teacher and the trend toward the development of standards for evaluation of all professionals. They noted that teacher educators to date were generally not involved in establishing job requirements as are most other professionals. Hamilton and Fardig (1976) developed CBTE one step further. They studied performance-based programs which allowed for the educator to demonstrate and perform those essential competencies in an actual classroom situation. The program could then be evaluated as well as the educators' performances.

Another concept on which CBTE could be developed is that specific performance objectives and criteria were designed and controlled by representatives from education at college or university levels, professional teacher organizations, and the particular school involved. This allowed teachers in the field to use their teaching experience to design what should be the basis for educational materials for future instructors. "One justification for starting with competencies is precisely that this point of departure avoids philosophical disagreements that impede progress" (Dressel, 1971, p. 283). In this manner, CBTE allowed for the development of a teacher education program that was based on delineated goals and objectives (AHEA, 1974). According to Dressel (1963, p. 10), "an objective states a desired outcome of education." He discussed the concept further and stated that "objectives, in contrast with purposes, are more explicit statements descriptive of the competencies and the traits which a program purports to develop in students" (p. 15). Research indicated that individuals strive to achieve goals or objectives that are clearly identifiable and consistent (Chickering, 1976; Hamilton and Fardig, 1976).

Chickering (1971), in his book Education and Identity, described the areas into which competencies may be divided. He pictured competence like a three-tined pitchfork with the tines being intellectual competence, physical and manual skills, and interpersonal competence. The handle of the fork was the sense of competence. Chickering discussed at length intellectual competence. In the development of college curriculum, intellectual competence appeared to be more widely studied, developed, and tested. Chickering continued that although much time has been spent on intellectual competence, the actual retention factor following graduation had not been solidly evidenced. He indicated that the "sense of interpersonal competence develops through effort and efficiency in human interaction" (Chickering, 1971, p. 33).

Lee and Dressel (1963) discussed curriculum development at the college level. According to their findings, curriculum developed with the proper objectives would provide basic experiences needed for beginning a practice following graduation. These objectives were planned to give the student a sufficient body of knowledge to build confidence in his or her own ability and allow for further professional growth through additional individual study and instruction. Dressel (1971) also discussed the need for establishing what specific results were desired of any educational program prior to curriculum development. He stated that any program lacking clear objectives would be again based on tradition and personal preference.

According to Kay and Rosner (1973), 600 institutions were developing CBTE programs. They accounted for this widespread adoption by stating that "CBTE offers (the promise) for expanding the knowledge-about-teaching base and for establishing teacher education on firm theoretical

and empirical grounds" (p. 47). Blankenship (1976) indicated that CBTE could be implemented into universities either gradually or by developing the entire program at once. Once the need for CBTE was shown, she discussed the steps that could be taken to implement a program. The first step was to identify the competencies needed for teachers. Recommendations were to completely develop a CBTE program before any implementation. "It is important that the preliminary identification of competencies not be done in a haphazard way" (p. 104).

Houston (1976) outlined five approaches for teacher competencies: 1) reformulating current courses based on teacher observation and analysis of teaching tasks; 2) establishing desired pupil outcomes; 3) defining an effective teacher; 4) identifying several curriculum areas; and 5) reducing teacher competencies to behavioral objectives. Determination of the procedure best suited for individual universities will depend on cost, time, and available resources.

Occupational Education

According to Hawkins, Prosser, and Wright (1951, p. 2)

vocational education made early beginnings among the races of mankind. The early aspects of vocational or occupational training were that of youth receiving training through either a natural outcome of family living or by studious observation of other adult members in the social group.

A more modern description by Evans (1971, p. 1) "is that part of education which makes an individual more employable in one group of occupations than in another."

Evans (1971) discussed the educational background of the occupational and vocational instructor. He noted that usually the state board

of education directly controls the number of new teachers to be certified as occupational instructors rather than the certification board of the state department of education or on a local district basis.

This gave the state direct control of the quality of what was expected of occupational instructors. According to Miller and Roehrich (1978)

Officials in state departments of education who have some responsibility for employment or certification of new vocational teachers express concern about the teacher education process. What troubles them is that the completion of a traditional baccalaureate degree program in vocational teacher education does not necessarily ensure teaching competence, which initial certification implies (p. 21).

Evans (1971) pointed out that occupational programs fail to do more for youth, especially those with special needs, due to a shortage of educators that are prepared to meet the demands of youth in occupational programs. "Assuring effective learning (for educators) is especially vital to a program designed to prepare young people for future occupations" (Schaefer, 1971, p. 135). One of the six steps listed by Evans for improving the quality of education was to make pre-service education the responsibility of the university with local and state education agencies being actively involved.

Moss (1971) stressed that

It is important for adequate beginning-level role performance that the pre-service education of vocational teachers, particularly of career-oriented personnel, develop the professional training skills that will permit student behavior modification in accord with prespecified objectives (p. 42).

Moss proposed that competency identification for pre-service occupational teacher education programs be made clear by listing the anticipated occupational setting and mission, identifying teacher roles, categorizing roles by career or non-career oriented, describing the competencies, and recognizing the emphasis of the types of competencies.

Evans (1971) listed two types of pre-service teacher education programs that were used. He noted that both processes assumed that subject matter either will be learned during employment in the occupation or learned in a university. Schaefer (1971) reported that teacher training programs are sterile, uninspiring, and lacking in the ability to individualize to meet the needs of future instructors. Roehrich and Miller (1978) stressed that the American society is mobile and that teachers are perhaps more mobile than most professionals. Certification of instructors was a problem when teachers crossed state lines because most states do not require the same amount of occupational experience.

Welch and Garner (1976) studied the educational background of teachers to determine the type of pre-service training that would best suit occupational institutions. They studied the concept that most of the time it was assumed that older persons with more years of work experience would best be able to teach in their respective fields. They found that although "work experience is not detrimental neither does it indicate superiority" (p. 35). In this study it was found that skilled craftsmen sent into the classroom could not teach their own skill due to a lack of teaching methods. They concluded that the primary emphasis for any teacher education program should be to offer adequate pre-service training prior to entering the classroom and that "work experience should be given a realistic rather than idealistic status as a prerequisite for both the certificate and baccalaureate programs" (p. 35).

Apparel Industry

The future for the apparel industry was described by the Marketing Committee of the American Apparel Manufacturers' Association in their publication Focus by Priestland (1979). The apparel industry employed 1.3 million workers with women making up four out of every five employees, or approximately 80 percent of the total. One-fifth of all working women employed in manufacturing were working in the apparel industry. The average wage was \$3.62 per hour, and primarily determined on a piecework basis; thus, the wage was dependent upon the employees' skill and speed. According to Ragland (n.d.) nearly all employees hired by the apparel industry work on industrial sewing machines.

The U. S. Department of Labor (Occupational Outlook Handbook 1978) indicated that the apparel industry was expecting a rate of growth that will match that of the average for all industries through the mid-1980's. With the advancement of technology and labor saving equipment, the need for manual labor was decreasing in many areas of manufacturing. The Bureau of Labor predicted that apparel manufacturing would not be affected by this trend as much as other industries due to the varieties of items produced as well as the seasonal style changes that occurred in the clothing area. Therefore, the apparel industry would still require much manual labor with most of the employment opportunities being for industrial sewing machine operators.

The U.S. Department of Labor (1978) bulletin, Occupational Outlook Handbook, reported studies of the apparel job market. It was determined that most of the apparel workers learn their job skills

through observation and assistance. This process may take anywhere from a few weeks to several years, depending on the 1) occupation within apparel manufacturing, 2) the attitude of the individual worker and 3) the method of instruction used by the employer. They further explained that many employees take courses for specific tasks at private and public schools in the geographic areas where apparel manufacturing was prevalent. It was noted that an increasing number of employees were receiving prior training in high schools and vocational schools. Contrary to the findings of the U.S. Department of Labor, Archer (1975) concluded that the majority of the applicants for production work had no formal training and therefore needed some type of training. Gillespie (1978, p. 106), in his study, concluded that "it is a reasonable supposition that more money is spent on operator training than any other aid to plant efficiency." He cited \$1,000 to \$2,000 or more as the cost to a plant for the training of an operator within the plant. Gillespie indicated that one reason for this high training cost was due to inefficient programs because of the plant's failure to define the training goals.

Due to the large number of sewing machine operators required for apparel manufacturing, the Department of Labor noted that larger companies had special courses within their own plants for sewing machine operators. In these courses the operator was taught to perform each task with minimal finger, arm, and body movement. The ability for a sewing machine operator to perform each job as rapidly as possible is essential, "since nearly all sewers are paid by the number of pieces" (U.S. Department of Labor, 1978, p. 639). Also listed in this

handbook was the desirable characteristics for satisfactory job performance in the cutting room and for pattern makers. These were: cutting room (bundlers and fitters)--speed, patience, ability to match colors; pattern makers--visualize from a sketch or model the size, shape, and number of pieces required for a particular garment; knowledge of fabrics; body proportions; and, garment construction. They also indicated that "for beginning tailoring and dressmaking jobs, many employers prefer to hire vocational school graduates who have had courses in these subjects" (U.S. Department of Labor, 1978, p. 640).

Apparel Industry in Oklahoma

The Oklahoma Employment Security Commission (1978) studied the present and future employment in the Oklahoma apparel industry. The commission grouped the apparel industry under the major heading of "operations for blue collar workers." This area included a broad range of blue collar workers with "jobs from assembling goods in factories to . . . operating certain types of machinery" (p. 7). It was predicted that by 1981 this group of workers would be the second in size to clerical workers with 8,000 job openings per year.

Table I presents past and predicted employment records for each division for apparel manufacturers as computed by the Oklahoma Employment Security Commission (1978, pp. 21-23). The table indicates that the number of people employed in all areas of the apparel industry were predicted to increase by the year 1981 with the highest percent of increase being seen in the cutting operatives for the bias machine operator. Ironers had the lowest predicted increase for the industry.

TABLE I
OKLAHOMA APPAREL INDUSTRY EMPLOYMENT FORECAST

	1976 Employment	1981 Employment	1976-81 Change (Employ.)	1976-81 Change (Percent)
Cutting Operatives				
Bias Machine Operator	115	174	59	51.30
Ironers and Pressers	1,738	1,778	40	2.30
Sewers and Stitchers				
Mender	116	112	-44	-3.45
Sewer, Regular Equipment	7,140	7,888	748	10.47
Garment Repairers	37	41	4	10.81
Sewer, Special Equipment	596	658	62	10.40
Total	9,742	10,651	909	13.64

In Oklahoma there were approximately 76 apparel manufacturers listed in the Oklahoma Directory of Manufacturers and Products, 1976, with a total employment of 12,000 persons. These plants tended to employ 20-99 workers each (Department of Labor, 1969).

Plant managers in Midwest City, Oklahoma (Hillinghead, 1979), Pawhuska, Oklahoma (Blue, 1980), and Durant, Oklahoma (Leasley, 1980) reported that their biggest expense stemmed from the cost of training sewing machine operators and the high turnover rate. This confirmed the previous quote by Gillespie (1978, p. 106) that "more money is spent on operator training than any other aid to plant efficiency." Plant managers reported that their training programs were supervised by the senior operator of each division in the plant and that most of the training was on-the-job. They also indicated an interest in interviewing and possibly hiring those applicants who had completed course work in apparel manufacturing.

Delphi Technique

The Delphi technique was developed as a "method of eliciting and refining group judgment" (Dalkey, 1969, p. V). This group judgment could be obtained from participants of a group through a series of questionnaires. The principle on which Delphi operated was that "age old adage, 'Two heads are better than one' when the issue was one where exact knowledge is not available" (Dalkey, 1969, p. V).

Delbecq and Van de Ven (1974) conducted a study to test and compare the effectiveness of three methods for group decision making. They compared the conventional interacting, or discussion group, the nominal group technique, and the Delphi technique. They found the Dalkey Delphi technique was best for situations where the cost and inconvenience of bringing people together face-to-face is very high, and for problems that do not require immediate solution" (p. 620).

The Delphi method eliminated the possibilities of group bias. According to Weaver (1971), the Delphi method had "been justified primarily on the grounds that it prevents professional status and high position from forcing judgments in certain directions as frequently occurs when panels of experts meet" (p. 267). Through individual response the participants were able to formulate their ideas on paper, then evaluate and react to their ideas as well as those of the group. Dalkey (1969) found that the group estimates when using the Delphi technique were more accurate than those responses when using face-to-face discussion. "Delphi replaces direct confrontation and debate by a carefully planned, anonymous, orderly program of sequential individual interrogations" (Brown, Cochran, and Dalkey, 1969, p. 1).

CHAPTER III

RESEARCH METHOD AND PROCEDURES

The purpose of the study was to identify and compare the competencies needed to teach the needle trades as prioritized by occupational and industrial instructors. The information obtained will be used to make recommendations to the Clothing, Textiles and Merchandising Department at Oklahoma State University, for a unit on needle trades.

Type of Research Design

Collection of the data for the study was accomplished by use of a modification of the Delphi technique. Three sequential mailings were made to the participants of the study in order to identify priority ranked competencies for instructors of the needle trades.

Population and Sample

The occupational instructors teach many different occupational skills throughout the United States. The occupational program has been widely accepted, with states adapting the program to best suit their needs for future employment of graduates. In Oklahoma a list of instructors was obtained from the State Education Department. From this list a group of participants was identified for use in the study. The criteria for selection of the occupational group was that they must

have specific duties for teaching the needle trade skills to high school age students. The selection was accomplished by contacting those participants who met the criterion, explaining the program and inviting them to participate in the study.

All of the occupational instructors involved with teaching the needle trades in Oklahoma were contacted to participate in the study. This involved 19 occupational instructors. Seventeen occupational instructors responded to Delphi Form No. I. Two occupational instructors said that they did not have the time to participate in the study. Therefore, Delphi Form No. II was mailed to 17 occupational instructors. Sixteen of the 17 returned Delphi Form No. II. The one participant not responding to the form said that Delphi Form No. II was too lengthy. Delphi Form No. III was mailed to the remaining 16 occupational instructors. Only 15 of the 16 returned this last form. An attempt was made to contact the one participant who did not respond but she had evidently moved away. From the original 19 occupational instructors invited to participate, a total of 15 (79 percent) finished the study.

The list of apparel manufacturers in Oklahoma was reviewed for number of employees. Research indicated that plants with a greater number of employees were more likely to have a type of employee training program. The researcher started a list of participants beginning with the manufacturers with the largest number of employees and working down. Forty-one apparel manufacturing managers were invited to participate in the study. Fifteen industrial instructors returned Delphi Form No. I. Some of the managers contacted did not wish to participate due to the lack of a structured employee training program or a lack of time to complete the forms. Fifteen industrial instructors were mailed

Delphi Form No. II with 12 returning this second form. The three who did not respond said that they were not able to find the time to complete this second form. Therefore, 12 industrial instructors received Delphi Form No. III. All 12 of these forms were returned. From the original 41 industrial instructors contacted to participate, a total of 12 (29 percent) finished the study.

A total of 60 instructors (both industrial and occupational) were originally contacted to participate in the study with 32 participants (53 percent) returning Delphi Form No. I; 28 participants (47 percent) returning Delphi Form No. II; and 27 participants (45 percent) returning Delphi Form No. III.

Description of the Instrument

The Delphi instrument was selected due to the nature of the study. A modification of this procedure made it possible to derive a list of competencies for instructors in the needle trades as viewed by experts in the field without bringing the participants together. Three sequential mailings were made to the instructors to obtain the prioritized competencies for the teaching of the needle trade skills.

The following forms were used to accomplish the purposes of the research:

Delphi Form No. I--Each participant was requested to list competencies he or she thought best described what an instructor of the needle trades should possess (see Appendix A).

Delphi Form No. II--Each participant was asked to rank by order of priority a composite list of all responses from Delphi Form No. I. A six point scale was used ranging from most important (one) to least

important (six) (see Appendix B).

Delphi Form III--Only the competency statements that ranked as first or second priority from Delphi Form No. II were listed. The participants were asked to confirm the prioritized list of competencies. Any revisions in their opinion could be made and reasons for the change were listed (see Appendix C).

The three Delphi forms were reviewed for clarity by graduate students in Home Economics and selected Oklahoma State University Home Economics faculty. Revisions were then made based on the recommendations received.

Collection of Data

Delphi Form No. I

This form was mailed to 19 occupational instructors and 41 industrial instructors, together with a letter explaining the general plan of the study, why they were selected to participate and a self-addressed stamped return envelope. The participants were requested to write the competencies that they felt were necessary for instructors of the needle trades (Appendix A). The instrument was coded to enable the researcher to record returned forms as well as for keeping the occupational and industrial groups separate for the first analysis. A reminder and duplicate questionnaire (Appendix A) were mailed to all participants who did not respond within 10 days. If no response was received in an additional seven days, a telephone call was placed to the participant.

A total of 240 competencies were returned from 32 participants completing Delphi Form No. I. Due to the large number of competencies and the possible duplication of concepts, an ad hoc committee of experts was formed to consider all competencies listed that were duplicates or contained like concepts. This committee consisted of a State Occupational Home Economics Administrator, a representative from the apparel manufacturers, and an Oklahoma State University home economics teacher educator.

The committee met with the researcher following receipt of 53 percent of the Delphi Form No. I's having been returned by the participants. The researcher began the meeting with an explanation of the purpose and objectives of the study and what tasks needed to be completed by the committee. Each committee member was given a list of 240 competencies on individual gummed labels. First, they were instructed to individually group similar competencies. Second, they discussed the groupings determined by each committee member, derived a list of 10 subject categories: 1) teaching skills; 2) interpersonal skills; 3) production knowledge; 4) machine knowledge; 5) sewing skills; 6) general knowledge; 7) other skills; 8) management knowledge; 9) employability skills; and 10) safety skills. These 10 subject matter categories were used throughout the remainder of the study. Third, the committee examined each group of competencies for statements that were similar in meaning. Fourth, they selected from the similar statements, the most clearly stated competency. They eliminated the other statements which were duplicates. The Ad Hoc Committee was not allowed to reword the competencies.

Following these deliberations, the committee recommended a total

of 191 competencies be used on Delphi Form No. II. The committee recommended that the participants be instructed to rank 25 statements for top and second priority, with 15 being of top priority ranking and 10 of second priority ranking.

The competencies were then alphabetized to be listed on Delphi Form No. II. This was done in order to eliminate researcher bias. Each competency was numbered, with this number being used throughout the study for easy identification.

Delphi Form No. II

Delphi Form No. II was mailed to the 32 participants along with a cover letter. The participants were asked to priority rank each statement on a six point scale with number one (1) being of most importance and number six (6) as least important. Instructions to the participants in the cover letter, as well as on the second form, were to rank no more than 15 responses as top (1) priority and no more than 10 responses as second (2) priority. There was no limit to the number of three, four, five, or six ratings that each participant could circle. This followed the recommendations of the ad hoc committee.

Statistical Analysis of Delphi Form No. II

Mean scores for each competency by instructor group were computed by adding the priority ratings for that competency and dividing by the number of participants of that group who responded. A pooled mean was also calculated for each individual competency by adding all priority ratings of that competency and dividing by the total number of participants.

The pooled mean score was used to determine the top and second priority competencies. The lower the mean score the more important the competency was rated by participants. The competencies with a pooled mean less than or equal to 2.3 were rated as top priority statements and those with a pooled mean greater than 2.3 but less than or equal to 2.5 were rated as second priority.

Analysis of Variance (AOV) was used to determine if there were significant differences between the means. The AOV model included the group (occupational or industrial instructor), the category (subject area), and interaction of group and category. The .05 level of confidence was selected to determine statistical significance.

Delphi Form No. III

Twenty-five competencies of top and second priority ranking were listed on Delphi Form No. III and mailed to 27 participants. These competencies were listed in numerical sequence from the first form and grouped with the 15 top priority rated competencies together and the 10 second priority rated competencies together (Appendix C). The number of one (1) and two (2) ratings that each competency received on Delphi Form No. II were totaled for all participants. These sums were then divided by the total number of participants in that group. The corresponding percentage was listed for each of the 25 competencies on the third form under the column heading of "Percent of Agreement." This score gave the respondents an insight into the actual number of participants who agreed with the top and second priority ratings following the second form.

The instructions for the third form asked that the participant read through the competencies and the check () "yes" or "no" depending on their agreement or disagreement with the group consensus. If the respondents disagreed with any of the competencies listed on the third form, they were asked to list their reasons in the last column.

Statistical Analysis of Delphi Form No. III

To test the null hypothesis a normal deviate z was computed (Snedecor and Cochran, 1978, pp. 220-221). The null hypothesis was:

H_1 : There will be no significant difference between the rating of competencies listed for teaching the needle trades by industrial instructors and occupational instructors.

The pooled proportion (P) of the two groups of "yes" responses for each competency was computed with the following formula:

$$P = \frac{N_1 \cdot P_1 + N_2 \cdot P_2}{N_1 + N_2}$$

P_1 = Proportion of Group 1 (number of "yes" responses in Group 1 divided by the number of respondents in Group 1).

P_2 = Proportion of Group 2 (number of "yes" responses in Group 2 divided by the number of respondents in Group 2).

N_1 = Number of respondents in Group 1.

N_2 = Number of respondents in Group 2.

After computing this pooled proportion (P) for each competency listed on Delphi Form No. III, the average proportions were compared by group using the following formula for each competency:

$$z = \frac{P_1 - P_2}{\sqrt{P(1-P) \left(\frac{1}{N_1} + \frac{1}{N_2} \right)}}$$

The computed z-values were compared with the theoretical z-value using a level of significance of .05 for a two-tailed test. If the computed z-values were less than the theoretical z, then there was no significant difference between the ratings of the competencies by instructor groups.

CHAPTER IV

FINDINGS

This chapter contains the findings from three sequential Delphi instruments. The information and evaluation from Form No. I were discussed. The statistical results from Delphi Form No. II and III have been presented and any significance discussed and evaluated.

Description of Sample

The sample was comprised of occupational and industrial instructors presently employed in Oklahoma. The occupational instructors had specific duties for teaching the needle trade skills to high school age students. Nineteen instructors from the occupational group were invited to participate in the study; a total of 15 (79 percent) finished with the project. The apparel instructors invited to participate had a type of entry-level employee training program. Forty-one instructors from the industrial group were invited to participate, a total of 12 (29 percent) completed the study. A total of 60 instructors were mailed Delphi Form No. I, with 27 participants (45 percent) completing and returning the final form.

Delphi Analysis

Three sequential mailings were made to occupational and industrial instructors. The forms used were titled: Delphi Form No. I, Delphi Form No. II, and Delphi Form No. III.

Delphi Form No. I

The instructions included with the first form requested that each participant list six to ten endings to the following statement:

Competencies needed by instructors in the needle trades
to teach or supervise entry-level students are:
(Appendix A).

Seventeen occupational (89 percent) and 15 industrial (37 percent) instructors returned Delphi No. I; the 32 participants (53 percent) who returned the first form listed a total of 240 competencies. An ad hoc committee met to eliminate duplications, similarities, and made recommendations for grouping the competencies into subject categories. The committee recommended 10 categories. They eliminated 49 competencies, leaving a total of 191 competencies to be listed on Delphi Form No. II. The committee agreed that a total of 15 (8 percent) of the competencies should be rated as top priority and a total of 10 (5 percent) should be rated as second priority ranking.

Delphi Form No. II

The instructions included with the second form requested that each participant priority rank each competency on a six-point scale with one (1) being of top priority and six (6) being least important. A total of 15 competencies could be ranked by each participant as top priority and 10 ranked as second priority items (Appendix B).

The form was returned by 12 industrial (29 percent) and 16 occupational (84 percent) instructors, giving a total of 28 participants (46 percent). The 191 competencies as grouped by subject matter category are listed in Appendix D. Each competency retained the original

numerical sequence from Delphi Form No. II for easy identification. The score for each competency was computed from the ratings or priority rank of the occupational group, the industrial group, and the pooled ratings.

Analysis of Statistical Data for Delphi II

Table VI (Appendix D) indicates which competencies ranked as top and second priority ranking according to the pooled score. The lower the score the more important the competency. The competencies with a pooled mean score of 2.5 or less were selected to be used of Delphi Form No. III.

The number of competencies rated as top or second priority in each category are shown in Table II. The percentage of the total 25 competencies within which each represents is also indicated. The teaching skills and interpersonal skills areas accounted for 64 percent of the total number of top and second priority rankings. The other areas contained a small percentage, with machine knowledge and safety skills having a zero percent value.

Mean scores for the subject categories by instructor group were computed and are shown in Table III. The mean for the occupational group was lower than the mean for the industrial group for all subject categories except Interpersonal Skills and Management Skills. The standard deviation of the industrial group was consistently higher than the occupational group, which indicated less agreement within the group.

Both groups rated the categories of Teaching Skills and Interpersonal Skills as important, as can be seen from the low mean scores. The category of "Other Skills" was also rated as important, but this group had a very low N (N=3).

TABLE II
NUMBER OF TOP AND SECOND PRIORITY COMPETENCIES
WITHIN SUBJECT CATEGORIES

Subject Matter Category	Priority Competencies	
	\bar{X}_1	%
Teaching Skills	8	32
Interpersonal Skills	8	32
Production Knowledge	1	4
Machine Knowledge	0	0
Sewing Skills	1	4
General Knowledge	1	4
Other Skills	2	8
Management Skills	3	12
Employability Skills	1	4
Safety Skills	0	0
Total	25	100

TABLE III
MEAN SCORES FOR SUBJECT CATEGORIES BY
INSTRUCTOR GROUP

Subject Matter Category	Occupational Group		Industrial Group	
	\bar{X}_1	S_1	\bar{X}_2	S_2
Teaching Skills (N=34)	2.77	.41	3.17	.83
Interpersonal Skills (N=28)	2.81	.41	2.58	.68
Production Knowledge (N=35)	3.43	.42	3.94	.74
Machine Knowledge (N=27)	3.28	.42	3.67	.46
Sewing Skills (N=16)	3.10	.47	3.99	.65
General Knowledge (N=21)	3.28	.58	4.37	.85
Other Skills (N=3)	2.55	.48	2.92	.68
Management Skills (N=18)	3.10	.50	2.89	.70
Employability Skills (N=6)	2.87	.64	3.32	1.04
Safety Skills (N=2)	2.79	.21	3.80	.42

Analysis of Variance (AOV) was used to test for significant differences of the mean scores. Difference between the mean scores of the group of occupational and the group of industrial instructors and the differences among the mean scores of the categories were analyzed.

The AOV indicated that: 1) there were significant differences between the mean scores of the occupational instructors and industrial instructors; 2) there were significant differences among the mean scores of the subject matter categories; and 3) there was significant interaction between the mean scores of groups and mean scores of the categories. Table IV presents the AOV with computed F-scores.

TABLE IV
ANALYSIS OF VARIANCE OF MEAN SCORES ON
DELPHI FORM NO. II

Source	df	Sum of Squares	Mean Square	F-Score
Groups	1	13.776911	13.7769109	37.804*
Categories	9	57.628697	6.4021886	17.573*
Groups-Categories	9	18.641144	1.8490160	5.075**
Residual	359	130.790714	0.3643195	

*Significant at .01 level.

**Significant at .05 level.

Delphi Form No. III

The 25 competencies rated as top and second priority were listed on Delphi Form No. III (Appendix C). The form reported the percent of participants who indicated each as top or second priority as computed from Delphi Form No. II. Participants were asked to indicate if they agreed with the consensus of the group. The researcher asked that the participant list on Delphi Form No. III the reason for disagreement. Some of the participants disagreed with the group consensus due to the low "percent of agreement" as perhaps they felt this value should be greater. Other participants disagreed with the group consensus, yet failed to list any type of reason. The statements from the participants who disagreed are recorded in Appendix E.

Analysis of Statistical Data for Delphi Form III

The z-test allows for a comparison of two or more groups given the sample size and the proportions for each independent group. In this study it was used to determine if there were any significant differences between the proportion of agreement of the occupational and industrial groups on each of the top or second priority competencies.

The number of "yes" responses from Delphi Form No. III for each occupational group is listed in Table V. In testing the hypothesis, there will be no significant difference between the rating of competencies listed for teaching the needle trades by industrial instructors and occupational instructors, the computed values listed for each competency were less than the theoretical z-value of 1.96 for a two-tailed test. Therefore, no significant difference was found between the priority

TABLE V
TABLE OF z-VALUES FOR TOP AND SECOND
PRIORITY COMPETENCIES

Competency	Number of "Yes" Responses		z-Test Value
	Occupational (N=15)	Industrial (N=12)	
<u>Top Priority</u>			
5	14	12	-.91
9	14	12	-.91
10	14	11	.16
15	13	11	-.41
16	14	12	-.91
17	14	10	.82
22	13	10	.24
24	14	11	.16
26	14	12	-.91
30	10	10	-.98
32	15	11	1.14
44	14	10	.82
49	14	11	.16
88	13	10	.24
152	13	11	-.41
<u>Second Priority</u>			
14	14	9	1.33
20	14	10	.82
21	14	12	-.91
23	14	12	-.91
63	13	11	-.41
76	11	10	-.62
80	14	11	.16
138	14	10	.82
156	13	12	-1.31
176	15	12	.00

ratings of competencies by the two occupational groups.

Analysis of Top Priority Responses

Twenty-six respondents (96 percent) agreed that six of the 15 competencies should be ranked as top priority. These competencies are listed below in numerical sequence from the original Delphi Form No. II. All competencies used throughout the study are in participants' own words.

- 5. Ability to communicate.
- 9. Ability to relate to students on a personal level and display concern to the individual.
- 16. Attitude.
- 26. Being able to get along with people.
- 32. Competency of the job you are giving instruction or supervising.
- 44. Demonstrates work ethics to students.

Twenty-five respondents (93 percent) agreed that an additional four of the 15 competencies should be ranked as top priority. These statements in addition to the ones mentioned above are:

- 10. Ability to teach another person.
- 24. Be patient and polite, but at the same time have a degree of firmness.
- 49. Emotional adjustment (able to operate under pressure, opposition, and change).
- 88. Instructor needs to be able to use the machines in order to teach the students.

Twenty-four respondents (89 percent) agreed that an additional three of the 15 competencies should be ranked as top priority. These statements in addition to the ones listed above are:

- 15. Always set a good example.
- 17. Be able to handle responsibility well.
- 152. Optimistic and enthusiastic attitude.

Therefore, of the 15 top priority competencies listed on Delphi Form No. III, 24 (89 percent) of the respondents agreed that 13 of the 15 competencies fall into the top priority level. The following two competencies were rated as top priority by the indicated percentage of participants:

- 22. Be happy with what you're doing (85 percent).
- 30. Communicate with students (78 percent).

Analysis of Second Priority Responses

All 27 respondents (100 percent) agreed that one of 10 competencies ranked as second priority. This competency is listed below with the numerical sequence used in the original Delphi Form No. II.

- 176. To have an overall knowledge of clothing construction.

Twenty-six of the respondents (96 percent) agreed that an additional ten competencies ranked as second priority. These statements in addition to the one mentioned above are:

- 21. Be a good listener.
- 23. Be honest with every member of your production force.

Twenty-five of the respondents (93 percent) agreed that an additional two of the ten competencies ranked as second priority. These statements in addition to the ones listed above are:

- 80. How to do something correctly and ability to show that to someone else.
- 156. Planning and organizing ability.

Twenty-four of the respondents (89 percent) agreed that an additional three of the ten competencies ranked as second priority. These statements in addition to the ones listed above are:

20. Be a good judge of what motivates different individuals.

63. Factory methods of sewing.

138. Mental ability (general learning ability).

Therefore, of the ten second priority competencies listed on Delphi Form No. III, 24 (89 percent) of the respondents agreed that eight of the ten competencies fall into the second priority level. The following two competencies were rated as second priority by the indicated percent of participants.

14. Always be available to talk to your workers-- never seem to be "too busy" (85 percent).

76. Have available an industrial machine to train students on the technique of using it (78 percent).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of the study was to identify and compare entry-level competencies needed to teach needle trades as priority ranked by instructors of needle trades in occupational programs and in industry. A review of the literature indicated that competency-based teacher education (CBTE) could be a viable means for planning a curriculum. Prior to implementing a CBTE program, the goals and objectives that were needed to teach the needle trades should be identified. The literature indicated the basis for identification of the methods and procedures to be used in order to reach the goals of the study.

The specific goals of the study were: 1) to identify the entry-level competencies for instructors of the needle trades, 2) to compare competencies between the occupational and industrial instructors, 3) to rate the first and second priority competencies, and 4) to make recommendations for a needle trades unit at Oklahoma State University. To fulfill the objectives of this study, the Delphi technique was selected as the research tool to be used for obtaining the data.

Summary of Findings

In this study the participants identified a list of first and second priority competencies for entry-level teachers of needle trades.

Delphi Form No. I requested that each participant list competencies that they thought best described what competencies were needed by an instructor of the needle trades. Thirty-two respondents returned 240 competencies.

An ad hoc committee met to review the list of competencies. After reviewing the competencies, the committee decided the competencies could be grouped into the 10 following subject categories: 1) teaching skills, 2) interpersonal skills, 3) production knowledge, 4) machine knowledge, 5) sewing skills, 6) general knowledge, 7) other skills, 8) management knowledge, 9) employability skills, and 10) safety skills. They also determined if there were any competencies listed that were the same or similar in meaning. After selecting the most clearly stated competency, the duplications were eliminated. The committee recommended that 191 competencies be included on the Delphi No. II, and that the participants be requested to select a maximum of 15 competencies as top priority ranking and 10 as second priority.

Delphi Form No. II was composed of 191 of the original competencies. Each participant was asked to rank each competency by order of priority. A six-point scale was used, ranging from most important (one) to least important (six). Twenty-eight participants returned the form. The mean scores were computed and used in order to determine the 15 top and 10 second priority competencies.

Delphi Form No. III contained the 25 first and second priority ranked competencies from the second form. The participants were asked to indicate if they agreed that each competency listed should be rated as first or second priority. If they did not agree to the ranking, they were asked to write the reason for the negative response.

Objective one of the study was to identify entry-level competencies for needle trades instructors. This objective was accomplished with Delphi Form No. 1. A total of 191 competencies were compiled and listed by subject matter categories (Appendix A).

The second objective was to compare the competencies listed by the instructional groups and by subject matter categories. Following Delphi Form No. II an Analysis of Variance (AOV) was performed and a significant difference was found between the ranking of competencies by the instructor groups. Significant differences were also found among categories and there was significant interaction among the groups and categories. Following Delphi Form No. III a z-test was used to determine if there were significant differences between the instructor groups on the proportion of "yes" responses. No significant differences were found.

Objective three was to priority rank the competencies and the pooled mean scores from Delphi Form No. II were used to compile the list of 25 first and second priority ranked competencies listed on the third and final form. The competencies with a pooled mean less than or equal to 2.3 were rated as top priority statements and those with a pooled mean greater than 2.3 but less than or equal to 2.5 were rated as second priority. Fifteen competencies were rated as top priority and ten competencies were rated as second priority. The majority of the top and second priority rated competencies were from the subject matters of teaching skills and interpersonal skills. The participants confirmed on Delphi Form III that this list of competencies should be rated as first and second priority.

Objective four was to make recommendations for a unit on the needle trades. The basis for curriculum planning begins with a workable number of goals and objectives. In the case of this study, instructors of the needle trades have identified 25 first and second priority competencies that they thought were needed for instructors of the needle trades (Appendix C).

Conclusions

The following conclusions were based on data collected from needle trades instructors by means of the Delphi technique:

1. Statistical analysis indicates that there was a significant difference between the mean scores of the instructor groups following Delphi II. However, the groups were brought to consensus following Delphi Form No. III. This supports the hypothesis:

There will be no significant difference between the rating of competencies listed for teaching the needle trades by industrial instructors and occupational instructors.

Therefore, the researcher has accepted the null hypothesis made in this study.

2. The Delphi technique was an effective means for identifying a list of first and second priority ranked competencies for needle trades instructors.

3. Recommendations for a unit on needle trades could be made from the list of priority ranked competencies identified by needle trades instructors.

Recommendations

The following recommendations for the Needle Trades Program

Development were made by the researcher:

1. A one semester credit hour unit on the needle trades could be developed from the listed competencies. The researcher recommends that the course be taught by individualized instruction. The students could be encouraged to visit an apparel manufacturing plant prior to or at the beginning of the course. This would give the students an overview of how a plant operates, what was expected of an employee, and what kinds of skills the student will be learning. The objectives of the course should be based on the listed competencies. The competencies have already been divided into subject matter categories which could serve as the basis for planning the course. Sewing skills, production knowledge, and machine knowledge were closely related in content. Those types of competencies could be reached by operating an industrial sewing machine to assemble garments using the mass production method. The student should also be able to make minor repairs on the machine. On the other hand, those competencies grouped under interpersonal skills may be learned in other courses and indirectly related to the needle trades unit. Opportunities should be provided for the students to actually teach skills to each other. This would be one way in which such competencies as being flexible, patient, and getting along with others might be accomplished. The teaching skills could also be emphasized in the course. The student, at the end of the course, should be able to 1) understand the operations of an apparel manufacturing plant, 2) know the correct procedure for assembling a garment with production techniques, and 3) effectively communicate apparel manufacturing procedures to another person.

2. Following the completion of the needle trades unit an intern-

ship or work experience for future occupational instructors could be offered. This would include actual on-the-job work experience. This could be coordinated by the Clothing, Textiles and Merchandising Department and Home Economics Education Department.

3. An in-service training program could be held in order to accomodate those instructors already working as needle trades instructors. This workshop could focus on individual concepts such as:

1) exploring advanced industrial sewing techniques, 2) demonstrating and applying the mechanics of an industrial machine, and 3) studying in-depth the concept of how-to-teach the needle trades.

Recommendations for Future Study

The results of this research suggest the following recommendations:

1. Further study be conducted for additional input by using the identified competencies as a basis for the development of a questionnaire to be mailed to outlying states.

2. Develop and implement the needle trades unit and then evaluate those occupational instructors who had taken the course.

3. A study be conducted within the apparel manufacturing plants to examine reasons for the high turnover rate of sewing machine operators and make recommendations to reduce this turnover rate.

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APPENDIXES

APPENDIX A

DELPHI FORM NO. I

February 25, 1980

Dear Plant Manager:

I am a master's degree student in Clothing, Textiles and Merchandising at Oklahoma State University. My thesis is an investigation of teacher education in the area of clothing production. You are one of many apparel industries in the state of Oklahoma who employ needle trade operators and I need your help.

Students may prepare for work in the apparel industry by attending an occupational clothing program. At the present time Oklahoma State University does not offer the instructors of these occupational programs the opportunity for classroom experiences related to mass production. A consistent form of education for the occupational instructors would be of benefit to both the students and the industry, as these graduates may be employed in your plant at some future date.

Your expertise as a supervisor or instructor in this area would be a great deal of help in the identification of what needle trade instructors should know prior to teaching entry-level students. Valuable contributions from your experience will help with curriculum development at OSU.

Your participation in this study would involve responding to three devices. The first device is enclosed with this letter and the other two will follow. Approximately one hour of your time will be needed for each form. The following is a very general idea of what can be expected:

- DELPHI Form No. I - Requests you list competencies you think the teacher of occupational clothing should possess.
- DELPHI Form No. II - Your responses will be compiled, listed alphabetically, and mailed back to you. You will be requested to rank order each competency using a priority scale.
- DELPHI Form No. III - Each competency will be compiled by rank and again listed and mailed back to you. You will then have an opportunity to agree

or disagree with the consensus of the group. If your opinion differs from that of the group you will have a chance to express your opinion on the form.

From the final form a summary will be made and ranked by priority. The competencies for occupational clothing teacher education as seen by the consensus of the group will be mailed to you.

If you are willing to participate in this study, please complete or have the appropriate supervisor/instructor complete the attached Delphi Form No. I and return it in the self-addressed, stamped envelope by March 7th. Your responses will be kept confidential.

Thank you for your willingness to participate.

Sincerely,

Susan Rottman
Graduate Research Assistant

Janice Briggs, Ph.D.
Assistant Professor

SR/tr

Enclosures

February 22, 1980

Dear _____:

I am a master's degree student in Clothing Textiles and Merchandising at Oklahoma State University. My thesis is an investigation of teacher education in the area of clothing production. You are one of 18 occupational instructors in Oklahoma who teach in the needle trades area and I need your help.

At the present time Oklahoma State University does not offer students the opportunity for classroom experiences related to mass production techniques or custom sewing. Since you are presently teaching in this area, your expertise will be of help in identifying what competencies are needed for instructors in this field. Valuable contributions from your experience can help when establishing guidelines for a possible unit for future clothing production instructors.

Your participation in this study would involve responding to three devices. The first device is enclosed with this letter and the other two will follow. Approximately one hour of your time will be needed for each form. The following is a very general idea of what can be expected:

DELPHI Form No. I - Requests you list competencies you think the teacher of occupational clothing should possess.

DELPHI Form No. II - Your responses will be compiled, listed alphabetically and mailed back to you. You will be requested to rank order each competency using a priority scale.

DELPHI Form No. III - Each competency will be compiled by rank and again listed and mailed back to you. You will then have an opportunity to agree or disagree with the consensus of the group. If your opinion differs from that of the group you will have a chance to express your opinion on the form.

From the final form a summary will be made and ranked by priority. The competencies for occupational clothing teacher education as seen by

the consensus of the group will be mailed to you.

If you are willing to participate in this study, please complete the attached DELPHI Form No. 1 and return it in the self-addressed, stamped envelope by March 3rd. Your responses will be kept confidential.

Thank you for your willingness to participate.

Sincerely,

Susan Rottman
Graduate Research Assistant

Janice Briggs, Ph.D.
Assistant Professor

SR/tr

Enclosures

DELPHI FORM NO. I

Purpose of the Study:

This study is designed to identify the competencies needed for instructors of the needle trades. The information obtained could be used for curricula development.

Definition:

Competency - Demonstration of understanding the skills, knowledge and attitudes to perform at a qualified level.

Instructor - One who imparts knowledge to another by supervision and direction.

Examples of Possible Competencies:

1. Works harmoniously with students.
2. Motivates students to follow policies and procedures of the industry.

Directions:

Please list six to ten endings to the following statement.

Competencies needed by instructors in the needle trades to teach or supervise entry-level students are:

JUST A REMINDER

In February a questionnaire was mailed to you in regard to teacher education for the needle trades. I am in need of the completed questionnaire so that the study can be continued.

If you have not returned the questionnaire you received, would you please take a few minutes to complete and return. I have enclosed a duplicate copy of the form for your convenience.

Thank you for your time and consideration.

Sincerely yours,

Susan J. Rottman
Graduate Research Assistant

APPENDIX B

DELPHI FORM NO. II

April 4, 1980

Mark Stewart
Temple Manufacturing Co.
Temple, OK 73568

Dear _____:

Thank you for agreeing to participate in the study of the needle trades by either returning DELPHI Form No. I or answering my questions over the phone. The responses and amount of thought that each of you put into the first form was great. A total of 231 competencies were returned from 31 participants.

In order to organize your responses for use in DELPHI Form No. II, an ad hoc committee of educators and an industrial representative met to eliminate duplication of competencies and group each competency by subject matter. They have recommended that a limit be placed on the maximum number of competencies to be ranked top priority.

In the enclosed DELPHI Form No. II you will find an alphabetized listing of competencies. I ask that you read each statement. Then rank each competency in order of priority by using a six point scale ranging from one (1), which is the most important, to six (6), which is the least important.

I ask that you circle no more than 15 number one (1), or top priority competencies, and no more than 10 number two (2), or second priority items. The remaining competencies may be ranked by circling three (3), four (4), five (5), or six (6).

I am trying to complete this study prior to the end of the school year in order to compile the data. It is important that I receive this second form by April 13 so that the third and final form can be mailed by the end of April.

Thank you for your support and cooperation.

Janice Briggs, Ph.D.
Assistant Professor

Susan Rottman
Graduate Research Assistant

Enclosure

DELPHI FORM NO. II

Below is listed alphabetically the competencies for needle trades instructors which is a result of your responses to DELPHI Form No. I.

DIRECTIONS: In order to establish a priority ranking for your responses, please rank each statement on a six-point scale. The scale goes from the most important one (1) to least important six (6). Give top priority (1) to no more than 15 responses and no more than 10 second priority (2) ratings. There is no limit to the number of 3, 4, 5, 6, ratings.

Competency	Circle Level of Importance					
	Most Important			Least Important		
Example: Motivates students to follow policies of industry.	1	2	3	4	5	6
1. Ability and knowledge to maintain the machines: adjust pressure.	1	2	3	4	5	6
2. Ability and knowledge to maintain the machines: clean and oil.	1	2	3	4	5	6
3. Ability and knowledge to maintain the machines: clean and oil.	1	2	3	4	5	6
4. Ability and knowledge to maintain the machines: exchange parts.	1	2	3	4	5	6
5. Ability to communicate.	1	2	3	4	5	6
6. Ability to operate the industrial sewing machines: blindstitch.	1	2	3	4	5	6
7. Ability to operate the industrial sewing machines: monogrammer.	1	2	3	4	5	6
8. Ability to operate the industrial sewing machines: serger.	1	2	3	4	5	6
9. Ability to relate to students on a personal level and display concern to the individual.	1	2	3	4	5	6
10. Ability to teach another person.	1	2	3	4	5	6
11. Able to use window measurements in making draperies.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
12. Able to measure windows for figuring yardage needed for draperies.	1	2	3	4	5	6
13. Adapt design strategies and pattern making techniques to a simplified procedure to be used in the class-room.	1	2	3	4	5	6
14. Always be available to talk to your workers - never seem to be "too busy".	1	2	3	4	5	6
15. Always set a good example.	1	2	3	4	5	6
16. Attitude.	1	2	3	4	5	6
17. Be able to handle responsibility well.	1	2	3	4	5	6
18. Be able to help with machine problems.	1	2	3	4	5	6
19. Be able to let students do work on their own and be creative with their projects (or to fail and learn from their mistakes).	1	2	3	4	5	6
20. Be a good judge of what motivates different individuals.	1	2	3	4	5	6
21. Be a good listener.	1	2	3	4	5	6
22. Be happy with what you're doing.	1	2	3	4	5	6
23. Be honest with every member of your production force.	1	2	3	4	5	6
24. Be patient and polite, but at the same time have a degree of firmness.	1	2	3	4	5	6
25. Be the first to arrive and try to be the last to leave.	1	2	3	4	5	6
26. Being able to get along with people.	1	2	3	4	5	6
27. Can adjust to changes in schedules.	1	2	3	4	5	6
28. Can find projects for students which keep them interested and teach them steps.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
29. Clerical perception (word and number perception).	1	2	3	4	5	6
30. Communicate with students.	1	2	3	4	5	6
31. Competencies in fashion theory, selling, buying, etc.	1	2	3	4	5	6
32. Competency of the job you are giving instruction or supervising.	1	2	3	4	5	6
33. Congenial.	1	2	3	4	5	6
34. Cordiality.	1	2	3	4	5	6
35. Cutting room operation skills: marking fabric.	1	2	3	4	5	6
36. Cutting room operation skills: operate cutting knife.	1	2	3	4	5	6
37. Cutting room operation skills: plan a marker.	1	2	3	4	5	6
38. Cutting room operation skills: planning a bundle.	1	2	3	4	5	6
39. Cutting room operation skills: spread fabric.	1	2	3	4	5	6
40. Cutting room operations: bundle a garment.	1	2	3	4	5	6
41. Cutting room operations: number a bundle.	1	2	3	4	5	6
42. Cutting room operations: splice fabric.	1	2	3	4	5	6
43. Demonstrates knowledge of industrial equipment as well as domestic machines.	1	2	3	4	5	6
44. Demonstrates work ethics to students.	1	2	3	4	5	6
45. Develop business attitude as opposed to a home sewing attitude.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
46. Develop skills in human relations.	1	2	3	4	5	6
47. Display knowledge.	1	2	3	4	5	6
48. Dominance (desire to lead, initiative, self-confidence).	1	2	3	4	5	6
49. Emotional adjustment (able to operate under pressure, opposition, and change).	1	2	3	4	5	6
50. Employability skills: writing letters of application.	1	2	3	4	5	6
51. Excellent knowledge of textiles and textile industry.	1	2	3	4	5	6
52. Excell in teamwork.	1	2	3	4	5	6
53. Exhibit and gain confidence with students.	1	2	3	4	5	6
54. Experience-based knowledge of factory construction techniques and short cuts.	1	2	3	4	5	6
55. Experience-based knowledge of cutting knives.	1	2	3	4	5	6
56. Experience-based knowledge of cutting room equipment.	1	2	3	4	5	6
57. Experience-based knowledge of hot drill.	1	2	3	4	5	6
58. Experience-based knowledge of notch-maker.	1	2	3	4	5	6
59. Experience-based knowledge of spreader.	1	2	3	4	5	6
60. Experienced-based knowledge of the retail garment industry.	1	2	3	4	5	6
61. Experience in the factory.	1	2	3	4	5	6
62. Experience in the field.	1	2	3	4	5	6
63. Factory methods of sewing.	1	2	3	4	5	6
64. Familiarity with practice in curriculum material use.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
65. Familiarity with state curriculum materials.	1	2	3	4	5	6
66. Fashion sketching basics: advertising.	1	2	3	4	5	6
67. Flat-pattern design and alterations skills.	1	2	3	4	5	6
68. Friendliness.	1	2	3	4	5	6
69. Flexibility.	1	2	3	4	5	6
70. Get across to employee that you have a genuine interest in the employee - he is appreciated and wanted on the job.	1	2	3	4	5	6
71. Get any ideas across.	1	2	3	4	5	6
72. Hand finger dexterity (be able to learn the jobs they are teaching.	1	2	3	4	5	6
73. Has comprehensive work experience in the clothing production industry.	1	2	3	4	5	6
74. Has patience with students' lack of familiarity with mass production techniques.	1	2	3	4	5	6
75. Have a knowledge of "short cut" techniques.	1	2	3	4	5	6
76. Have available an industrial machine to train students on the technique of using it.	1	2	3	4	5	6
77. Have better than average personal cleanliness and be neatly dressed.	1	2	3	4	5	6
78. Have students work together as they would have to do on an assembly line in a factory.	1	2	3	4	5	6
79. Having correct answers available to all basic and standard questions relating to needle trades.	1	2	3	4	5	6
80. How to do something correctly and ability to show that to someone else.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
81. How to repair the industrial machines.	1	2	3	4	5	6
82. Human relations (social skills, communicative ability, outgoingness).	1	2	3	4	5	6
83. If possible, completely learn a procedure, before trying to teach it.	1	2	3	4	5	6
84. Initiative.	1	2	3	4	5	6
85. Insight (understanding of self and others).	1	2	3	4	5	6
86. Instill pride in students to be a part of the industry.	1	2	3	4	5	6
87. Instills in others the observation of safety rules and regulations.	1	2	3	4	5	6
88. Instructor needs to be able to use the machines in order to teach the students.	1	2	3	4	5	6
89. Interest.	1	2	3	4	5	6
90. Is able to maintain equipment as well as use it.	1	2	3	4	5	6
91. Is able to state information in a clear, logical order.	1	2	3	4	5	6
92. Is cooperative, is willing to work with other instructors on joint projects.	1	2	3	4	5	6
93. Is very patient and maintains self-control.	1	2	3	4	5	6
94. Job interviews - resumes.	1	2	3	4	5	6
95. Know all safety procedures OSHA regulations that apply to mass production of clothing.	1	2	3	4	5	6
96. Know community resources and how to contact them.	1	2	3	4	5	6
97. Know construction of home furnishings items - draperies, bed pillows, spreads.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
98. Know each operation from front to back.	1	2	3	4	5	6
99. Know garment custom sewing.	1	2	3	4	5	6
100. Know garment fitting.	1	2	3	4	5	6
101. Know garment flat pattern design.	1	2	3	4	5	6
102. Know garment measurements.	1	2	3	4	5	6
103. Know garment pressing.	1	2	3	4	5	6
104. Know garment tailoring.	1	2	3	4	5	6
105. Know industrial sewing techniques.	1	2	3	4	5	6
106. Know published resources - technical and educational.	1	2	3	4	5	6
107. Know window treatments.	1	2	3	4	5	6
108. Know window types.	1	2	3	4	5	6
109. Knowledge.	1	2	3	4	5	6
110. Knowledge and skill in constructing pleated, lined and unlined draperies.	1	2	3	4	5	6
111. Knowledge of accepted custom sewing techniques.	1	2	3	4	5	6
112. Knowledge of alteration skills.	1	2	3	4	5	6
113. Knowledge of basic engineering practices.	1	2	3	4	5	6
114. Knowledge of basic sewing skills necessary in apparel industry: estimate seams allowance.	1	2	3	4	5	6
115. Knowledge of basic sewing skills necessary in apparel industry: felled seams.	1	2	3	4	5	6
116. Knowledge of basic sewing skills necessary in apparel industry: notching.	1	2	3	4	5	6
117. Knowledge of construction.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
118. Knowledge of how the industrial sewing machines work.	1	2	3	4	5	6
119. Knowledge of how-to-put on a fashion show.	1	2	3	4	5	6
120. Knowledge of industrial sewing machinery able to make minor repairs and adjustments.	1	2	3	4	5	6
121. Knowledge of management principles, organizational techniques.	1	2	3	4	5	6
122. Knowledge of mass production techniques in apparel industry.	1	2	3	4	5	6
123. Knowledge of operations.	1	2	3	4	5	6
124. Knowledge of steamer and presser.	1	2	3	4	5	6
125. Knowledge of the field.	1	2	3	4	5	6
126. Knowledge of the industry and what students need to learn to be competent employees.	1	2	3	4	5	6
127. Knowledge of the various machines.	1	2	3	4	5	6
128. Like the job - be interested in sewing and the factory business.	1	2	3	4	5	6
129. Machine maintenance: change machine needles.	1	2	3	4	5	6
130. Machine maintenance: remove, refill, and insert bobbin.	1	2	3	4	5	6
131. Machine maintenance: thread chain stitch machine.	1	2	3	4	5	6
132. Machine maintenance: thread a serge stitch machine.	1	2	3	4	5	6
133. Machine maintenance: thread machine using tie-on technique.	1	2	3	4	5	6
134. Machine maintenance: thread upper thread of lockstitch machine.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
135. Machine techniques: operate a double needle machine.	1	2	3	4	5	6
136. Machine techniques: operate a single needle lockstitch or chainstitch machine.	1	2	3	4	5	6
137. Machine techniques: ravel a chainstitch.	1	2	3	4	5	6
138. Mental ability (general learning ability).	1	2	3	4	5	6
139. Methods of sewing faster.	1	2	3	4	5	6
140. Motivates students to follow policies and procedures of the industry.	1	2	3	4	5	6
141. Motivates students to learn by using a variety of media sources for instruction.	1	2	3	4	5	6
142. Motivate the student to try to learn how to use the various power machines used in industry.	1	2	3	4	5	6
143. On the job training.	1	2	3	4	5	6
144. Operate and maintain blindstitch hemmer.	1	2	3	4	5	6
145. Operate and maintain chainstitch machines.	1	2	3	4	5	6
146. Operate and maintain chainstitch monogrammer.	1	2	3	4	5	6
147. Operate and maintain double needle machine.	1	2	3	4	5	6
148. Operate and maintain hemmer.	1	2	3	4	5	6
149. Operate and maintain industrial sewing machines.	1	2	3	4	5	6
150. Operate and maintain lockstitch machines.	1	2	3	4	5	6
151. Operate and maintain serger.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
152. Optimistic and enthusiastic attitude.	1	2	3	4	5	6
153. Orientation to activities involving people.	1	2	3	4	5	6
154. Personality - goal oriented.	1	2	3	4	5	6
155. Personnel Management	1	2	3	4	5	6
156. Planning and organizing ability.	1	2	3	4	5	6
157. Principles of color and design.	1	2	3	4	5	6
158. Production techniques.	1	2	3	4	5	6
159. Provide an atmosphere of learning that enables the students to want to be a part of the needle trades program.	1	2	3	4	5	6
160. Provide curriculum to enable the student to enter the work-force after completion of the course.	1	2	3	4	5	6
161. Psychological approach to handle the repetition of the job.	1	2	3	4	5	6
162. Put garment together in own section.	1	2	3	4	5	6
163. Quality consciousness.	1	2	3	4	5	6
164. Quality control/pressing/shipping.	1	2	3	4	5	6
165. Self-confidence.	1	2	3	4	5	6
166. Sense of humor.	1	2	3	4	5	6
167. Sensitive.	1	2	3	4	5	6
168. Sets a good example for students in motivating them to accept and practice policies and procedures in the clothing production industry.	1	2	3	4	5	6
169. Special training on industrial machines.	1	2	3	4	5	6
170. Some ability to handle unexpected classroom situations.	1	2	3	4	5	6
171. Supervisory principles and practices.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
172. Teacher needs to understand the needle trade industry and their needs.	1	2	3	4	5	6
173. Teach students how to work harmoniously with each other.	1	2	3	4	5	6
174. To be able to recognize the level of ability of each student and determine how to develop that level toward employment in the industry.	1	2	3	4	5	6
175. To be considerate and understanding.	1	2	3	4	5	6
176. To have an overall knowledge of clothing construction.	1	2	3	4	5	6
177. To have knowledge of careers available in the clothing industry.	1	2	3	4	5	6
178. To know how to make decisions.	1	2	3	4	5	6
179. A thorough working knowledge of the basic machines used in the needle trades.	1	2	3	4	5	6
180. Treat everyone equally.	1	2	3	4	5	6
181. Trouble-shoot industrial machines.	1	2	3	4	5	6
182. Understanding and relating of accepted methods used in various operations.	1	2	3	4	5	6
183. Understanding of labor policies.	1	2	3	4	5	6
184. Utilize mass production cutting techniques and equipment in a classroom situation.	1	2	3	4	5	6
185. Utilize mass production sewing techniques and industrial sewing equipment in the classroom.	1	2	3	4	5	6
186. Will be able to do general maintenance on equipment.	1	2	3	4	5	6

Competency	Circle Level of Importance					
	Most Important			Least Important		
	1	2	3	4	5	6
187. Will be able to keep interest high by using a variety of teaching methods and techniques.	1	2	3	4	5	6
188. Will be able to motivate industry in the area to become involved with the program.	1	2	3	4	5	6
189. Willingness to make use of outside resources such as field trips and guest speakers.	1	2	3	4	5	6
190. Works well with both adolescents and adults in the program.	1	2	3	4	5	6
191. Works well with industry contacts in coordinating advisory committees, classroom experiences, field trips, etc.	1	2	3	4	5	6

APPENDIX C

DELPHI FORM NO. III

May 9, 1980

Blue Bell Inc.
Ada, OK 74820

Dear Plant Manager:

Thank you for returning DELPHI Form No. II. We appreciate all of the time you have spent on this study. This last form contains only 25 out of the original 23 competencies. These 25 competencies are ones that the group has indicated as being of top or second priority.

We hope that you will complete this form and return by May 22 in order to insure that your responses will be recorded in the final data analysis. If the form is not returned, the time you already invested will be of no value.

DELPHI Form No. III contains 15 top priority items and 10 second priority items. Listed are the percentage of respondents who indicated that the competency listed was of top or second priority. We ask that you read all 25 competencies, then indicate whether you agree or disagree with the group consensus. If you checked "NO," then please list your reasoning in the last column. Read carefully the directions at the top of the form.

We have appreciated all of the written comments. Each one has been recorded and compiled.

Have a nice summer and thank you for all of your time, cooperation, and consideration during this study.

Sincerely,

Janice Briggs, Ph.D.
Assistant Professor

Susan Rottman
Graduate Research Assistant

Enclosure

DELPHI FORM NO. III

The competencies for needle trades instructors listed below are those which were rated as top and second priority by the participants of the study. (The percent of agreement to the rating is also shown.) Please read all competencies and then check 'yes' or 'no' depending on your agreement or disagreement with the group consensus. If you check 'no' in column 2, then please list your reason for differing from the group consensus.

Consensus Report	Percent of Agreement	Competency	Do you Agree With the Consensus Response? Check (✓) Yes or No		Reasons why you differ from the group.
			Yes	No	
<u>TOP</u>					
5.	53.6	Ability to communicate.			
9.	35.7	Ability to relate to students on a personal level and display concern to the individual.			
10.	50.0	Ability to teach another person.			
15.	25.0	Always set a good example.			
16.	46.4	Attitude.			
17.	42.9	Be able to handle responsibility well.			
22.	21.4	Be happy with what you're doing.			
24.	32.1	Be patient and polite, but at the same time have a degree of firmness.			
26.	32.1	Being able to get along with people.			
30	21.4	Communicate with students.			

Consensus Report	Percent of Agreement	Competency	Do you Agree With the Consensus Response? Check (✓) Yes or No		Reasons why you differ from the group
			Yes	No	
32.	28.6	Competency of the job you are giving instruction or supervising.			
44.	17.9	Demonstrates work ethics to students.			
49.	25.0	Emotional adjustment (able to operate under pressure, opposition, and change).			
88.	21.4	Instructor needs to be able to use the machines in order to teach the students.			
152.	32.1	Optimistic and enthusiastic attitude.			
<u>SECOND</u>					
14.	7.1	Always be available to talk to your workers - never seem to be "too busy."			
20.	10.7	Be a good judge of what motivates different individuals.			
21.	28.6	Be a good listener.			
23.	32.1	Be honest with every member of your production force.			
63.	7.1	Factory methods of sewing.			

Consensus Report	Percent of Agreement	Competency	Do you Agree With the Consensus Response? Check (✓) Yes or No		Reasons why you differ from the group
			Yes	No	
76.	10.7	Have available an industrial machine to train students on the technique of using it.			
80.	10.7	How to do something correctly and ability to show that to someone else.			
138.	7.1	Mental ability (general learning ability).			
156.	14.3	Planning and organizing ability.			
176.	25.0	To have an overall knowledge of clothing construction.			

Please indicate if you would like a final summary of this study mailed to you.

Name _____

Address _____

APPENDIX D

TABLE SHOWING CATEGORIZED COMPETENCIES WITH MEAN SCORES AND PRIORITY RATINGS

TABLE VI
CATEGORIZED COMPETENCIES WITH MEAN SCORES
AND PRIORITY RATINGS

Subject Matter Categories		X _{1a}	X _{2b}	X _c
<u>Teaching Skills</u>				
× 9 ^d	Ability to relate to students on a personal level and display concern to the individual.	2.0	1.9	2.0
10 ^d	Ability to teach another person.	2.0	1.5	1.8
13	Adapt design strategies and pattern making techniques to a simplified procedure to be used in the classroom.	3.0	4.1	3.5
15 ^d	Always set a good example.	2.4	1.6	2.1
19	Be able to let students do work on their own and be creative with their projects (or to fail and learn from their mistakes).	2.7	4.0	3.3
20	Be a good judge of what motivates different individuals.	2.8	2.1	2.5
28	Can find projects for students which keep them interested and teach them steps.	2.2	3.6	2.8
× 30 ^a	Communicate with students.	2.5	2.0	2.3
32 ^a	Competency of the job you are giving instruction or supervising.	2.2	2.0	2.1
44 ^a	Demonstrates work ethics to students.	2.2	2.7	2.4
46	Develop skills in human relations.	2.7	3.4	3.0
53	Exhibit and gain confidence with students.	2.9	2.5	2.8
64	Familiarity with practice in curriculum material use.	3.3	3.9	3.5
65	Familiarity with state curriculum materials.	2.8	3.9	3.2
71	Get any ideas across.	3.1	2.7	3.0
78	Have students work together as they would have to do on an assembly line in a factory.	2.9	3.7	3.2
80 ^b	How to do something correctly and ability to show that to someone else.	2.5	2.6	2.5
83	If possible, completely learn a procedure, before trying to teach it.	2.7	2.8	2.8
91	Is able to state information in a clear, logical order.	2.7	2.5	2.6
140	Motivates students to follow policies and procedures of the industry.	3.1	3.1	3.1
141	Motivates students to learn by using a variety of media sources for instruction	3.3	3.1	3.6
142	Motivate the student to try to learn how to use the various power machines used in industry.	3.2	3.3	3.1
159	Provide an atmosphere of learning that enables the students to want to be a part of the needle trades program.	2.8	3.1	2.9
160	Provide curriculum to enable the student to enter the work-force after completion of the course.	2.7	3.2	2.9
161	Psychological approach to handle the repetition of the job.	3.3	3.2	3.2
168	Sets a good example for students in motivating them to accept and practice policies and procedures in the clothing production industry.	2.3	3.3	2.7
170	Some ability to handle unexpected classroom situations.	3.9	3.4	3.6
× 173	Teach students how to work harmoniously with each other.	2.8	3.0	2.9
184	Utilize mass production cutting techniques and equipment in a classroom situation.	3.1	4.5	3.7

^aOccupational Group N=16.

^bIndustrial Group N=12.

^cPooled N=28.

^dTop Priority.

^eSecond Priority.

Note: Competencies are listed in participants' original words.

TABLE VI (Continued)

Subject Matter Categories		\bar{x}_1^a	\bar{x}_2^b	\bar{x}^c
<u>Production Knowledge</u>				
11	Able to use window measurements in making draperies.	3.8	5.5	4.2
35	Cutting room operation skills: marking fabric.	3.6	3.8	3.7
36	Cutting room operation skills: operate cutting knife.	3.6	4.0	3.8
37	Cutting room operation skills: plan a marker.	3.6	4.0	3.8
38	Cutting room operation skills: planning a bundle.	3.7	4.2	4.0
39	Cutting room operation skills: spread fabric.	3.7	3.8	3.7
40	Cutting room operations: bundle a garment.	3.8	4.0	3.9
41	Cutting room operations: number a bundle.	3.8	4.5	4.1
42	Cutting room operations: splice fabric.	3.6	3.9	3.7
54	Experience-based knowledge of factory construction techniques and short cuts.	2.4	3.6	2.9
55	Experience-based knowledge of cutting knives.	3.6	4.7	4.0
56	Experience-based knowledge of cutting room equipment.	3.9	4.6	4.2
57	Experience-based knowledge of hot drill.	4.2	5.0	4.5
59	Experience-based knowledge of spreader.	4.1	4.8	4.4
61	Experience in the factory.	2.6	3.1	2.8
63 ^c	Factory methods of sewing.	2.6	2.3	2.5
73	Has comprehensive work experience in the clothing production industry.	3.1	3.9	3.4
75	Have a knowledge of "short cut" techniques	3.2	4.3	3.7
97	Know construction of home furnishing items - draperies, bed pillows, spreads.	3.6	5.4	4.0
98	Know each operation from front to back.	2.6	2.9	2.8
100	Know garment fitting.	3.0	3.8	3.3
101	Know garment flat pattern design.	3.5	4.5	3.8
102	Know garment measurements.	3.2	3.7	3.4
104	Know garment tailoring.	3.1	4.1	3.5
105	Know industrial sewing techniques.	2.8	3.2	3.0
110	Knowledge and skill in constructing pleated, lined and unlined draperies.	3.7	4.2	4.0
111	Knowledge of accepted custom sewing techniques.	2.6	4.0	3.3
114	Knowledge of basic sewing skills necessary in apparel industry: estimate seams allowance.	3.5	3.4	3.4
117	Knowledge of construction.	3.1	3.0	3.0
122	Knowledge of mass production techniques in apparel industry.	3.1	2.9	3.0
123	Knowledge of operations.	3.1	2.8	3.0
124	Knowledge of steamer and presser.	3.9	4.6	4.2
139	Methods of sewing faster.	3.1	3.2	3.2
158	Production techniques.	3.2	3.3	3.3
164	Quality control/pressing/shipping.	3.8	3.7	3.7
169	Special training on industrial machines.	3.1	4.0	3.5
182	Understanding and relating of accepted methods used in various operations.	3.4	3.8	3.6

^aOccupational Group N=16.^bIndustrial Group N=12.^cPooled N=28.^dTop priority.^eSecond priority.

TABLE VI (Continued)

Subject Matter Categories		\bar{X}_1^a	\bar{X}_2^b	\bar{X}^c
185	Utilize mass production sewing techniques and industrial sewing equipment in the classroom.	3.5	3.8	3.6
187	Will be able to keep interest high by using a variety of teaching methods and techniques.	2.8	3.0	2.9
188	Will be able to motivate industry in the area to become involved with the program.	2.8	3.5	3.1
189	Willingness to make use of outside resources such as field trips and guest speakers.	2.7	3.9	3.2
191	Works well with industry contacts in coordinating advisory committees, classroom experiences, field trips, etc.	2.1	3.8	2.9
<u>Interpersonal Skills</u>				
× 5 ^d	Ability to communicate.	2.2	1.3	1.8
16 ^d	Attitude.	2.4	1.6	2.1
21 ^e	Be a good listener.	2.8	2.0	2.4
× 22 ^d	Be happy with what you're doing.	2.2	2.1	2.2
24 ^d	Be patient and polite, but at the same time have a degree of firmness.	2.4	1.8	2.1
× 26 ^e	Being able to get along with people.	2.3	1.6	2.0
33	Congenial.	3.2	2.7	3.0
34	Cordiality	3.2	2.7	3.0
48	Dominance (desire to lead, initiative, self-confidence).	3.1	2.0	2.6
49 ^e	Emotional adjustment (able to operate under pressure, opposition, and change).	2.5	2.0	2.3
68	Friendliness.	2.9	3.0	2.9
× 69	Flexibility.	2.7	2.9	2.8
70	Get across to employee that you have a genuine interest in the employee - he is appreciated and wanted on the job.	2.9	2.2	2.6
74	Has patience with students' lack of familiarity with mass production techniques.	2.3	3.6	3.4
× 82	Human relations (social skills, communicative ability, outgoingness).	3.2	2.6	2.9
84	Initiative.	2.7	2.4	2.6
85	Insight (understanding of self and others).	3.1	3.0	3.0
89	Interest.	2.7	2.6	2.7
× 92	Is cooperative, is willing to work with other instructors on joint projects.	2.7	3.1	2.9
× 93	Is very patient and maintains self-control.	2.7	2.5	2.6
× 152 ^e	Optimistic and enthusiastic attitude.	3.4	1.9	2.2
153	Orientation to activities involving people.	3.3	3.2	3.3
154	Personality - goal oriented.	3.2	3.1	3.1
165	Self-confidence.	2.7	2.3	2.5
166	Sense of humor.	2.9	3.5	3.1
167	Sensitive.	2.6	3.8	3.7
175	To be considerate and understanding.	2.1	2.8	3.0
190	Works well with both adolescents and adults in the program.	2.5	3.9	3.2

^aOccupational Group N=16.^bIndustrial Group N=12.^cPooled N=28.^dTop priority.^eSecond priority.

TABLE VI (Continued)

Subject Matter Categories		\bar{X}_1^a	\bar{X}_2^b	\bar{X}^c
<u>Machine Knowledge</u>				
1	Ability and knowledge to maintain the machines: adjust pressure.	2.6	3.7	3.1
2	Ability and knowledge to maintain the machines: adjust tension.	2.9	3.6	3.2
3	Ability and knowledge to maintain the machines: clean and oil.	2.9	3.6	3.2
4	Ability and knowledge to maintain the machines: exchange parts.	3.5	3.9	3.7
18	Be able to help with machine problems.	2.8	2.6	2.7
43	Demonstrates knowledge of industrial equipment as well as domestic machines.	1.9	3.6	2.6
81	How to repair the industrial machines.	2.8	4.6	4.1
90	Is able to maintain equipment as well as use it.	3.4	3.8	3.6
103	Know garment pressing.	3.0	4.4	3.7
118	Knowledge of how the industrial sewing machines work.	3.3	3.5	3.4
120	Knowledge of industrial sewing machinery able to make minor repairs and adjustments.	3.3	3.2	3.3
127	Knowledge of the various machines.	2.8	3.1	2.9
129	Machine maintenance: change machine needles.	2.9	3.3	3.1
130	Machine maintenance: remove, refill, and insert bobbin.	2.9	3.3	3.1
131	Machine maintenance: thread chain stitch machine.	3.3	3.4	3.3
132	Machine maintenance: thread a serge stitch machine.	3.3	3.5	3.4
133	Machine maintenance: thread machine using tie-on techniques.	3.4	3.7	3.5
134	Machine maintenance: thread upper thread of lockstitch machine.	3.3	2.2	2.8
144	Operate and maintain blindstitch hemmer.	3.4	4.3	3.8
145	Operate and maintain chainstitch machines.	3.6	3.8	3.7
146	Operate and maintain chainstitch monogrammer.	4.1	4.4	4.2
147	Operate and maintain double needle machine.	3.9	4.4	4.1
148	Operate and maintain hemmer.	3.4	4.1	3.7
149	Operate and maintain industrial sewing machines.	3.6	3.0	3.3
150	Operate and maintain lockstitch machines.	3.5	3.5	3.5
151	Operate and maintain serger.	3.2	3.7	3.4
179	A thorough working knowledge of the basic machines used in the needle trades.	3.0	3.3	3.1
181	Trouble-shoot industrial machines.	3.9	4.2	4.0
186	Will be able to do general maintenance on equipment.	3.6	3.7	3.7
<u>Sewing Skills</u>				
6	Ability to operate the industrial sewing machines: blindstitch.	2.7	3.6	3.2
7	Ability to operate the industrial sewing machines: monogrammer.	3.6	4.7	4.2
8	Ability to operate the industrial sewing machines: serger.	3.0	3.8	3.3
67	Flat-pattern design and alterations skills.	2.6	5.0	3.6
72	Hand finger dexterity (be able to learn the jobs they are teaching).	3.0	3.0	3.0
88 ^d	Instructor needs to be able to use the machines in order to teach the students.	2.0	2.6	2.3
99	Know garment custom sewing.	2.6	4.7	3.5
112	Knowledge of alteration skills.	2.6	4.3	3.3

^aOccupational Group N=16.^bIndustrial Group N=12.^cPooled N=28.^dTop priority.^eSecond priority.

TABLE VI (Continued)

Subject Matter Categories		\bar{x}_1^a	\bar{x}_2^b	\bar{x}^c
115	Knowledge of basic sewing skills necessary in apparel industry: felled seams.	3.6	4.0	3.8
116	Knowledge of basic sewing skills necessary in apparel industry: notching.	3.4	3.6	3.6
135	Machine techniques: operate a double needle machine.	3.8	3.8	3.8
136	Machine techniques: operate a single needle lockstitch or chainstitch machine.	3.1	3.5	3.3
137	Machine techniques: ravel a chainstitch.	3.3	4.2	3.7
162	Put garment together in own section.	3.5	4.0	3.8
<u>General Knowledge</u>				
12	Able to measure windows for figuring yardage needed for draperies.	3.7	5.2	4.4
29	Clerical perception (word and number perception)	3.5	4.4	3.9
31	Competencies in fashion theory, selling, buying, etc.	2.8	4.9	3.7
47	Display knowledge.	3.1	3.5	3.3
51	Excellent knowledge of textiles and textile industry.	2.7	4.0	3.2
58	Experience-based knowledge of notch-maker.	4.1	4.9	4.5
60	Experienced-based knowledge of the retail garment industry.	3.1	4.3	3.6
66	Fashion sketching basics: advertising.	3.9	5.5	4.6
79	Having correct answers available to all basic standard questions relating to needle trades.	3.4	2.7	3.2
86	Instill pride in students to be a part of the industry.	2.6	2.7	2.6
106	Know published resources - technical and educational.	3.0	4.4	3.4
107	Know window treatments.	3.9	5.1	4.4
108	Know window types.	3.9	4.4	4.2
109	Knowledge.	3.4	3.4	3.4
119	Knowledge of how-to-put on a fashion show.	3.9	5.7	4.6
125	Knowledge of the field.	3.0	3.6	3.3
157	Principles of color and design.	3.9	4.8	4.2
172	Teacher needs to understand the needle trade industry and their needs.	2.3	3.6	2.8
176 ^e	To have an overall knowledge of clothing construction.	2.1	3.0	2.5
177	To have knowledge of careers available in the clothing industry.	2.5	4.0	3.1
<u>Other Skills</u>				
62	Experience in the field.	2.7	3.5	3.0
76 ^e	Have available an industrial machine to train students on the technique of using it.	2.0	3.1	2.5
138 ^e	Mental ability (general learning ability).	2.8	2.4	2.5
<u>Management Skills</u>				
14 ^e	Always be available to talk to your workers - never seem to be "too busy."	2.8	1.8	2.4
23 ^e	Be honest with every member of your production force.	2.7	2.0	2.4

^aOccupational Group N=16.^bIndustrial Group N=12.^cPooled N=28.^dTop priority.^eSecond priority.

TABLE VI (Continued)

Subject Matter Categories		\bar{x}_1^a	\bar{x}_2^b	\bar{x}^c
25	Be the first to arrive and try to be the last to leave.	3.8	2.9	3.3
27	Can adjust to changes in schedules.	3.0	2.9	3.0
45	Develop business attitude as opposed to a home sewing attitude.	2.2	3.3	2.7
52	Excell in teamwork.	3.0	2.9	3.0
96	Know community resources and how to contact them.	2.9	4.4	3.5
113	Knowledge of basic engineering practices.	4.2	3.9	4.0
121	Knowledge of management principles, organizational techniques.	3.0	2.6	2.8
143	On the job training.	3.2	3.3	3.1
155	Personnel management	3.2	3.1	3.2
156 ^e	Planning and organizing ability.	2.7	2.2	2.5
163	Quality consciousness.	2.9	2.3	2.6
171	Supervisory principles and practices.	3.0	2.8	2.9
174	To be able to recognize the level of ability of each student and determine how to develop that level toward employment in the industry.	2.9	3.3	3.0
178	To know how to make decisions.	3.1	2.1	2.6
180	Treat everyone equally.	3.2	2.5	2.8
183	Understanding of labor policies.	3.7	3.8	3.7
<u>Employability Skills</u>				
17 ^d	Be able to handle responsibility well.	1.7	2.0	1.8
50	Employability skills: writing letters of application.	3.4	4.8	4.0
77	Have better than average personal cleanliness and be neatly dressed.	3.1	3.1	3.1
94	Job interviews - resumes.	3.4	4.3	3.8
126	Knowledge of the industry and what students need to learn to be competent employees.	2.3	2.9	2.6
128	Like the job - be interested in sewing and the factory business.	2.5	3.1	2.8
<u>Safety Skills</u>				
87	Instills in others the observation of safety rules and regulations.	2.6	3.6	3.0
97	Know all safety procedures OSHA regulations that apply to mass production of clothing.	3.0	4.1	3.5

^aOccupational Group N=16.^bIndustrial Group N=12.^cPooled N=28.^dTop priority.^eSecond priority.

APPENDIX E

TABLE SHOWING REASONS FOR DISAGREEING
WITH TOP AND SECOND PRIORITY
COMPETENCIES

TABLE VII
REASONS FOR DISAGREEING WITH TOP PRIORITY COMPETENCIES

Competency Number and Statement	Reason(s) for Disagreement	Number of Respondents Disagreeing
5 Ability to communicate.		1
9 Ability to relate to students on a personal level and display concern to the individual.		1
10 Ability to teach another person.	If you can't teach a student they can't learn. If they can't learn they won't be hired. Same as #32.	2
15 Always set a good example.	Not necessary for needle trades instructors.	3
16 Attitude.	Prefer wording of #152.	1
17 Be able to handle responsibility well.	Not necessary for needle trades instructors. I don't feel there is all that much responsibility other than the responsibility of doing a good job.	3
22 Be happy with what you're doing.	Not necessary for needle trades instructors. There are a great many competent people in jobs they are not particularly happy doing.	4

Note: The reasons are listed in participants own words.

TABLE VII (Continued)

Competency Number and Statement	Reason(s) for Disagreement	Number of Respondents Disagreeing
24 Be patient and polite, but at the same time have a degree of firmness.	Not necessary for needle trades instructors.	2
30 Communicate with students.	<p>I feel this ties in with the essence of training.</p> <p>If you can't communicate with your students they can't learn to their fullest potential. Relates to Consensus Report #10.</p> <p>Same as #5.</p> <p>Covered first statement.</p> <p>Repetition of #5.</p> <p>Isn't this the same as #5. Except #5 is everyone, including students.</p>	6
32 Competency of the job you are giving instruction or supervising.	If you show a lack of competence on something you are instructing, you show a lack of knowledge. This hinders the students ability to learn. Relates to #10 and #30.	1
44 Demonstrates work ethics to students.	This is a huge problem in the industry according to employers - deserves a high ranking in % of agreement.	1

TABLE VII (Continued)

Competency Number and Statement	Reason(s) for Disagreement	Number of Respondents Disagreeing
49 Emotional adjustment (able to operate under pressure, opposition, and change).	This causes more problems in my classroom than any other factor in completing a production project.	2
88 Instructor needs to be able to use the machines in order to teach the students.	If the instructor does not know how to use the machine, the students won't use it either. I have experienced this and I have seen it in other programs. Because if we don't teach them it wouldn't be necessary.	2
152 Optimistic and enthusiastic attitude.	Similarity in this and #16	3

TABLE VII (Continued)
REASONS FOR DISAGREEING WITH SECOND PRIORITY COMPETENCIES

Competency Number and Statement	Reason(s) for Disagreement	Number of Respondents Disagreeing
14 Always be available to talk to your workers - never seem to be "too busy."	Goes back to communication - if you don't have time how can you communicate? You must establish lines of communications with your workers. This helps in the harmony of your operation.	4
20 Be a good judge of what motivates different individuals.	Motivating people on a production line, supervision or mechanical accounts for at least 20% of your productivity - you must have what is called <u>Human Relations</u> .	3
21 Be a good listener.	Could be placed in the top group.	1
23 Be honest with every member of your production force.	Could be placed in the top group.	1
63 Factory methods of sewing.	Too few people are familiar with these - deserves much more importance - the production manager for Bryan Infant's Wear told me she has employed home ec teachers in her plant and can't use them because they do not adapt well to factor methods of sewing- As teachers we need to know factory techniques and use them in the classroom if our students are going to be employable in the needle trades.	4

TABLE VII (Continued)

Competency Number and Statement	Reasons(s) for Disagreement	Number of Respondents Disagreeing
63 Factory methods of sewing (continued)	I agree with this percentage only because every factory and needle trade industries have different methods of sewing. If you were specializing in one garment or factory I would not agree. Not necessary to be able to teach methods. Most company's and methods vary to some degree any way. They may be doing other types of work not related to a factory.	6
76 Have available an industrial machine to train students on the technique of using it.	Not necessarily. The company will train them work on machines. Because the manager of the factory has said he would like to train his own employees. You can't teach skills without the equipment - This should be #1. Same as on #63.	2
80 How to do something correctly and ability to show that to someone else.	Same as #32 Again this relates to items #10, #30, #32	2

TABLE VII (Continued)

Competency Number and Statement	Reasons(s) for Disagreement	Number of Respondents Disagreeing
138 Mental ability (general learning ability).	You must be able to learn yourself from trial and error or from mistakes. If you can't learn, you can't succeed. Some don't have mental ability and can do great sewing. I have had special education students - each had done an excellent job.	3
156 Planning and organizing ability.	Mass production does not work in the classroom unless it is well planned and organized. If it isn't, it can really kill any desire your students might have for employment in a production situation.	2
176 To have an overall knowledge of clothing construction.	I don't necessarily agree with the percentage of importance. If there is a correlation with percentage of agreement to importance.	0

2
VITA

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