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Title: A PROFILE OF PROFESSIONAL IMPROVEMENT NEEDS AS

PERCEIVED BY OCCUPATIONAL EDUCATION

INSTRUCTORS IN OREGON COMMUNITY COLLEGES

Abstract approved: Redacted for privacy
_____/_____Dr. Sylvia L. Lee_____

The Purpose of the Study

The purpose of this study was to develop a profile of the pro-

fessional improvement needs of occupational instructors in Oregon

community colleges as perceived by selected instructors. Specific

objectives included: (1) to determine on a 5-point rating scale how

proficient occupational instructors feel they should be in certain pro-

fessional competencies; (2) to determine at what level these same

instructors feel they are proficient in the competencies; (3) to find

need deficiencies by comparing proficiency attained with proficiency

expected in each competency; (4) to determine if there were any

significant differences in the responses between the six service areas

identified in the study; (5) to deduce implications for teacher educa-

tion and for the development of guidelines for professional improve-

ment programs in Oregon community colleges.

The Procedures

Competencies deemed necessary for occupational instructors in previous studies were utilized in this study to determine proficiency levels perceived attained and expected by the respondents. A screening committee and a panel of experts evaluated the questionnaire. A mail survey questionnaire containing 53 competencies together with two identical five-point scales per item were used to gather data.

The sample for the study consisted of 150 randomly selected occupational instructors from Oregon community colleges. Six community college service areas were identified as Trade and Industrial, Home Economics, Technical, Health, Business, and Agriculture. Each service area was represented in the sample by 25 randomly selected instructors. All of Oregon's 13 community colleges were represented in the 90 usable questionnaires that were returned.

Median scores were utilized to determine central tendency levels and variation patterns for each of the 53 competencies in the questionnaire. The Mann-Whitney U Test was utilized to test the hypothesis that there was no significant difference in professional improvement needs between the six service areas.

Selected Findings

Respondents rated 38 of the 53 competencies at the maximum or "5" level for proficiency perceived as needed and the remaining 15

items only one level lower. Respondents perceived a need deficiency in 47 out of the 53 competencies (90%) when proficiency that was perceived as attained was compared to proficiency perceived necessary in each of the competencies. Significant differences occurred in only 3% of the comparisons between service areas suggesting that respondents in general are alike in perceived need deficiencies.

Selected Conclusions

1. The 53 selected competencies are important in the design of professional improvement programs since respondents rated 41 items at the maximum level of needed proficiency and the remaining items at the next highest level.

2. Professional improvement programs in Oregon community colleges should encompass the 47 items that were assessed to be need deficiencies by the respondents.

3. In a vast majority of the possible comparisons (97%), respondents from the six service areas resembled one another in perceived need deficiencies. This result indicates that few problems should arise in grouping instructors together from the six service areas for professional improvement activities.

Selected Implications for Teacher Education

1. The development of audio-visual materials and use of individualized instruction materials and techniques are two areas that should receive greater emphasis in teacher education.

2. The 47 competencies identified in this study with a perceived need deficiency should be incorporated in teacher education with particular emphasis on their applicability to community college instruction.

3. Teacher education leaders must make special efforts to accommodate the education needs of community college instructors recruited directly from business and industry. Programs located off campus and more flexible entry and re-entry policies involving teacher education programs were suggested.

A Profile of Professional Improvement Needs as Perceived
by Occupational Education Instructors in
Oregon Community Colleges

by

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CHAPTER I

INTRODUCTION

Background of the Study

The community-junior college movement has existed some 70

years. In the decade of the 1960's, enrollment grew throughout the

nation from approximately 600,000 students to more than 2,000,000,

served by approximately 122,400 staff members (O'Banion, 1972).

The National Advisory Council on Education Professions

Development (1972) recently published a blunt appraisal of community-

junior college teaching. In their May 28, 1972 report presented to

the White House and Congress, the council indicated that nearly all

122,400 junior college instructurs needed inservice training, and "too

few colleges provide a well-designed strongly supported total institu-

tion in-service program" (p. 9).

Gleazer alluded to both the responsibility of professional staff

for professional growth and development, and the lack of clear cut

processes to achieve this goal:

> Especially in the two-year institutions, teachers and other
> professionals clearly owe it to their students to remain alert
> and responsive to all significant developments, both in their

special and related fields. While many of us have long held feelings such as these, we have had only impressions about the real dimensions of the need for so-called in-service training (American Association of Junior Colleges, 1969, p. i).

While Gleazer indicates that only "impressions" about the real needs are evident, Kilpatrick (1967) goes one step further by advising that "what is needed is a new way of looking at in-service education. Recognition of the need to be filled is the first step" (p. 11).

In a study describing deficiencies which exist in the inservice training supply and demand picture, Singer observed that:

> Despite many good efforts by users and suppliers alike, it seems painfully evident that both two and four-year colleges still have a long way to go to "close the training gap" (American Association of Junior Colleges, 1969, p. 2).

According to O'Banion (1972), the number one priority for the community-junior college in the 1970's lies in the area of staff development. His statements about the failure of community colleges and teacher training institutions to properly identify inservice training needs are consistent with statements by Gleazer, Kilpatrick, and Singer previously mentioned. In his analysis, O'Banion calls for the following course of action:

> If inservice programs are to be fully effective, then they need much more development, integration, and organization than they receive at present. First, these programs must be given much higher priority than they have at present. Funds must be available to convert potshot inservice experiences into meaningful inservice education programs. Second, These programs must be integrated into the fibre of the college. The basis for this integration must be the <u>individual staff</u>

member's specification of his personal needs and plans for
long-range professional development. [1] Third, inservice
programs must be better organized--eventually at the state
level. Every state department of education has a unit respon-
sible for community-junior colleges. This unit should receive
a block of federal funds to assist its identification of outstand-
ing programs, allocation of funds for program development and
coordination of all services for this development (p. 113).

The decade of the 1960's was a period of tremendous growth for

community colleges in general but particularly for Oregon; nearly all

of Oregon's 13 community colleges were founded during that period.

Oregon's late start in the community college movement has allowed

the state to benefit from experiences of other state systems, most

notably those of California and Washington. The literature, however,

consistently stresses that all of the states have been so engrossed in

the problems of designing programs and facilities to handle the student

growth rate that they have paid scant attention to staff development

needs. Therefore, Oregon has had few professional improvement

programs to emulate. Selinger and Marlantes describe the state of

inservice shortcomings in Oregon, with the following comments:

> Only a minuscule minority of professional personnel in
> community colleges in Oregon received training in programs
> designed to acquaint them with the nature and goals of the
> community college and which equipped them to teach as
> successfully as possible the kinds of courses offered in
> these institutions to the diverse kinds of students who
> attend them (Oregon State University, 1969, p. 2).

Nine Oregon community college deans expressed the opinion

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[1] Underlining not in original quote; added for emphasis.

that no sustained effort has been made to provide for the staff

development needs of community college instructional personnel in

Oregon. Furthermore, a review of the literature indicates no evi-

dence that a systematic effort to identify needs has been undertaken.

On occasion, the State Department of Education and the state uni-

versities sponsor a specialized course or workshop aimed at a select

group of instructors or administrators. These efforts might meet

limited objectives but represent only partial solutions to the overall

problem of growth and development of professional staff in Oregon's

community colleges.

Statement of the Problem

The central problem of the study was to determine if occupa-

tional instructors in Oregon community colleges feel that they need

improvement in certain professional competencies. Specifically, the

following questions were answered:

1. At what level do occupational instructors in Oregon community

    colleges feel they should be proficient in the competencies?

2. At what level do these same instructors feel they are proficient

    in these competencies?

3. Were there any significant differences in the responses between

    the six service areas identified in the study?

Purpose of the Study

The purpose of this study was to develop a profile of the pro-
fessional improvement needs of occupational instructors in Oregon
community colleges as perceived by selected instructors.

The study also provided information to deduce

1. Implications for the development of guidelines for professional

    improvement programs in Oregon community colleges.

2. Implications for recommendations for curriculum content and

    instructional strategies in teacher education.

Limitations

The following limitations were inherent in the study:

1. The paucity of research on staff development needs as perceived

    by instructors at the community college level.

2. Only competencies previously identified as important to occu-

    pational instructors in community colleges were utilized.

3. No attempt was made to include part-time instructors although

    they comprise a significant part of the teaching staff in Oregon

    community colleges.

4. The study was limited to _reported_ perceptions of the respon-

    dents.

5. The study was limited to an analysis of the perceived needs of

    instructors in the six service areas included in the sample.

Importance of the Study

Gleazer (1969), Monroe (1972), and O'Banion (1972) have reached

agreement that vast numbers of community college staff members are

performing at mediocre levels of instruction and, in too many cases,

inadequately. Their solution to the problem, as well as that of

Garrison (1967), Kilpatrick (1967), and Singer (1969) is to provide

instructors with inservice programs that upgrade and retool their

skills, attitude, and knowledge. These writers agree that inservice

education needs have not been identified and that staff members them-

selves must be involved in the identification if meaningful programs

are to be achieved.

The Carnegie Commission on Higher Education (1970) estimated

that nearly 200,000 new and replacement staff members will be

required in community colleges throughout the nation by 1980. The

main basis for the projection was a predicted student enrollment of

4,430,000 students by 1980, compared to nearly 2,500,000 in 1970.

O'Banion (1972), in view of these estimates, asserted that "programs

to prepare these community college personnel. . .are virtually non-

existent" (p. 115). Furthermore, he maintained that programs will

not be sufficient in number "to meet the needs of community colleges

in this decade and probably not the next" (p. 102). Garrison (1967)

felt that programs offered were neither sufficient in number nor

adequate in content. In 1971, Blake expressed the same idea more forcibly in a statement that the current programs for community college instructors are "nothing more than the old graduate smorgasbord with the addition of a new dish generally entitled 'the community college' " (O'Banion, 1972, p. 59).[2]

In view of the above projections and opinions, neither the number nor the quality of community college instructors needed can be prepared in preservice programs within the next few years. The need is in addition to the contention that those currently employed are not adequately prepared and must become involved in professional improvement programs. It is apparent that high priority must be assigned to inservice programs.

Concerns about staff development needs in Oregon community colleges have been expressed by the State Department of Education, teacher education institutions, and community college personnel. Their comments indicate that the situation is at least as critical in Oregon as it is across the nation.

The necessity to identify Oregon's community college needs for inservice education is clearly evident. Successful professional development programs are not likely to be developed until these needs are known.

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[2]From Blake letter to O'Banion.

Definitions of Terms

The following definitions are included for purposes of standardiz-

ing the use of terms in the study.

Community College is a two-year public institution of higher

education with academic, occupational, and general education pro-

grams. It is designed to provide a wide range of options and services

in response to the needs of the local community. For purposes of this

study, no distinction is made among the junior college, the community

college, the comprehensive community college, or the community-

junior college.

Competence is an individual's ability to produce agreed-upon

results (Biddle, 1964).

Inservice Education refers to formal activities engaged in by

instructional staff during their service which is designed to contribute

to improvement on the job. Staff Development and Professional

Improvement are terms considered to be synonymous with inservice

education.

Occupational Education includes vocational education, career

education, and technical education. It refers to courses, programs,

performance objectives, and related instruction based upon compe-

tencies designed to prepare the learner for an occupation or advance-

ment in a current job.

Occupational Instructor is an individual who has identified his

primary teaching responsibility in terms of one of the service areas

described in this section.

Service Areas are designations used to group occupational pro-

grams with similar requirements and characteristics under a single

heading. Those used in this study include:

Agriculture Education. Programs designed to prepare students

for employment in production, supplies, mechanics, orna-

mental horticulture, resources, and forestry.

Business Education. Programs planned to assist youth and

adults to prepare for employment in marketing, secretarial,

clerical, accounting, transportation, real estate, manage-

ment, and sales.

Health Services. Programs organized to prepare students for

occupational objectives concerned with assisting qualified

personnel in providing diagnostic, therapeutic, preventa-

tive, restorative, and rehabilitative services, and includes

understandings and skills essential to the care and health

services. Oregon community college programs include

Nursing, Dental, Therapies, Mortuary Science, Medical

Assisting, and Mental Health.

Home Economics. Programs planned to assist youth and adults

to understand and solve problems in home and family living

and/or to prepare for employment and upgrading in occupations involving knowledge and skills in Home Economics subjects. Oregon community college program categories include Home Economics, Food Services, Food Processing, Child Care, Family Living, and Human Services.

Technical Education. Programs devoted to instruction and training in occupations above the craftsman or trade levels, but generally not professional in nature. The courses qualify persons for employment in paraprofessional positions and as technicians, engineering aides, and production specialists. Oregon community college programs in this area include Electronics, Drafting, Civil Engineering, Environmental Control, Marine Technology, Chemical Technology, and Aviation Technology.

Trade and Industrial Education. Programs organized to develop basic manipulative skills, safety practices, judgment, technical knowledge, and related occupational information for the purpose of fitting persons for initial employment in industrial occupations or upgrading and retraining workers employed in industry. Oregon programs include Automotive, Machining, Industrial Mechanics, Welding, Metals, and Construction.

Summary

Inservice education for community college instructors is advocated but there is no evidence that the professional improvement needs of these instructors is known. Because of this lack of knowledge, staff development programs have been ineffective or nonexistent. The purpose of this study was to determine the educational deficiencies of occupational education instructors in Oregon community colleges as they perceive them. Once a profile of these perceived needs has been constructed, a base for developing effective professional improvement programs will have been established.

CHAPTER II

REVIEW OF RELATED LITERATURE

This study was directed toward identification of the professional improvement needs of occupational instructors in Oregon community colleges, and determination of any significant differences between service areas in professional improvement needs. Competencies studies indicate that there is general agreement as to the kinds of competencies needed by occupational instructors, but no study has been made to determine to what degree individual instructors have mastered them. Related studies, articles, and texts dealing with the need for instructors specifically trained for community college teaching were examined. A review of the literature was directed toward the following subjects:

1. Historical emergence of the community college as a unique institution with special problems.

2. Instructors specifically trained to cope with these problems on the national level and in Oregon.

3. Indications that the problems might be more acute in occupational education than in general education.

Growth and Development of Community Colleges

Our founding fathers knew that without a strong system of

education, democracy could not exist. As the population grew and the

primarily agrarian society became increasingly industrialized,

workers educated to cope with the new problems were required.

During the nineteenth century, the idea became prevalent that educa-

tion was a social good and, consequently, that society was obligated

to provide as much of it as was needed and desired by individuals.

Therefore, by the turn of the century, politically, economically, and

socially the United States had become committed to the idea of educa-

tion for all (Parkes, 1958). As Channing (1843) said, "He is to be

educated not because he is to make shoes, nails, and pins, but

because he is a man" (p. 374).

Beyond the elementary school, education for all and the practice

of this idea seemed to have been divorced with little hope of reconcilia-

tion until the concept of the community-junior college was born. This

concept was given impetus by the Morrill Acts of 1862 and 1890.

O'Banion (1972) noted the relationships between the purposes of the

Morrill Acts and the community-junior college movement:

> Both movements involved opening the doors of higher educa-
> tion even wider to attract new types of students. Both placed
> a great deal of emphasis upon new, practical programs of
> study--programs which faced a long uphill struggle to
> establish respectability in the halls of "higher learning. "
> Both movements maintained unquestionably strong traditional
> curricular offerings alongside those that were more innova-
> tive, opting for comprehensive programs rather than separate
> technical or scientific schools (p. 9).

Earlier, Ross (1942) noted that early land-grant colleges and junior

colleges shared common labels, such as "Democracy's Colleges" and

"People's Colleges" (p. 37).

Thornton (1972) divides the evolution of the present day com-

munity college into four major stages[3]:

1. The first and longest lasted from 1850 to 1920. During that
    period the idea and the acceptable practice of the junior college,
    a separate institution offering the first two years of bacca-
    laureate curriculums, were achieved.

2. Next, the concepts of terminal and semiprofessional education
    in the junior college, which had been described earlier,
    gained widespread currency with the foundation of the American
    Association of Junior Colleges in 1920. By the end of World
    War II in 1945, this idea was an established part of the junior
    college concept.

3. The changes in post-high school education brought by the
    war emphasized a third element of responsibility, service
    to the adults of the community, and so the period after 1945
    has seen the development of the operative definition of the
    community-junior college. During this period, the rapid
    growth in college enrollments emphasized once more the
    transfer function of the junior college and brought increasing
    recognition of the importance of the institution as a part of
    the total system of higher education.

4. Finally, the period since about 1965 has seen the beginning of
    a movement toward the full realization of the open-door
    concept, with the spread of colleges into the inner city and
    their emphasis on seeking ways to provide for all educational
    needs of that community (p. 47).

The current community college philosophy emerged with goals,

distinguished from functions, that give community colleges their

identity on the educational ladder. Monroe (1972) identifies these

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[3]Numbers were added to emphasize the distinct periods of develop-
ment.

goals as comprehensive curricula, the open door principle, and community orientation (p. 22-29). An elucidation of these goals clarifies current community college philosophy:

1. Comprehensive curricula: to serve students of all ages, varying intellectual abilities, and different goals.

2. Open-door principle: to admit any student who is a high school graduate or an adult citizen (over 18).

3. Community orientation: to offer formal vocational and non-vocational curricula and adult education classes based on community needs and to provide college advisory services and college facilities for use by the community.

Cohen (1972) concludes that "The goals of an institution not only give it internal direction, but also mark it as a particular kind of social structure" (p. 25). Blocker, Plummer and Richardson (1965) see the community college as "closely related to the social, economic, and political conditions which shape its character" (p. 18), and as Monroe maintains, "has its peculiar purposes and goals and its own destiny to fulfill" (p. x).

Having evolved from the society whose needs it serves, the community college's phenomenal growth is not surprising. To fulfill its destiny, the first step had to be physical plants in which to attain purposes and goals.

In 1900 no public community-junior colleges existed. Seventy years later every state in the nation had a community-junior college. In 1970, approximately 2,500,000 students attended 1,091 community-junior colleges. This was four times the number of community-junior college students and twice the number of colleges in 1960. The Carnegie Commission on

Higher Education predicts that 450 additional community-
junior colleges may be needed by 1980. The phenomenal
growth of these institutions in the past decade will continue
for the next decade and possibly beyond (National Advisory
Council on Education Professions Development, 1972, p. 1).

The reader's attention is called to Tables 1 and 2 (p. 17, 18),

which may be used to trace lines of development by numbers of

institutions and for enrollments of students from 1900-01 to 1970-71.

Projections for increases in both numbers of community colleges and

enrollment growth are listed in Table 3 (p. 19).

To staff the number of colleges predicted to be in operation by

1980, Medsker and Tillery had forecast in 1971 that there would be a

need for 71,000 to 89,000 new and replacement faculty. The National

Center for Educational Statistics projected the 1980 faculty need to be

72,000. O'Banion (1972) noted that Medsker and Tillery's figures

included a replacement factor that totaled 24,000 to 30,000 faculty

members, while N. C. E. S. 's figures were for new hires only. By

adding Medsker and Tillery's replacement figures to N. C. E. S. 's

predictions, O'Banion arrived at a total of 102,000 new and replace-

ment faculty members needed in community colleges by 1980.

When there is phenomenal growth in any institution of society,

equally phenomenal problems arise. This is especially true of educa-

tion, bound by tradition and interrelated with every facet of life as

it is. Since the community colleges are comparative newcomers on

the educational scene and their growth has outstripped that of all other

Table 1. Growth in Number of Community-Junior Colleges, 1900-1970.

Year	Public	Private	Total
1900-01[a]	0	8	8
1915-16	19	55	74
1921-22	70	137	207
1925-26	136	189	325
1929-30	178	258	436
1933-34	219	302	521
1938-39	258	317	575
1947-48	328	323	651
1952-53	327	267	594
1956-57	377	275	652
1958-59	400	277	677
1961[b]	405	273	678
1962	426	278	704
1963	422	272	694
1964	452	267	719
1965	503	268	771
1966	565	272	837
1967	648	264	912
1968	739	254	993
1969	794	244	1,038
1970	847	244	1,091
1971	872	239	1,111

[a]From Gleazer (1961), p. 41.

[b]From AAJC Directories (1966-72).

Table 2. Growth in Community-Junior College Enrollment,
          1900-1970.

Year	Public	Private	Total
1900-01[a]	0	100	100
1915-16	592	1,771	2,363
1921-22	8,349	7,682	16,031
1925-26	20,145	15,485	35,630
1929-30	45,021	29,067	74,088
1933-34	74,853	32,954	107,807
1938-39	140,545	56,165	196,710
1947-48	378,844	121,692	500,536
1952-53	489,563	71,169	560,732
1956-57	776,493	93,227	869,720
1958-59	806,849	98,123	905,062
1961[b]	644,968	103,651	748,619
1962	713,334	105,535	818,869
1963	814,244	113,290	927,534
1964	921,093	112,870	1,043,963
1965	1,152,086	140,667	1,292,753
1966	1,316,980	147,119	1,464,099
1967	1,528,220	143,220	1,671,440
1968	1,810,964	143,152	1,954,116
1969	2,051,493	134,779	2,186,272
1970	2,366,028	133,809	2,499,837

[a]From Gleazer (1961), p. 42.

[b]From AAJC Directories (1966-71).

Table 3. Number of Public Colleges Projected and
Enrollment Projected.

Year	No. of public colleges[a]	Enrollment[b]
1972	964	2, 586, 000
1973	1, 030	2, 742, 000
1974	1, 094	2, 889, 000
1975	1, 159	3, 037, 000
1976	1, 223	3, 185, 000
1977	1, 288	3, 332, 000
1978	1, 352	3, 480, 000
1979	1, 417	3, 628, 000
1980	1, 481	3, 775, 000
1981	1, 546	3, 923, 000

[a]Based on projected public college enrollment increases.

[b]Based on the effect of projected increased numbers of
public colleges.

Source: Junior College Directory (1972), p. 6-8.

educational institutions, their problems become seriously compounded.

Answers to community college problems must be found if, as Cohen

says (1971),

> The junior college is the safety valve of the American educational scheme. It is the shock absorber for the jarring tensions generated by the victories of mass education and the academic revolution in American life (p. 11).

The literature pertaining to the growth factor of community

colleges reveals one consistently stressed requirement that is not now

being effectively met. There are not sufficient numbers of instructors

trained to teach in the community colleges, dedicated to the philosophy

of the community college, and willing and able to grow with the

increasing and changing demands of the community college. Instruc-

tors who are not dedicated to community college philosophy cannot

function adequately with a student body too complex to stereotype.

Cohen (1972) sees faculty identity as the key to institutional identity.

"The instructors personify institutional goals. It is they who most

frequently associate with the institution's clientele, the students"

(p. 25). Gleazer (1967) agrees that "It is critical. . .that there be

some consistency between the perception of faculty members and the

objectives of the community college "(p. 2). In analyzing present

faculty-college relationships, Blocker, Plummer and Richardson

(1965) came to the conclusion:

> It is apparent that there is no consistency between the perceptions of faculty members and the stated objectives of the

two-year colleges. Absolute congruence is not necessarily
desirable. . . but there must be a stronger link between the
values, attitudes, and motivations of individual staff members
and the objectives of the college if the educational program is
to be a success. General institutional purposes are translated
into action and behavior patterns by faculty members, and
these patterns are subsequently transmitted to student. At
this point, a synthesis of institutional and individual objectives
takes place (p. 164).

Community colleges have grown in both scope and number. They

have evolved a definite philosophy and goals. These goals, in the

final analysis, must be met by faculties who realize they are the

central force, the power that facilitates achievement of goals. The

depressing reality is that present community college staffs are not

adequately trained to cope with community college goals; new and

replacement faculty have little if any chance for better preparation.

Preservice Training

With very few exceptions, preservice programs for the
preparation of community-junior college staff are grossly
inadequate. The disciplines in the university are inflexible;
the colleges of education are unsure and unpracticed. Available
instructors are either discipline-oriented, narrow, subject
matter specialists or secondary school-oriented, college of
education graduates. Neither is prepared to instruct at the
community-junior college (O'Banion, 1972, p. 84).

O'Banion cites three other leading community college authori-

ties, Cosand, McCabe and Blocker, who agree with his position. In

addition, several community college spokesmen have expressed simi-

lar ideas. Gleazer (1967), for example, in comparing programs for

preparation of community college leadership personnel and teaching

personnel, notes a "Concerted and systematic approach to the prepara-

tion of professional leadership. . ." but "Nothing of such scale and

coherence has been done to prepare community college teachers"

(p. 112). When he advocated inservice training to overcome com-

munity college instructional weaknesses, Kilpatrick (1967) also

recognized "the deficiencies in teachers' preservice preparation"

(p. 1). Singer (1968) observed that:

> Among the top leaders in the two-year colleges, there exists
> widespread, growing uneasiness and dissatisfaction over the
> insufficient, inappropriate kinds of orientation, subject-
> matter knowledge, and teaching skills which are being
> transmitted at many colleges and universities where
> students are now preparing to become teachers in our two-
> year colleges (p. 36).

While Singer agrees with the concerns of these leaders in the

two-year colleges, he maintains that the potential for effective com-

munity college teacher preparation programs remains greatest in our

existing schools of education. He cites examples of efforts being

conducted at these institutions to give greater priority to the needs of

prospective community college instructors, and implies that greater

efforst are planned for the near future. However, he cautions that

many community college leaders are not convinced that positive

changes will occur. He quotes Irene Kiernan, Director of the 1967

Bennett College Conference on the "Nature and Demands of Two-Year

College Teaching, " to this effect:

We should not count on the four-year college and universities
to train teachers for two-year colleges, especially when
experiences show that the universities tend to do this in isola-
tion from the realities of two-year college needs and circum-
stances (p. 38).

One large and very important segment of the community college

faculty, consistently ignored in the literature surveyed, is faculty

recruited from business and industry, and the professions. These

people, for the most part, had not been exposed to teacher training

programs, and in many cases had not received post-secondary training

of any kind. O'Banion (1972) indicates that in 1971, 35 percent of

community college faculty were obtained from these sources. It would

be unrealistic to suppose that these instructors had sufficient knowl-

edge of community college philosophy or goals, community college

student characteristics, teaching-learning processes, or innovations

in education. The potential benefit to the instructional process that

these people offer with their up-to-date knowledge of occupational

requirements and their own demonstrated competency on the job make

it imperative that they be given an opportunity to overcome whatever

deficiencies they may have.

Most community college leaders readily admit that their attempts

at solving teacher training deficiencies through inservice training

efforts, to date, have proven something less than adequate. The reason

given is that dealing with the tremendous growth problems has forced

giving priority to the development of programs and facilities. Little is

mentioned by these leaders in their criticisms of preservice training

about similar growth trends at teacher training institutions that have

required considerable attention. Furthermore, there seems to be a

lack of a concerted effort on the part of community colleges in docu-

menting their teacher preparation needs in a consistent and clearly

defined manner.

That deficiencies exist in both quantity and quality of preservice

training seems to be generally accepted. Educational researchers

have tried to pinpoint the exact areas where preservice has failed to

adequately prepare staff for community colleges. According to

O'Banion (1972), the consensus of their opinions clusters around the

following community college needs:

1. Understanding of and commitment to community college philosophy.

2. Understanding and acceptance of community college students.

3. Improvement of the teaching-learning process.

4. Awareness of innovations in education and the ability to select and use those pertinent to their instructional assignment.

5. Development of a humanistic personality.

These opinions form the basis for the argument for inservice

education. They were instrumental in the selection of items used in

the questionnaire for this study.

Inservice Training

Education rises and falls with the
quality of the teacher.

(Monroe, 1972, p. 254)

Since preservice training is not the immediate answer to an
immediate and pressing problem, another answer should be found.
The case for inservice programs has been and is being propounded as
a means to close the training gap. The National Advisory Council on
Education Professions Development advises that ". . . programs for
the 70's should focus on inservice education" (p. 8). Furthermore,
the Advisory Council asserts that presently employed staff members
need "continuing inservice educational experiences" (p. 9).

The need for inservice education of community college personnel
stems from the fact that traditional procedures and methods are
inadequate to meet today's requirements. As pointed out in the pre-
ceding section, Preservice Education, the traditional method of obtain-
ing teachers from teacher training institutions has seldom been
utilized to staff community colleges. The National Advisory Council
on Education Professions Development states, "It has been estimated
that present preservice programs place only about 150 faculty in the
community-junior college each year" (p. 8).

The community college is forced to recruit staff from non-
traditional sources. During the past ten years the greatest number of

community college staff have been obtained from public school

systems, senior institutions, and business. A table compiled by

O'Banion shows that in 1970 only 13 percent came from other com-

munity colleges where presumably, though not necessarily, they had

been oriented to community college philosophy, goals, and students.

In 1949, the American Council on Education stated that ". . .a clear

conception of the philosophy and background of the institutions, their

relationship to the whole educational structure, and especially their

place in the community" (p. 8) was paramount in the preparation of

community college faculty. Twenty years later, A. A. J. C. was still

saying much the same thing. Staff recruited from public school

systems, senior institutions, and business had not met these basic

requirements during the interim. Priest (1966) elucidates this

contention when he says:

> The tendency to force the junior college into the mold of a
> glorified high school or a little university can be harmful and
> this is a common tendency of the newcomer who enters junior
> college teaching via high school or university teaching experi-
> ence. Therefore, it is suggested that major attention be given
> to in-service training after the person enters junior college
> teaching (p. 7).

Another fact of modern life that cannot be dealt with by tradi-

tional procedures and methods is the proliferation of knowledge.

Keeping pace with a constantly accelerating explosion of information is

a challenge difficult to meet. Whaley (1965) underlines this difficulty

when he estimates that:

There is about 100 times as much to know now as was
available in 1900. By the year 2000 there will be over a
thousand times as much knowledge of all kinds to record,
to sift, to store, to search out, to teach about, and, hopefully,
to use with some discrimination and effectiveness (p. 107).

Assuming that a staff had managed to obtain adequate preservice

training and inservice experience to function efficiently in 1973, with-

out a consistent program of inservice renewal, could the same be said

for that staff ten years later? In this century, to believe that such a

situation could exist is not only ridiculous but dangerous. Johnson

(1969) says that "the watchwords of this century have become 'The

one certainty in life is change!'. . . Change is commonplace and the

capacity to adapt to successive changes remains the price requisite to

survival" (p. 1). In his contention that priorities for the 70's should

focus on inservice education, O'Banion (1972) states "Unless staff

members are constantly updated and supported in their own develop-

ment, programs cannot grow and flourish to meet the needs of stu-

dents" (p. 102). Blocker, Plummer and Richardson (1965) agree that

Reasoned change which is consistently relevant to the college's
needs while protecting its integrity is essential if the organiza-
tion is to succeed in meeting its responsibilities and adapting
to a changing environment (p. 69).

Cohen (1971) says

Many junior college groups realize that the college must forge
ahead alone if appropriate specialized training is to be accom-
plished. . . . Accordingly, plans for inservice training have
been developed in several states (p. 54).

Scientific and technological advances and the proliferation of knowledge are mutually dependent. New knowledge leads to scientific discoveries; scientific discoveries lead to technological progress; technological progress leads to new knowledge. Traditional methods and procedures cannot hope to cope with the new occupations and positions that the advancing frontiers of science and technology have created. According to Johnson (1969), "Eighty percent of our college graduates in the late sixties. . . entered positions that did not even exist when they were born" (p. 5). The changing and proliferating job market requires trained workers whose instructors have had experiences that brought them up to date on the latest scientific and technological advances.

Integrated with the proliferation of knowledge and scientific and technological advances are current concepts of the teaching-learning process and innovations in education. New knowledge includes new teaching-learning concepts. O'Banion says:

> Many teachers do not know how to teach, and they are not
> helped to know how in most teacher education programs. . . .
> It is hoped that advances in microteaching, systems learning,
> encounter groups, and other learning technologies will pro-
> vide improved bases for teacher education programs (p. 87).

Innovations spring from scientific and technological advances. Though some may prove to be fads and at best not particularly harmful, an instructor should have the opportunity to select the gold from the dross. Without awareness of possibilities no selection can be made. In this

connection O'Banion adds:

> In addition to learning about the process of learning, instructors
> must be aware of new approaches and innovations in education.
> Behavioral objectives, multa-media systems, audio-tutorial
> systems, computer assisted learning, micro groups and many
> other approaches need to be studied so that the instructors can
> adapt these to their own styles (p. 87).

The dearth of teachers prepared specifically for community

college teaching makes it important that those who are employed find

enough satisfaction in their work to make community college teaching

a permanent career. They will find this satisfaction if opportunities

for professional growth are afforded. Monroe (1972) when speaking of

teachers who desire to leave community college employment for

"greener" fields, maintains that "The retention of the teacher often

depends most on the extent to which the college environment provides

conditions for professional growth" (p. 253). Garrison (1967), writing

for the American Association of Junior Colleges, reiterates this idea.

> It is important to emphasize. . . that faculty accept the idea of
> junior college teaching as a permanent career with the qualifica-
> tion that the colleges in which they work and will be working
> will provide, increasingly, a context, resources, and assistance
> which will enable them to experience continued professional
> growth (p. 63).

An analysis by Preus (1971) of the educational status, needs, and

aspirations of professional personnel in Alabama junior colleges

revealed:

> Most respondents indicated a desire to enroll in graduate level
> courses. . . . Their replies showed a strong interest in
> graduate courses designed especially for instructors teaching

in junior colleges. . . . Of particular interest to Auburn University are the findings indicating that this typical junior college person, although technically qualified for his position, recognizes and indicates his need for further graduate education (p. 5, 7).

Arrowsmith (1968), in his chapter delineating the teacher of the future, describes teachers past, present, and future by saying that most teachers aspire to become:

> . . . the man who might for the first time give him [the student] the only profound motivation for learning. . . the hope of becoming a man. . . It is only in the teacher that the end is apparent; he can humanize because he possesses the human skills which give him the power to humanize others. If that power is not felt, nothing of educational value can occur (p. 119).

In this delineation, Arrowsmith brings up a point that O'Banion (1972) feels is the most important attribute a community college instructor can have and that is a "humanistic" personality. For, he says, ". . . ultimately, this personality distinguishes the superior from the inferior educator" (p. 87).

If institutions can be said to have personalities, then the "humanistic" personality is the label that would be applied to community colleges. Warm concern for people, a belief that man is good and under the right conditions will move in positive directions are integral parts of community college philosophy, goals, and aspirations. The community college places value on every individual. It is committed to facilitate human development politically, socially, and economically. The instructor who understands community college

philosophy and students, who is concerned to know all aspects of the teaching-learning processes and utilize innovations that will make his teaching more effective has gone far toward developing the humanistic attitude so vital for inspired teaching.

Occupational Education

The concept of occupational education came late in the development of the community college. Traditional and philosophical opposition against including occupational programs in "higher" education clouded the issue. Only since World War II has the nation become aware of the importance of technical and other specialized programs for economic progress and national defense.

From the passage of the Smith-Hughes Act in 1917 to the National Defense Education Act of 1958, little of significance was done to further vocational education in the community colleges. The latter act funded the training of skilled technicians in fields necessary for national defense. The Vocational Education Act of 1963 added more federal funds and broadened the scope of vocational education. The 1968 amendments to the 1963 Vocational Education Act provided access to vocational training or retraining to persons of all ages in all communities.

Community college philosophy exerted pressure within the institution to provide more occupational programs. Society's needs,

backed by federal funding, exerted pressure from without. As the two

pressure merged during the 60's, occupational education grew at an

unprecedented rate. Trends in Vocational Education, a publication of

the United States Office of Education, gives some indication of this

growth. Between 1960 and 1969, the enrollment in vocational educa-

tion programs jumped from 3.7 million to nearly 8 million. The

U. S. O. E. has predicted that 13.5 million Americans of high school

age or older will be enrolled in vocational educational programs by

1975 (1971, p. 3-4).

Perhaps the greatest problem for the community colleges is

instituting the myriad of programs for which there is a demand. How-

ever, no matter how well this is done, no program will succeed unless

qualified instructors can be found. Blocker, Plummer and Richardson

(1965) saw this when they said, "In the final analysis, the two-year

college will not necessarily be judged by how many things it attempts,

but how many things it successfully accomplishes" (p. 289).

Thornton (1972) sounded a pessimistic note about the future of

occupational education by saying:

> It seems probable that a major deterrent to the development of
> occupational education in junior colleges has been the scarcity
> of qualified instructors in these subjects. Until plans can be
> elaborated for the effective recruitment and training of instruc-
> tors, the offerings will continue to be scanty and only partially
> suited to the educational needs of junior college students
> (p. 198).

Part of his pessimism springs from the problem pertinent to obtaining all community college staffs--lack of preservice training. Another factor unique to occupational instructors is the low status of occupational programs, which, in turn, reflect on the instructors of the program. Monroe (1972) explained how, prior to 1950, this was quite understandable. Most community colleges had started on a financial shoestring, the student wanted prestige transfer courses, and the academically oriented faculties resisted occupational programs for fear that their own images would be damaged. Moreover, tax-payers were not willing to buy expensive shop equipment and buildings to accommodate occupational programs. They were accustomed to the cheaper-to-operate liberal arts programs. Furthermore, programs were often instituted on a hit-or-miss basis without consultation with the faculty, business, or industrial people in the community. Few programs survived these obstacles and these were mainly in prestige vocations such as nursing for women and data processing and account-ing for men.

Since 1958, this picture has been rapidly changing. Monroe (1972) notes that "Today, at least a third of community college enrollees are in occupational courses, while some community colleges can boast that half their students are in these courses" (p. 93). But the status stigma lingers on often reflected in the salary schedule.

Often, the academically oriented college administrators and faculty tend to downgrade the skilled person with no or little college education, by placing him on the salary scale for persons without bachelor's degrees. This practice is an injustice which can be corrected by setting up equivalents in work experience for college credits (p. 101).

Monroe's solution for salary inequity might serve to interest more businessmen, industrialists, and tradesmen in entering the teaching profession, but it does solve any deficiencies they may have as professional teachers. This remains and will continue to remain the task of the community college through a realistic program of staff development.

The Oregon Picture

The first bill directly concerned with legislative sanction for post-high school education was introduced by Austin Dunn of Baker, Oregon in 1949. This bill gave permission for individual school boards to hold classes of lower division collegiate grade in the school district. Passage of the bill indicated some concern by Oregon legislators that post-high school education was needed but that they were not yet ready to accept community college philosophy. Only transfer students were considered and no state funds were made available. Nevertheless, three districts, Bend, Klamath Falls, and Baker, attempted to set up these "extension" schools. Only Bend was able to limp along until conditions became more favorable.

The 1949 Legislature appointed an Interim Committee that employed Leonard V. Koos to direct a study of post-high school education facilities in Oregon. Koos and the committee made numerous recommendations; many were incorporated in the 1951 Junior College Bill passed by that legislature. The provisions of the bill were as follows:

1. Outlined minimum requirements for establishing a junior college including true cash value of the district, high school enrollment, building and library facilities, and approval of the State Board of Education.

2. Limited the maximum tuition that could be charged.

3. Placed the control of the junior college under the State Board of Education.

4. Made the colleges eligible for state aid on the same basis as the elementary and secondary schools.

5. Provided for lower division collegiate work only.

Although some funding was now provided, the true meaning of the community college was not realized. The legislature appointed an interim committee to study the situation. In 1957, an amendment to the 1951 Junior College Law changed the name to Community College Law. Now Oregon had the name but still fell short of the game.

The 1957 Legislature commissioned two interim studies of post-high school education for 1958 and one of them was to study technical-vocational education. During this time the "service area"[4] concept

[4]"Service area" in this context refers to the geographical area that constitutes a community college district.

was born. In 1959, each of these study groups submitted a bill;

provisions of both bills were incorporated providing for the following:

1. Repeal of the 1951 Community College Law, the 1941 Regional Vocational School Act, and other vocational education legislation. (These vocational legislations had not been connected with community colleges.)

2. Defined a broad curriculum, consisting of lower division transfer courses, vocational education programs, and adult education.

3. Provided for the formation of area educational districts and allowed school districts with over 100,000 population to establish a community college or "education center" as part of the district. (Portland was the only district to qualify under this section.)

4. Tuition charges were left to the discretion of the community college board.

5. Required the election of an area education district board composed of five members.

6. Increased state support to $200 per full-time enrollment in lower division transfer courses.

7. Increased state support of technical-vocational programs from one-third to two-thirds of operating cost.

Passage of this bill provided the basis for future legislation that

would put Oregon on a par with its neighbors. Legislation in 1961

with amendments and additions in 1963 and 1965 provided the basic

law under which present community colleges operate.

The 1963 Legislature decreased state aid for operating expenses

and building costs and gave approval to community colleges to establish

student loan funds and participate in student loan programs of the

federal government. The 1965 Legislature amended the 1961 law to

permit adding federal vocational funds to the basic state aid.[5] Federal

money stimulated growth; growth augmented the teacher shortage

problem.

Oregon profited in many areas from the growing pains of other

states in developing its community colleges, but has been no more

able to solve the shortage of qualified teachers than have the other

states. Gleazer (1968) asked the same questions in 1968 as Oregon is

asking now.

> Where do you find the necessary teachers? How do you pre-
> pare them for what most experts consider the "special" needs
> of junior college teaching? Estimates of the number of
> trained teachers needed during the next decade run into the
> tens of thousands (p. 13).

Enrollments in Oregon's community colleges grew tremendously

in the 1960's and have continued to do so in the 1970's. According to

the State of Oregon Educational Coordinating Council (1972) there was

approximately an eight-fold increase in enrollments from 1961-1971 as

shown in Table 4. Projections by the Council indicate that the period

1972-1981 will produce continued growth in student enrollments as

noted in Table 4.

Figures obtained at the State Department of Education (March,

1973) show there were 523 full-time occupational instructors in Oregon

community colleges in 1972. The State Department of Education

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[5] Legislative actions were condensed from Oregon Law and Revised
Statutes as cited in the Bibliography.

Table 4. Summary of Actual and Projected Fall Term Headcount
for Oregon Public Community Colleges, 1961-62 to 1981-
82.

Year[a]	Fall term headcount	Year[a]	Fall term headcount
1961-62	7, 192	1972-73	67, 503
1962-63	8, 164	1973-74	74, 260
1963-64	8, 689	1974-75	80, 438
1964-65	10, 713	1975-76	85, 977
1965-66	15, 435	1976-77	89, 172
1966-67	20, 183	1977-78	95, 934
1967-68	27, 878	1978-79	100, 787
1968-69	33, 146	1979-80	105, 589
1969-70	43, 583	1980-81	110, 022
1970-71	50, 614	1981-82	114, 431
1971-72	56, 481		

[a]The fall term headcount is an unduplicated headcount which includes
all students who were enrolled or are projected in programs for
which the state reimburses.

projects that at least 750 full-time instructors will be needed by 1976, an increase of 43 percent (227 instructors) over the 1972 level in just four years.

Oregon State University is an institution in the state that provides opportunities for the preparation of community college instructors. Courtney and Cox (1973) project that Oregon State University will be able to train 186 instructors for the community college level in the next four years. Since the State Department of Education has projected a need for 227 additional occupational instructors, it appears that the 186 instructors, many of whom will not prepare in occupational areas, will fall far short of the need. To fill the need, the community colleges must rely on out-of-state sources, business and industry, public schools, and other college or university-trained persons, few of whom, as has been established, will have had the specific training vital to the needs of community colleges.

Neither in the nation as a whole nor in Oregon have qualified occupational instructors been available in sufficient numbers to fill past needs. They will not be found for the anticipated needs of the future unless recruitment from present sources is stepped up and new sources for recruitment tapped. Russo (1969) verifies this contention when he insists that "The recruitment, training, and retention of qualified staff are among the most critical needs in vocational education" (p. 10).

O'Banion (1972) suggests two new sources--paraprofessionals
and "retooled" doctorate degree holders. Many community colleges
prepare paraprofessionals for other areas, why not prepare them for
their own institutions ? Many students prepared as paraprofessionals
decide to continue their education and become professionals. If
paraprofessional education for community colleges could be coordinated
with the requirements of university education, the excellent oppor-
tunity for the early recruitment of students to a career in the com-
munity college should help to alleviate future shortages of qualified
instructors. The student will have had the most valuable inservice
training available if his instructors personify all that is best in
community college teaching. For, as Emerson (1883) so aptly put
it, "That which we are, we are all the time teaching, not voluntarily
but involuntarily" (p. 185).

Mayhew (1971) estimates that nearly three times as many
doctorates will be produced per year in the next decade as were pro-
duced in 1968-1969. Though the present oversupply is only in certain
fields, Mayhew predicts that it could spread to all disciplines. The
abundance of doctorates has worried community college leaders, for
the orientation of the Ph. D. is often the antithesis of the orientation
desired for a community college instructor. The intelligence waste-
land represented by the unemployed doctorate is the shame of higher
education. O'Banion (1972) maintains that "Highly sophisticated

selection procedures and well developed inservice programs can pro-

vide opportunities for Ph. D. 's to become competent staff members in

the community junior college" (p. 100). Community college adminis-

trators have shunned this source of teacher supply in the past. In

the light of Mayhew's predictions and the demand for teachers, they

may be forced to change their views.

In addition to tapping new sources, increased reliance will have

to be placed on obtaining more community college instructors from

previously used sources. Whatever the source, community college

occupational personnel must be trained to function at a high level, not

only for the sake of the students, but for the sake of their own images

and the prestige of occupational programs.

Preservice and Inservice Training in Oregon

The results of a report (Oregon State University, 1969) on data

gathered from interviews and a questionnaire conducted within each

community college in Oregon were:

1. Proposals for programs for community college instructors are in existence at both O. S. U. and the U. of O. Neither proposal is comprehensive enough to satisfy the requirements of the community colleges (p. 14).

2. Little has been done to develop programs to improve the quality of instructors for community colleges.

3. Community colleges have relied on recruiting staff from other levels of education, institutions preparing teachers for other levels, and personnel from all levels in the trades and industry.

4. Very few professional personnel had received training designed to inform them of the nature and goals of the community college.

5. Few were prepared to successfully teach the kinds of courses offered in community colleges to the diverse kinds of students who attend them.

A further finding from this study was that very little was being done for inservice education in the community colleges of Oregon. Orientation programs varying from three days to two weeks, short inservice programs for specific college problems during the year, provision of professional journals, and attendance of staff members at professional meetings were mentioned as abortive steps toward a more desirable goal of a coordinated approach to inservice training problems. Even these steps were not carried out in all of Oregon's community colleges. The description of what is being done in Oregon comes close to the National Advisory Council on Education Professions Development's description of the poor programs that abound:

> Some colleges provide no inservice opportunities; most provide at least an orientation program preceding the beginning of fall classes; some even provide for periodic programs during the year and allow staff members to attend off-campus programs (p. 9).

The only exception noted in the literature surveyed to the almost total lack of a concerted program for inservice training was the Florida Plan. Sufficient funds were allocated by the Florida Legislature. The Florida Board of Education stated that the funds were to be used for the continuing development and improvement of the faculty

and the program. Each community college in the state was required

to make long-range plans that included college philosophy and objec-

tives and its goal priorities for staff and program development.

Specific projects and activities and evaluating procedures for them

had to be spelled out in detail. Finally, the program had to be sub-

mitted to the Florida Division of Community Colleges for review and

approval. The Florida Plan could serve Oregon as a model if suffi-

cient funds were available to implement such a program. Details of

the Plan can be found in Appendix I.

Before the Florida Plan or any modification of such a plan

could be adopted, more research needs to be done in order to deter-

mine exactly from what deficiencies Oregon's community college

instructors suffer. As pointed out in the Oregon State University

study (1969):

> The best service the University in conjunction with the State
> Department of Education could render in this area would be to
> undertake a job analysis on subject mastery, teaching compe-
> tency, and guidance expertise of staff members in community
> colleges. Thus it could be determined how far from the goal
> present staff are situated and then determine the amount and
> kind of in-service education that is actually required (p. 10).

As noted above, an analysis of subject mastery and teaching

competence are priority items in the development of programs for

professional improvement of community college instructional staff in

Oregon. Cotrell (1970) and Halfin and Courtney (1970) advocated the

description of common professional education competencies among

vocational teachers. Gunderson (1971), Lindahl (1971), and Miller (1971) utilized the findings of Cotrell, and Halfin and Courtney in the design of studies whose purpose was to determine the professional education needs and proficiency requirements of community college instructors in the vocational service areas.

> Their major objective was to extract a common core of poten-
> tial matter which would be descriptive of professional educa-
> tion needs and instructor performance elements, and to
> develop a list of professional education competencies common
> to community college vocational instructors (Spaziani, 1972,
> p. 22).

In these studies, community college instructors were sampled in four western states. No significant differences existed between the respondents in the four states in regard to 99 competencies tested by each researcher.

While these researchers identified competencies common to community college vocational instructors and ranked them according to importance, no attempt was made to determine the level of proficiency that instructors possessed in the identified competencies. To determine how far from the goal present instructors of occupational programs in Oregon community colleges are situated, 53 of the 99 competencies tested that had high mean scores were utilized in the present study. The rationale for this application and the method employed are further examined in the next chapter dealing with the design of the study.

Summary

The present need for inservice education in community colleges

is the result of gradual democratizing of education. Early in our

history, a theory that education for the masses was necessary in a

democracy was widely accepted. Later, the theory of education as a

social good crept in. The Industrial Revolution took education out of

the realm of theory and placed it right in the middle of necessity.

More trained workers were essential for economic progress. High

schools and trade schools multiplied to meet this need, but universities

continued to be institutions for the social and intellectual elite.

To democratize higher education, a new educational concept was

developed--the community college. By 1965, the community college

had come into full flower with its comprehensive curricula, open-door

policy, and community orientation. By this time, physical facilities

had multiplied rapidly and student enrollment had more than kept pace.

The democratic philosophy of community colleges, their rapid

growth, the proliferation of curricula, and the heterogeneous student

body created an increasing need for instructors prepared to cope with

problems few teachers had experienced previously. Teacher training

institutions failed to grasp the idea that those planning to go into

community college teaching needed a different kind of preparation than

they offered. Teachers recruited from high schools and universities

tended to make glorified high schools or watered down universities of the community colleges thus defeating the main purposes of the community college. Teachers recruited from business, industry, and the professions often did not have either a grasp of community college philosophy or the necessary teaching skills. To further compound the problems, academically oriented faculties looked down on occupational programs.

All of these situations plus an expanding technology and the knowledge explosion influenced the National Advisory Council on Education Professions Development to insist that priorities for the 70's be placed on inservice education.

No study had been made in Oregon to determine to what degree occupational instructors in community colleges lack adequate preparation. Inservice programs cannot be devised that will be relevant to their needs until this has been done. Chapter III will examine the argument that teachers themselves can best determine whether or not they have professional improvement needs, and also outlines the method employed to obtain and analyze the data from the randomly selected group used in this study.

CHAPTER III

DESIGN OF THE STUDY

This research was based on the premise that professional

improvement for occupational instructors in Oregon's community

colleges will be effective only if the perceived needs of the instructors

are identified and used in the development of guidelines for the

establishment of improvement programs. Louk (1966) maintains that

programs can only be effective ". . . to the degree that the bases for

such programs are the real problems of the faculty member as he

perceives them" (p. 2).

A second premise was that instructors are competent to perceive

their professional growth needs through a process of self evaluation.

Brown and Thornton (1963) take the position that teachers can and do

evaluate themselves, but that their evaluation needs to be measured

against a specific goal of competency. Salatino (1967), in outlining a

four-part evaluation procedure for the inservice development of faculty

in New England community-junior colleges, regarded the primary part

of the process as teacher self-evaluation. Cohen (1972), after review-

ing a number of possible instructor evaluation procedures, asserts

that "For the mature person, perhaps the most difficult--but even-

tually the most rewarding--kind of evaluation is the evaluation of self"

(p. 179).

Previous Research Related to the Questionnaire

The initial step in the development of the questionnaire for this study was consideration of related research using a similar questionnaire. Courtney (1967) constructed a questionnaire that was designed to determine the training needs and requirements of vocational education teachers. Subsequently, this 130-point instrument was used by Halfin and Courtney (1970) in a ten-state study of the training needs of secondary level vocational teachers. Cortelyou (1970) employed 126 items of the questionnaire to conduct a task analysis of supervisors of technical institutes in Wisconsin. Ward (1971) adapted the questionnaire to identify competencies important to vocational education leaders at local levels in Oregon. Gunderson (1971), Lindahl (1971), and Miller (1971) revised the questionnaire for appropriateness to community college teaching. Their studies utilized a mail questionnaire containing 99 professional education competencies with a five-point scale that enabled occupational instructors to judgmentally score the level of proficiency necessary for each competency.

Gunderson, Lindahl, and Miller's adaptations of the previously described questionnaires provided 71 competencies selected for the research survey of this study, hereinafter referred to as the "Professional Improvement Assessment Questionnaire." The 71 initial competencies (later reduced to 53) were determined by two primary

considerations:

1. A mean score of 3.5 or higher calculated from scores on a five-point rating scale that designated a score of "5" as the greatest degree of proficiency assigned to a competency.

2. A direct or indirect relationship to the inservice training need categories previously established in Chapter II of this study.

It was not necessary to delete any of the competencies with high mean scores since all of these fell within the following categories of inservice need previously established:

1. Understanding and commitment to community college philosophy.

2. Understanding and acceptance of community college students.

3. Improvement of the teaching-learning process.

4. Awareness of all innovations in education and the ability to select and use those pertinent to an instructional assignment.

5. Development of a humanistic personality.

Design of the Questionnaire

This research utilized an adaptation of the technique developed by Porter (1960). His design was subsequently adapted by Heuchert (1972) when he conducted a needs satisfaction study of community college administrators in four western states.

There are two parts to the questionnaire:

1. Questions seeking demographic information.

2. A section where 53 competencies are designated and two questions asked about each one:

a. How much proficiency do you have ? (in relation to this competency)

b. How much proficiency do you need ? (in relation to this competency)

Part 2 measures need deficiencies by utilizing a five-point rating scale. The respondents were asked to rate themselves on both questions for each of the 53 competencies. A score of "1" represented the minimum and a score of "5" represented a maximum for each question.

The questionnaire and a copy of the proposal for this study were then presented to the Oregon Community College Association to obtain permission to conduct the study in the 13 Oregon community colleges. A three-man team consisting of two occupational deans representing community colleges and a State Department of Education official were appointed by the executive secretary of the Oregon Association of Community Colleges to review the proposal and questionnaire. Upon completion of the review, the group recommended approval for the study and permission was granted by the Oregon Community College Association to mail the questionnaire to Oregon community colleges. (See Appendix A for a copy of the letter of approval.)

The next step was to present the questionnaire to a jury of experts to evaluate it for format, content, clarity and comprehensiveness. The jury was composed of three occupational deans and ten instructors in occupational programs from Oregon community colleges. Each juror was mailed a copy of the questionnaire, a summary of the

proposed study, and a checklist. The checklist provided space for

additions, deletions, or revisions of the 71 originally selected items.

The demographic section and the section dealing with instructions for

filling out and returning the questionnaire were also included for the

jury's inspection. Several items were revised for clarity and 18 items

were eliminated as a result of the jury's recommendations. The

primary reasons for eliminating 18 items were the jury members'

contentions that these items were not directly related to professional

improvement or were mainly concerned with decision making pro-

cesses that were outside the realm of the instructional staff. The

resulting 53 items constituted the Professional Improvement Question-

naire. In addition to these changes, the jury added two categories to

the demographic section which allowed the investigator to gain addi-

tional information concerning respondents' special qualifications for

their respective positions.

Selection of the Sample

The population used in this study consisted of randomly selected

instructors of occupational programs in Oregon's 13 community

colleges (see Figure 1 for a map showing the approximate location of

each community college). Two criteria were considered prior to

selection of the sample. The first was that only full-time instructors

of programs with an identifiable occupational goal (or goals) would be

1. Blue Mountain
2. Central Oregon
3. Chemeketa
4. Clackamas
5. Clatsop
6. Lane
7. Linn-Benton
8. Mt. Hood
9. Portland
10. Rogue
11. Southwestern
12. Treasure Valley
13. Umpqua
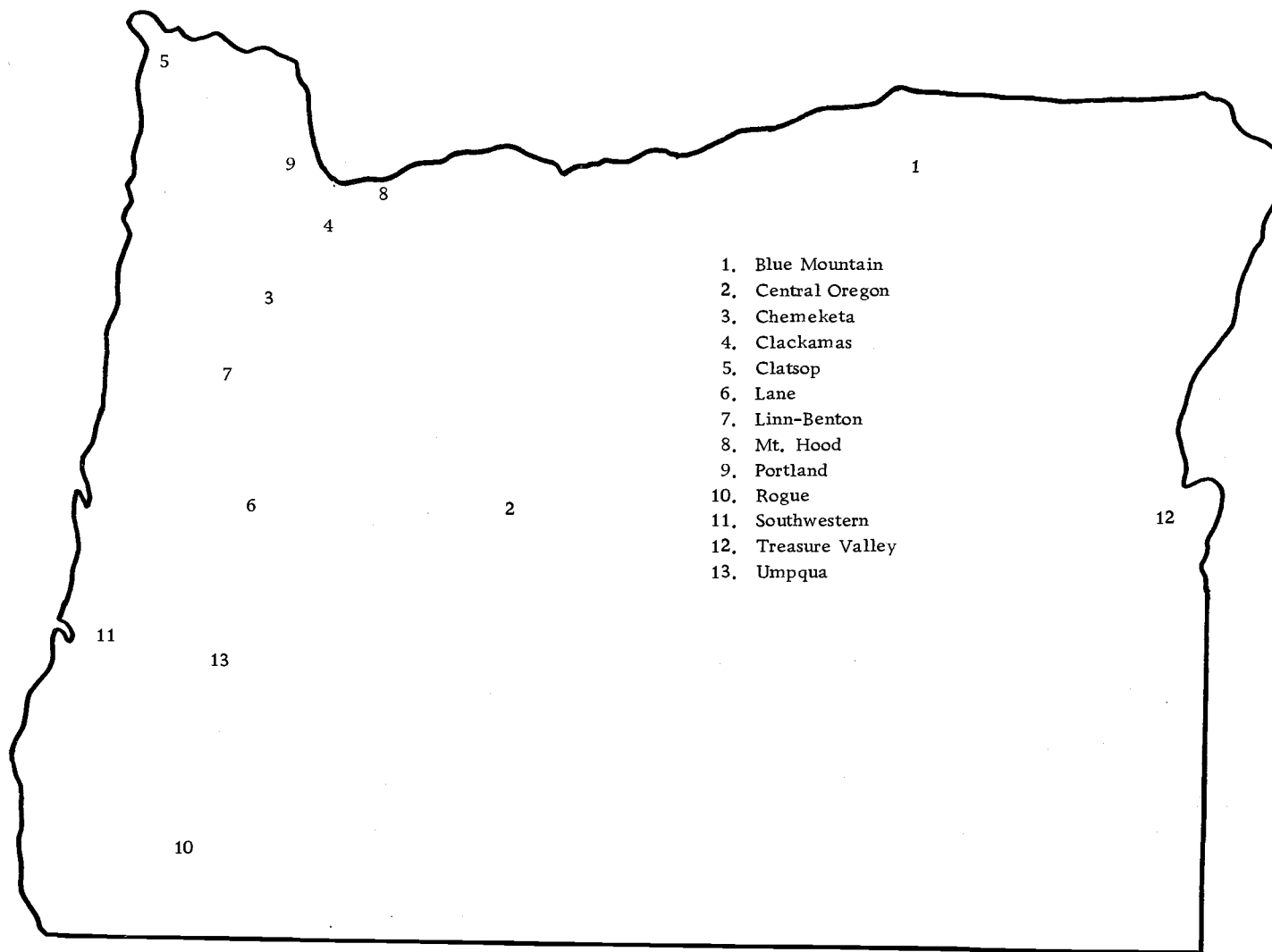
Figure 1. Location of community colleges participating in the study.

asked to participate in the study. Second, each community college

involved in the study must have at least one full-time instructor in five

of the following service area designations:

    Trade and Industrial Education
    Home Economics Education
    Technical Education
    Agriculture Education
    Business Education
    Health Occupations Education

The Oregon Community College Association publication,

Directory to Personnel in Oregon Community Colleges, was utilized to

compile a list of instructors whose primary teaching responsibilities

were identified with a program in one of the six service categories

previously mentioned. A table of random numbers was then employed

to select 25 names from each of the six service areas for a total of

150 randomly selected respondents. The following sampling matrix

describes the procedure employed.

Group (service area)	N
1	n = 25
2	n = 25
3	n = 25
4	n = 25
5	n = 25
6	n = 25
	Σ = 150

A copy of the Professional Improvement Assessment Questionnaire

was mailed to each respondent in late February, 1973, along with a

personally addressed letter that explained the importance and purpose of the study. The questionnaire was designed so that upon completion, it could be folded once, stapled or taped, and returned to the address printed on the back page. Postage for the return was provided each respondent. A precise record was kept of all questionnaires returned as a result of the first mailing. Through a coding system, persons not responding to the initial mailing were identified and contacted with a follow-up letter and a second copy of the original questionnaire. The second mailing was made approximately three weeks after the initial mailing. Samples of the questionnaire, introductory letter, and follow-up letter are included in Appendices D, E, and F.

All questionnaires were color coded by service area and cross-checked through the numerical coding system marked on each for accurate classification upon their return. Ninety usable questionnaires were returned, or 60 percent. Three questionnaires were rejected as unusable because of failure to follow directions or incompleteness.

The final step in the treatment of the questionnaire was transfer of data to data processing cards for computer analysis. The method for coding cards is outlined in Appendix G.

Analysis of Data

After collecting, categorizing, and coding the data, they were analyzed in the following manner:

1. Data from the returned questionnaires were coded and key punched on IBM cards for electronic computer analysis using the CDC 3300 computer at the Oregon State University Computer Center. Key punching was verified in the process.

2. The data were analyzed according to the following plan:

   a. The degree of perceived deficiency in professional improvement needs for each respondent on each item in the questionnaire was obtained in the same manner as in Porter's (1961) and Heuchert's (1972) studies. In this method, part (a) of an item ("How much proficiency do you have?") was subtracted from part (b) of the item ("How much proficiency do you need?"). Like the studies of Porter and Heuchert, an a priori assumption was made that the smaller the difference--(a) subtracted from (b)--the smaller the degree of need deficiency for the competency in question. This method is an indirect measure of perceived need deficiency derived from two direct answers by the respondent for each item. In effect, this method asks the respondent, "To what degree, if any, do you feel you need to improve your proficiency in this competency in relation to your instructional responsibilities"?

      Negative discrepancy scores were interpreted as an assessment by the respondent that he possessed greater

proficiency in the competency than his instructional respon-
sibilities required. This occurred when the respondent
rated his actual proficiency level (a) ("How much proficiency
do you have?") higher than the perceived need (b) ("How much
proficiency do you need?"). For purposes of this investiga-
tion, such negative scores were treated as "0," whereas
positive scores ranging from +1 to +5 indicated a need
deficiency, with +5 indicating the greatest degree of need.

b. Medians and interquartile ranges were computed for each
item and utilized to determine central tendency levels and
variation patterns for each of the 53 competencies. Median
scores were ranked for each item. Raw scores rather than
differences were utilized.

c. The Mann-Whitney U test was applied to each need deficiency
score for each item to test the null hypothesis that there was
no significant difference in the professional improvement
needs between the six service areas identified in this study.
This test considered differences between (a) and (b) scores
rather than raw scores. According to Downey and Heath
(1965), "A more powerful test than the median test for
uncorrelated data is the Mann-Whitney U test. The test is
used with independently drawn random samples, the sizes
of which need not be the same" (p. 240). Siegel (1956)

indicates that this test is a powerful test and an excellent

substitute for the t test.

Summary

Numerous writers have agreed that the instructor's perception

of his professional improvement needs is critical for the design of

inservice programs. The Professional Improvement Assessment

Questionnaire was based on this premise. It was adapted from Halfin

and Courtney's (1970) 130-item questionnaire and subsequently revised

for appropriateness to community college instruction by Gunderson

(1971), Lindahl (1971), and Miller (1971). A jury of 13 Oregon

community college instructors and administrators of occupational

programs assisted in the selection of the 53 items that constituted the

final form of the Professional Improvement Assessment Questionnaire.

The importance of the competencies represented by the 53 items

on the questionnaire had been established for community college levels

in occupational education by Gunderson, Lindahl, and Miller. The

present research was designed to assess the perceived need for

improvement in each of the 53 competencies through:

1.   Computation of medians and interquartile ranges to determine
     central tendency levels and variation patterns.

2.   Application of the Mann-Whitney U test to determine if there
     were significant differences between service areas for each
     item. The need deficiency method developed by Porter (1960)
     and adapted for an education survey by Heuchert (1972) was
     employed for this part of the analysis.

The results of the statistical analysis and subsequent conclusions, recommendations, and implications are reported in Chapters IV and V.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The analyses of data collected for the study are presented in three major sections. The first section delineates the general characteristics of the respondents in the sample. Section two describes central tendency levels and variation patterns for each of the 53 competencies included in the Professional Improvement Assessment Questionnaire. Section three analyzes Mann-Whitney U scores to determine if significant differences existed between the six service areas previously identified.

<u>Personal Characteristics of the Respondents</u>

The data for this study were provided by 90 occupational instructors in Oregon community colleges. Table 5 (p. 60) shows the number respondents in each service area.

The majority of instructors included in the sample were in their present position less than nine years. Table 6 (p. 60) lists time categories ranging from "less than two years" to "over nine years" and the number of respondents in each category.

Table 7 (p. 60) shows that the ages of the respondents ranged from 20 to over 60 with the largest number falling in the 40-50 age group. The second largest number was in the 30-40 age group. Only four respondents were over 60.

Table 5. Service Areas of Respondents.

Service Area	N	%N
Trade and Industrial	16	17
Home Economics	14	16
Technical	17	19
Health	14	16
Business	17	19
Agriculture	12	13
Totals	90	100

Table 6. Time in Present Position of Respondents.

Time Range	N	%N
Less than two years	21	23
Two to four years	33	37
Five to nine years	31	34
Over nine years	5	6
Totals	90	100

Table 7. Age of Respondents.

Age Range	N	%N
Under 20	0	0
20-29	8	9
30-39	27	30
40-49	34	38
50-59	17	19
Over 60	4	4
Totals	90	100

The education of the respondents differed as much as their ages. Eighteen (20 percent) had no degree. Eight (9 percent) held an associate degree. The next to the largest number, 23 (26 percent), had obtained a baccalaureate degree. By far the largest number, 36 (40 percent) had a masters degree while the smallest number, 5 (5 percent), held a doctorate. Table 8 (p. 62) summarizes the education of respondents.

With few exceptions, occupational instructors in Oregon community colleges must have a minimum of three years practical work experience that directly relates to their area of instruction if they are to meet minimum certification requirements. The number of years of work experience is as important to an occupational instructor's qualifications as is his level of education. Table 9 (p. 62) shows that a majority of the respondents far exceeded the minimum requirements. Only one instructor had no practical work experience. Twelve had three years or less; 14 had not less than four or more than seven years. By comparison, 63 (70 percent), had acquired at least seven years of practical work experience. Of the 63, 45 had an average of 11.6 years beyond the seven-year mark for a total of 18.6 years practical work experience.

Specialized military training that relates to the instructor's teaching assignment is considered a type of practical work experience in many community colleges. Twenty-six (29 percent) of the

Table 8. Education of Respondents.

Education	N	%N
No degree	18	20
Associate degree	8	9
Baccalaureate	23	26
Masters	36	40
Doctorate	5	5
Totals	90	100

Table 9. Practical Work Experience of Respondents.

Years	N	%N
None	1	1
3 years or less	12	13
4 to 7 years	14	16
Over 7 years	63	70
Totals	90	100

respondents had had military training related to their present position.
Another group of 24 (26 percent) had obtained special certificates or
licenses connected with their teaching assignments. The greatest
number of special certificates or licenses were required of instructors
in the medical or dental programs such as those needed by a Registered
Nurse or Dental Assistant. Eleven of the respondents had this type of
license. The second largest group consisted of five respondents who
had achieved journeyman rating.

Table 10 lists the average number of years teaching experience
of the 90 respondents by educational institution and service area. The
16 respondents in the Trade and Industrial service area averaged 3. 7
years in their present position and 3. 9 years of previous teaching
experience. By contrast, Home Economics instructors averaged only
2. 7 years in their present position, but 10. 3 years outside of their
present position. Instructors in Technical education programs
averaged the most years in their present position, 4. 1, of any of the
service areas, but ranked fifth, 2. 3 years, in previous teaching
experience. Health occupations instructors ranked second in average
number of years in present position, 4. 1, and lowest of the six service
areas in former teaching experience, 2. 2 years. This low ranking
could be attributed to their complete lack of high school teaching
experience. Business instructors averaged almost twice as many
years of previous experience, 6. 6, as in their present position, 3. 8

Table 10. Average Number of Years of Teaching Experience by Educational Institution and Service Area.

Service area	N	Experience in present position	Experience outside present position				
			High school	Other CC	College or university	Other	Total
Trade and Industrial	16	3.7	2.3	0.6	0.3	0.8	3.9
Home Economics	14	2.7	1.6	0.3	1.6	6.9	10.3
Technical	17	4.1	0.6	0.7	0.6	0.5	2.3
Health	14	4.1	0.0	0.2	0.5	1.5	2.2
Business	17	3.8	3.4	0.3	2.5	0.5	6.6
Agriculture	12	3.8	0.9	0.4	0.4	1.5	3.2
Totals	90	22.4	8.8	2.5	5.9	11.7	28.5
Average per category (total/6)		3.7	1.5	0.4	1.0	1.9	4.8

years. Agriculture instructors averaged nearly the same number of years in their present position, 3. 8, as outside of their present position, 3. 2. The 90 respondents as a group averaged more years, 4. 8, outside of their present position than they did in their present position, 3. 7 years.

Teaching experiences other than present position were desig-nated in Table 10 as high school, other community college, college or university, and "other. " "Other" included part-time equated to full-time years, mainly for adult education courses, occupational extension courses, nurses training through hospital programs, and teaching in private schools such as business colleges. It is note-worthy that the 90 respondents averaged only . 4 years experience in other community colleges. The "other" category was highest with an average of 1. 9 years, followed by high school with 1. 5 and college or university with 1. 0 years.

Examination of Median Scores

Table 11 (p. 66) lists the distribution of respondents' scores and the medians computed for scales a and b for each item on the question-naire. Only item 12 of the 53 items had a median at the maximum or "5" level on scale a (How much proficiency do you have ?). However, this item also scored a "5" on scale b (How much proficiency should you have ?) meaning that instructors feel that they have as much

Table 11. Distribution of A and B Scale Scores.

Item	Distribution					Median
	1	2	3	4	5	
1. Interpret the objectives of vocational education to others.						
(a) How much proficiency do you have?	0	6	21	43	20	4
(b) How much proficiency should you have?	0	2	13	27	48	5
2. Maintain student performance or progress records.						
(a) . . . do you have?	3	2	34	29	22	4
(b) . . . should you have?	1	1	5	33	50	5
3. Interpret the philosophy of the community college in providing vocational programs for the student.						
(a) . . . do you have?	0	5	24	37	24	4
(b) . . . should you have?	2	3	8	34	43	4
4. Select textbooks and instructional materials for the classroom, shop or laboratory.						
(a) . . . do you have?	0	2	21	45	22	4
(b) . . . should you have?	0	0	3	28	59	5
5. Motivate students in the classroom, shop or laboratory.						
(a) . . . do you have?	0	1	16	50	23	4
(b) . . . should you have?	0	0	3	18	69	5
6. Interpret your vocational programs to others.						
(a) . . . do you have?	0	1	15	34	40	4
(b) . . . should you have?	0	0	6	20	64	5
7. Provide appropriate practice for development of basic skills.						
(a) . . . do you have?	1	3	12	43	31	4
(b) . . . should you have?	0	0	2	26	62	5
8. Maintain a clean, orderly laboratory or classroom.						
(a) . . . do you have?	1	7	17	28	37	4
(b) . . . should you have?	1	2	12	24	51	5
9. Maintain student attention during classroom presentations or demonstrations.						
(a) . . . do you have?	0	2	10	46	32	4
(b) . . . should you have?	0	0	2	27	61	5
10. Identify students in need of counseling or guidance.						
(a) . . . do you have?	0	5	32	34	19	4
(b) . . . should you have?	1	1	3	30	55	5

Table 11. (Continued)

Item	Distribution					Median
	1	2	3	4	5	
11. Participate in professional organizations related to your subject matter area.						
(a) How much proficiency do you have?	5	11	20	31	23	3
(b) How much proficiency should you have?	1	3	13	31	42	4
12. Maintain discipline in the classroom, shop and laboratory.						
(a) . . . do you have?	1	2	8	30	49	5
(b) . . . should you have?	1	1	10	23	55	5
13. Inform students of the nature and requirements of specific occupations.						
(a) . . . do you have?	1	1	23	37	28	4
(b) . . . should you have?	0	1	8	32	49	5
14. Work cooperatively with people in the community.						
(a) . . . do you have?	0	8	19	36	27	4
(b) . . . should you have?	0	2	8	30	50	5
15. Make use of available guidance and counseling services within the community college.						
(a) . . . do you have?	4	9	39	22	16	3
(b) . . . should you have?	4	2	14	29	41	4
16. Be stimulating in your work as an instructor.						
(a) . . . do you have?	0	1	18	44	27	4
(b) . . . should you have?	0	0	4	17	69	5
17. Interpret safety rules and regulations to students.						
(a) . . . do you have?	7	4	24	31	24	4
(b) . . . should you have?	6	2	15	20	47	5
18. Conduct a shop or laboratory demonstration for an individual student.						
(a) . . . do you have?	2	3	13	31	41	4
(b) . . . should you have?	2	1	8	20	59	5
19. Provide practical shop or laboratory experience to enhance classroom learning.						
(a) . . . do you have?	1	3	13	39	34	4
(b) . . . should you have?	1	1	2	17	69	5
20. Develop audio-visual materials for instructional purposes.						
(a) . . . do you have?	6	16	29	25	14	3
(b) . . . should you have?	4	2	14	23	47	5

Table 11. (Continued)

Item	Distribution					Median
	1	2	3	4	5	
21. Utilize individualized instruction materials and techniques.						
(a) How much proficiency do you have?	3	19	29	20	19	3
(b) How much proficiency should you have?	0	1	13	30	46	5
22. Relate the course of study to measurable performance objectives.						
(a) . . . do you have?	2	8	28	33	21	4
(b) . . . should you have?	0	0	7	31	52	5
23. Develop classroom instruction based upon the individual needs of the learner.						
(a) . . . do you have?	0	7	29	37	17	4
(b) . . . should you have?	1	0	5	22	62	5
24. Write performance objectives.						
(a) . . . do you have?	0	9	29	26	26	4
(b) . . . should you have?	0	0	11	24	55	5
25. Teach at the student's level and rate of learning.						
(a) . . . do you have?	0	4	27	36	23	4
(b) . . . should you have?	0	0	4	28	58	5
26. Use a student-centered teaching style.						
(a) . . . do you have?	1	0	33	28	28	4
(b) . . . should you have?	0	1	3	32	54	5
27. Develop performance tests to measure achievement.						
(a) . . . do you have?	3	6	30	35	16	4
(b) . . . should you have?	1	1	5	36	47	5
28. Develop student learning activities to facilitate instruction.						
(a) . . . do you have?	1	8	35	29	17	4
(b) . . . should you have?	1	0	9	25	55	5
29. Coordinate and supervise cooperative work experience programs.						
(a) . . . do you have?	15	17	25	17	16	3
(b) . . . should you have?	6	10	19	18	37	4
30. Draw from personal avocational interests to enrich instruction.						
(a) . . . do you have?	3	6	21	30	30	4
(b) . . . should you have?	0	2	13	31	42	4

Table 11. (Continued)

Item	Distribution					Median
	1	2	3	4	5	
31. Relate the vocational program to other instructional programs.						
(a) How much proficiency do you have?	2	5	39	28	16	3
(b) How much proficiency should you have?	1	2	25	31	31	4
32. Communicate your ideas or point of view to other instructors or administrators.						
(a) . . . do you have?	1	7	28	37	17	4
(b) . . . should you have?	0	1	9	29	51	5
33. Relate current events associated with your subject matter area to classroom instruction.						
(a) . . . do you have?	1	2	16	33	38	4
(b) . . . should you have?	0	1	6	29	54	5
34. Articulate your instructional program with other educational institutions or agencies.						
(a) . . . do you have?	6	10	30	32	12	3
(b) . . . should you have?	2	2	14	32	40	4
35. Assist community college administrators to initiate and maintain vocational programs.						
(a) . . . do you have?	9	12	38	24	17	3
(b) . . . should you have?	2	3	21	29	35	4
36. Prepare budgetary requests for vocational programs.						
(a) . . . do you have?	14	14	24	18	20	3
(b) . . . should you have?	5	3	20	33	29	4
37. Promote and teach adult vocational programs.						
(a) . . . do you have?	10	10	15	30	25	4
(b) . . . should you have?	2	1	16	32	39	4
38. Ask questions during classroom presentations or demonstrations to aid student learning.						
(a) . . . do you have?	0	2	21	31	36	4
(b) . . . should you have?	0	0	6	28	56	5
39. Select appropriate equipment and supplies for instructional purposes.						
(a) . . . do you have?	1	2	19	28	40	4
(b) . . . should you have?	2	0	6	18	64	5
40. Arrange and conduct field trips.						
(a) . . . do you have?	8	8	17	29	28	4
(b) . . . should you have?	3	4	14	32	37	4

Table 11. (Continued)

Item	Distribution					Median
	1	2	3	4	5	
41. Relate technological advances to laboratory and classroom instruction.						
(a) How much proficiency do you have?	1	4	28	34	23	4
(b) How much proficiency should you have?	1	2	12	23	52	5
42. Select appropriate audio-visual materials for instructional purposes.						
(a) . . . do you have?	2	7	24	39	18	4
(b) . . . should you have?	1	0	9	24	56	5
43. Revise courses in accordance with current occupational trends.						
(a) . . . do you have?	1	3	23	32	31	4
(b) . . . should you have?	0	0	8	26	56	5
44. Develop objective tests to measure achievement.						
(a) . . . do you have?	2	8	29	39	12	4
(b) . . . should you have?	1	1	12	27	49	5
45. Relate to students from different socioeconomic backgrounds.						
(a) . . . do you have?	4	5	33	22	26	4
(b) . . . should you have?	2	4	9	25	50	5
46. Organize or work with local vocational advisory committee.						
(a) . . . do you have?	5	9	17	30	29	4
(b) . . . should you have?	0	3	13	26	48	5
47. Formulate your own educational philosophy.						
(a) . . . do you have?	2	4	23	28	33	4
(b) . . . should you have?	1	1	14	29	45	5
48. Break down an occupation or job into its component parts for instructional or guidance purposes.						
(a) . . . do you have?	4	7	18	32	29	4
(b) . . . should you have?	0	1	13	31	45	5
49. Use the information contained in the professional journals for personal improvement of instruction.						
(a) . . . do you have?	2	7	24	27	30	4
(b) . . . should you have?	1	2	12	27	48	5

Table 11. (Continued)

Item	Distribution					Median
	1	2	3	4	5	
50. Assess the validity, reliability and difficulty of instructor-made tests.						
(a) How much proficiency do you have?	7	12	33	30	8	3
(b) How much proficiency should you have?	0	4	9	33	44	4
51. Evaluate the effectiveness of a classroom or laboratory demonstration.						
(a) . . . do you have?	4	6	23	37	20	4
(b) . . . should you have?	1	0	8	27	54	5
52. Summarize classroom presentations.						
(a) . . . do you have?	1	6	21	38	24	4
(b) . . . should you have?	0	0	8	31	51	5
53. Evaluate teaching effectiveness by measuring student achievement.						
(a) . . . do you have?	0	8	26	40	16	4
(b) . . . should you have?	0	0	8	23	59	5

proficiency in maintaining discipline as they perceive they need, even though a maximum level was specified as needed. Five other items (3, 11, 30, 37, and 40) also showed that instructors perceived they had as much proficiency as needed, but at the "4" level of need rather than the "5" level on the scales. These five items are discussed in greater detail in Chapter V.

While the six items mentioned above show no need deficiency, items 20 and 21 had the greatest need deficiency of any of the 53 competencies. These two items, dealing with individualized instruction and development of audio-visual materials, were rated at the "3" level for attained proficiency and the "5" level for needed proficiency.

Appendix J (p. 121) lists median scores for scales a and b of each item and the need deficiency (b - a) for each item. Thirty-eight items showed median scores of "4" for scale a, and "5" for scale b. These results show that respondents ranked the 38 items at the maximum level for proficiency needed. Seven other items had median scores of "3" on scale a and "4" on scale b, indicating that respondents felt improvement was needed in these items, but that less proficiency was required than the 38 items that scored a "5" on scale b.

Additional findings from an examination of median scores are included in the next section, "Results of the Mann-Whitney U Test Analysis. "

Median scores did not lend themselves to formal determination

of interquartile ranges as the scores were too consistent for differ-

entiation.

Results of the Mann-Whitney U Test Analysis

The Mann-Whitney U Test was utilized to examine the null

hypothesis that there was no significant difference in perceived pro-

fessional improvement needs between the six service areas. The

critical level was set at $\alpha = .05$ for a two-tailed test. Computed U

values that were $\leq$ table U values were significant and made it

possible to reject the null hypothesis. Computed U values greater than

table U values were not significant and the null hypothesis was retained

in these comparisons. Appendix K (p. 122) lists the results of the

comparisons. There were 15 possible groupings of the six service

areas and a total of 795 possible comparisons (15 groupings x 15

items). The group combinations are shown in the first horizontal row

in the heading for Appendix K. The sample size for each group or

service area is a key factor in Mann-Whitney U calculations and is

listed after the $N_1 - N_2$ heading in the second horizontal row. The

third heading in Appendix K is the U table value for each of the groups.

Calculated U values are positioned directly under their respective

table values for each of the 53 items in the Professional Improvement

Assessment Questionnaire. Those calculated values that are $\leq$ table

values are followed by an "R" to indicate that these calculations

resulted in a rejection of the null hypothesis. Positioned directly

beneath each "R" is the sum of ranks of the combined sample for each

group or service area involved in that particular rejection of the null

hypothesis. The larger figure indicates the greatest need deficiency

in each comparison where a rejection occurred. For example, the

first rejection occurs in item one under groups 3-4. The larger sum

of ranks is positioned under group three (Technical) and the

smaller under group four (Health), meaning that Technical

instructors in the sample felt they had a significantly greater need

deficiency in this competency than did Health instructors. The total

number of rejections per item is shown on the right hand margin

while the total number of rejections per group is shown at the bottom

of the last page in Appendix K.

Only 25 rejections of the null hypothesis occurred in the 795

possible comparisons. Thirty-five of the 53 items did not have a

single rejection although there were 15 possible rejections in each

item. Thirteen of the remaining 18 items had only one rejection.

Item 13 (Inform students of the nature and requirements of

specific occupations) had the most rejections of any single item (four).

This item also had a need deficiency as shown in the median scores.

Technical instructors accounted for the greatest need deficiency in

three of the four rejections in item 13, as indicated by the higher sum

of ranks score for this group. Item 37 (Promote and teach adult vocational programs) totaled two rejections but was one of six items previously discussed that showed no need deficiency in the median scores.

An examination of rejections by service area reveals that Trade and Industrial respondents accounted for the greatest number of rejections by any single service area as they were involved in 14 of the total of 25 rejections of the null hypothesis. An inspection of the sum of ranks in the combined sample reveals that in each case the Trade and Industrial respondents felt that they had less need deficiency in the competencies involved than did the group with which they were being compared.

Conclusions from this analysis with resulting implications and recommendations were presented in Chapter V.

CHAPTER V

SUMMARY WITH INTERPRETATIONS AND CONCLUSIONS,
IMPLICATIONS, AND GUIDELINES

Introduction

In this chapter, this researcher reviews, interprets, and draws

conclusions from the data, and sets forth implications and recom-

mendations for action. Although conclusions by one researcher may

differ from those of others examining the same data, there are some

results of significance in this study. Two major findings were:

1. A large majority of the respondents felt that they needed
   improvement in nearly all of the competencies listed.

2. There were few significant differences in perceived needs for
   professional improvement between the six service areas.

A note of caution on the limitations of the study was sounded in

Chapter I. It must be remembered that this study dealt with only full-

time instructors of occupational programs in Oregon community

colleges. Data were based on their reported perceptions of professional

improvement needs. Extension of ideas or facts beyond these reported

perceptions were not intended or implied.

The central problem of the study was to determine if occupa-

tional instructors in Oregon community colleges feel that they need

improvement in certain professional skills. The purpose of the study

was to develop a profile of perceived needs identified by an analysis of

data collected through the Professional Improvement Assessment

Questionnaire.

Summary of the Study

The literature reviewed provided a rationale and background for

the study. According to a number of authorities, teachers adequately

prepared for community college teaching had never been available in

sufficient numbers to staff the burgeoning community colleges and

would not be available in the projected future. Three reasons for this

condition were reiterated. First, preservice preparation for com-

munity college instructors was considered inadequate. Second,

instructors recruited from other educational institutions were oriented

to levels and/or philosophies not congruent with the orientation

necessary for community college instruction. Third, and most

pertinent to this study, one-third or more of these instructors were

recruited from business and industry with little or no exposure to

teacher education programs or community college philosophy and

students. In the literature, inservice programs to remedy these

situations were advocated. Such programs, however, had been non-

existent or ineffective with one exception--the Florida Plan.

The literature omitted any indication that the instructors them-

selves had received an opportunity to assess and to make known their

education deficiencies. The value of this kind of information was

mentioned a number of times, but no formal study was found that elicited it. Both the National Advisory Council on Education Professions Development and a study at Oregon State University stressed specification by individual staff members of their personal needs as a basic step toward realistic inservice programs. The present study is a limited attempt to provide this information.

Competencies perceived important for effective teaching in occupational programs by occupational instructors had been identified in a number of studies. Careful scrutiny of these studies elicited the 53 competencies chosen for the Professional Improvement Assessment Questionnaire. Since these competencies had been deemed important in previous studies, it was anticipated in the current research that respondents would feel that a high level of proficiency should be attained by instructors in these items. The anticipation was justified when 41 of the 53 competencies were rated at the maximum level and the remaining 12 competencies were rated at the next highest level.

Interpretation of Personal Characteristics Data

The respondents in the sample supplied personal information that tended to corroborate findings in the literature about characteristics of community college instructors. An inference could be made that the 20 percent of instructors with no degree and the 9 percent with an associate degree had been recruited from business and industry. This

comes fairly close to the national figure of 35 percent. If, in addition, the 70 percent who had had seven or more years of practical work experience prior to community college teaching are considered, the number of instructors recruited from business and industry probably exceeds the national figure. The assumption that these instructors needed further education to prepare them for effective community college teaching was stressed in the literature and supported by the results from the Professional Improvement Assessment Questionnaire.

The inference that many occupational instructors in Oregon community colleges were recruited from other educational institutions could be made from (1) the number of baccalaureate and masters degrees held by respondents in the sample (66 percent), and (2) the respondents' average number of years teaching experience at educational institutions other than the community college (4. 4 years). Orientation to other levels was cited in the literature as a detriment to community college teaching, and that "retooling" or upgrading was necessary. This contention was supported in the current research when respondents noted improvement needs in 47 of the 53 competencies. Of the six competencies in which the respondents felt they were adequately proficient, five were rated below the maximum level of proficiency needed. The other competency, dealing with maintaining discipline, was rated at the maximum for both proficiency needed and acquired in the perceptions of the respondents.

A small percentage of the sample had had previous community college teaching experience. Respondents had held their present positions a short time. These results were probably due to Oregon's late arrival on the community college scene and probably does not truly represent a trend away from the national averages.

Interpretation of Median Scores

Median scores for the 53 items produced the following information with ensuing interpretations and conclusions:

1. The contention in previous studies that these competencies were necessary for occupational instructors in community college programs was supported in this research when respondents rated 41 of the 53 competencies at the highest or "5" level of needed proficiency. The remaining 12 competencies were rated only one point lower on the scale.

2. The contention in the literature that instructors had not acquired these competencies at a level concomitant with effective community college teaching was supported when in all but six of the 53 competencies instructors assessed themselves as needing a greater proficiency.

3. The two items showing the most need for greater proficiency, as perceived by the respondents were:

   a. Item 20--Develop audio-visual materials for instructional purposes.

b.   Item 21--Utilize individualized instruction materials and
      techniques.

Both of these competencies could be considered sub-topics under

the general headings "Improvement of the Teaching-Learning

Process" for item 20, and "Innovations in Education" for item

21.   These headings were discussed in Chapters II and III and

were pinpointed by educational researchers as areas where

inservice education would be profitable.

4.   Item 12--Maintain discipline in the classroom, shop, or

      laboratory--was the only item rated by respondents at the

      maximum or "5" level on both a and b scales.   This result

      indicates that although they perceived a maximum proficiency

      was required in matters of discipline, they felt well prepared to

      handle such problems.

5.   Other items in which the instructors felt they had the desired

      proficiency but rated needed proficiency one point lower than

      the maximum were:

      a.   Item 3--Interpret the philosophy of the community college in
            providing vocational programs for the student.
                 The position taken by respondents on this competency
            contradicts the assertion by writers in the community college
            field that this is an area of urgent need in professional
            improvement programs.

      b.   Item 11--Participate in professional organizations related
            to your subject matter area.
                 A reduction in emphasis for this competency as a neces-
            sary part of inservice education is indicated.

c. Item 30--Draw from personal avocational interests to
    enrich instruction.
    Although a high level of proficiency is considered needed
    in this competency, it can be inferred that respondents have
    little difficulty in using their avocational interests for
    instruction.

d. Item 37--Promote and teach adult vocational programs.
    Since respondents felt proficient in this item, the
    inference is that no special consideration need be directed
    toward problems of teaching adult vocational programs in the
    design of professional improvement programs.

e. Item 40--Arrange and conduct field trips.
    Although it cannot be deduced that respondents do not
    consider this competency important, it can be concluded
    that this competency should be assigned a low priority for
    inclusion in a professional improvement program.

Three basic conclusions are evident from the median scores.

The first is that a high priority should be assigned to developing

audio-visual materials and utilizing individualized instruction materials.

The second is that the six items discussed in point 5 above, where the

proficiency deemed necessary was judged attained, should be assigned

a low priority, at least in the initial design of professional improve-

ment programs. The third conclusion is that the remaining 45 items

should be included in staff development programs as a need deficiency

was perceived in each of these competencies.

Interpretation of the Mann-Whitney
U Test Results

Gunderson, Lindahl, and Miller had concluded from their 1971

studies that community college instructors of occupational programs

in four western states resembled one another in their assessment of
the importance of a list of 99 competencies. A problem in my
research was to determine if a sample of occupational instructors in
Oregon community colleges also resembled one another--but in terms
of perceived needs of proficiency in 53 of the 99 competencies. The
general conclusion was that respondents do resemble one another in
their assessment of proficiency needs in a vast majority (97 percent)
of possible comparisons. The null hypothesis that there was no
significant difference in perceived needs for professional improvement
between the six service areas was rejected in only 25 of the 795
comparisons.

Trade and Industrial respondents were involved in 14 of the 25
rejections of the null hypothesis. In each case, this group showed less
need deficiency than the group with which they were being compared.
However, an examination of the competencies involved in these
rejections showed no common patterns between the items. It is my
opinion, based on personal experience and observation, that the
reason Trade and Industrial respondents perceived slightly less need
deficiency than other groups was due to a substantial statewide effort
in recent years to provide this group with professional improvement
opportunities. The conclusion from this finding is that Trade and
Industrial respondents resemble other respondents the least of all the
groups in that they perceived less need deficiency in a limited number
(11) of competencies.

Guidelines for Professional Improvement Programs

1. No special consideration must be given when deciding what groups can be combined for professional improvement activities. However, results of the Mann-Whitney U Test indicated that Trade and Industrial instructors perceived less need for professional improvement than respondents from other service areas in a limited number of competencies.

2. It is questionable that a heavy emphasis in understanding community college philosophy is needed in staff development programs in Oregon. Occupational instructors in the sample did not perceive that greater proficiency was needed, although this point was stressed in the literature as an area of urgent need.

3. A high priority should be assigned to activities involving individualized instruction techniques and the development of audiovisual materials.

4. A need deficiency was perceived by respondents in 47 out of the 53 competencies. Activities geared to these 47 competencies should be included in the design of professional improvement programs.

Implications for Teacher Education

The literature reviewed indicates that priorities for professional

improvement programs should focus on inservice education activities

in the 1970's. As teacher education provides more effective programs

for those preparing to teach in community colleges, the demand for

extensive inservice education will decrease, at least for those staff

members who are not recruited directly from business and industry.

Implications deduced from this study that are pertinent to preservice

education include:

1. A course should be required in preservice programs that focuses on the <u>development</u> of audio-visual materials for instruction.

2. Units and/or courses should be included in preservice programs that emphasize the <u>use</u> of individualized instruction materials and techniques.

3. The 47 competencies perceived to have a need deficiency in this study should be examined by teacher educators for
   a. The extent of their inclusion in preservice programs.

   b. The extent to which they are geared to preparation of community college instructors.

4. Instructors recruited directly from business and industry in many cases will not have been exposed to teacher preparation programs. Special efforts are necessary by teacher educators to provide for their needs. Two possible solutions are
   a. Locate comprehensive programs off campus for more accessibility to business and industry recruits. These programs should be available to those contemplating a community college position as well as for those already employed.

   b. Institute cooperative programs between teacher education institutions and community colleges whereby instructors recruited from business and industry periodically are granted released time to enter or re-enter preservice programs tailored to their needs.

Some Unanswered Questions

1. Do community college personnel who are charged with designing and implementing programs for professional improvement perceive similar needs as did the respondents in this study?

2. Can effective programs for professional improvement be designed primarily from need deficiencies as perceived by instructors? If not, what types of additional input should be considered?

3. How can need deficiencies best be assessed on a continuing basis?

4. What are the main barriers to establishing effective programs for staff development? Time considerations? Instructor apathy? A combination of several factors?

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APPENDICES

APPENDIX A

LETTER OF APPROVAL

To all recipients of the enclosed questionnaire:

      Mr. Charles Reinmuth has requested approval of the Oregon Community College Association for a doctoral thesis study. A committee has been appointed, composed of Dr. Kaiser, Clackamas, Dr. Martin, Linn-Benton, and Don Gillis, Director of Community Education, to review the proposed study and survey instrument with it. The Committee has approved the study and the questionnaire which accompanies this cover letter. We urge your participation in this study.

      As part of the approval procedure, Mr. Reinmuth has agreed to provide feedback to Oregon Community Colleges of his findings.

Sincerely yours,

Donald K. Shelton
Executive Secretary
Oregon Community College Association

APPENDIX B

LETTER TO REVIEW PANEL

To: Review Panel Participants

From: Chuck Reinmuth, Instructor
      Division of Vocational, Adult and
        Community College Education
      Oregon State University

re: Review of the "Professional Improvement
    Assessment Questionnaire"

You and fifteen of your colleagues in Oregon's community colleges are being asked to review the attached questionnaire for possible improvements prior to the mailing of the questionnaire to 150 selected occupational instructors.

Your role is to examine the items, including the instructions and personal data sections, and to make suggestions that will add to the completeness or clarity of the questionnaire. A "Questionnaire Revision form" is included to record your comments.

Please refer to the "Instructions" section for a statement on the purpose of the study and for procedures respondents will use when filling out the questionnaire.

A stamped, self addressed envelope is included for your convenience in returning your comments.

Your participation in this review is truly appreciated and I trust that the results of this study will prove of benefit to occupational program instructors by presenting staff development needs from an instructor's point of view.

Again, thanks for your assistance!

Chuck Reinmuth

APPENDIX C

QUESTIONNAIRE REVISION FORM

From: _____   _____   _____
         (name)   (position)   (institution)

SUBJECT:. Suggested revisions to Professional Improvement
        Assessment Instrument.

Item No. .   Suggested Revisions

_____   _____

_____   _____

_____   _____

_____   _____

Suggested Additions
(new items)

_____

_____

_____

Suggested Deletions

Item No.   Comment

_____   _____

_____   _____

Note: If additional space is needed, please attach sheet to this memo.

Please Return To: Chuck Reinmuth
                     B 303
                     Oregon State University
                     Corvallis, Oregon 97330

APPENDIX D

PROFESSIONAL IMPROVEMENT ASSESSMENT

QUESTIONNAIRE

A RESEARCH PROJECT

CHARLES REINMUTH
DIVISION OF VOCATIONAL, ADULT AND
   COMMUNITY COLLEGE EDUCATION
B 303
OREGON STATE UNIVERSITY
CORVALLIS, OREGON   97331

DIRECTIONS FOR USE

PURPOSE

To provide information that will be utilized in recommendations for staff development programs designed to meet the needs of occupational instructors in Oregon community colleges.

YOUR
ROLE

You have been selected, along with a limited number of others, to provide important input, from an instructor's point of view, for the development of professional improvement programs.

Your role is to examine the listed competencies in terms of:

(a) How much proficiency do you have?

PROCEDURE

(b) How much proficiency do you need?

Each rating will be on a five-point scale, which will look like this:

(Minimum) 1 2 3 4 5 (Maximum)

You are to circle the number on the scale that represents the degree of proficiency you feel you (a) have (b) should have in relation to each competency. Low numbers represent low or minimum degrees of proficiency and high numbers represent high or maximum degrees of proficiency.

Please do not omit any scales.

****

The code number in the upper right hand corner is for the purpose of identifying returns and organizing mailings. All data will be anonymous and treated as confidential.

Upon completion of the questionnaire, please fold on the dotted line, staple (or tape) and mail.

PROFESSIONAL IMPROVEMENT ASSESSMENT

QUESTIONNAIRE

1. Interpret the objectives of vocational
   education to others.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

2. Maintain student performance or progress
   records

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

3. Interpret the philosophy of the community
   college in providing vocational programs
   for the student.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

4. Select textbooks and instructional materials
   for the classroom, shop or laboratory.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

5. Motivate students in the classroom, shop
   or laboratory.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

6. Interpret your vocational program to others.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

7. Provide appropriate practice for development of basic skills.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

8. Maintain a clean, orderly laboratory or classroom.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

9. Maintain student attention during classroom presentations or demonstrations.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

10. Identify students in need of counseling or guidance.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

11. Participate in professional organizations related to your subject matter area.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

12. Maintain discipline in the classroom, shop or laboratory.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

13. Inform students of the nature and requirements of specific occupations.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

14. Work cooperatively with people in the community.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

15. Make use of available guidance and counseling services within the community college.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

16. Be stimulating in your work as an instructor.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

17. Interpret safety rules and regulations to students.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

18. Conduct a shop or laboratory demonstration for an individual student.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

19. Provide practical shop or laboratory experience to enhance classroom learning.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

20. <u>Develop</u> audio-visual materials for in-structional purposes.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

21. Utilize individualized instruction
    materials and techniques.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

22. Relate the course of study to measurable
    performance objectives.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

23. Develop classroom instruction based upon
    the individual needs of the learner.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

24. Write performance objectives.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

25. Teach at the student's level and rate of
    learning.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

26. Use a student-centered teaching style.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

27. Develop performance tests to measure
    achievement.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

28. Develop student learning activities to facilitate instruction.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

29. Coordinate and supervise cooperative work experience programs.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

30. Draw from personal avocational interests to enrich instruction.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

31. Relate the vocational program to other instructional programs.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

32. Communicate your ideas or point of view to other instructors or administrators.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

33. Relate current events associated with your subject matter area to classroom instruction.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

34. Articulate your instructional program with other educational institutions or agencies.

   (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

   (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

35. Assist community college administrators to initiate and maintain vocational programs.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

36. Prepare budgetary requests for vocational programs.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

37. Promote and teach adult vocational programs.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

38. Ask questions during classroom presentations or demonstrations to aid student learning.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

39. Select appropriate equipment and supplies for instructional purposes.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiendy should you have?   (min) 1 2 3 4 5 (max)

40. Arrange and conduct field trips.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

41. Relate technological advances to laboratory and classroom instruction.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

42. <u>Select</u> appropriate audio-visual materials
for instructional purposes.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

43. Revise courses in accordance with current
occupational trends.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

44. Develop <u>objective</u> tests to measure
achievement.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

45. Relate to students from different socio-
economic backgrounds.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

46. Organize or work with local vocational
advisory committee.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

47. Fromulate your own educational philosophy.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

48. Break down an occupation or job into its
component parts for instructional or
guidance purposes.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

49. Use the information contained in the pro-
fessional journals for personal improve-
ment of instruction.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

50. Assess the validity, reliability and
difficulty of instructor-made tests.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

51. Evaluate the effectiveness of a class-
room or laboratory demonstration.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

52. Summarize classroom presentations.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

53. Evaluate teaching effectiveness by
measuring student achievement.

    (a) How much proficiency do you have?   (min) 1 2 3 4 5 (max)

    (b) How much proficiency should you have?   (min) 1 2 3 4 5 (max)

PERSONAL DATA

Please Mark an "X" in the Appropriate Place

INSTRUCTIONAL AREA:
(Most closely related to   Trade & Industrial ☐   Health ☐
your position)   Home Ec. ☐   Business ☐
                                           Technical ☐   Agriculture ☐

TIME IN PRESENT   Less than 2 years ☐   5-9 years ☐
POSITION: 2-4 years ☐   Over 9 years ☐

AGE: Under 20 ☐   40-49 ☐
                                       20-29 ☐   50-59 ☐
                                       30-39 ☐   Over 60 ☐

PRACTICAL   None ☐   4-7 years ☐
WORK   3 years or less ☐   Over 7* ☐
EXPERIENCE:
                              _____
                              *Specify no. over 7

                                    No. Yrs.

TEACHING   Present Position _____   Other_____
EXPERIENCE: High School _____   _____
(Full time)   Other CC _____   _____
                        College or University _____ (Specify level and yrs.)

SPECIAL CERTIFICATE OR
LICENSE CONNECTED WITH   Yes* ☐
YOUR TEACHING ASSIGNMENT: No ☐
(RN, Journeyman, etc.)
                              _____
                              *If "yes" please specify

HIGHEST DEGREE   No Degree ☐   Baccalaureate ☐
EARNED: Associate ☐   Masters ☐
                                               Doctorate ☐

MILITARY TRAINING: None ☐
(Related to present position)   One year or more ☐

PLEASE TURN PAGE, FOLD OVER, STAPLE (or TAPE) AND MAIL

THANK YOU

-------------------------------- fold here --------------------------------------

Return to:

Charles Reinmuth
Division of Vocational, Adult and
    Community College Education
Oregon State University
Corvallis, Oregon 97331

STAPLE OR TAPE

APPENDIX E

LETTER TO SELECTED OCCUPATIONAL INSTRUCTORS

Research is currently being conducted at Oregon State University concerning staff development needs of occupational instructors in Oregon community colleges.

You and a limited number of colleagues have been selected to provide important input to reflect the instructor's assessment of what is needed. Information obtained will be analyzed and the results will be used to develop guidelines for professional improvement programs.

The demands on your time are no doubt considerable and because of this, your professional assistance in completing the enclosed questionnaire is doubly appreciated.

Although names of respondents will not be identified in the final report, a summary of findings will be made available to all respondents indicating a desire for a copy of these findings.

Your response by early March is truly appreciated.

Cordially,

Charles Reinmuth
Coordinator, Community College In-Service

APPENDIX F

FOLLOW-UP LETTER

MEMORANDUM

TO:

FROM: Charles Reinmuth, Coordinator
          Community College In-Service

SUBJECT: Professional Improvement Assessment Questionnaire

We recently mailed to you a questionnaire requesting your help in
assessing, from the instructor's point-of-view, the major elements
that should be included in the development of professional improvement
programs for Oregon community college instructors.

The data you will provide will be extremely useful in the development
of guidelines for programs that will soon be established in each of the
state's community colleges. If you have already completed and
returned the questionnaire, please consider this memorandum as an
expression of our appreciation.

If you have not responded, please do so in the next few days. For your
convenience, we have enclosed another questionnaire (stamped and
self-addressed) in the event that the first one was misplaced.

Thank you for your cooperation.

APPENDIX G

CODING OF DATA CARDS

Data for each of the 90 respondents were coded on a card as follows:

Card 1

Column	Code
1-2	Identifies respondent's service area.
3-5	Identifies respondent.
6-7	Identifies the respondent's community college.
8-9	Identifies the size of the community college as small, medium, or large.
10	Represents Data card number one.
11-80	Data. Response values of 1, 2, 3, 4, or 5 which were assigned to scales a and b for the first 35 competencies.

Card 2

1-9	Same as above.
10	Represents Data card number two.
11-46	Data. Response values 1, 2, 3, 4, or 5 which were assigned to scales a and b for the remaining competencies (36-53).
47-53	Personal characteristics of respondents.

APPENDIX H

COMMUNITY COLLEGES PARTICIPATING IN THE STUDY

Community College	City
Blue Mountain	Pendleton
Central Oregon	Bend
Chemeketa	Salem
Clackamas	Portland
Clatsop	Astoria
Lane	Eugene
Linn-Benton	Albany
Mt. Hood	Gresham
Portland	Portland
Rogue	Grants Pass
Southwestern	Coos Bay
Treasure Valley	Ontario
Umpqua	Roseburg

APPENDIX I

EXCERPTS FROM THE FLORIDA PLAN
GUIDELINES AND FORMS

The following guidelines and forms have been revised as per recommendations received by the Staff and Program Development Guidelines Committee.

I. Deadlines for Plans and Reports due in the Division of Community Colleges:

Due	Item	Form No.
April 15, 1972	5-Year Goals Plan	SPD-1
June 1, 1972	1972-73 Annual Plan of Activities (as budget exhibit)	SPD-2 Section 1 (completed)
Sept. 1, 1972	Evaluation and Status Report on 1971-72 Annual Activities Plan	SPD-2 Section II (completed)
April 15, 1973	5-Year Goals Plan Update	SPD-1
June 1, 1973	1973-74 Annual Plan of Activities (as budget exhibit)	SPD-2 Section I (completed)
Sept. 1, 1973	Evaluation and Status Report on 1972-73 Annual Activities Plan	SPD-2 Section II (completed)

II. Definition of Staff and Program Development

A. Staff Development--The development of existing staff includes the following: improvement of staff competency for both current requirements or new applications; up-dating on subject matter, teaching techniques, foundation disciplines, and methods and media use. "Staff" is interpreted to include faculty, administrators, and other non-instructional college employees such as clerical, maintenance, janitorial, and auxiliary personnel.

B. Program Development--Program development applies to
both improvement of existing offerings and improvement by
the addition of innovative elements. It may include adminis-
trative and student personnel services, clerical, janitorial,
and maintenance and similar programs which contribute to the
effectiveness of the college services. Development of new
programs may include the following: research, planning and
evaluation of new programs; retraining of existing staff;
"seed money" for new staff; and limited purchase of equip-
ment as outlined below. Program development does not
include expansion of existing programs.

III. There are now only three types of forms used in processing
Staff and Program Development Plans. These are:

SPD Goals Five Year Plan (SPD-1 Revised)
SPD Annual Activity Plan (SPD-2 Revised)
SPD Action Letter (SPD-3)

Although blank forms are available from the Division of
Community Colleges, SPD-1 and SPD-2 may be reproduced by the
local college as needed.

A. SPD-1 Revised--This five-year plan is to be submitted
annually to the Division of Community Colleges by April 15 of
each year. It is intended to reflect the institution's commit-
ment to specific goals during the five-year period. It also
identifies the areas and directions to be covered by the
activities of SPD-2 Revised. SPD-1 is the only document to
be approved in advance by the Division. It is important to
note that the approved plan and these Guidelines are the basis
of local college SPD accountability.

B. SPD-2 Revised--The form is divided into two major sections.

1. Section I provides for the identification of specific
activities for the year which are commensurate with the
goals identified in SPD-1 Revised. Form SPD-2 Revised
with Section I completed is to be submitted to the Division
as an exhibit to the college budget on June 1 of each year.

2. Section II provides for evaluation and a status report of
the activities identified in Section I. Section II will be
uncompleted when SPD-2 Revised is submitted on June 1.
On September 1 of the following year, Section II will be
completed and submitted to the Division.

Please note that the financial summary page(s) should be completed and included with the submission of both sections. First as a budget summary when completing Section I and then as a financial report summary with the final submission of SPD-2 in September of the following year. In the first instance, this summary will reflect your plans; in the second instance it will identify actual expenditures.

C. SPD-3--This is an action letter to be used by the Division of Community Colleges when evaluating SPD-1 plans.

IV. Definitions and Restrictions

The following information and instruction is provided as an aid in completing SPD-1.

A. Goals--It is assumed that the institutional staff and program development plan is part of a broader institutional master plan which allocates certain goals to the staff and program development program. Goals listed in Section I of the plan are long-range goals of the SPD program--not overall goals of the institution.

B. Objectives--A statement of an achievable, measurable outcome within a given time span, under specific conditions. An objective may be expressed as a desired result, a condition or an activity.

C. Restrictions

1. Hiring of new staff with SPD funds is limited to "seed money" which is intended to start a program and which is directly tied to program improvement as opposed to program support. Payment of salaries for new persons is limited to three years. This limitation applies both to the person and the position. (NOTE: Payment of salaries with SPD funds is intended to permit released time for planning or study which contributes directly to program improvement. SPD funds may not be used for salary increases or to provide fringe benefits.)

2. Equipment budgeted for under SPD plans must be specialized equipment which is essential to support program development. The equipment must be used in an innovative application and may not duplicate or replace existing equipment, increase existing inventories, nor

meet regular equipment needs. Cost of equipment must not exceed 15% of the annual SPD budget without special justification. Equipment may not be rented for more than three years, nor may incremental purchases of equipment cover more than a three-year period. The three-year limitation applies to generic types rather than particular pieces, brand names, or models which might be used in the same application.

3. A budgeted contingency fund is permitted but it is not to exceed two (2) percent of the SPD allocation. Contingency funds can be expended only on projects which are commensurate with the approved SPF plan.

4. The use of staff and program development funds is appropriate to examine institutional goals, long-range projections and for the employment of consultants for curriculum, but not be used for self-study per se.

5. Use of staff and program development funds to pay for normal expenses common to operation of any college is not appropriate.

SPD-2 Revised

_____
(Institution)

SPD Annual Activity Plan _____ Fiscal Year _____

Section I   List of Specific Activities Necessary to Accomplish
            5-Year Goals

1.   Name of Activity _____

2.   (Refer to Form SPD-1) Which 5-year goal (by number only) does
     this activity refer to? _____

3.   What do you expect to accomplish by this activity? (Please list
     explicit objectives.)

     _____

     _____

4.   How do you expect to accomplish these objectives?

     _____

     _____

5.   Cost of Activity

     A.   Equipment only (Please itemize):
          (1)

          (2)

     B.   All other costs, including costs per unit and total
          (1)

          (2)

          (3)

     C.   Total Cost: $ _____

6.   How do you intend to evaluate the outcome of this activity?

     (1)

     (2)

     (3)

7. Please check functional area this activity primarily serves:

_____ Instructional Program

_____ Instructional Personnel

_____ Non-Instructional (Clerical, janitorial, maintenance, etc.)

_____ Guidance and Testing

_____ Student Personnel

_____ Facilities

_____ Administration

_____ Compensatory, Guided Studies, or Remedial Programs

_____ Other

8. Check one aspect of the college program which this activity primarily serves:

_____ College parallel (Associate in Arts Degree)

_____ Associate in Applied Science Degree

_____ Other Occupational or Vocational Programs

_____ Enrichment courses not part of certificate or degree program

_____ Community services other than formal courses

_____ Other

Section II   Annual Evaluation and Status Report (This section is to be completed at the end of the Annual Plan Year as part of the September 1 deadline requirements.)

1.   Name of Activity _____

2.   Budgeted Cost $_____   3.   Actual Cost $_____

4.   Surplus or Deficit $_____

5.   Activity Status

_____ Activity was completed

_____ Activity was not completed but will be continued

_____ Activity was never started

_____ Activity was abandoned

6. Check the techniques used in evaluating this activity:

    _____ Questionnaire

    _____ Statistical study

    _____ Expert opinion

    _____ Consensus of peers

    _____ Other

7. Success of Reported Activity (Please check item which most accurately describes your thinking.)

    _____ Not successful, will be discontinued

    _____ Difficult to implement, must revise approach

    _____ Impossible to evaluate at this time but will be continued

    _____ Moderately successful

    _____ Highly successful, can be recommended to others

8. Value of Activity (Please check item which most accurately describes your thinking.)

    _____ This activity was very valuable

    _____ This activity was very valuable and is worth repeating, and can be recommended to other institutions

    _____ The value of this activity is marginal

    _____ The value of this activity was neutral

    _____ The value of this activity is not assessable

    _____ The activity is recommended for rejection

9. Narrative Evaluation. From an evaluation standpoint, describe the outcome of this activity.

10. Report of Expenditures.

<u>Sample</u>

STAFF AND PROGRAM DEVELOPMENT PLAN
BUDGET SUMMARY
1970-71

Estimated Balance - July 1, 1970	$ 5,000
Estimated Revenue	<u>42,000</u>
Total Available	$47,000
Deduct Estimated Expenditures	<u>45,720</u>
Estimated Balance - June 30, 1971	$ 1,280

SUMMARY OF EXPENDITURES

Salaries
    1. Released time to develop materials $12,370
    2. Substitute Instructor   1,100
    3. Tutorial & Help session personnel   5,800
    4. Additional Nursing Staff   <u>7,200</u>
                               $26,470

Consultants
    1. Honorariums $ 2,900
    2. Expenses   <u>1,350</u>
                                 $ 4,250

Travel
    1. Educational Meetings $ 5,000

College Tuition Reimbursement
    1. 50 Courses at $60 $ 3,000

Institutional Research $ 2,000

Professional Study (Sabbatical)
    1. One   <u>$ 5,000</u>

                                                            $45,720

APPENDIX J

MEDIAN SCORES FOR SCALES A AND B FOR
EACH OF THE 53 COMPETENCIES

Variable (competency no.)	Scale a	Scale b	b-a	Variable (competency no.)	Scale a	Scale b	b-a
1	4	5	1	27	4	5	1
2	4	5	1	28	4	5	1
3	4	4	0	29	3	4	1
4	4	5	1	30	4	4	0
5	4	5	1	31	3	4	1
6	4	5	1	32	4	5	1
7	4	5	1	33	4	5	1
8	4	5	1	34	3	4	1
9	4	5	1	35	3	4	1
10	4	5	1	36	3	4	1
11	4	4	0	37	4	4	0
12	5	5	0	38	4	5	1
13	4	5	1	39	4	5	1
14	4	5	1	40	4	4	0
15	3	4	1	41	4	5	1
16	4	5	1	42	4	5	1
17	4	5	1	43	4	5	1
18	4	5	1	44	4	5	1
19	4	5	1	45	4	5	1
20	3	5	2	46	4	5	1
21	3	5	2	47	4	5	1
22	4	5	1	48	4	5	1
23	4	5	1	49	4	5	1
24	4	5	1	50	3	4	1
25	4	5	1	51	4	5	1
26	4	5	1	52	4	5	1
				53	4	5	1

APPENDIX K

RESULTS OF THE MANN-WHITNEY U TEST ANALYSIS

Item	Group	Trade & Industrial Home Economics 1-2	Trade & Industrial Technical 1-3	Trade & Industrial Health 1-4	Trade & Industrial Business 1-5	Trade & Industrial Agriculture 1-6	Home Economics Technical 2-3	Home Economics Health 2-4	Home Economics Business 2-5	Home Economics Agriculture 2-6	Technical Health 3-4	Technical Business 3-5	Technical Agriculture 3-6	Health Business 4-5	Health Agriculture 4-6	Business Agriculture 5-6	Sum
	N_1-N_2	16-14	16-17	16-14	16-17	16-12	14-17	14-14	14-17	14-12	17-14	17-17	17-12	14-17	14-12	17-12	
	U^*	64	81	64	81	53	67	55	67	45	67	87	57	67	45	57	R
1		87	104	83	109	88	116	57	114	76	64-R (328-169)	142	93	69	61	110	1
2		107	121	94	114	88	111	90	89	83	115	97	96	73	75	73	0
3		96	105	85	102	75	107	61	109	54	68	139	60	58-R (163-333)	82	62	1
4		84	122	99	120	87	73	60	103	72	116	109	83	89	67	101	0
5		81	75-R (211-350)	76	97	60	97	90	113	70	109	130	100	117	76	91	1
6		89	121	112	119	83	105	75	109	78	104	141	98	102	71	101	0
7		111	97	107	121	72	84	94	105	62	82	124	102	102	61	89	0
8		109	124	94	120	77	112	79	101	64	86	111	70	112	81	92	0
9		110	116	110	101	71	103	98	89	63	103	129	90	89	63	101	0
10		110	108	91	115	83	97	78	104	75	75	136	92	79	55	100	0
11		107	113	104	133	78	102	86	117	64	92	115	67	104	75	76	0
12		93	128	102	127	91	107	90	92	75	116	127	103	101	82	91	0
13		50-R (186-279)	126	102	100	88	67-R (276-220)	42 (259-147)	85	33 (240-111)	102	120	87	81	83	68	4
14		88	72-R (208-353)	91	99	88	81	98	109	74	86	113	62	110	93	83	1
15		104	126	95	105	79	119	74	97	73	88	116	88	68	50	93	0
16		110	128	109	131	95	115	92	117	83	109	142	98	110	81	99	0

(Continued on next page)

Item	Group	T & I / H.E.	T & I / Tch	T & I / Hlth	T & I / Bus	T & I / Ag	H.E. / Tch	H.E. / Hlth	H.E. / Bus	H.E. / Ag	Tch / Hlth	Tch / Bus	Tch / Ag	Hlth / Bus	Hlth / Ag	Bus / Ag	Sum
		1-2	1-3	1-4	1-5	1-6	2-3	2-4	2-5	2-6	3-4	3-5	3-6	4-5	4-6	5-6	
	N_1-N_2	16-14	16-17	16-14	16-17	16-12	14-17	14-14	14-17	14-12	17-14	17-17	17-12	14-17	14-12	17-12	Sum
	U*	64	81	64	81	53	67	55	67	45	67	87	57	67	45	57	R
17		93	84	93	119	44-R (180-226)	89	98	117	48	89	109	88	116	48	62	1
18		84	93	85	128	82	111	95	97	74	105	109	82	99	92	94	0
19		109	129	109	119	74	109	92	107	62	116	120	85	99	67	66	0
20		75	86	88	121	82	112	86	69	68	95	83-R (360-236)	74	83	78	76	1
21		92	126	107	134	78	91	87	98	84	110	136	78	117	76	84	0
22		81	129	110	124	57	82	72	100	72	115	124	59	107	54	76	0
23		77	125	90	120	46-R (182-224)	93	82	98	68	108	138	60	111	49	64	1
24		83	101	83	84	71	113	97	96	83	116	126	97	99	83	83	0
25		102	126	112	132	84	116	93	113	80	113	140	95	121	76	92	0
26		107	125	106	132	75	122	98	112	65	116	130	73	110	62	84	0
27		68	125	62-R (198-267)	134	88	82	92	87	56	80	140	102	82	53	97	1
28		81	102	94	266	83	112	85	96	72	109	122	93	110	83	97	0
29		107	115	84	122	71	102	79	112	67	74	112	63	103	83	87	0
30		99	124	100	95	80	115	97	98	60	115	109	74	95	60	54-R (303-132)	1
31		102	99	88	86	95	100	72	91	77	68	135	78	55-R (160-336)	70	70	1
32		110	129	111	131	86	117	97	117	89	117	133	97	114	79	88	0
33		104	116	108	128	56	113	94	118	60	107	136	75	115	55	73	0
34		82	85	90	99	87	102	92	118	56	95	124	58	111	61	68	0
35		83	88	89	99	86	106	93	118	70	101	124	74	114	75	85	0
36		101	70-R (206-355)	86	106	93	75	86	109	76	89	92	46-R (312-123)	110	62	79	2

Item	Group N_1-N_2 U*	T & I H.E. 1-2 16-14 64	T & I Tch 1-3 16-17 81	T & I Hlth 1-4 16-14 64	T & I Bus 1-5 16-17 81	T & I Ag 1-6 16-12 53	H.E. Tch 2-3 14-17 67	H.E. Hlth 2-4 14-14 55	H.E. Bus 2-5 14-17 67	H.E. Ag 2-6 14-12 45	Tch Hlth 3-4 17-14 67	Tch Bus 3-5 17-17 87	Tch Ag 3-6 17-12 57	Hlth Bus 4-5 14-17 67	Hlth Ag 4-6 14-12 45	Bus Ag 5-6 17-12 57	Sum R
37		62-R (198-268)	88	54-R (190-275)	100	67	115	93	94	70	109	120	89	86	65	97	2
38		90	111	92	103	79	119	97	115	83	118	138	101	112	84	97	0
39		110	101	97	128	67	87	87	110	58	76	117	96	98	52	78	0
40		108	114	104	106	69	97	96	91	66	93	142	61	85	67	51-R (306-129)	1
41		76	106	80	128	89	110	92	89	65	106	122	88	91	66	101	0
42		84	82	81	94	47-R (183-224)	100	97	118	66	102	120	97	117	69	79	1
43		111	89	108	130	93	77	93	113	83	87	107	65	119	79	95	0
44		106	130	78	121	74	119	64	112	70	80	138	85	75	40-R (233-118)	92	1
45		102	105	104	106	90	86	84	86	82	101	151	74	104	73	74	0
46		107	113	103	104	82	102	86	93	75	92	140	98	85	66	92	0
47		97	121	105	128	81	119	92	110	81	115	136	98	118	77	92	0
48		101	76-R (212-350)	90	88	46-R (182-225)	75	87	88	46	93	123	95	106	59	78	2
49		91	93	96	112	86	89	97	118	76	93	111	70	117	78	92	0
50		66	63-R (119-362)	55-R (191-274)	101	66	102	86	102	74	117	105	77	89	65	98	2
51		92	91	89	129	66	96	94	105	71	101	105	98	102	75	76	0
52		98	117	110	115	75	119	86	118	76	103	143	92	102	65	91	0
53		77	102	77	113	76	111	96	104	79	110	135	101	102	77	97	0
Total R		2	5	3	0	4	1	1	0	1	1	1	1	2	1	2	25/25

*
α = .05, two-tailed test   R = Reject