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ABSTRACT

A study sought to describe the professional activities and background characteristics of occupational education teachers in Nevada and their concerns about issues facing occupational education. Data were obtained through a written questionnaire sent to all 519 occupational education teachers in the state (386 were completed for a 74 percent return) and from information stored within a state certification database. Some of the results were the following: (1) 91.5% of occupational education teachers are Caucasian; (2) over 90% of home economics teachers are women whereas over 98% of trade and industrial arts teachers are men; (3) the average salary of occupational education teachers is $30,170, somewhat lower than the average secondary teacher's salary in the state; (4) teachers have taught in secondary schools for an average of 13.3 years; (5) teachers reported average class sizes of 22 students; (6) about 40 percent of the teachers do not have appropriate occupational endorsements to teach the classes they are teaching; (6) more than one-third of the teachers sponsor an occupational educational student organization; (7) almost 81 percent of the teachers have work experience in an occupational education area; and (8) teachers reported lack of availability of suitable occupational education preparation courses as an impediment to their professional development. The results suggested the need for further study of the sufficiency of training opportunities in occupational areas, the adequacy of funding of Nevada's occupational programs, and the adequacy of recruiting efforts to bring teachers into nontraditional areas. The survey instrument is attached and a total of 32 data tables are either appended or included with the text. (KC)

A SURVEY OF OCCUPATIONAL EDUCATION TEACHERS IN NEVADA

by

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and

David Lawson Smith, PhD

Nevada DEPARTMENT OF EDUCATION

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January 1991

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EXECUTIVE SUMMARY

This study investigates the professional activities and background characteristics of Nevada's secondary occupational education teachers and their concerns with issues facing occupational education in Nevada. The results reported here were derived from the analysis of occupational education teachers' responses to items within a written questionnaire and data stored within a licensure database maintained by the Nevada Department of Education.

Analysis of the database information yielded various demographic findings, such as:

- Approximately 16% of secondary teachers in Nevada are teaching at least one occupational education class.
- The occupational education teacher population is 91.5% Caucasian, 5% Black, 1.7% Hispanic, 1.2% Native American, and .4% Asian. This ethnic distribution among occupational education teachers is somewhat similar to that among all secondary school teachers statewide; however, these minority percentages for both groups of teachers are much lower than the minority percentages among the secondary occupational education student population statewide.
- The size of female (47.2%) and male (52.8%) occupational education teacher populations are similar; however, the questionnaire results indicate that over 90% of the those teaching home economics, home economics related occupations (HERO), career guidance, and health occupations classes are female and over 98% of those teaching trade & industry, technical, and industrial arts classes are male.
- The average annual salary of occupational education teachers ($30,170) is somewhat lower than the average annual secondary teachers' salary ($31,943) for the state.

Of the 519 surveys issued, 386 were completed and returned, making the statewide response rate approximately 74%. Survey results indicated the following information, broken down by major areas:

Teaching Activities

- The teachers have taught in secondary schools for an

average of 13.3 years and have taught occupational education classes for an average of approximately 11 years.

- Occupational education teachers teach an average of 4.5 classes per semester, with approximately 90% of their teaching load devoted to occupational classes.

- The average of the class sizes reported by survey respondents for all occupational classes taught by these teachers is 21.7 students, with an average class size of 17.3 for job-specific skills classes. The average class size of introductory occupational classes (23.4) is almost the same as the state class average of English, mathematics, science, and social studies classes in high schools (23.9).

- The average class size for cooperative education classes is 71.9 students per class.

- Overall, approximately 39.7% of the occupational education teachers who are teaching classes that require an occupational endorsements do not possess an appropriate occupational endorsements to teach those classes. A considerable percentage of occupational teachers in Trade & Industry (45.4%), Technical (46.1%), and HERO (20%) do not hold appropriate occupational endorsements for the particular classes that they are teaching.

- Approximately one-quarter of the respondents indicated that they have had problems with (re-)licensure requirements. The following are issues that were most frequently mentioned: 1) the modifications to the computer endorsement have been troublesome to them; noting that the changes may require teachers to take classes in subject areas that they teach or have taught in either secondary or post-secondary settings; 2) required courses are offered at inconvenient times or places; 3) required courses are unrelated to teacher's subject area and do not provide useful information; 4) there is a lack of coordination between universities /community colleges and the state licensing agency; and 5) some classes in specific occupational areas or in developing occupational skills do not satisfy licensure requirements.

Professional Activities

- Over one-third (35.2%) of the teachers sponsors an occupational education student organization.

- Nearly 90% of the occupational education teachers have been involved in at least one of the following professional activities during their teaching careers: membership/leadership in occupational education associations or in business/trade and industry organizations; involvement in occupational education curriculum development; master teacher for student teachers; and department chairperson.

Work and Academic Background

- Almost 81% of the teachers have work experience in an occupational education area, and the average number of years worked for those jobs is nine.

- Approximately 93.5%, 47.7%, 3.4%, 1.3% of the survey respondents hold at least one bachelors, masters, educational specialist, and doctoral degree, respectively.

- The mean number of years since the teachers received their degrees are 18.8 for associates, 16.8 for bachelors, 12.4 for masters, 10 for educational specialists, and 9.8 for doctoral degrees.

- Less than one-third of the occupational education teaching force received their associate (12.0%) and bachelor (27.1%) degrees from the state of Nevada and less than one-half of the occupational education teachers received their masters (41%) and doctoral (40%) training from a Nevada university.

- Approximately 67% of the survey participants have been a student teacher of an occupational education class and over 95% of the teachers have had a teaching methods class.

Comments and Concerns

- Over one-half (54.1%) of these teachers indicated that they did not believe that sufficient occupational education classes had been made available to them through local universities, community colleges, or professional development centers.

- Seventy-eight percent of the survey respondents indicated experiences or courses that have helped them become more effective occupational education teachers. The most commonly mentioned factors included: 1) work experience, in general, 2) occupational training, 3) occupational

work experience, 4) coursework in education, and 6) undergraduate/graduate training, in general.

- Approximately 22 % of the occupational education teachers responded to the question asking them to list anything in their teacher training that may have hampered them from being as effective as they would like. The most frequently mentioned hampering factors included: 1) lack of courses, in general; 2) courses required for (re-) licensure are unrelated to teacher's occupational area and are not considered useful; 3) classes in specific occupational areas or in occupational skills development were unavailable to teachers; 4) lack of teacher training focusing on student discipline; 5) lack of commitment to occupational education by administrators; 6) lack of teacher training in motivating students; and 7) being trained by professors or instructors who have no high school teaching experience.

- Approximately two-thirds of the teachers made suggestions to improve their classes or departments. The most commonly noted suggestion included: 1) updating of programs/equipment/curriculum/material; 2) addressing occupational teacher concerns about decreases in student enrollment due to increased academic credit requirements for student graduation; 3) increasing support by administrators/counselors/public for occupational education; and 4) recruiting a wider range of students to occupational education classes.

- Nearly one-fifth of the occupational education teachers elected to make comments when prompted to do so at the end of the survey. They most frequently expressed apprehension about the future of occupational education and re-iterated some of the previously stated concerns.

This is the third in a series of studies by the Nevada Department of Education intended to describe the professional background characteristics and activities of educational staff in Nevada. Social studies teachers and guidance counselors were the focus of previous studies. Occupational education teachers are the focus of this report, which also includes the opinions and concerns of these individuals about issues involving occupational education.

METHOD

Participants

An occupational education teacher is defined for the purpose of this study as: *an individual who taught one or more occupational education classes in grades 7 - 12 during the Fall '88 - Spring '89 school year.* Such teachers were identified by querying a computerized database that is maintained by the Nevada Department of Education and contains employment, licensing, and demographic information. Five hundred and nineteen individuals fit this description. All school districts, except Esmeralda[1], participated in this study.

Materials

The survey instrument included fill-in-the-blank, forced choice, and open-ended questions (see Appendix A). Most of the questions focused on teaching assignments, academic background, work and teaching experience, professional/career activities, and occupational training. The survey also solicited teacher suggestions for improving their occupational area and comments regarding sufficiency of course offerings made available to them, requirements for licensure, experiences that may have helped or hampered

[1] *There are no secondary schools within the Esmeralda School District.*

their instructional performance, and any issue of interest that involves Occupational Education.

A pilot study was conducted to determine the effectiveness of the format and content of these questions. Thirty-three occupational teachers from Lyon County and from Clark County's Southern Nevada Vocational Technical Center and Area Trade & Technical Center participated in the pilot. Pilot participants completed the instrument and provided feedback on the clarity of items and the ease of answering. Items were reviewed for the extent to which they elicited responses consistent with the intent of the query. The pilot instrument then was modified to reflect changes indicated by the pilot study.

The previously mentioned database not only provided a reliable source to identify members of the target population but also provided a source for additional demographic and licensure information. The database information was downloaded during the same term that the surveys were distributed and it should be noted that any database figures reported refer to values contained within the database in September, 1989.

Design and Procedure

Questionnaires were issued to all individuals identified as occupational education teachers. Occupational education coordinators and other district-level administrators distributed the questionnaires and two follow-up letters to the teachers within their respective districts. The surveys and follow-up letters were given either directly to the teachers by the coordinator or to other school-level administrators who delivered them to the teachers. The two follow-up letters were required in order to obtain an acceptable response rate.

RESULTS

All percentage results are reported to the nearest tenth of one percent.

Demographic Information

The following demographic information was accessed from the Department of Education database and is based on the 519 individuals who qualified as occupational education teachers in this study:

1)

Age	Percentage
30 and under	7.7
31-40	29.3
41-50	38.9
51-60	19.7
61 and over	4.4

2)

Ethnicity	Percentage
American Indian or Alaskan Native	1.2
Asian or Pacific Islander	.4
Black	5.0
Hispanic	1.7
White	91.5

3)

Sex	Percentage
Female	47.2
Male	52.8

4)

Teachers	Number	Average Salary
Occupational Education	519	$30,170
Secondary (Statewide)	3,250	$31,943

The results indicate that almost two-thirds of the occupational education teachers are over 40 years old (63%) and that this teacher population is predominately White (91.5%). The following is the ethnic distribution among

certain statewide populations:

	STATEWIDE GROUPINGS		
	Secondary Occ.Ed. Teachers	All Secondary Teachers	Secondary Occ.Ed. Students
Ethnicity	%	%	%
Amer.Ind./Alaskan N.	1.2	.5	2.5
Asian/Pacific Is.	.4	.9	3.2
Black	5.0	5.4	9.4
Hispanic	1.7	3.4	8.3
White	91.5	89.8	76.6

The percentage of Whites is slightly higher among occupational education teachers than it is among the secondary teacher population as a whole. Also, the percentage of Hispanics among the secondary teachers statewide is twice that of the percentage of Hispanics within the occupational education teacher population. The percentage of American Indians among occupational education teachers is more than twice that of the percentage of Native Americans among the secondary teacher population statewide. However, differences in percentages between occupational and all secondary teachers are small when compared to differences in percentages of ethnicity between teacher and student populations in occupational education. It should be noted that the percentage for each of the minority groups among occupational education students is from twice to almost four times that of these same minority groups among those teaching occupational education classes.

The size of the female (47.2%) and male (52.8%) occupational education teacher populations are similar. Approximately 16% of the secondary school teachers in Nevada are teaching at least one occupational education class and the average annual salary of occupational education teachers ($30,170) is slightly lower than the average annual salary for secondary teachers statewide ($31,943).

Response Rates

Of the 519 surveys issued, 386 were completed and returned, making the overall statewide response rate approximately 74%. The reported figures throughout the remainder of this report are generally associated with either the number of survey respondents or question respondents and not the total number of occupational teachers within the state. A breakdown of respondents by county is as follows:

COUNTY	Number of Teachers	Number of Respondents	Percent of County Response	Percent of Statewide Response
CARSON	21	15	71.43	4.08
CHURCHILL	12	8	66.67	2.17
CLARK	247	181	73.28	49.18
DOUGLAS	17	14	82.35	3.80
ELKO	29	25	86.21	6.79
EUREKA	3	2	66.67	.54
HUMBOLDT	13	10	76.92	2.72
LANDER	7	7	100.00	1.90
LINCOLN	14	8	57.14	2.17
LYON	20	17	85.00	4.62
MINERAL	6	5	83.33	1.36
NYE	15	12	80.00	3.26
PERSHING	5	5	100.00	1.36
STOREY	2	2	100.00	.54
WASHOE	100	69	69.00	18.75
WHITE PINE	8	6	75.00	1.63

The percentage of county and statewide response is determined by dividing the number that responded in a county either by the number of occupational education teachers within that county or by the number within the state that responded, respectively. All those selected in Lander, Pershing, and Storey counties completed and returned their surveys. The county response rates for Clark, Washoe, Humboldt, Carson, and White Pine Counties are similar to the overall statewide response rate.

The following is a breakdown of respondents by rural and urban areas:

AREA	Number of Teachers	Number of Respondents	Percent of Area Response	Percent of Statewide Response
RURAL	172	136	79.07	35.23
URBAN	347	250	72.05	64.77

The urban areas, as defined by the U. S. Bureau of the Census, are Clark and Washoe counties. All remaining areas are considered rural. Although the response rates for the rural (79%) and urban (75%) areas were both high and similar, it should be noted that only about one-third of the total returned questionnaires came from the rural areas. The statewide response rates closely approximate the actual distribution of occupational education instructors teaching in urban (66.9%) and rural (33.1%) areas within the state.

Approximately 20%, 12% and 68% of the respondents taught at middle/junior high schools, occupational facilities, and high schools, respectively, in the 1988-1989 school year. The occupational facilities included the Southern Nevada Vocational Technical Center and the Area Technical Trade Center in Clark County and the Hare Occupational Center in Washoe County. These response rates are very nearly the same as the actual distribution of occupational education teachers at middle/junior high schools (19.8%), occupational facilities (11.8%) and high schools (68.4%).

The similarity of these response rates to that of the various distributions of occupational education teachers within the state would suggest that the respondents in the present study are representative of the population of occupational education teachers in Nevada.

The percentages of respondents who taught in various

subject areas during the 88-89 school year are as follows:

Subject Area	Percentage of Respondents
Agriculture	4.7
Business - Occupational	17.6
Business - Non-Occupational	26.4
Coop Education	3.9
Career Guidance	2.8
Home Economics	19.2
Home Economics Related Occupations (HERO)	8.0
Health Occupations	.5
Industrial Arts	15.8
Marketing	2.1
Media & Communication	4.4
Technical	4.4
Trade & Industry	28.5

Approximately 29% of the respondents taught at least a one trade and industry class. The next largest percentages teach general business, home economics, business & office, and industrial arts classes, respectively. The classes included within the subject areas are fully described in the endorsement section of this report. Note that the preceding percentages do not sum to 100 since many of the occupational education teachers taught classes in more than one subject area.

The percentages of females and males teaching classes in various subject areas are as follows:

Subject Area	% Female	% Male
Agriculture	16.7	83.3
Business - Occupational	64.7	35.3
Business - Non-Occ.	69.6	30.4
Coop Education	46.7	53.3
Career Guidance	100.0	0
Home Economics	97.3	2.7
HERO	90.3	9.7
Health Occupations	100.0	0
Industrial Arts	1.6	98.4
Marketing	62.5	37.5
Media & Comm.	47.1	52.9
Technical	0	100.0
Trade & Industry	0.9	99.1

All, or almost all, of those teaching career guidance, health occupations, home economics, and home economics related occupations (HERO) classes are female. Also, all or almost all, of those teaching technical, trade & industry, industrial arts, and agriculture classes are male. There is a more even distribution of males and females among those who teach business & office, general business, cooperative education, marketing, and media & communications classes.

Teaching Activities

The occupational education teachers have taught secondary school classes for an average of 13.3 years. Respondents' teaching experience ranged from beginning teachers to an individual with 38 years of secondary experience. On the average, the number of years of occupational education classroom teaching experience was approximately 11, with 36 years as the maximum.

Survey participants indicated that they teach an average of 4.5 classes each term, with approximately 90% of their teaching load devoted to occupational classes (see Table 1). Over one-quarter of the classes taught by these teachers provides students with entry level, job-specific skills.

Table 1.

PERCENTAGE OF TEACHING LOAD IN OCCUPATIONAL AND NON-OCCUPATIONAL CLASSES

Type of Class	Percentage
Occupational	
Introductory	64.2
Job-Specific	25.8
Non-Occupational	
Introductory	9.4
Advanced	.6

Table 2 contains information on the average size of classes taught by occupational education teachers. It should be noted that these figures are derived from the self-reports of respondents and that cooperative education classes are not included in the figures of this table. The

average class size for cooperative education classes is 71.9 students per class. The average class size for all classes taught by occupational education teachers is 21.8, with an average class size of 17.3 for job-specific occupational education classes.

It should be noted that the reported class sizes of introductory occupational education courses are comparable to the class size averages for other classes taught in secondary school within the state. The Nevada Department of Education's Status Report for the 1988-1989 school year indicates that the average class size of English, Mathematics, Science and Social Studies courses for high schools and junior high schools was 23.9 and 23.4, respectively. These figures are very close to the averages mentioned in Table 2 for introductory occupational courses (23.4).

Table 2.

AVERAGE CLASS SIZE OF CLASSES TAUGHT BY OCCUPATIONAL TEACHERS

Type of Class	Average Class Size
Occupational	21.7
Introductory	23.4
Job-Specific	17.3
Non-Occupational	22.8
Introductory	23.4
Advanced	14.8
Overall	21.8

Non-Occupational Business classes (i.e. Beginning Typing, Keyboarding, and Business Education, Law, Math, and Survey) are included in the introductory occupational,

occupational, and overall average class sizes listed above. These business courses tend to have structures that are more characteristic of general education, as opposed to occupational, courses. Such courses frequently are omitted from research on occupational education; however, since business teachers are regarded as occupational teachers for the purpose of this study, all classes taught by these individuals were included. Their inclusion here does not appear to have had a significant impact on the results for class size. If these classes are excluded from analysis, the introductory occupational, occupational, and overall average class sizes change slightly to 22.8, 21.1 and 21.3, respectively.

Licensure

The Nevada Department of Education certification database was used to access information regarding licensure. It should be noted that the information reported and licensure requirements referred to in this section were current as of September, 1989. This section will refer to occupational (K-A) and secondary (7-12) endorsements. Due to the coding limitations of the data within Nevada Department of Education database at the time the licensing information was accessed, these terms shall refer to the following:

Occupational (K-A)
For the purpose of this study this title shall include Professional and Standard Occupational Endorsements.

Standard Occupational Endorsement
Endorsees could teach at Kindergarten through Adult levels and this endorsement was issued to individuals with:

1) a high school diploma or its equivalent;
2) a minimum a 8 years of past work experience in his/her occupational teaching area; and
3) a minimum of 6 semester credits in courses prescribed by the state licensure board.

4) a valid license in the occupation for which the person had applied for the endorsement if a license was required by state law to provide services to the general public.

Professional Occupational Endorsement:
Endorsees could teach at Kindergarten through Adult levels and this endorsement was issued to an individual who had:

1) earned a bachelors degree from an accredited college or university,
2) completed a prescribed number of semester hours in courses related to his/her teaching area,
3) completed a program of student teaching or taught for one year in his/her occupational area,
4) completed 12 semester hours in occupational education instruction courses,
5) two years of verifiable work experience in his/her occupational teaching area; and
6) a valid license in the occupation for which the person was applying for the endorsement if a license was required by state law to provide services to the general public.

Secondary (7 - 12)
Generally, secondary licenses were issued with endorsements in specific non-occupational areas. This title shall not include any occupational areas, except agricultural education. A secondary license was issued to an individual who had:

1) earned a bachelors degree from an accredited college or university and
2) completed State Department of Education approved program of preparation for teaching in the secondary grades or
3) completed 22 semester credits in professional secondary education.

Individuals under this title did not need to possess the verifiable work experience, the credits in occupational coursework, or the occupational licenses mentioned under the Occupational (K-A) title.

Guidelines and assistance regarding the classification of courses into programs of study and appropriateness of endorsements to specific classes was provided by the Trade & Industry, Business, and Home Economics consultants from the Occupational and Continuing Education Branch of the Nevada

Department of Education.

Table 3 indicates the percentage of individuals teaching within given programs of study who have occupational and/or secondary endorsements related to those programs of study. For example, 88.2% of those teaching agricultural classes hold an occupational endorsement in agriculture and 72.2% of those teaching agricultural classes hold a secondary endorsement in agriculture. A single asterisk (*) in Table 3 indicates that there is either no specific occupational or no secondary endorsement for the particular program specified on that line.

An industrial arts endorsement can be categorized as either a Secondary or Special (K-Adult) endorsements. Generally, Special (K-Adult) endorsements are reserved for administrative or support endorsements; however, industrial arts and some computer endorsements are included in this category. Approximately 39.7% and 50.0% of the individuals teaching industrial arts classes have a secondary and Special (K-Adult) endorsement in industrial arts, respectively. Over 88% of these teachers have at least one of these endorsements. The remaining 12% have either some agricultural or some trade and industry endorsement.

All of those teaching health occupations and marketing classes held occupational endorsements in those respective areas. Tables 4 - 9 further delineates the endorsements held by those teaching classes within the Agriculture, Occupational Business, Home Economics Related Occupations (HERO), Trade & Industry, Technical, Media & Communications programs. The figures in these tables indicate the percentages of those holding appropriate occupational endorsements by class title.

According to Table 4, the percentages of individuals teaching agricultural classes who have occupational endorsements in agriculture are very high. Since either a occupational endorsement in the specific subject area taught or a secondary agriculture endorsement qualifies an

Table 3.

PERCENTAGE OF INDIVIDUALS TEACHING WITHIN GIVEN PROGRAMS OF STUDY WITH OCCUPATIONAL AND SECONDARY ENDORSEMENT RELATED TO THOSE PROGRAMS

Programs	Occupational (K-A)	Secondary (7-12)
AGRICULTURE	88.2	72.2
BUSINESS - OCCUPATIONAL	73.6	87.4
BUSINESS - NON-OCC.**	*	94.3
COOP EDUCATION	60.0	*
HOME ECONOMICS	*	79.5
HERO	80.0	*
HEALTH OCCUPATIONS	100.0	*
INDUSTRIAL ARTS	*	88.2***
MARKETING	100.0	*
MEDIA & COMMUNICATIONS	42.9	*
TECHNICAL	53.9	*
TRADE & INDUSTRY	54.6	*

* There are either no Occupational or no Secondary endorsements in that subject area.

** Non-Occupational Business Classes include Beginning Typing, Keyboarding, and Business Education, Law, Math, and Survey.

*** Industrial Arts endorsements that are classified as Special (K-A) are also included in this figure.

Table 4.

PERCENTAGE OF ENDORSEMENTS HELD BY THOSE TEACHING AGRICULTURE CLASSES

Subject Area	Subject Area Occupational*	Secondary AG Only*	Neither
AGRI-BUSINESS	100.0	0	0
AGRICULTURE	91.7	8.3	0
HORTICULTURE	80.0	20.0	0
AGRICULTURAL MECHANICS	100.0	0	0

* Either an occupational endorsement in the subject area or a secondary agriculture endorsement satisfies licensure requirements to teach agriculture classes.

Table 5.

PERCENTAGE OF ENDORSEMENTS HELD BY THOSE TEACHING OCCUPATIONAL BUSINESS CLASSES

Subject Area	Subject Area Occupational*	Secondary Bus.Ed. Only*	Neither
ACCOUNTING	77.1	20.0	2.9
OFFICE PRACTICE	76.6	23.3	0
COMPUTERS	85.7**	10.7	3.6
DATA PROCESSING	100.0	0	0
SECRETARIAL	72.7	27.3	0
ADVANCED TYPING	66.7	33.3	0
WORD PROCESSING	91.7	0	8.3

* Either an occupational endorsement in the subject area or a secondary business education endorsement satisfies licensure requirements to teach occupational business classes.

** Computer endorsements that are classified as Special (K-A) are also included in this figure.

Table 6.

PERCENTAGE OF ENDORSEMENTS HELD BY THOSE TEACHING HOME ECONOMICS RELATED OCCUPATIONS CLASSES

Subject Area	Subject Area Occupational*	Secondary Home Ec. Only	Neither
CHILD CARE	100.0	0	0
FASHION/CLOTHING	80.0	20.0	0
GERONTOLOGY	100.0	0	0
CULINARY ARTS	60.0**	20.0	20.0
FOOD SERVICE	66.6**	33.3	0

* An occupational endorsement in the given subject area is required to teach HERO classes. A secondary home economics endorsement alone does not satisfy licensure requirements to teach these classes.

** Culinary Arts and Food Service may also be considered Trade and Industry subjects.

Table 7.

PERCENTAGE OF ENDORSEMENTS HELD BY THOSE TEACHING TRADE & INDUSTRY CLASSES

Subject Area	Subject Area Occupational*	IA Only	Neither
AUTOMOTIVE	52.6	39.5	7.9
BUILDING/CONSTRUCTION	50.0	33.3	16.7
CABINET MAKING	60.0	40.0	0
CARPENTRY	41.2	47.1	11.7
DRAFTING/CAD	21.6	70.3	8.1
MACHINE SHOP	75.0	25.0	0
METALS/WELDING	61.5**	38.5	0

* An occupational endorsement in the given subject area is required to teach trade and industry classes. An industrial arts endorsement alone does not satisfy licensure requirements to teach these classes.

** Agricultural endorsements are also included in this figure.

Table 8.

PERCENTAGE OF ENDORSEMENTS HELD BY THOSE TEACHING TECHNICAL CLASSES

Subject Area	Subject Area Occupational*	IA Only	Neither
ARCHITECTURE	25.0	75.0	0
ELECTRONICS	66.7	11.1	22.2

* An occupational endorsement in the given subject area is required to teach technical classes. An industrial arts endorsement alone does not satisfy licensure requirements to teach these classes.

Table 9.

PERCENTAGE OF ENDORSEMENTS HELD BY THOSE TEACHING MEDIA AND COMMUNICATIONS CLASSES

Subject Area	Subject Area Occupational*	IA Only	Neither
TELECOMMUNICATIONS	50.0	0	50.0
PHOTOGRAPHY	0	33.3	66.7
GRAPHIC ARTS/PRINTING	33.3	33.3	33.3

* An occupational endorsement in the given subject area is required to teach media and communications classes. An industrial arts endorsement alone does not satisfy licensure requirements to teach these classes.

individual to teach agriculture classes and the Neither column in Table 4 contains only zeros, it is evident that all the respondents teaching agriculture classes have the proper endorsements to teach those classes.

Either an appropriate subject area occupational or a secondary business education endorsement qualifies an individual to teach an occupational business class; the percentages with neither are very low, except for the percentage for word processing (Table 5). Overall, 2.3% of those teaching occupational business classes have neither type of endorsement. The subject area of office practice includes office procedure, office simulation, record keeping, and business machines. Shorthand is included in the secretarial category. A large percentage of those teaching word processing (91.7%), data processing (100%), and other computer classes (85.7%) have a appropriate occupational endorsements. Between one-fifth and one-third of those teaching courses in accounting, office practice, secretarial procedures, and advanced typing has a secondary business education endorsement but has no applicable occupational endorsement.

HERO classes require occupational endorsements in the specific subject areas taught. In Table 6, it appears that all those teaching child care and gerontology classes have an occupational endorsement in those respective areas. One-fifth of those teaching fashion/clothing has a secondary home economics endorsement but has no occupational endorsement. Less than two-thirds of those teaching culinary arts and food service classes have endorsements in those subject areas. All those who teach culinary arts who have neither an secondary occupational culinary arts endorsement nor a secondary home economic endorsement, have a culinary arts endorsement that allows them to teach this subject to adults only.

The percentages of those teaching various trade and

industry classes who have the required appropriate occupational endorsements to teach those classes are relatively low, as illustrated in Table 7. Only about one-fifth of those teaching drafting/computer aided drafting (CAD) classes has an occupational endorsement in that subject area. Also, only 40 - 62% of those teaching automotive, building/construction, cabinet making, carpentry and metal/welding classes have an appropriate occupational endorsements to teach those classes. Since metals/welding are often considered part of a agricultural program, an agricultural endorsement is considered an appropriate occupational endorsement for these classes. The percentages of those teaching without an appropriate occupational endorsement but with an industrial arts endorsement are relatively high. Over seventy percent of those teaching drafting/CAD have only an industrial arts endorsement. Between 8 and 17 percent of those teaching automotive, building/construction, carpentry, and drafting/CAD have neither an appropriate occupational nor an industrial arts endorsement.

One-quarter of those teaching architecture courses has the required occupational endorsement in architecture or drafting (Table 8). Agriculture and science endorsements are held by those who are teaching electronics classes who have neither an occupational endorsement in electronics nor an industrial arts endorsement.

Only a small percentage of those teaching the media and communications classes have applicable occupational endorsements (Table 9). It should be noted that, in each area, five or less of the survey respondents teach the architecture, telecommunication, photography, and graphic arts/printing courses and, therefore, the percentages in each area may be somewhat misleading.

Overall, approximately 39.7% of the occupational education teachers who are teaching classes that require an

occupational endorsements do not possess appropriate occupational endorsements to teach those classes. This appears to be a substantial percentage that warrants some concern.

For additional information on the percentages of teachers in each of the programs who have secondary major or minor endorsements in math, science, English, social studies, health, or computer literacy/programming and for additional details regarding other endorsements refer to Appendix B, Tables 29B - 30B. Also, the percentages of total licenses held by survey respondents are as follows:

License	Percentage
Elementary	40.4
Secondary (7 -12)	84.2
Special (K-Adult)	39.6
Occupational (K-Adult)	70.5
Occupational (Adult)	13.0

Comments Regarding Licensure

The present report provides summary tables for each of the six open-ended questions within the survey (see Appendix A, items A.3., B.6., B.8., B.9., B.10., and request for comments on final page). These summary tables list responses in descending order by percentage of individuals who mentioned those topics. It should be noted that the percentages reported in each of the summary tables are not percentages of total survey respondents who identified particular topics but rather the percentages of question respondents who identified particular topics in response to corresponding questions. Topics that were identified by less than three percent of those responding to the corresponding questions were not included in the tables.

Almost three-quarters of the survey participants indicate that the Nevada licensure or re-licensure regulations have not been troublesome to them (see Table 10.)

Table 10.

PROBLEMS WITH LICENSURE

	Number	Percentage
Problems	95	24.6
No problems	286	74.1
Did not respond	5	1.3

Table 11.

SUMMARY OF COMMENTS REGARDING TEACHER LICENSURE

Computer endorsement regulations have taken a long time to be defined and/or may require individuals to take computer classes on topics that they currently teach or have taught (23.2%)

Required courses are offered at an inconvenient time/place (16.2%)

Required classes are unrelated to teacher's subject area and do not provide teacher with useful information (10.3%)

Lack of co-ordination between universities/ community colleges and the state licensing department to insure that required classes are offered (8.8%)

Classes in specific occupational areas and classes that develop occupational skills do not satisfy licensure requirements (7.4%)

Reciprocal agreement between states to recognize previously acquired credits or teaching licenses should considered (7.4%)

Inconsistencies exist in the interpretations of some of the regulations (7.4%)

Table 11 summarizes the written responses of the remaining one-quarter of the survey participants. Almost one-quarter of the remarks refers to the computer endorsements; noting that: 1) the changes in these endorsements may require that computer teachers take classes that will cover subjects that they have taught or currently teach in secondary or even post-secondary settings or 2) the changes in the endorsements have long been unestablished. At the time the surveys were issued, changes in the regulations for these endorsements were not yet decided and it should be noted that the changes have now been established. Although only 22 respondents noted a concern about the computer regulations, this number may represent a very high percentage of those who might be affected by these regulations. Only 46 and 87 of the survey respondents were assigned to teach computer classes and occupational business classes, respectively.

Another topic described by occupational teachers as hampering their efforts at licensure is that required courses are unrelated to teacher's subject areas and do not provide the teacher with useful information. Also, a number of responses indicated that credits earned in specific occupational areas and in developing occupational skills do not satisfy semester credit requirements for licensure. For example, credits earned by auto teachers for attending automobile manufacturer sponsored workshops have not allows been accepted to satisfy re-licensure requirements.

Lack of: 1) reciprocal agreements with other states to recognize previously acquired credits or credentials, 2) offerings for required courses at convenient times and in rural areas, 3) co-ordination between university/community colleges and those who establish the rules for licensure, and 4) consistency in interpreting regulations also were interpreted as problems by those who commented.

The following includes quotes from question respondents:

"Computer endorsements: Indecision to determine requirements."

"Teaching use of computer - methods - [Have] already been teaching use of computers for 10 years. Total waste of my time and money."

"The current computer requirement. I have taught computer education at secondary & post-secondary level for the past 12 years, and am currently teaching a CIS 202 course for TMCC..."

"Teaching Computers" course would not make me more effective in the classroom. I feel that I have the knowledge and skill to teach a course in computer teaching methods."

"Classes offered in sequence during the day - can't complete because I'm teaching."

"There aren't enough classes in oc ed - I always have to take classes that elem[entary] teachers are taking."

"Certification wouldn't [accept] something like welding for recert[ification] because it had the wrong prefix- so I took a correspondence course that had the correct prefix and didn't get what I needed."

"Yes- When I was working on my Vocational Endorsement for Distributive Ed I had to go to Colorado to take necessary classes".

"UNR was not teaching all the necessary requirements, yet the state mandated such. Now the # of hours needed have dropped and UNR is now teaching more! "Very frustrating" that the state & the university can't get together in a more timely fashion".

"The State Department is not clear on course titles & they don't know what the classes entail. The St. Dept. and Univ needs to be consistent along with CCC."

"Vocational endorsement -- too long ago to track down ex-employers to verify hours -- should have a reciprocity [with] other states."

"I am certified to teach HERO in TX and AZ ... and I cannot teach it in NV because of the number of hours required to work in work force job. I would have to quit my teaching position to work in a home economics related job."

"Being told I did not need a specific class in History to Teach Bus[iness] then having been told my cert[ification] would be pulled because of that."

Professional Activities

Almost 90% of the occupational education teachers have been involved in at least one professional activity during their teaching careers (see Table 12). Those who have been involved in four activities represent the highest percentage (14.5) and three percent of the teacher have been involved in as many as nine professional activities (see Table 13).

Table 12.

PARTICIPATION IN AT LEAST ONE PROFESSIONAL ACTIVITY

	Number	Percentage
Participated	345	89.4
Did not participate	41	10.6

Table 13.

NUMBER OF PROFESSIONAL ACTIVITIES IN WHICH TEACHERS WERE INVOLVED

	Number	Percentage
One	48	12.4
Two	49	12.7
Three	53	13.7
Four	56	14.5
Five	39	10.1
Six	46	11.9
Seven	26	6.7
Eight	15	3.9
Nine	12	3.1
Ten	1	.3

The percentage of occupational education teachers that are currently or have been involved in various professional activities is as follows:

Activity	Percentage
Member in a Local or State Occupational Education Association	70.2
Member in a Regional or National Occupational Education Association	51.6
Involved in Occupational Education Curriculum Development	50.0
Department Chairperson	44.3
Master or Cooperating Teacher for Student Teacher(s)	36.8
Involved in Occupational Education Textbook or Equipment Selection/Evaluation	36.5
Member in any Professional Business, Trade or Industry Organization	25.9
Leads an Occupational Education Organization	24.1
Instructs School District In-service course(s)	17.1
Involvement in Other Professional Career Activities	12.2

Appendix B., Tables 31 - 32 contain the percentages of teachers involved in each of these professional activities sub-categorized by the subject areas that they teach.

Survey responses indicated that over one-third of the teachers sponsored occupational education student organizations in the 1988-89 school year (see Table 14), with about 34% of these teachers sponsoring various chapters of Vocational Industrial Club of America. Among the other student organizations most frequently mentioned, Future Business Leaders of America, Future Farmers of America, and

Future Homemakers of America represented 14%, 10.3%, and 11% of the organizations sponsored, respectively. In addition, a variety of other groups such as auto, gourmet foods, industrial arts, electronics, and computer clubs were sponsored by teachers in the sample.

Table 14.

STUDENT OCCUPATIONAL EDUCATION ORGANIZATION SPONSORSHIP

	Number	Percentage
Sponsored	136	35.2
Did not sponsor	235	60.9
Did not respond	15	3.9

Work Experience and Academic Background

Over 80% of the teachers have work experience that is related to the occupational education area in which they teach (Table 15). For teachers with occupational work experience, the average number of years of work experience in these areas was approximately nine. Ten percent of those with such work experience were employed in more than one related occupational education area.

Table 15.

WORK EXPERIENCE IN ONE OR MORE OCCUPATIONAL EDUCATION AREAS

	Number	Percentage
Worked	311	80.6
Has not worked	64	16.6
Did not respond	11	2.9

Almost 95% of the occupational education teachers involved in this survey indicated that they hold at least one academic degree. The following are the numbers and percentages of teachers holding various degrees:

	Number	Percentage
Baccalaureate	361	93.5
Masters	184	47.7
Doctorate	5	1.3
Educational Specialist	13	3.4
None	20	5.2

Those who selected "none" or did not indicate any degree on question B. 1. (see Appendix A) are considered to have no degrees. In addition, approximately 19% of the occupational education teachers hold associates degrees.

Approximately 6.5% of occupational education teachers do not possess an academic degree above the associates level. Each of these teachers holds either a standard occupational standard license or a limited standard occupational license. Requirements for the standard occupational license are mentioned in the previous licensure section of this document. The requirements for a limited occupational license are identical except that the semester credits must be obtained before the holder's first renewal period has expired.

The mean numbers of years since the teachers received their degrees are: associates 18.8, bachelors 16.8, masters 12.4, specialist 10 and doctorate 9.8.

Tables 16 and 17 indicate that less than one-third of the occupational education teaching force received their associates (12.0%) and bachelors (27.1%) from the state of Nevada. The bachelors degrees were earned in 38 different states. Also, less than half of the occupational education teachers received their masters (41%) and doctoral (40%) training from the state of Nevada (Tables 18 and 20).

Approximately 69% of the specialist degrees were obtained from a Nevada university (see Table 19).

Table 16.

STATES WHERE ASSOCIATES DEGREE WERE EARNED

State	Number	Percent
Nevada	9	12.0
California	23	30.7
Utah	11	14.7
Colorado	5	6.7
New York	4	5.3
Indiana	3	4.0
Arizona	2	2.7
Washington	2	2.7
Arkansas	1	1.3
Alaska	1	1.3
Kansas	1	1.3
Massachusetts	1	1.3
Michigan	1	1.3
Missouri	1	1.3
Mississippi	1	1.3
Montana	1	1.3
Oregon	1	1.3
Pennsylvania	1	1.3
Tennessee	1	1.3
Wyoming	1	1.3
Uninterpretable	4	5.3

Table 17.

STATES WHERE BACCALAUREATE DEGREES WERE EARNED

State	Number	Percent
Nevada	98	27.1
Utah	51	14.1
California	35	9.7
Colorado	14	3.9
Michigan	13	3.6
Montana	13	3.6
Arizona	11	3.0
Indiana	7	1.9
Illinois	7	1.9
North Dakota	7	1.9
New Mexico	7	1.9
Wisconsin	7	1.9
Louisiana	6	1.7
Missouri	6	1.7
Texas	6	1.7
Minnesota	5	1.4
Nebraska	5	1.4
Wyoming	5	1.4
New York	4	1.1
Ohio	4	1.1
Oregon	4	1.1
South Dakota	4	1.1
Washington	4	1.1
Kansas	3	.8
Kentucky	2	.5
Virginia	2	.5
West Virginia	2	.5
Arkansas	1	.2
Alabama	1	.2
Connecticut	1	.2
North Dakota	1	.2
Iowa	1	.2
Indiana	1	.2
Massachusetts	1	.2
Maryland	1	.2
Mississippi	1	.2
Oklahoma	1	.2
Pennsylvania	1	.2
Uninterpretable	17	4.7

Table 18.

STATES WHERE MASTERS DEGREES WERE EARNED

State	Number	Percent
Nevada	75	41.0
Arizona	27	14.8
Florida	12	6.6
Utah	12	6.6
California	10	5.5
Colorado	5	2.7
Indiana	4	2.2
New Mexico	3	1.6
Alabama	2	1.1
Idaho	2	1.1
Michigan	2	1.1
North Dakota	2	1.1
Ohio	2	1.1
Oklahoma	2	1.1
South Dakota	2	1.1
Virginia	2	1.1
Illinois	1	.5
Kansas	1	.5
Louisiana	1	.5
Maryland	1	.5
Minnesota	1	.5
Missouri	1	.5
Montana	1	.5
Oregon	1	.5
South Carolina	1	.5
West Virginia	1	.5
Wyoming	1	.5
Guam	1	.5
Uninterpretable	7	3.8

Table 19.

STATES WHERE SPECIALIST DEGREES WERE EARNED

State	Number	Percent
Nevada	9	69.2
California	2	15.4
Louisiana	1	7.7
Ohio	1	7.7

Table 20.

STATES WHERE DOCTORAL DEGREES WERE EARNED

State	Number	Percent
Nevada	2	40.0
Colorado	1	20.0
Indiana	1	20.0
Oregon	1	20.0

The following are the subject areas in which teachers majored to obtained their degrees:

Subject Area	Associates	Bachelors	Masters	Specialist	Doctoral
Occupational	71.6	82.4	48.4	58.6	60
Education	16.2	4.8	23.4	24.1	40
Ed.Admin./Counsel.	0	.3	22.8	3.4	0
Other	6.8	12.7	5.4	10.8	0
Uninterpretable	5.4	.8	0	3.4	0

It is interesting to note the percentage of individuals at each degree-level who majored in occupational education area. The percentage of those with bachelors degrees who majored in an occupational education area to earn those degrees is very high. The percentage of education majors is quite low among those with associates and, especially, bachelors degrees and increases greatly for those with masters, specialist, and, especially, doctoral degrees. The percentage of school administration or school counseling majors for those with masters degrees also is sizable. In addition, only 8.2% neither majored nor minored in an occupational education subject area for their bachelors degree.

It should be noted that it is likely that individuals who majored or minored in business education are included

among the occupational majors and minors listed above since business teachers typically indicated that their degrees were in business without specifying business & office or business education.

Approximately 67% of the survey participants indicated that they had been a student teacher of a class in an occupational area as part of their academic training (Table 21). Also, over 95% of the teachers have had a methods of teaching class (Table 22), 20% of whom have had methods of teaching in more than one area.

Table 21.

PARTICIPATION IN STUDENT TEACHING IN AN OCCUPATIONAL EDUCATION AREA

	Number	Percentage
Participated	258	66.8
Did not participated	112	29.0
Did not respond	16	4.1

Table 22.

PARTICIPATION IN A METHODS OF TEACHING CLASS

	Number	Percentage
Participated	368	95.3
Did not participated	11	2.8
Did not respond	7	1.8

Comments and Concerns

Sufficiency of Class Offerings

The majority (54.1%) of the occupational education teachers indicated that they do not believe that sufficient occupational education classes have been made available to them through local universities, community colleges or professional development centers (see Table 23). Table 24 summarizes the most frequently mentioned remarks of the teachers who did not believe the class offering were sufficient.

Table 23.

SUFFICIENT OCCUPATIONAL EDUCATION CLASSES OFFERED

	Number	Percentage
Yes	147	38.1
No	209	54.1
Unsure	15	3.9
Did not respond	15	3.9

A need for more classes in specific occupational areas and occupational skill development is the topic that received the greatest attention, with methods classes in specific occupational areas ranking second. A number of teachers indicated that classes at the community colleges, which offers some skills courses, and the Agriculture Department at UNR, which offers occupational classes, were very helpful but that these offerings are not sufficient. Specifically, occupational education teachers mentioned that offerings in home economics, business education, and industrial arts are lacking. Some of these teachers

Table 24.

SUMMARY OF COMMENTS REGARDING INSUFFICIENCY OF CLASS OFFERINGS

- Need for classes in specific occupational areas in developing occupational skills (13.9%)
- Need for more methods classes in specific occupational areas (6.7%)
- Need for more home economics courses (5.7%)
- Need more class offerings for rural teachers (5.3%)
- Need for update in technology and class curriculum (5.3%)
- Need class offerings at more convenient times (4.8%)
- Need more business classes (4.3%)
- Need for more computer classes (4.3%)
- Classes offered by the Agriculture department were not sufficient, too general, and not related to specific occupational areas (3.8%)
- Need for more in-service and workshop training (3.3%)

indicated that home economics and business education classes are especially limited in the southern part of the state. Other topics remarked upon include a need for training on updating class curriculum to include current technology in specific occupational areas and a need to offer more classes in rural areas and at more convenient times (weekends, evenings or summers).

A need for more courses focusing on practical teaching

experience and classroom management (2.9%), graduate classes in specific occupational areas (2.8%), and training conducted by those working in industry (2.8%) also were expressed.

This section includes some quotes from those who indicated that course offering were insufficient:

"Put occupational classes back into the university."

"We need classes to cover specific occupational areas."

"There are no Industrial Arts programs in the state only vocational programs for those with experience. The only skill upgrading classes are through the community college or adult ed through the district."

"Most of those available come though general education and are not specific in teaching area."

"Begin having classes that correspond to the field of occupational education that will generate credits and additional experience in their particular areas such as woodworking."

"The UNLV campus has only teacher education courses for vocational education ... "hands on" masters degree courses are needed to keep up on latest technological improvements."

"Methods & occupational classes in specific area."

"Methods courses in how to teach vocational subjects have been needed (forever): handling discipline, planning lessons, keeping school records, how to teach "vocational" subjects."

"Home Economics has been absorbed by UNR & now it is difficult to find classes that public school educators can take due to times available and locations."

"There are no more Home Ec education classes offered."

"There are no Home Ec courses available! Had to go to Arizona to get masters.

"Difficult/impossible to take coursework during the school year in rural areas."
"Occupational Education PDC in Lyon has been great! - University offering in rural Nevada has been

insufficient. - Community college outreach program would help rural teachers."

"We constantly need updates. It is difficult to attend classes more than 100 miles from home."

"More tech update courses need to be offered."

"Specific training in new ideas or advances in technology. To keep upgrading new ideas."

"Since most accredited colleges do not offer courses in many of the occupational education areas, i.e. auto, welding, I would like to see some sort of acknowledgement from specified training institutes such as auto tech schools and auto manufacturers training centers."

"The training is not of real world technology is leaving education at least 3 years behind. Suggest using the technical trainers of the various disciplines for instructors..."

"In my area of teaching, nothing is offered - Professional training from technical institutes are not college credit, so I have to take credits to recertify each time that do me very little."

"More classes such as 1 unit weekend classes."

"Stop trying to make Ag[riculture] courses do the job of vocational or industrial courses. Establish a bonafided industrial or vocational department at the UNR level for both B.S. and M.S. degrees."

"Need more occupational classes other than through the AG[riculture] Department."

"State does not accept courses at community college (Vegas)- No courses at UNLV."

"Offered by the community college -but only at the undergraduate level."

"Most classes are community college or school district in-service which are meeting many needs, but not all."

Experiences/Courses that have Helped

Three hundred and one teachers, or about 78% of the survey participants, responded to the item asking them to list any experiences or courses that they believed helped them to be an effective occupational education teacher. Table 25 summarizes the responses. Note that in the open-ended questions, respondents often replied with more than one response and that sub-categorized items within each of these tables only represent the most frequently mentioned details with regard to their respective heading. Therefore, any group of subcategory percentages will not sum to the percentage of the category heading.

Over 94% of the teachers responding to this question indicated that training and/or work experience helped them become effective. (This figure can not be determined from Table 25.). Sixty four percent indicated that training (occupational and/or academic) and 56.5% indicated that work experience had been helpful to them. The next highest percentages are associated with those who mentioned occupational training (30.2%), occupational work experience (28.9%) and educational coursework (25.2%).

Specifically, methods classes and student teaching, were noted by a substantial number of teachers. Teacher training in the form of seminars or workshops, Professional Development Center training, in-service, community college courses, and state or regional occupational meetings also was mentioned.

Some of the other experiences/courses which helped occupational education teachers that are not listed in Table 25 include: 1) participation in workshops or seminars sponsored by product manufacturers (2%), 2) participation in the Lyon County Professional Development Center (2%), 2) experience as a master teacher for student teachers (1.7%), and 3) Pathway to Careers (1.3%).

Table 25.

SUMMARY OF EXPERIENCES OR COURSES
WHICH HELPED RESPONDENTS BECOME MORE EFFECTIVE
OCCUPATIONAL EDUCATION TEACHERS

Experiences/Training		Percentage
TRAINING		**64.1**
Occupational		30.2
Skills	29.6	
Business & Office	12.0	
Trade and Industry	8.6	
Home Economics	3.7	
Educational Coursework		25.2
Methods Class	16.3	
Student Teaching	10.3	
Undergraduate/Graduate		14.3
Seminars/Workshops		4.7
Professional Development Center		4.7
In-Service		4.3
Community College		3.7
State/Regional Occupational Meetings		3.0
Other Training		7.6
WORK EXPERIENCE		**56.5**
Occupational Work		28.9
Trade & Industry	11.0	
Business & Office	10.6	
Home Economics	3.7	
Teaching		10.0
Managing/Business Ownership		7.8
On-the-Job-Training		3.7
OTHER EXPERIENCES WITH		**23.6**
Professional Organizations		3.7
Military		3.3

The following are examples of some of the responses to this question:

"All my work experience has made me very aware of the employer's need for qualified workers."

"Working through high school and college gave me the experience to relate to employers in our coop program effectively, student teaching allowed me to compare teaching methods and explore the occupation of education before jumping into it."

"Being involved in industry to see what is really required of the employee."

"No courses are as relevant as actual working experience."

"All courses have helped."

"Trade experience & undergraduate coursework very helpful. Graduate coursework in technology education proved helpful as well."

"All of my under graduate work in the business area."

"Most business classes I had at UNR were very good."

"Method of teaching science at U.N.L.V."

"Workshops by experts in the field - more valuable than any graduate or recertification college course taken."

"Very good methods classes as an undergrad & student teaching."

"The 2-day workshops provided through Lyon County PDC were without question the most helpful to me in up-dating effective teaching skills. Peer coaching provided in the follow-up has been a great boost."

"Various community college courses such as air conditioning, welding. Private 1-week training schools sponsored by large manuf[acturer] of different product lines."

"Workshops especially during the Summer Vocational Conferences each year."

Aspects of Teacher Training that Hampered

Approximately 21.5% of the total respondents replied to the question asking them to list any aspect of their training as a teacher that they believe has hampered them from being as effective an occupational teacher as they would like. Table 26 contains a summary of their responses. Lack of courses in general is the most frequently mentioned topic. The next highest percentages indicate that unavailability of classes in specific occupational areas or occupational skills development and being required to take classes that are unrelated or not useful are also factors that were perceived as hampering occupational education teachers. A relatively large percentage of respondents indicated that there is a perceived need for more teacher training focusing on practical classroom experience covering such topics as disciplining and motivating students. Lack of commitment on the part of administrators and being trained by professors or instructors with no high school teaching experience also rank high among the comments.

This section includes some quotes from those who responded to this question:

"We needed more on-hand experiences for college credit. Something I had to do on my own."

"No skills were taught - only theory."

"Not having methods courses in the area(s) of occupational education."

"The study of educators does not help when trying to learn skills to teach "hands on" classes."

"We are not given enough training in how to deal with classroom discipline. ... We are not equipped to motivate uncooperative students."

Table 26.

SUMMARY OF ASPECTS OF TRAINING THAT HAMPERED OCCUPATIONAL EDUCATION TEACHERS FROM BEING AS EFFECTIVE AS THEY WOULD LIKE

Lack of courses available (31.3%)
- In specific occupational area or in developing occupational skills (14.5%)
- Involving disciplining students (12.0%)
- Giving practical classroom experience (8.4%)
- Involving motivating students (7.2%)
- In specific occupational area methods of teaching (7.2%)

Education/required (for licensure) courses were unrelated to teacher's occupational area and did not provide teachers with useful information (16.9%)

Courses taken focused on theory instead of practical classroom experience or skills training (9.6%)

Administrators are not committed to occupational education (7.2%)

Teacher instructors who have no high school teaching experience (7.2%)

Paperwork/red tape (4.8%)

Lack of money for occupational programs (4.8%)

"Most education courses are really out of touch with what really goes on in the classroom. More classroom [management] skills need to be taught."

"My professors were slightly out of touch with reality. They paint a beautiful picture but do not prepare you for what the paper-work & schedules are really like"

"My education classes & methods classes were a waste of my time & money. They were <u>not</u> realistic. They did <u>not</u> include any classroom management or instruction in lesson

plans or any suggestions on teaching methods."

"There was nothing at the time that was offered that specifically helped, 8 weeks in the classroom hardly prepared me."

"Too many university classes teach theory with little hands on application. Beginning teachers can learn more from successful established teachers in the same trade. Even established teachers can learn more from each other than the PHDs at some university."

"Too much theory; not enough reality. We should be learning how to teach unmotivated & undisciplined students who perform at very low achievement levels."

"Learning how to deal with school administrators who are more interested in college preparation education as opposed to vocational training."

Suggestions for Improvement

Two hundred and fifty five (255) individuals listed suggestions for improving their occupational education classes or department. Table 27 summarizes the most frequently mentioned suggestions. The greatest emphasis is placed on concerns regarding equipment and keeping all aspects of occupational classes/programs current with today's technology. Familiar suggestions regarding increasing funds and reducing class size also were made. Respondents also express a concern regarding the perceived decreased in opportunity for students to select occupational or elective classes due to the increase in academic credits required for student graduation. Some indicated that increasing the number of occupational education classes that qualify for academic credit and that earning additional support for occupational education from administrators, counselors and the general public might have a positive effect on this concern. Approximately five percent

Table 27.

SUMMARY OF SUGGESTIONS TO IMPROVE
OCCUPATIONAL EDUCATION CLASSES/DEPARTMENTS

Equipment Suggestions (29.4%)
- Update (18.4%)
- Acquire more (7.5%)
- Acquire computers (5.9%)

Update programs/equipment/curriculum /materials (19.6%)

Increase funding to occupational programs for equipment/materials/staffing (11.4%)

Reduce class size (10.2%)

Provide more/update materials (9.8%)

Address occupational/elective class teacher concerns about increased academic requirement (9.4%)

Update Curriculum (7.8%)

Increase support by administrators/counselors /public for occupational education (6.3%)

Recruit a wider range of student to occupational education classes (4.7%)

Establish/increase involvement with local business and industries and provide more job-site experience for students (4.7%)

Continue/more/job-specific teacher training (3.5%)

Provide more adult aids for skills classes (3.1%)

indicated that recruiting a more diverse range of students to occupational education and that increasing involvement with local business and industries, including more job-site experience for students, would improve their classes /departments.

Some suggestions not identified in the summary table include: 1) establishing keyboarding as a pre-requisite for any computer class (2.4%); 2) lengthening the duration of certain advanced skills class (2%); and 3) providing separate classes for different levels of occupational skills (1.6%).

The following is a sample of some of the improvement suggestions made by occupational education teachers:

"Updating courses, equipment etc. to be training students for "real" world."

"Update to today's tech."

"Update equipment up date instructional tech."

"Must continue to add modern high tech equipment if the latest technologies are to be taught."

"More computers available to classroom use."

"1) To become more updated with equipment to keep up with technological advances. 2) To continue with my own training."

"Money or grants to buy needed equipment. Provide training and time to update on the new technology."

"More funding for equipment that is job-specific"

"Money to update equipment. The program is currently 15 years behind industry in some areas."

"We need a class size set at a state level for our Occupational ed classes. This is a safety concern."

"Smaller class size in beginning courses."

"Smaller class size
Continuous updating equipment
Continuous teacher education."

"Up to date teaching materials such as computers video tapes"

"Lessen the amount of core-academic classes to allow for more electives - We're dying.

"Academic credit for Occ/Ed classes would help attract a broader cross-section of the student body."

"Science credit needs to be given for auto."

"Move more toward science in curriculum."

"Rewrite the electronics curriculum to include microprocessor technology & digital techniques, robotics and fiber optics."

"Further administrative/counselor support."

"Provide more funding and educate both public & school administrators as to the lifetime benefits of industrial arts to both professionals & vocational careers."

"More public awareness about the availability of vocational courses."

"Enhance recruitment procedures to obtain interested - motivated students."

"... require more exposure to occupational ed opportunities."

"On job training -- in cooperation [with] business-hotels-law, etc."

"The UNLV campus has only teacher education course for voc ed in areas such as "hands on" masters degree courses are needed to keep up on latest technological improvements. Undergrad programs at UNLV in technology education are in the development.

"More interaction with teachers in my area about teaching ideas."

General Comments

Table 28 summarizes the most commonly mentioned topics by the 71 individuals who chose to make comments. A large percentage of the individuals who responded to this question indicated that they believe that occupational education is important and expressed a concern about the future of programs in this area. Many of those providing comments believe that the increase in academic requirements for graduation will, and has already, reduced students' opportunities to chose occupational courses, that there is a lack of commitment toward Occupational Education by administrators and counselors, and that only a select group of students are encouraged to enroll in occupational courses.

Also, a substantial percentage of the respondents indicated that there is a need to: 1) update programs, equipment, curricula, and facilities, 2) provide more teacher training, 3) increase money for occupational programs, and 4) provide courses in specific occupational areas and in developing occupational skills.

This is a sample of comments made by respondents:

"Vocational education should not be a dumping ground for non-achievers! Counselors need training in understanding the value and role of occupational training for all students. Many college students support their education through some form of occupational employment (secretary, carpenter, mechanic). Nevada needs to seek out funding to update equipment [and] facilities and provide motivational and informative training to its occupational instructors. Currently increased academic requirements for graduation are killing occupational education classes. If the trend continues Nevada won't have occupational education."

"Occupational education has been given the lowest priority in Nevada. Due to increased graduation requirements in the academics and the possible dropping

Table 28.

SUMMARY OF COMMENTS BY OCCUPATIONAL EDUCATION TEACHERS

Concern about the future of Occupational Ed. (35.2%)

- ▸ Lack of commitment administration/counselors to support occupational education (21.1%)
- ▸ Increased academic credits required for graduation (19.7%)
- ▸ Presently not serving a wide range of students (11.3%)
- ▸ Occupational classes are more expensive to offer than academic classes (4.2%)

Occupational education programs, equipment, curricula, or facilities need to be updated (12.7%)

Occupational education is important for students (11.3%)

Work experience has been valuable to them as occupational education teachers (9.9%)

More training would be helpful (9.9%)

Occupational programs need more funds (9.9%)

There is lack classes offered in specific occupational areas or in developing occupational skills (8.5%)

Dissatisfied with the types of classes required to maintain licensure or the licensure process (8.5%)

Skills classes need teachers with skills/work experience (7.0%)

Class size should be standardized and limited (4.2%)

Rural area teachers would like more training/ occupational meetings offered at times/ locations that are more convenient for them (4.2%)

State department/professional development/other teacher have been helpful (4.2%)

of an elective credit, occupational courses are being phased out."

"We sought Carl Perkins' money. This was great! The next year after the grant was ended the county dropped any additional funding & expected the building's general funds to cover the difference. How sad! The state has not earmarked [dollars] for vocational programs. Voc programs are expensive to run, yet I receive much more $ for my regular programs."

"There is a need to educate administrators and counselors to the fact that occ ed classes should be for all students. Not just the trouble makers, non-English speakers or spec[ial] ed[ucation] kids. All students need some type of job skills no matter where they end up."

"The increased graduation requirements have already caused enrollment in all occupational education areas to drop dramatically because students cannot fit elective courses into their schedules."

"The changing of the graduation requirements have severely hurt occupational education.. The "Powers" should look at some "occupational" courses as "college prep", especially the ones that have an articulation agreement in force."

"I feel the school system is being unfair to about 80% of all student in high school. It is limiting the course choices they may take (too many academic requirements) which seldom will make them better prepared to meet the demands of life in the work force of this state and nation."

"I believe students learn more from teachers who have worked in the fields they teach, although some academic training in teaching skills is necessary."

"All the degrees in the world will never take the place of experience gained on the job. Please remember I am referring to the trade industry, not the three R's."

"Until recently at TMCC, no classes have been offered in job specific courses. In order to get my Master in Sec Ed I was forced to take absurd classes at UNR that were no value in my teaching, so I have not wanted to return. My Masters was a pay raise, that was it['s] only value.

"Would like to take a class like welding from a comm[unity] college but the state says it doesn't apply because it doesn't have the correct prefix number. Somebody needs to explain (to the state) how a welding class might be beneficial to a auto shop teacher.

"As an auto instructor I have found it difficult and frustrating to stay certified. Even though I am continually trying to stay updated in my field by taking courses and training from institutes such as Automotive Tech schools, Manufacturers Training center, etc. which are not and perhaps should not be accreditated for whatever reasons, but who offer excellent training in their specified areas."

"I have a problem with the dual certification for Business Education teachers - Most new teachers in a school will be given skills classes (typing, computer application, etc.) and if the teacher does not have the skills training, methods, and background, the student will be short changed. I firmly believe that <u>all</u> Business Teachers should have the Occupational Certification."

"The state department has been a big help with any problems. The help is greatly appreciated. Help finding funding and help in writing grants for Carl Perkins has been excellent. Without this funding my program would not be as strong as it is."

DISCUSSION

The portrait of the typical Nevada secondary occupational education teacher that emerges from this study is one of an experienced teacher who is active in his or her specialty area and is concerned for the future of occupational education in Nevada. Based upon a composite of averages in this study, the typical occupational education teacher is White, has one or more college degrees, has over 13 years of secondary teaching experience, and has nine years of non-classroom work experience, in an occupational education area. Also, he or she has likely been involved with more than one extracurricular educational and professional activity and sponsors a student organization.

Like teachers in other curriculum areas, occupational education teachers are concerned about the impact of large class sizes, lack of funds for their programs, and insufficient teacher training courses offered in rural areas, on weekends, in the evenings, or during the summer.

In addition to these areas of shared concern, occupational education teachers express opinions and specific concerns that no doubt reflect their unique backgrounds and current teaching assignments. As noted, these teachers tend to either come from, or have had work experience in, business and industry. They tend to view their occupational training and work experience as equally important as they do their educational coursework in terms of making them effective teachers. Indeed, the primary focus of their classroom responsibilities is to assist students in acquiring skills or knowledge that may be used in particular job settings.

Occupational education teachers appear concerned about updating all aspects of their programs and particularly are interested in acquiring current information, teacher training, equipment, materials, and curriculum in order to

remain informed about changes in business and industry. Many are interested in establishing joint ventures with, and receiving training from, local business and industry.

With regard to their own training, over half of the occupational education teachers do not believe that current class offerings are sufficient. Unavailability of classes in specific occupational education areas and in developing occupational skills was the most frequently mentioned issue among those who indicated that offerings were insufficient. Further, concern was expressed over the applicability to occupational education of teacher training courses in education that are required for licensure. Some are concerned that specific skill development classes may not satisfy licensure requirements. Others noted the need for methods of teaching courses in specific occupational areas.

Overall, these teachers believe that most students, whether immediately joining the job market or continuing their education after graduation, can benefit from participating in occupational education classes. In this regard, their belief is in accord with a majority of Nevada voters, including employers and employee supervisors, surveyed in the recent Needs Assessment study (Nevada Department of Education, 1990). Approximately 84% of those surveyed indicated that occupational education is important for *all* students and 76.7% indicated that more importance should be given to occupational education in high school.

Yet, it is observed by the present teachers that only a narrow range of students are encouraged to enroll in occupational education classes. The increased number of academic credits required for student graduation and a perceived lack of commitment by school administrators and counselors to support occupational education also are cited as threats to occupational education enrollments and programs.

The present study obtained a number of somewhat

remarkable results. One such result is the similarity in class sizes reported by participants for introductory occupational classes and class size for non-occupational classes recorded statewide. Given the nature of occupational education instruction, this is a cause for concern.

Also, some mention should be made regarding the number of participants holding appropriate occupational endorsement. At the time of the data collection, one of the requirements for an occupational endorsement was 2-8 years of related work experience, depending upon whether the individual held an academic degree. Although there appears to be a heightened appreciation for work experience and occupational skills training among these teachers, over 30% of the occupational education teachers do not hold an appropriate occupational endorsement in the subject area of the classes they teach.

The ethnic ratios among the occupational education teacher population do not reflect the ethnic ratios of the occupational education students. All minority group are under-represented in the teacher population. Also, with regards to sex equity, the data indicated that female teachers were teaching almost all of the home economics, HEROS, career guidance, and health occupations classes and that almost all of the trade & industry, technical, and industrial arts classes were taught by males.

Finally, the finding that a large majority of occupational education teachers received their principal academic training outside of the state is noteworthy. At each degree level, a majority of participants received their degrees outside of the state, and the percentages of those receiving their degrees in Nevada are especially low for undergraduate degrees. Perhaps since the average length of teaching for Nevada's occupational teachers is 13 years, this finding, to some extent, could be accounted for by the

rapidly increasing population of Nevada over this same time period and the concomitant influx of professionals in all areas. Another possibility that should be considered is that there may be limited training opportunities in Nevada for those wanting to pursue teaching in occupational education.

APPENDIX A

OCCUPATIONAL EDUCATION

TEACHER SURVEY

Instructions:

This survey contains both fill-in and multiple choice questions. Most of the multiple choice questions may be answered by placing a "✓" in the appropriate box next to the <u>one</u> best answer. If a multiple choice question requires more than one response, it will be clearly indicated. If more space is needed to respond to a fill-in question, please use the back of the sheet on which the question appears. When providing this additional information, be sure to indicate the question's number. After completing the survey, please mail it to the Planning, Research and Evaluation Office, in the stamped self-addressed envelope provided, as soon as possible.

David L. Smith

Denise K. Quon

PLANNING RESEARCH and EVALUATION BRANCH
OCCUPATIONAL RESEARCH UNIT

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A. TEACHING & SPONSORING ASSIGNMENTS

1. Fill in the following information about each of the classes (whether occupational education or other) that you taught during the last school year (1988-1989). If you were teaching more than one section of any class, use one line for each section. (continue on back of sheet if necessary)

Course Title	Class Size	Level (introductory, job-specific, etc.)

2. Did you sponsor any student organizations that are related to occupational education during the 1988-1989 school year?

[] no
[] yes--------> Please list the organizations:

_____

_____

3. Do you have any suggestions for improving your occupational education classes or department?

[] no
[] yes----> Please list suggestions:

_____

_____

_____

_____

B. ACADEMIC BACKGROUND/WORK EXPERIENCE

1. Check and fill in the information for all of the following degrees that you presently hold.

[] None

[] Associate

Major	School/State	Date Grad.

[] Baccalaureate

Major	Minor	School/State	Date Grad.

[] Masters

Major	Minor	School/State	Date Grad.

[] Doctorate

Major	Minor	School/State	Date Grad.

[] Specialist

Major	Minor	School/State	Date Grad.

2. How many undergraduate hours in occupational education have you earned? (if none, please write "0")

_____

3. How many graduate hours in occupational education have you earned? (if none, please write "0")

_____

4. Have you ever participated in student teaching?

[] no
[] yes ----> As a student teacher, did you teach one or more occupational education classes?
[] yes
[] no

5. Have you ever taken a Methods of Teaching course?

[] no
[] yes-----> | Area (Ag., Bus.,OccEd, General, etc.) | Year Taken |

6. At present, do you believe that sufficient occupational education classes have been made available to you at your local university, community college or professional development center?

[] yes
[] no ----> Please indicate any suggestions that you might have regarding this issue:

_____

_____

_____

_____

_____

7. Do you have any verifiable work experience that is related to your occupational education area(s)?

[] no
[] yes -------|
↓

Please fill in the following information regarding that work experience:

Job Title	Occupational Area	Number of Full-time Years Worked

8. List any experiences or courses which you believe helped you to be an effective occupational education teacher.

_____

_____

_____

_____

9. List any aspect of your training to become a teacher that you believe has hampered you from being as effective an occupational education teacher as you would like. (if none, please write "none")

_____

_____

_____

_____

10. Have any of the Nevada teacher certification/licensure or re-certification regulations been troublesome for you to meet?

[] no
[] yes----> Please explain: _____ _____

C. PROFESSIONAL CAREER ACTIVITIES

1. Check and fill in the information for all the following professional activities in which you have been involved at any time during your teaching career.

[] member in a local or state occupational education association

[] member in a regional or national occupational education association

[] leadership capacity in an occupational education association

[] member of an occupational education curriculum development/evaluation committee

[] member of occupational education textbook or equipment selection/evaluation committee

[] instructor for school district in-service course

[] master or cooperating teacher for student teacher(s)

[] department chairperson

[] certified, licensed or member in any professional business, trade or industry organization

-----> Please specify organization(s): _____

[] other ------> Please specify: _____

2. How many full-time years of secondary teaching (Grades 7-12) have you completed at the end of the last school year (Spring, 1989)?

_____

3. How many years have you taught occupational education classes in secondary school as of the end of the last school year (Spring, 1989)?

_____

4. During the last five years (or the number of years taught if less than five), how many credits have you completed in various occupational educational areas? Check and fill in the information for <u>all</u> of the following options that apply to you.

[] In-service coursework offered by the school or district

Occupational Education Area(s)	Number of Credits

[] In-service coursework offered by the Department of Education

Occupational Education Area(s)	Number of Credits

[] In-service from your regional Professional Development Center

Occupational Education Area(s)	Number of Credits

4. During the last five years (or the number of years taught if less than five), how many credits have you completed in various occupational educational areas? Check and fill in the information for all of the following options that apply to you (continued).

[] University coursework

Occupational Education Area(s)	Number of Credits

[] Community college coursework

Occupational Education Area(s)	Number of Credits

[] Other----> Please specify:

[] None

If you have any additional comments, this space is provided for your convenience.

Thank you for your time and effort in completing this questionnaire. If you have any questions regarding the items in this survey, please contact Ms. Quon, Senior Research Analyst, at (702) 885-3130.

(cut along this line)

If you would like a summary of the results from this study please fill in your address below. In order to preserve your anonymity, you may cut off this section and mail it separately to the same address that the questionnaire will be sent; otherwise, you may keep this request attached to this questionnaire and return it in the stamped self-addressed envelope provided.

_____

_____

_____

APPENDIX B

Table 29B.

PERCENTAGE OF THOSE TEACHING IN GIVEN SUBJECT AREAS WHO HAVE SECONDARY ENDORSEMENTS IN MATHEMATICS, SCIENCE, ENGLISH, SOCIAL STUDIES, HEALTH OR COMPUTER LITERACY/PROGRAMMING

	MAJOR/MINOR SECONDARY ENDORSEMENT					
SUBJECT AREA	MATH	SCIENCE	ENGLISH	SOCIAL S.	HEALTH	COMPUTER*
AGRICULTURE	5.6	33.3	0	11.1	0	5.6
BUSINESS - OCC.	6.9	4.6	16.1	19.5	2.3	25.3
BUSINESS - NON-OCC.	5.7	4.6	17.2	21.8	2.3	11.5
COOP EDUCATION	6.7	0	40.0	33.3	6.7	26.7
CAREER GUIDANCE	5.3	31.6	15.8	10.5	0	10.5
HOME ECONOMICS	8.1	20.3	9.5	12.2	5.4	1.4
HERO	0	6.7	6.7	0	0	0
HEALTH OCCUPATIONS	0	33.3	0	0	100.0	0
INDUSTRIAL ARTS	8.8	19.1	2.9	8.8	2.9	2.9
MARKETING	10.0	0	40.0	20.0	10.0	10.0
MEDIA & COMMUNICATIONS	0	0	0	28.6	0	0
TRADE & INDUSTRY	3.4	17.9	.9	7.7	1.7	.9

* Computer endorsements are classified as either Special (K - A) or Occupational (K-A) endorsements.

Table 30B.

PERCENTAGE OF ENDORSEMENTS HELD BY THOSE TEACHING IN GIVEN SUBJECT AREAS

Subject Area	ENDORSEMENTS			
	Any Occupational	Any Secondary	Any Special	Elementary
AGRICULTURE	88.9	77.8	27.8	55.6
BUSINESS - OCCUPATIONAL	77.0	94.3	44.8	50.6
BUSINESS - NON-OCCUPATIONAL	57.5	98.9	37.9	54.0
COOP EDUCATION	93.3	86.7	53.3	53.3
CAREER GUIDANCE	47.4	94.7	47.4	52.6
HOME ECONOMICS	76.7	90.4	12.3	37.0
HOME ECONOMICS RELATED OCC.	80.0	73.3	0	26.7
HEALTH OCCUPATIONS	100.0	33.3	100.0	66.7
INDUSTRIAL ARTS	50.0	79.4	60.3	29.4
MARKETING	100.0	100.0	37.5	75.0
ME_IA & COMMUNICATIONS	71.4	57.1	28.6	28.6
NON-OCCUPATIONAL	52.2	95.7	33.3	42.0
TECHNICAL	64.3	35.7	57.1	7.1
TRADE & INDUSTRY	74.3	68.8	50.5	33.0

Any Occupational - Includes Standard or Professional Occupational endorsements (K-A) in any subject area.

Any Secondary - Includes secondary endorsements (7th-12th grade) in any subject area.

Any Special - Includes any Special (K-A) endorsements.

Table 31B.

PERCENTAGE OF THOSE TEACHING IN GIVEN SUBJECT AREAS WHO HAVE BEEN INVOLVED IN PROFESSIONAL ACTIVITIES DURING THEIR TEACHING CAREERS

	PROFESSIONAL CAREER ACTIVITIES				
SUBJECT AREA	LOCAL/STATE	REG/NATIONAL	LEADERSHIP	CURRICULUM	TEXT/EQUIP
AGRICULTURE	94.4	83.3	66.7	61.1	44.4
BUSINESS - OCC.	74.7	63.2	23.0	54.0	46.0
BUSINESS - NON-OCC.	64.4	47.1	14.9	40.2	32.2
COOP EDUCATION	80.0	73.3	33.3	60.0	60.0
CAREER GUIDANCE	57.9	36.8	21.1	47.4	36.8
HOME ECONOMICS	68.9	50.0	25.7	60.8	48.6
HERO	86.7	66.7	46.7	60.0	40.0
HEALTH OCCUPATIONS	100.0	33.3	0	33.3	0
INDUSTRIAL ARTS	60.3	30.9	19.1	45.6	26.5
MARKETING	70.0	60.0	30.0	40.0	30.0
MEDIA & COMMUNICATIONS	85.7	57.1	14.3	28.6	42.9
TECHNICAL	73.3	66.7	20.0	60.0	66.7
TRADE & INDUSTRY	68.5	53.7	27.8	49.1	29.6

LOCAL/STATE - Member of a local or state occupational education association.
REG/NATIONAL - Member of a regional or national occupational education association.
LEADERSHIP - Leadership capacity in an occupational education association.
CURRICULUM - Member of an occupational curriculum development/evaluation committee.
TEXT/EQUIPMENT - Member of an occupational education textbook or equipment selection/evaluation committee.

Table 32B.

PERCENTAGE OF THOSE TEACHING IN GIVEN SUBJECT AREAS WHO HAVE BEEN INVOLVED IN PROFESSIONAL ACTIVITIES DURING THEIR TEACHING CAREERS (CONT.)

	PROFESSIONAL CAREER ACTIVITIES				
SUBJECT AREA	INSTRUCTOR	MASTER	CHAIRPERSON	PROFESSIONAL	OTHER
AGRICULTURE	16.7	61.1	61.1	27.8	16.7
BUSINESS - OCC.	27.6	49.4	51.7	23.0	12.6
BUSINESS - NON-OCC.	16.1	42.5	37.9	16.1	10.3
COOP EDUCATION	26.7	46.7	53.3	53.3	20.0
CAREER GUIDANCE	31.6	26.3	47.4	21.1	15.8
HOME ECONOMICS	13.5	32.4	48.6	27.0	14.9
HERO	0	26.7	46.7	46.7	33.3
HEALTH OCCUPATIONS	33.3	66.7	33.3	66.7	0
INDUSTRIAL ARTS	13.2	16.2	41.2	10.3	7.4
MARKETING	20.0	70.0	60.0	30.0	0
MEDIA & COMMUNICATIONS	0	14.3	28.6	42.9	14.3
TECHNICAL	13.3	60.0	60.0	46.7	20.0
TRADE & INDUSTRY	15.7	33.3	37.0	28.7	10.2

INSTRUCTOR - Instructor for school district in-service course.
MASTER - Master or cooperating teacher for student teacher(s).
CHAIRPERSON - Department chairperson.
PROFESSIONAL - Certified, licensed or member in any professional business, trade or industry organization.
Other - Other professional career activities.