

AN ABSTRACT OF THE THESIS OF

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Abstract approved:

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The purpose of this study was to ascertain the factors which influenced undergraduate students in the School of Education at Oregon State University to select vocational teacher education as their major. Data were collected from 315 vocational, practical arts, and non-vocational undergraduate teacher education majors who were enrolled in teacher education professional courses during Spring Term 1983. A questionnaire was used to collect the data. Discriminant analysis was used to relate group membership to selected variables.

Nine unique characteristics of vocational teacher education students were identified: (1) sex; (2) total work experience; socioeconomic status in terms of (3) father's education and (4) father's occupation; influence of significant others in terms of (5) major influence of peers, (6) media, (7) non-educational personnel, and (8) relatives; and (9) grade point average during high school. The respondents tended to come from middle-class homes, to be "B" students in high school, and to work in skilled and technical

occupations before enrolling in their current majors. Maturation either through aging or work experience in business, industry, or both seemed to provide career options for these subjects. The only significant others who had important influence on the selection of the subjects' major were their peers in the same vocational teacher education major. Male friends in the work place also influenced these students' career decisions.

It was concluded that vocational teacher education students are identifiable on three factors. Two variables, father's occupational prestige and educational attainment, comprise one factor: socioeconomic status. The other factors are work experience related to majors and grade point average in high school. Peers seem to influence the decisions of these students to pursue careers. Other college and university students in the same majors as vocational teacher education students, as well as male friends in the labor force, either in business or industry, have significant influence on the career decisions of these subjects and, therefore, are important sources through which information about vocational teacher education programs should be disseminated to potential students.

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of Vocational Teacher Education by Undergraduate Students
at Oregon State University

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A Study of Factors Influencing the Selection
of Vocational Teacher Education by Undergraduate Students
at Oregon State University

I. INTRODUCTION

The purpose of this study was to ascertain the factors which influenced undergraduate students to select vocational teacher education as majors.

Rationale

Although there will be a slight decrease in the public secondary school enrollment during the 1980's, enrollment in vocational and technical education should actually increase (U.S. Bureau of Census, 1980). The expected rise in student enrollment in vocational and technical education at both the secondary schools and in community colleges will result in an even greater shortage of vocational teachers than currently is experienced (National Education Association, 1981).

Congress attempted to address the problem of vocational teacher shortage through the Vocational Education Amendments of 1976 (Public Law 94-482, Part 2, Sect. 172). The Act authorized the expenditure of 65 million dollars to meet the training needs for qualified vocational teachers in all the states (Public Law 94-482, Section 130). The Act further stipulated that the Commissioner of Education should award fellowships to certified non-vocational teachers and persons from industry so that they could become qualified as vocational teachers through the completion of appropriate undergraduate

preparation. The Commissioner also was required to publish annually the numbers of vocational teachers needed in each service area in each state. In response to this mandate, 37 states reported a need for 692 vocational teachers during the 1977-78 school year (Federal Register, 1978). It should be noted that nine states reported no vocational teacher shortages, three indicated that they did not have the data available, and seven states did not respond.

The U.S. Commissioner of Education awarded grants to qualified applicants so that they could complete their undergraduate vocational teacher preparation at approved, accredited universities and colleges within two years. Despite this effort, shortages for qualified vocational teachers still existed. The House Committee on Education and Labor (1981) entered into the report of their hearings on the reauthorization of the Vocational Education Act of 1963 the following total numbers of vocational teachers needed and the proportion that these positions constituted: agriculture education, 419 (7.4 percent); distributive education, 277 (4.9 percent); health occupations education, 855 (14.7 percent); home economics education, 757 (13.3 percent); office occupations, 689 (12.1 percent); technical education, 193 (3.4 percent); trade and industrial education, 2083 (36.5 percent); and industrial arts, 439 (7.7 percent).

As implied earlier, the need for qualified vocational teachers will increase during the 1980's. The National Center for Educational Statistics (1980) projected a need for 4183 newly certified vocational instructors during 1983-84. Between 1985 and 1986, an

additional 4319 new instructors will be needed for a total of 8502 new vocational instructors needed during the three-year period.

Current projected shortages of qualified vocational teachers may be caused by a variety of reasons. In his testimony during the House Committee on Education and Labor's hearings on the reauthorization of the Vocational Education Act of 1963 (1981), Evans outlined eight possible reasons for the shortages:

1. Universities have been decreasing and closing vocational teacher education programs; for example, the state of Michigan curtailed its programs at its three major universities.

2. Federal funding for vocational teacher education has been decreasing.

3. Requirements for teacher certification have increased in different states, including greater emphasis on baccalaureates.

4. Vocational teacher education has suffered from relatively low status.

5. Teacher turnover as a direct result of those who retire and those who leave teaching to work in industry has aggravated the teacher shortage problem.

6. Student enrollment in vocational programs at the secondary schools and community colleges has increased, while enrollment of students in vocational teacher education programs at the universities has continued to decline.

7. Salaries for vocational teachers have been relatively low, as opposed to the salaries paid by industry.

8. The emerging new occupational areas caused by technological changes and advancements have necessitated vocational instructor's new knowledge and competencies.

A study conducted in the state of Illinois (Tomlinson, 1980) showed that about half of the certified vocational teachers in that state were employed outside of education. It concluded that until teaching provides a closer financial parity with the private sector, and until societal attitudes towards vocational education change, the number of vocational teachers will continue to decline. Also, a report published by the National Center for Education Statistics (1981) on vocational teacher supply and demand predicted that about 18.9 percent of vocational teacher shortages in the 1983 and 1986 period will be accounted for by teacher turnover and changes in pupil-teacher ratio.

Although much discussion and effort has been expended on alternative means for preparing future vocational teachers, it appears that less consideration has been given to the recruitment of potential teachers (Sugarman, 1980). Increased effort in recruiting of vocational teacher trainees is critical if the projected demands are to be met (Foran and Kaufman, 1971; Goldston, 1982). There have been few proposals on alternative recruitment strategies in the literature. This may be due to the lack of knowledge regarding the factors that influence the selection of vocational teaching as a profession (Evans, 1978), although extensive research has been done on the influences on career decision-making in general (e.g., Hedges, 1970; Arnold and Ferguson, 1973; Hall and Mansfield, 1975; Anderson,

K. L., 1980) and for the college-directed specifically (e.g., Pershing and Schwandt, 1980; Daluge and Thompson, 1981; Dunkelberger, Molnar, and Adirian, 1981; Bowen, Lee, Cantrell, and Frese, 1983).

In 1967, Foley reported on a survey of industrial arts teacher education students and administrators in New York (Foley, 1967b). He then published The Handbook on Recruitment of Potential Industrial Arts Teachers based on the findings of the study (Foley, 1967a). The purpose of Foley's study was to ascertain current recruitment practices used by educational institutions in recruiting potential industrial arts teachers. The recruitment practices most frequently reported by administrators were:

1. Conducting visits of college campuses and facilities.
2. Sending booklets describing industrial arts teacher education.
3. Making speeches about industrial arts teacher education.

The influential factors most frequently reported by students enrolled in industrial art teacher education program in the participating institutions were:

1. Parents and high school industrial arts teachers were most influential in assisting the students with their career selections.
2. Personal interests, hobbies, high school industrial arts courses, and visits to college industrial arts education facilities had major influence on the respondents' career choices.

Because Foley's (1967b) study was reported nearly 16 years ago, societal changes in terms of economic, social, and technological

changes make this present study necessary at this period. Furthermore, his study addressed industrial arts, the practical arts aspect of industrial education, rather than its vocational component, trade and industrial education. A study of students across the five vocational teacher education services areas will provide more useful information for designing recruitment strategies. Despite the aforementioned limitations of Foley's (1967b) report, it does, however, provide a basis for the present study.

Significance of the Study

The findings of this study may help to understand some of the factors which are influential in the students' selection of vocational teacher education. Its outcomes could offer some insights into the types of information sources which could be useful in developing recruitment strategies.

Related Literature

The purpose of the review of related literature was to identify those variables which may influence undergraduate students to select vocational teacher education. The review of related literature was conducted in two general areas: (1) career choice and (2) vocational and practical arts teacher education.

Career Choice

Career choice and the factors which influence that choice embrace a broad array of speculation and research. Five factors seem to impact on the occupational choices: (1) significant others, (2) achievement, (3) work experience, (4) socioeconomic status, and

(5) sex. Most of the previous research on factors which influence career choice appeared to focus on adolescents in high schools. Research on college students appeared to focus on those enrolled in the liberal arts and sciences. Information concerning adults is limited (Eliason, 1978). Furthermore, other than the study conducted by Foley (1967b), even less is known about vocational teacher trainees (Couch, 1980; Thomas, 1980).

Significant Others. Significant others are objects or individuals in the social environment that influence the attitudes or behaviors of individuals (Picou and Hernandez, 1970; Sowell, 1972; Lungstrom, 1974). They serve as role models that define expectations (Shibutari, 1961; Brookover, 1955; Haller and Woelfel, 1978; Benninger and Walsh, 1980; Zytowski, 1980). Parents, spouses, peers, mass media, and educational personnel appear to influence career choices and educational decisions of students (Kerckhoff, 1974; O'Donnell, 1976; Ridgeway, 1978; Harren, 1979; Anderson, K. L., 1980; Salomone and Slaney, 1981). Parental identifications can influence children's attitudes towards roles and values (Roe and Siegelman, 1964). However, such identifications may not have long-term effects on the children's future career decisions. The influence of parents seems effective with adolescents in high schools and less effective with the older college students (O'Donnell and Andersen, 1978; Huth, 1978; Harren and Biscardi, 1980; Fitzgerald and Crites, 1980; Ohlendorf and Rafferty, 1982).

For adults, marital status seems to affect the type of occupational and educational choices persons make (Wolfe, 1969). Single,

divorced, widowed, and separated individuals appear to gain a sense of independence on their vocational choices while married individuals, especially women, tend to aspire to the type of jobs that would ease their life's monotony, regardless of the jobs' remuneration (Bem and Bem, 1973; Basualdo, 1975). Husbands appear to exert major influences on their wives' occupational choices and educational attainments (Cartwright, 1978; St. John-Parsons, 1978; Hall and Hall, 1979). However, the influence seems to reflect the husbands' attitudes towards their spouses' combining careers and family roles (Hall and Gordon, 1973; Marini and Greenberger, 1978; Holaham and Gilbert, 1979; Anderson, K. L., 1980; Motsch, 1980; Spitze and Huber, 1980).

Peers seem to influence individuals' career or educational choices (Hoffman, 1972; Kerckhoff, 1974; Oliver, 1975), but the specific influences exerted by them appear to be stronger for students in high schools than for the college and university students (Farmer, 1976; Neapolitan, 1980; Molnar and Dunkelberger, 1981). Although friends provide useful occupational and educational information which might influence individuals' career preferences (Lungstrom, 1974), the information seems to relate to their social group membership (Rohrer, 1982; Bowen et al., 1983).

The influence of mass media on vocational choice also may differ among groups of students (Singer, 1974; Bartol, 1976). For example, while books and pamphlets seem to provide occupational and educational information to the majority of students (Thompson, 1966), television, radio, and computer-based system are more important

sources of occupational information to non-white students than to white students (Brief and Oliver, 1976; Krefiting, Berger, and Wallace, 1978; Jurgenson, 1978; Schnieder, DeWinne, and Overton, 1980; Brown and Strange, 1981).

The effects of educational personnel on career choice varies among groups of students. High school teachers have minimal influences on the vocational choices and educational decisions of high school students (Almquist and Angrist, 1971; Tangri, 1972; Douvan, 1976; Yanico, Hardin, and McLaughlin, 1978; Teglassi, 1981). College and university teachers seem to have no influence whatever on the career decisions of college students (Woelfel and Haller, 1971; Neice and Bradley, 1979; Gottfredson and Becker, 1981; Yongue, Todd, and Burton, 1981; MacKay and Miller, 1982).

Achievement. There seems to be some relationship between achievement and career choices in adolescents at the high school level (Trent, 1965; Seron, 1967; Picou and Hernandez, 1970; Featherman, 1972; Bailey and Stadt, 1973; Amoapim, 1979; Reuterfors, Schneider, and Overton, 1979; Boocock, 1980). The high school students' career choices and their acceptance of responsibilities for those choices appear to relate to their high school grades (Super and Overstreet, 1960; O'Reilly, 1972; DeCoster and Mable, 1974).

The relationship between achievement as measured by high school grade point averages and career choices, however, may be less important with other people who are attending colleges and universities. The influence of friends and spouses may be more important in the career choices of adults than are their achievements while in

high school (Bergsma and Chu, 1981). Furthermore, occupational work experiences may be more important in the career choices of adults who are experiencing mid-life career crises and changes (Stake, 1978) than are their academic grade point averages (Motsch, 1980; DeSanctis, 1981).

Work Experience. The necessity of work experience in occupations related to a person's vocational teaching area has been a long-standing tenet in vocational education (Prosser and Allen, 1925; Ricciardi and Kibby, 1932; Roberts, 1957). Occupational work experience has served as a means by which teachers acquire the skills and knowledge necessary for teaching in their vocational services areas (Barlow, 1963; Venn, 1964; Russo, 1967; Shoemaker, 1967). It also serves as a means for learning the social characteristics and adaptations necessary for success within the industrial and business environments (Ricciardi and Kibby, 1932; Schaefer and Kaufman, 1971; Wenrich and Wenrich, 1974; Evans and Herr, 1978).

Currently, occupational work experience is required by all states for vocational teacher certifications (Smith, W. G., 1980). The amount of work experience required varies among the states, ranging from 18 months to seven years (Wenrich and Wenrich, 1974; Evans and Herr, 1978). The amounts and types of work experience required for certification also varies among the vocational teaching services areas. For example, students enrolling in agricultural education are not required to have occupational work experience beyond that which is acquired while growing up on a farm (Bailey and Stadt, 1973; Arnold and Ferguson, 1973). Teaching certification for

trade and industrial education, business education, and distributive education, however, requires occupational work experience acquired at the adult level (Peck and Tucker, 1973; Evans and Herr, 1978).

Occupational work experience can influence the career and educational choices of individuals (Smith, H. T., 1963; Smith, D. O., 1969; Thompson, 1973; Lasley, 1980). Adults who wish to change their careers have used their work experiences as a basis for making decisions about their new careers, as well as plans for further education (Lindsey, 1961; Schill, 1964a, 1964b; Silvius and Fold, 1965; Walsh and Selden, 1965; Staton, Colson, and Bassett, 1979; Schwanke, 1980; DeSanctis, 1981). Since occupational work experience seems to be an important element in vocational teaching certification requirements, and, hence, it is a major admission requirement in most vocational teacher education programs, it is, therefore, reasonable to expect its relationship with the students' career and educational choices, particularly with adults.

Socioeconomic Status (SES). The term "socioeconomic status" has been used to locate a person's position in society. Occupations and educational attainments often have been used to determine the status of individuals (Pendleton, 1973; Hout and Morgan, 1975; Sewell and Hauser, 1975; Angi and Coombe, 1976; O'Bryant and Corder-Bolz, 1978). Views on the influence of socioeconomic status on career and educational choices have changed over time. Earlier writings (Nelson, 1939; Bendix, Lipset, and Malma, 1954; Jensen and Kirchner, 1955; Astin, 1965; Duncan, Heller, and Portes, 1968) tended to show that the career choices of adolescents

and young adults were directly and highly related to their parents' socioeconomic status. However, more contemporary research seems to indicate that socioeconomic status is related to career choice only through other variables. The variables intervening between socioeconomic status and occupational choices of individuals seem to include: significant others (Picou and Hernandez, 1970; Looft, 1971b; Ace, Graen, and Davis, 1972); achievement (Vanderwell, 1970; Featherman and Duncan, 1972; Haller and Woelfel, 1972; Wolkon, 1972); work experience (Schwanke, 1980; DeSanctis, 1981); and marital status (Moles and Friedman, 1973; O'Donnell, 1976; Pennebaker, Durrett, and O'Bryant, 1978; O'Donnell and Andersen, 1978).

Sex. At one time, the perceived occupational options available to people were highly related and influenced by their sex (Bendix et al., 1954; Bernard, 1964; Seigel, 1973; Blitz, 1974; Singer, 1974; Feldman-Summers and Kiesler, 1974; Nichols, 1975). Currently, the perceived scope of occupational choices has been increasing for women while the choices of males have been and continue to be much broader (Crawford, 1978; Falk and Salter, 1978; Moreland, Gulanick, Montague, and Harren, 1978; Ware, 1980; Ware and Pogge, 1980; Daluge and Thompson, 1981).

The concept of femininity in American culture has long been artificially shaped by restrictive customs and imposed values. Although, societal norms that shaped individual vocational role expectations in the past have undergone a liberalizing process, much of the human capital found among women is still being either ignored or used selectively (Basow and Howe, 1975; Ridgeway, 1978;

Heilman, 1979, 1980; Stockton, Shepson, and Berry, 1979; Stockton, Shepson, Berry, and Utz, 1980; Imada, Fletcher, and Dalessio, 1980; Marshall and Wijting, 1980). An analysis of employment patterns suggests that women's talents have not been utilized in a broad spectrum of occupational endeavors, despite the fact that women are currently better educated than ever before (Treiman and Terrell, 1975; Tully, Stephan, and Chance, 1976; Krefting et al., 1978; Pennebaker et al., 1978; Schneider et al., 1980). The concentration of women in a relatively small number of occupations is illustrated by the fact that in 1979, 50 percent of the men were employed in 65 occupational classifications while the same percentage of women workers were represented by only 21 occupational classifications (U.S. Department of Labor, 1979; Dresser, 1981).

The perceived scope of occupational choices has been expanding for women, and their participation in traditionally male-intensive occupations has increased (U.S. Department of Labor, 1979). However, most of the women in the work-force still continue to be employed in traditionally female-dominated occupations (Carnegie Commission on Higher Education, 1973). In vocational teacher education, for example, the majority of male students is found in trade and industrial education, agricultural education, and marketing and distributive education, while home economics education and office occupations are largely represented by female students (Evans and Herr, 1978).

Vocational and Practical Arts Teacher Education

Vocational education is concerned with enabling people to acquire skills and knowledge necessary to be productive workers in occupations that usually require less than baccalaureates (Calhoun and Finch, 1979). Certification for these programs requires that teachers or perspective teachers show evidence of competence in both teaching and technical subject matter (Roberts, 1971). University vocational teacher education programs that lead toward baccalaureates provide supplemental instruction on the technical subject matter as well as coursework on teaching.

Vocational teacher education programs are usually identified by the vocational service areas for which they are preparing teachers. The most commonly used designation for these service areas are: agricultural education, business and office education, home economics related occupations, marketing and distributive education, and trade and industrial education. Home economics related occupations and trade and industrial education are often referred to by the more inclusive "home economics education" and "industrial education," respectively. Other areas, such as allied health occupations education, service occupations education, forest products education, although distinct service areas, are often included with one of the five major areas for teacher preparation (Evans and Terry, 1971; Wenrich and Wenrich, 1974).

Vocational education is usually considered as "specific education," that is, only persons desiring to learn appropriate skills and knowledge for specific or a family of related occupations

would participate in programs offered in a service area (Evans and Herr, 1978). On the other hand, a broad spectrum of general education programs called "practical arts," also are associated with the service areas. As general education programs, practical arts programs are appropriate for all persons in public and private elementary and secondary schools as well as community colleges and community education. The practical arts education programs, which are probably most familiar to the public, and their associated service areas, are secondary programs in consumer/homemaking (home economics education), general business and office (business and office education), and industrial arts (industrial education) (Roberts, 1971; Evans and Herr, 1978). Goals may address prevocational skills; career awareness and exploration; the world of work in terms of materials, processes, and socioeconomic factors; and avocational activities.

Vocational and practical arts teacher education students often complete much of the same professional coursework (Calhoun and Finch, 1979). A distinguishing feature of their preparation, however, is the degree of specialization of their technical coursework. Vocational students usually specialize in technical coursework related to the family of related occupations on which they will teach. Practical arts teacher education students, on the other hand, normally complete technical coursework in all of the functional areas of their industry (Mays, 1948; Roberts, 1971; Evans and Herr, 1978). Unlike vocational teacher education students, however, practical arts students are not required to have related work experience, which may

often serve as the deciding factor whether they pursue vocational or practical arts certification (Smith, W. G., 1980).

Summary

The purpose of the review of related literature was to identify variables which may influence undergraduate students to select vocational teacher education as majors. Considerable research has been conducted on the factors influencing career choices by adolescents and by college students in liberal arts and sciences. There seems to be some indication that variables such as significant others, socioeconomic status, achievement, work experience, age, and sex may influence a person's selection of a collegiate major. The expectations of significant others, as well as family background, also may be related to adolescents' career choices.

Minimal emphasis, however, has been given to factors which may influence the career choices of teacher education students in general, and even less is known about vocational teacher education students. Most of the research has been conducted on other problem areas of vocational teacher education, such as teachers' competency and certification requirements.

Although knowing the characterization of vocational teacher education students is necessary, it is not sufficient for proposing recruiting alternatives. To design recruiting strategies, it is also necessary to know which of these influences are unique to vocational teacher education students. An area closely related to vocational education is the practical arts, although the intent of vocational

education and the practical arts are somewhat dissimilar. Vocational and practical arts teacher education students often complete much of the same professional coursework. They also complete technical coursework which is somewhat similar.

Furthermore, the uniqueness of vocational teacher education students in comparison to other teacher education students may provide additional insights into factors which should be considered when designing a recruitment strategy.

Given this state of art, it appears reasonable to ask the following question: What is the relationship between a teacher education student's major (vocational, practical arts, or non-vocational) and the following variables: age; sex; marital status; high school grade point average; years of work experience; socio-economic status in terms of parents' occupations and educational attainments; and significant others influence on career decisions.

II. METHODOLOGY

Population and Sample

The populations for this study were undergraduate teacher education students in the School of Education at Oregon State University. The samples consisted of 315 vocational, practical arts, and non-vocational teacher education students.

The vocational and practical arts samples included the freshman, sophomore, junior, and senior students enrolled in professional courses in six major program areas within the School of Education during Spring Term 1983 (Table 1). The vocational group consisted of 148 teacher education students in the agricultural education, business and distributive education, home economics education, and industrial education majors. They were enrolled in Theory and Practicum II (sophomore professional block) and III (junior professional block), methods and curriculum courses, and student teaching. Among the vocational and practical arts teacher education students, 38 (25.7 percent) of the respondents were seeking only vocational certification (Table 2). Another 35 (23.6 percent) were seeking both vocational and practical arts certificates. The remaining 75 (50.7 percent) were pursuing only practical arts teaching certificates.

Table 1. Number and percentage of respondents by teacher education major and by class.

Class	Respondents by Major*													
	AED		BED		HED		IED		Other Secondary		Elementary		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Freshman	2	5.9	1	3.4	0	0.0	0	0.0	0	0.0	0	0.0	3	1.0
Sophomore	2	5.9	4	13.8	6	21.4	4	6.9	28	42.4	22	33.3	66	21.2
Junior	8	23.5	9	31.0	7	25.0	21	36.2	25	25.3	29	29.3	99	31.7
Senior	17	50.0	12	41.4	13	46.4	27	46.6	30	31.9	18	15.4	117	37.5
Other	5	47.7	3	10.3	2	7.1	6	10.3	11	11.7	0	0.0	27	8.3
Total	34	100.0	29	100.0	28	100.0	58	100.0	94	100.0	69	100.0	312	100.0

*Major: AED = agricultural education
 BED = business education
 HED = home economics education
 IED = industrial education

Table 2. Number and percentage of respondents in vocational and practical arts teacher education by service area and by certification program.

Certification Program	Respondents by Service Area*									
	AED		BED		HED		IED		Total	
	N	%	N	%	N	%	N	%	N	%
Vocational only	32	94.1	3	10.3	1	3.8	2	3.4	38	25.7
Both vocational and practical arts	2	5.9	20	69.0	0	0.0	13	22.4	35	23.6
Subtotal Vocational	34	100.0	23	79.3	1	3.8	15	25.8	73	49.3
Practical arts only	0	0.0	6	20.7	25	96.2	43	74.1	75	50.7
Total	34	100.0	29	100.0	26	100.0	58	100.0	148	100.0

*First major indicated by respondents:

- AED = agricultural education
- BED = business education
- HED = home economics education
- IED = industrial education

The non-vocational group consisted of 167 teacher education students who were majoring in other secondary and elementary teacher education programs. Those in secondary teacher education major were enrolled in the campus portion of Theory and Practicum II (sophomore professional block) and the reading and composition professional courses. The elementary teacher education majors were enrolled in the method courses in language arts and in reading and composition, as well as the campus portion of Theory and Practicum II.

Instrumentation

Data were acquired for this study with an instrument that had three parts (Appendix A). Most of the items for the instrument were adapted or selected from those used in other studies (e.g., Anderson, W. S., 1963; Stout, 1969; Hullman, 1971; Amoapim, 1979), especially the one conducted by Foley (1976b). The items were selected or developed to answer the research question posed at the end of the previous chapter.

The first part of the instrument was divided into two sections: Section A and Section B. Section A contained all possible pairs of five major sources of influence for selecting a major. The five major sources of influence were: relatives, peers, media, educational personnel, and other non-educational personnel. The number of times each major source was selected by each respondent served as the score for that particular source. The items in Section B were the specific sources of influence which described each of the above five major sources. They were grouped as following:

1. Relatives: items a, b, c, and d.
2. Peers: items e, f, k, l, m, n, o, p, q, r, s, t, x, and y.
3. Media: items u, v, and w.
4. Non-educational personnel: items z, zi, and zj.

Both sections in Part I were designed to determine which of the sources were most influential in the selection of majors by the respondents.

The second part of the instrument contained 12 items designed to ascertain the respondents' perceived reasons for choosing the teaching profession as a career. This was aimed specifically at providing supplementary information which could be pertinent for developing recruitment strategies in vocational teacher education.

The third and final part of the instrument consisted of 20 questions designed to elicit information on the personal characteristics of the respondents. The Standard International Occupational Prestige Scale (Treiman, 1977) was used to assign scores to the occupations of the respondents' parents (questions 5 and 6). The Oregon Employment Division's Occupational Program Planning System (1982) was used to classify the respondents' prior work experiences into the related and unrelated categories in terms of their vocational and practical arts majors (questions 14 and 15). The numbers of years of work experience for each respondent was then cumulated for these two categories (years related and years unrelated).

Four faculty members in the Department of Vocational and Technical Education and a faculty member in the Department of Educational Psychology and Foundations in Oregon State University's

School of Education reviewed the instrument and the items. The reviewers judged the instrument on the following areas:

1. Format;
2. Appropriateness of the items listed under each part;
3. Item wording;
4. Clarity of instructions.

A staff member at Oregon State University's Survey Research Center also reviewed the instrument and suggested an organization of the items that was believed to be a logical order for the respondents.

This instrument was pilot tested with ten vocational and non-vocational teacher education students at Oregon State University. These volunteers completed the questionnaire after being encouraged to ask questions about the items as needed. Each student was then interviewed to identify potential problems with the questions and the instrument's format. Identified problems were noted and changes made to alleviate them. Those involved in the pilot testing procedure were advised not to participate in the actual study. A copy of the instrument used in the study is provided in Appendix A.

Procedure

Instructors of the aforementioned courses were asked to administer the questionnaire to their students. Ideally, the instrument was to be completed during regular class meetings; however, some instructors asked their students to do so on their own time. The instructors were provided with written instructions

for administering the instrument (Appendix B). A statement to assure compliance with the protection of human subject's guidelines of Oregon State University was included in the instructions. These administrators were advised to read the statement to the respondents before administering the instrument to them.

Sufficient numbers of questionnaires were sent to the instructors in self-addressed envelopes. Two of the returned questionnaires were completed by graduate students and, therefore, were not used in the study's analysis. A check of responses to certain items, such as major and class, in relationship to the courses in which the questionnaire was completed indicated that the respondents were quite consistent. However, it is only assumed that all data are reliable; the consistency of responses to questions concerned with the respondents' perceptions is unknown. It should be noted, that the participants in the pilot study appeared to provide consistent responses.

Analysis

The CYBER Computer at Oregon State University's Milne Computer Center was used to compile the data. The Statistical Package for Social Sciences (SPSS) program was employed to compute the necessary statistics (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975).

The research question posed at the end of the prior chapter was concerned with the criterion variable, vocational teacher education, practical arts teacher education, or non-vocational teacher education

majors. Discriminant analysis was used to differentiate the three groups on each of the following 14 discriminant variables:

- Age;
- Sex;
- Marital status;
- High school grade point average;
- Total number of years of work experience;
- Socioeconomic influence--father's occupation and mother's occupation;
- Socioeconomic influence--father's education and mother's education;
- Significant others' influence--relatives;
- Significant others' influence--peers;
- Significant others' influence--media;
- Significant others' influence--educational personnel;
- Significant others' influence--non-educational personnel.

The step-wise method was used, which permitted the entry of the discriminant variables singly into the analysis. Wilk's Lambda Criterion was used to determine whether each variable should be entered into the scheme.

To further describe the characteristics of vocational teacher education students, significant variables not used in the discriminant analysis were examined further. Appropriate parametric (e.g., one-way analysis of variance) and non-parametric (e.g., chi-square) techniques were used based on the item scaling and cell representation. The .05 confidence level was used for all decisions.

III. FINDINGS

The major question posed for this study was concerned with whether a subject was a vocational, practical arts, or non-vocational teacher education major. Discriminant analysis was conducted to determine the relationship of 14 discriminating variables to these groups, that is, the extent to which the groups were differentiated on these variables. A step-wise method with Wilk's Lambda Criterion ($p < .10$) and a computed F to enter at 1.0 were used to identify the variables which best described the three groups. Intercorrelation coefficients for the variables are shown in Appendix C. The results of each step in the procedure are presented in Appendix D.

Nine of the 14 discriminating variables that were used in the step-wise process entered as useful in the discriminant analysis before the addition to Wilk's Lambda became non-significant (Table 3). Five variables were eliminated because they failed to meet the selection criteria. The variables which were entered were sex, work experience, father's education, father's occupation, major influence of peers, major influence of media, major influence of non-educational personnel, major influence of relatives, and high school grade point average. To accurately classify the three groups in relation to the variables entered, two discriminant functions were identified, and separation among the groups was indicated by the final Wilk's Lambda of .65 ($\chi^2 = 120.78$, $df = 18$, $p = .00$) and a canonical correlation of .54 for the first discriminant function,

Table 3. Summary of step-wise discriminant analysis.

Step	Variable Entered	F to Enter or Remove	Wilk's Lambda	P
1	Sex	20.495	.846	.00
2	Work experience	8.877	.781	.00
3	Father's education	4.491	.737	.00
4	Major influence of peers	7.466	.705	.00
5	Major influence of media	2.981	.678	.00
6	Father's occupation	2.718	.667	.00
7	High school GPA	1.533	.659	.00
8	Major influence of non-educational personnel	1.713	.659	.00
9	Major influence of relatives	1.118	.648	.00

Classification Coefficients
(Fisher's Linear Discriminant Function)

Variables	Group 1 Vocational	Group 2 Practical Arts	Group 3 Non-Vocational
High school GPA	2.045	1.860	1.999
Father's occupation	.215	.190	.223
Work experience	.557	.419	.412
Father's education	.576	.913	1.099
Sex	4.949	5.529	7.155
Major influence of relatives	1.082	1.281	1.121
Major influence of peers	2.458	2.178	2.759
Major influence of media	2.004	2.060	2.346
Major influence of non- educational personnel	1.656	1.851	1.558
(Constant)	-24.558	-23.474	-29.820

Canonical Discriminant Functions

Function**	Eigen- value	Canonical Correlation	Wilk's Lambda	χ^2	DF*	P
1	.41379	.541	.648	120.78	18	.00
2	.09217	.291	.916	24.51	8	.00

*DF = degree of freedom

**The two functions that were used in the remaining analysis.

and by Wilk's Lambda of .92 (χ^2 24.51, $df = 8$, $p = .00$) and a canonical correlation of .29 for the second function.

An examination of the standardized canonical discriminant function coefficients and the canonical discriminant functions evaluated at the groups' centroids (Table 4) indicated that while there appeared to be a slight differentiation between vocational and practical arts groups, the non-vocational teacher education subjects tended to be more distinctively separated. This was confirmed by examining the results of the group classification (Table 5). Approximately 69 percent of the non-vocational teacher education majors were appropriately classified, while 10.3 percent of them were categorized into the vocational group and 20.6 percent were most like the practical arts teacher education majors. Fifty-seven percent of the practical arts teacher education majors were classified into the practical arts category; whereas, approximately 20.6 and 22.1 percent were split between the vocational and non-vocational groups, respectively. Approximately 55 percent of vocational teacher education majors were divided classified correctly; the remainder were equally divided into the two other groups.

Discriminating Variables

The following discussion is focused on the nine variables upon which the three groups (i.e., vocational, practical arts, and non-vocational teacher education students) differentiated significantly. In the order of entering, these variables were: (1) sex, (2) work

Table 4. Discriminant analysis function.

Standardized Canonical Discriminant Function Coefficients		
Variables	Function 1	Function 2
High school GPA	.028	.383
Father's occupation	.193	.493
Work experience	- .342	.603
Father's education	.384	- .330
Sex	.699	- .026
Major influence of relatives	- .034	- .324
Major influence of peers	.354	.499
Major influence of media	.295	.041
Major influence of non-educational personnel	- .143	- .299

Unstandardized Canonical Discriminant Function Coefficients		
Variables	Function 1	Function 2
High school GPA	.016	.218
Father's occupation	.013	.032
Work experience	- .073	.129
Father's education	.303	- .264
Sex	1.530	- .577
Major influence of relatives	- .024	- .239
Major influence of peers	.311	.438
Major influence of media	.246	.034
Major influence of non-educational personnel	- .130	- .272
(Constant)	-4.472	-2.835

Canonical Discriminant Functions Evaluated at Group Means (Centroids)		
Group	Function 1	Function 2
1	-.842	.365
2	-.496	-.504
3	.588	.052

Table 5. Classification of subjects based on the discriminant functions.

Actual Group Membership	Cases	Percentage of Predicted Group Membership*			Total (%)
		Vocational	Practical Arts	Non-Vocational	
Vocational	69	55.1	21.7	23.2	100.0
Practical Arts	68	20.6	57.4	22.1	100.1
Non-Vocational	155	10.3	20.6	69.0	99.9
Ungrouped cases	2	0.0	50.0	50.0	100.0

*64 percent of cases were correctly classified.

experience, (3) father's education, (4) major influence of peers, (5) major influence of media, (6) father's occupation, (7) high school grade point average, (8) major influence of non-educational personnel, and (9) major influence of relatives.

Sex

Sex entered the analysis as the variable with greatest ability to differentiate among the three groups. As indicated in (Table 6), it appeared that the proportions of male subjects in the vocational group (66.7 percent) and the practical arts group (57.3 percent) were somewhat similar. However, non-vocational teacher education subjects were predominately female (75 percent). Table 7 indicates that this disproportionately high number of females in the non-vocational group was due to the female dominance (92.8 percent) in elementary education. The proportions of students by sex in the Department of Vocational and Technical Education and in other secondary teacher education majors were somewhat more balanced.

When considering the vocational and technical teacher education majors only (Table 8), there seemed to be a relative balance of male and female students in agricultural education (73.5 percent males, 26.5 percent females) and business and distributive education (48.3 percent males, 51.7 percent females). Large differences in distributions were found in home economics education (96.4 percent females, 36 percent males) and in industrial education (89.5 percent males, 10.5 percent females).

Work Experience

The variable that entered second during the discriminat analysis

Table 6. Chi-square analysis of teacher education students by sex and by certification areas.

	<u>Number and Percentage by Group</u>					
	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>N</u>	<u>(%)</u>	<u>N</u>	<u>(%)</u>	<u>N</u>	<u>(%)</u>
Vocational	48	66.7	24	33.3	72	100.0
Practical Arts	43	57.3	32	42.7	75	100.0
Non-Vocational	41	25.0	123	75.0	164	100.0
Total	132	42.4	179	57.6	311	100.0

Note: $\chi^2 = 44.53$, $df = 2$, $p = .00$.

Table 7. Chi-square analysis of vocational-technical, secondary, and elementary teacher education students by sex.

	Number and Percentage by Group					
	Male		Female		Total	
	N	(%)	N	(%)	N	(%)
Vocational-Technical Education	91	61.5	57	38.5	148	100.0
Secondary Education	36	38.3	58	61.7	94	100.0
Elementary Education	5	7.2	64	92.8	69	100.0
Total	132	42.4	179	57.6	311	100.0

Note: $\chi^2 = 57.8$, $df = 2$, $p = .00$.

Table 8. Chi-square analysis of vocational-technical teacher education students by sex and by majors.

Sex	Number and Percentage by Vocational-Technical Majors*									
	AED		BDED		HED		IED		Total	
	N	%	N	%	N	%	N	%	N	%
Male	25	73.5	14	48.3	1	3.6	51	89.5	91	61.5
Female	9	26.5	15	51.7	27	96.4	6	10.5	57	38.5
Total	34	100.0	29	100.0	28	100.0	57	100.0	148	100.0

Note: $\chi^2 = 62.733$, $df = 3$, $p = .00$.

*Majors: AED = agricultural education
 BDED = business and distributive education
 HED = home economics education
 IED = industrial education

was the total number of years of work experiences that the subjects had completed. This included the number of years of work experiences that were related and unrelated to the students' majors. Vocational subjects had worked an average of 7.6 years (Table 9); significantly less ($F = 16.33$; $df = 2, 309$; $p = .00$) work experience was completed by the practical arts ($\bar{X} = 4.5$ years) and the non-vocational subjects ($\bar{X} = 3.9$ years). Only the observed difference between the vocational subjects and the non-vocational teacher education majors was significant. Total numbers of years of work experience were significantly different ($F = 4.55$; $df = 5, 306$; $p = .00$) by the subjects' majors (Table 10). Agricultural education majors had worked significantly more years ($\bar{X} = 7.4$ years) than had the other secondary education majors ($\bar{X} = 2.9$ years). The other majors fell between these two extremes and were not statistically different from them.

The amount of related and unrelated work experience was further examined for the vocational and practical arts teacher education students. As expected, vocational students had significantly more ($t = 3.59$, $df = 133.47$, $p = .00$) years of related work experience than did the practical arts students (Table 11). However, both groups had the same amount of unrelated work experience ($t = .71$, $df = 122.90$, $p = .48$). The amounts of related work experience varied significantly ($F = 3.16$; $df = 3, 45$; $p = .03$) among the majors (Table 12). The Scheffe range test at a 95 percent confidence level did not identify any differences between the means for the four groups. Although theoretically inappropriate, the same test was conducted at a 90 percent confidence level. Agricultural education and industrial

Table 9. One-way analysis of variance of total years of work experience by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	681.02	2	340.51	16.33	.00
Within groups	6,444.39	309	20.85		
Total	7,125.41	311			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = 3.23.

Groups	N	\bar{X}	S	Scheffe Subsets*
Vocational	72	7.57	5.8] 2
Practical Arts	76	4.49	4.73	
Non-Vocational	164	3.93	3.79] 1

*Observed difference between means within a bracket (subset) are statistically insignificant. Differences between means that are located in different brackets (subsets) are statistically significant.

Table 10. One-way analysis of variance of total years of work experience by majors.

Source of Variance	SS	DF	MS	F	P
Between groups	492.63	5	98.53	4.55	.00
Within groups	6,632.78	306	21.68		
Total	7,125.41	311			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 4.74, actual value = 3.29.

Majors	N	\bar{X}	S	Scheffe Subsets
Agricultural Education	34	7.39	4.80	
Business & Distributive Education	29	6.06	6.10	
Industrial Education	58	5.89	6.02	
Home Economics Education	28	4.37	4.10	
Elementary Education	69	4.35	4.72	
Other Secondary Education	94	3.61	2.94	

Table 11. t-test analysis of unrelated and related years of work experience by vocational and practical arts teacher education students' group.

Unrelated Work Experience						
Groups	N	\bar{X}	S	DF	t	P
Vocational	72	2.45	4.47	122.90	.71	.48
Practical Arts	76	2.00	2.98			
Related Work Experience						
Groups	N	\bar{X}	S	DF	t	P
Vocational	72	5.12	4.98	133.47	3.59	.00
Practical Arts	76	2.49	3.85			

Table 12. One-way analysis of variance of related years of work experience by majors.

Source of Variance	SS	DF	MS	F	P
Between groups	192.25	3	64.08	3.16	.03
Within groups	2,938.37	145	20.26		
Total	3,130.62	148			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 4.00, actual value = 3.18. Scheffe range test at $\alpha = .10$; ranges (tabular) = 3.57, actual value = 3.18.

Majors	N	\bar{X}	SD	Scheffe Subsets	
				$\alpha = .05$	$\alpha = .10$
Agricultural Education	34	4.83	4.83] 1] 1
Industrial Education	58	4.49	5.33		
Business & Distributive Education	29	2.99	3.30		
Home Economics Education	28	1.82	2.99		

education students had significantly more related work experience (average 4.83 and 4.49 years, respectively) than did home economics education majors ($\bar{X} = 1.82$ years).

Father's Education

The educational attainment of the respondents' fathers was the third variable entered into the analysis. Approximately 60 percent of the non-vocational students' fathers had attained baccalaureates. Significantly ($\chi^2 = 26.95$, $df = 8$, $p = .00$) fewer fathers of vocational subjects (29.6 percent) and practical arts students' fathers (45.2 percent) had earned at least baccalaureates (Table 13).

Major Influence of Peers

The major influence of peers entered the analysis during the fourth step. For this paired-comparison item, a major influence could have been selected a maximum of four times by each respondent. The non-vocational subjects selected peers as a major influence on their choice of a teacher education major (average of twice) (Table 14). Somewhat fewer vocational (average of 1.9 times) and practical arts (average of 1.5 times) students selected peers as a major influence ($F = 4.62$; $df = 2, 309$; $p = .01$). The average numbers of times that peers were selected as major influences were not statistically significant ($F = 1.99$; $df = 5, 306$; $p = .08$) among the majors (Table 15).

In Table 16, a summary of statistical analyses of the specific sources of influences associated with the major influence of peers is indicated. Analysis of variance summary tables are provided in Appendix E. Friends in the work place and college and university

Table 13. Chi-square analysis of fathers' educational attainment by groups.

Fathers' Educational Attainment	Groups						Total	
	Vocational		Practical Arts		Non-Vocational			
	N	%	N	%	N	%	N	%
Grade 8 or lower	10	14.1	11	15.1	7	4.3	28	9.1
High school graduate	25	35.2	15	20.5	32	19.5	72	23.4
Some college	15	21.1	14	19.2	26	15.9	55	17.9
Baccalaureate	11	15.5	14	19.2	55	33.5	80	26.0
Beyond baccalaureate	10	14.1	19	26.0	44	26.8	73	23.7
Total	71	100.0	73	100.0	164	100.0	308	100.0

Note: $\chi^2 = 26.95$, $df = 8$, $p = .00$.

Table 14. One-way analysis of variance of major influence of peers by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	12.36	2	6.18	4.62	.01
Within groups	412.86	309	1.34		
Total	425.22	311			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = .82.

Groups	N	\bar{X}	SD	Scheffe Subsets
Non-Vocational	164	2.00	1.18	
Vocational	72	1.88	1.22	
Practical Arts	76	1.51	1.03	
Total	312	1.85		

Table 15. One-way analysis of variance of major influence of peers by majors.

Source of Variance	SS	DF	MS	F	P
Between groups	13.41	5	2.68	1.99	.08
Within groups	411.82	306	1.35		
Total	425.22	311			

$\bar{X} = 2.87, S = 1.0$

Table 16. Summary of ANOVA of specific influences associated with the major influence of peers by groups.

Specific Influence	Mean by Group			F	DF	P
	Vocational	Practical Arts	Non- Vocational			
High school friends:						
Male	.79	.68	.56	1.86	2, 308	.16
Female	.81	.63	.85	1.61	2, 309	.20
College & university students in major	1.38	1.43	1.52	.48	2, 309	.62
Other college & university students	.83	.88	1.12	2.96	2, 309	.05
Friends in work place:						
Male	.96	.86	.52	7.51	2, 308	.00
Female	.81	.79	.64	.70	2, 308	.50

friends in major had some influence on the career choices of vocational and practical arts students and had no practical effect on the non-vocational students. Male friends during high school, female friends during high school, other college and university students, and female friends at work place appeared to have no effect on any of the three groups of teacher education students.

Major Influence of Media

The major influence of media on the students' career choices entered the analysis during step five. The non-vocational teacher education students appeared to be more influenced by media than the vocational students ($F = 4.48$; $df = 2, 309$; $p = .01$) (Table 17). However, this source of major influence was not judged by the subjects as being important. The non-vocational students selected mass media only an average of 1.2 out of the possible four times; whereas, majors in the Department of Vocational and Technical Education selected this source only an average of 0.8 times. No significant differences ($F = 1.98$; $df = 5, 306$; $p = .08$) were found among the numbers of times students in each major selected media as a major source of influence (Table 18).

Table 19 is a summary of statistical analysis of the specific influences associated with the major influence of media (analysis of variance summary tables are provided in Appendix F). Newspapers, magazines, radio, and television had minimal influence on the career choices of non-vocational students. These specific sources had for all practical purposes no influence on the career decisions made by

Table 17. One-way analysis of variance of major influence of media by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	12.89	2	6.44	4.48	.01
Within groups	444.48	309	1.44		
Total	457.37	311			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = .85.

Groups	N	\bar{X}	S	Scheffe Subsets
Non-Vocational	164	1.24	1.24	
Practical Arts	76	.84	1.20	
Vocational	72	.82	1.09	

Table 18. One-way analysis of variance of major influence of media by majors.

Source of Variance	SS	DF	MS	F	P
Between groups	14.32	5	2.86	1.98	.08
Within groups	443.05	306	1.45		
Total	457.37	311			

$\bar{X} = 1.94$, $S = 0.995$.

Table 19. Summary of ANOVA of specific influence associated with the major influence of media by group.

Specific Influence	Mean by Group			F	DF	P
	Vocational	Practical Arts	Non-Vocational			
Film	.56	.38	.58	1.85	2, 308	.16
Newspapers & magazines	.65	.61	1.00	7.52	2, 309	.00
Radio & television	.49	.51	.77	4.68	2, 309	.01

the vocational or practical arts teacher education majors. Film seemed to have no effect on any of the groups.

Father's Occupation

Occupations of the subjects' fathers entered sixth in the analysis. The distributions of the occupational prestige scores (Treiman, 1977) ranged from 18 to 78. The occupational prestige scores for fathers of non-vocational students ($\bar{X} = 55.1$) were significantly higher ($F = 7.86$; $df = 2, 300$; $p = .00$) than were those for the fathers of practical arts and vocational teacher education students ($\bar{X} = 48.3$) (Table 20). Occupations with prestige scores which range from 50 to 59 include social worker, x-ray technician, elementary school teacher, and head of small firm. Occupations with scores ranging from 40 to 49 include skilled workers, retail store manager, farmer, police officer, and restaurant owner.

High School Grade Point Average

High school grade points average (GPA) entered seventh in the analysis. The respondents' grade point averages during high school ranged from "B" to "B+" (9 = A, 8 = A-, 7 = B+, 6 = B, 5 = B-, 4 = C+, 3 = C, 2 = C-, and 1 = D or less). The average high school GPA for non-vocational teacher education students ($\bar{X} = 7.1$) was significantly higher ($F = 6.08$; $df = 2, 307$; $p = .00$) than it was for practical arts ($\bar{X} = 6.4$) teacher education students (Table 21). When GPA's were examined by educational majors, business and distributive education ($\bar{X} = 7.5$), elementary education ($\bar{X} = 7.2$), and

Table 20. One-way analysis of variance of fathers' occupational prestige scores by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	3521.60	2	1760.80	7.86	.00
Within groups	67182.23	300	223.94		
Total	70703.83	302			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = 10.58.

Groups	N	\bar{X}	S	Scheffe Subsets
Non-Vocational	161	55.10	14.58	
Practical Arts	72	48.28	15.69	
Vocational	70	48.26	15.06	

Table 21. One-way analysis of variance of the respondents' high school grade point averages by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	37.52	2	18.76	6.08	.00
Within groups	946.99	307	3.08		
Total	984.51	309			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = 1.24.

Groups	N	\bar{X}	S	Scheffe Subsets
Non-Vocational	163	7.11	1.68	
Vocational	72	6.50	1.81	
Practical Arts	75	6.35	1.87	

secondary education ($\bar{X} = 7.1$) majors had higher averages ($F = 8.25$; $df = 5, 304$; $p = .00$) than students in industrial education ($\bar{X} = 5.6$) (Table 22).

Major Influence of Non-Educational Personnel

The major influence of non-educational personnel was the eighth variable that entered the analysis. Non-educational personnel appeared to have somewhat minimal influences on the selection of majors by practical arts ($\bar{X} = 1.30$) and vocational students ($\bar{X} = 1.24$) and even less influence with the non-vocational teacher education subjects (Table 23). However, observed differences among these groups were not significant statistically ($F = 2.81$, $df = 2, 309$, $p = .06$) at the previously established 95 percent confidence level. It may have been possible to infer statistically significant differences among the groups if the same confidence level (i.e., 90 percent) as was set for the discriminant analysis was used. Regardless, the amount of variance contributed by this variable to the total accounted for variance in the discriminant functions was minimal although statistically significant (Table 3).

The specific sources of influence that were associated with the major sources of non-educational personnel were: church ministers and camp counselors. A summary of specific sources is shown in Table 24. Only community and youth organizations seemed to be influential on the selection of majors by vocational teacher education students, but only minimally.

Table 22. One-way analysis of variance of the respondents' high school grade point averages by majors.

Source of Variance	SS	DF	MS	F	P
Between groups	117.58	5	23.51	8.25	.00
Within groups	866.94	304	2.85		
Total	984.52	309			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 4.74, actual value = 1.19.

Groups	N	\bar{X}	S	Scheffe Subsets
Business & Distributive Education	29	7.52	1.15	
Elementary Education	68	7.19	1.49	
Secondary Education	94	7.07	1.78	
Home Economics Education	27	6.89	1.79	
Agricultural Education	34	6.44	1.86	
Industrial Education	58	5.62	1.83	

Table 23. One-way analysis of variance of major influence of non-educational personnel by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	7.20	2	3.60	2.81	.06
Within groups	395.87	309	1.28		
Total	403.07	311			

$\bar{X} = 1.80, S = 0.93.$

Table 24. Means and standard deviations of specific influences of non-educational personnel.

Specific Source	N	\bar{X}	S
Community organization or youth group	310	1.13	1.10
Professional organization	310	0.63	0.88
Church ministers	312	0.37	0.75
Rehabilitation counselors	310	0.11	0.40
Camp counselors	311	0.42	0.81

Major Influence of Relatives

The variable which entered the analysis during the ninth and final step of step-wise procedures was "major influence of relatives." An examination of Table 25 shows that this variable had relatively minimal effect on career decisions of the three groups of teacher education students ($F = 0.96$, $df = 2$, 309 , $p = .39$). Similar to the major influence of non-educational personnel, this variable contributed very little to the total accounted for variance in the discriminant functions. Only parents seem to influence the career choices of the subjects, although only minimally to moderately (Table 26).

Variables Which Did Not Enter

The five variables which did not enter the discriminant analysis were mother's occupational prestige, mother's education, age of the student, marital status, and major influence of educational personnel. Descriptive statistics for these variables and their related detailed variables are reported in Appendix G. Although, the three groups of students may have been differentiated on these variables, their potential contributions to the explained variance may have been accounted for by those variables which entered. For example, the Pearson product moment correlation for mother's education and father's education was $.52$ ($N = 309$, $p = .00$), age and work experience was $.46$ ($N = 309$, $p = .00$), and marital status and work experience was $.34$ ($N = 309$, $p = .00$). As for the other two variables, the three groups did not statistically differ on the prestige scores of mother's occupations ($F = 2.48$, $df = 2$, 297 , $p = .09$) and

Table 25. One-way analysis of variance of major influence of relatives by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	3.53	2	1.76	.96	.01
Within groups	507.21	309	1.85		
Total	573.74	311			

Note: Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = .96.

Groups	N	\bar{X}	S	Scheffe Subsets
Non-Vocational	164	2.54	1.33] 1
Practical Arts	76	2.51	1.35	
Vocational	72	2.28	1.43	
Total	312	2.47		

Table 26. Means and standard deviations of specific influences of relatives.

Specific Source	N	\bar{X}	S
Parents	311	1.61	1.06
Spouse	301	0.54	1.01
Siblings	311	0.87	0.93
Other	309	0.75	1.02

major influence of educational personnel ($F = 2.35$, $df = 2$, 309, $p = .10$).

Although the three groups did not discriminate on the major influence of educational personnel variable, an examination of the specific sources of influence indicates that high school and college professors may have moderately influenced career decisions. However, counselors had very little influence on whether the subjects had selected teacher education as a career.

Discussion

The data analyzed in this study indicate that out of the fourteen variables that were examined, nine of them were useful in discriminating between vocational and other teacher education majors. The variables can be grouped into two major categories: demographic and significant others' influence.

The demographic variables were: sex; work experience; socio-economic status in terms of father's occupational prestige and educational attainment; and the subject's high school grade point average. Although sex had the greatest discriminative power, the significance of gender could change if the proportion of females in vocational programs increased. Legislation and changes in societal attitudes seem to encourage more females to enter male-dominated majors, such as agricultural and industrial education. Also, more males could enter those majors that were predominately females' traditionally (e.g., home economics education and business and office occupations education).

The strong discriminating power of work experience is understandable because it has been and continues to be one of the major requirements for admission into vocational teacher education programs. When work experience was further examined, relationships were found with two variables which did not enter the discriminant functions: age and marital status. Because of the work experience requirement, vocational teacher education students tend to be older than other students and, therefore, married. Age and marital status failed to enter the discriminant functions because their discriminating power may already have been contributed by the work experience variable.

Fathers' occupational prestige scores and educational attainment were found to discriminate among the groups; however, the significance of these variables as opposed to mothers' educational attainment and occupational prestige may have been caused by the male and female ratios in vocational and other teacher education programs.

High school grade point average discriminated between the three groups. Vocational teacher education students at Oregon State University were "B" students in high school. A priori, it would appear that recruitment should therefore focus on the "B" students. The best students are still needed as future vocational education teachers. On the other hand, what is the cost-effectiveness of recruiting students with higher high school grade point averages? Are we willing to compete with perceptually more glamorous occupations, such as engineering and the sciences? Finally, the work experience requirement may work against recruiting the "best"

students directly from high school. The most able students traditionally enter higher education after high school; whereas, the less able enter the labor market.

It seems that there is little vocational teacher education programs can do with the demographic variables when designing recruitment strategies. The situation could change with changes in society and family ideology and in work experience requirements. At this time, the most promising factor to consider when developing recruiting strategies is significant others' influence.

Peers, such as friends in major and friends in work place, influenced the selection of majors by vocational teacher education students. These sources may be the most productive for disseminating information to potential students. Even though non-educational personnel and media discriminated between the groups, these specific sources when examined appeared to have little influence on vocational teacher education students. The only specific source of influence by relatives were the vocational teacher education students' parents. The use of parents as a recruitment source has been, however, inefficient (Pershing and Schwandt, 1980). Socioeconomic status seems to relate to the influence of parents (Picou and Hernandez, 1970; Ace, Graen, and Davis, 1972).

The influence of educational personnel was among the five variables that did not enter the discriminant functions. When specific sources for educational personnel were examined, high school teachers and college professors were minimally to moderately influential on the career decisions of vocational teacher education

students. Counselors, on the other hand, had very little influence on the vocational subjects. Speculatively, convincing high school teachers and college professors that vocational teaching may be a viable alternative for their students may be somewhat productive when attempting to increase enrollments in vocational teacher education. However, it may be more efficient to be selective when disseminating information to educators. High school teachers in related areas, such as industrial arts, consumer/homemaking, and general business, are well-defined groups and may be quite effective in providing career information to their students. Vocational instructors also may be a viable group for providing information to students. Finally, it may be profitable for vocational teacher educators to meet with Oregon State University faculty members in related disciplines, such as General Agriculture and General Home Economics, to describe the desirability of vocational teaching as a career and the requirements of vocational teacher education.

IV. SUMMARY AND CONCLUSIONS

The purpose of this study was to ascertain the factors which influenced undergraduate students in the School of Education at Oregon State University to select vocational teacher education majors. The major question to be answered was: "What is the relationship between a teacher education student's major (vocational, practical arts, or non-vocational) and the selected variables?" The variables were: age, sex, marital status, high school grade point average, parents' occupations and educational attainments, and significant others' influences on career decisions. Data were collected from 315 vocational, practical arts, and non-vocational undergraduate teacher education majors who were enrolled in professional courses during Spring Term 1983. A questionnaire was used to collect the data. Several statistical methods were used to analyze the data, including a discriminant analysis which was used to relate group memberships to the selected variables.

Nine variables differentiated between the three groups of teacher education students who were involved in this study. Characteristics which appeared unique to vocational teacher education students were: related work experience, socioeconomic status in terms of father's occupational prestige and educational attainment, high school grade point average, and the influence of peers such as friends at work places and other college students in the same major. The four other variables were: sex, influence of media, influence of non-educational personnel, and the influence

of relatives. Sex may reflect enrollments in the programs. For example, industrial education was male dominant, and elementary education was female dominant. These distributions could change with Affirmative Action. Although the major source of influence of media made some contribution to the total accounted for variance in the discriminant functions, the specific sources that were associated with it had no apparent effect on career decisions of vocational teacher education majors. Non-educational personnel and relatives both had minimal influence on the choice of majors by the subjects, particularly the vocational teacher education student. Again, these two variables contributed very little to the total accounted for variance in the discriminant functions.

The variables that did not enter the discriminant analysis were: mother's occupation, mother's educational attainment, age of the student, marital status, and influence of educational personnel. Although the subjects may have been differentiated on them, their contributions to the explained variance may have been accounted for by variables that entered. For example, high correlations were found between father's education and mother's education ($r = .52$, $N = 309$, $p = .00$) and between work experience, and age and marital status ($r = .46$, $N = 309$, $p = .00$; $r = .59$, $N = 313$, $p = .00$).

Conclusions

Vocational teacher education students at Oregon State University are identifiable on two major factors. The first is described by demographic variables: socioeconomic status, defined by prestige of

father's occupation and father's educational attainment; sex; work experience; and high school grade point average. Vocational teacher education majors come from middle-class homes. A large proportion of them are males. They tend to be "B" students in high school and have worked in skilled and technical occupations, which somewhat substantiates the notion proposed by Jensen and Kirchner (1955), Thompson (1966), Jencks (1972, 1979), and Anderson (1980).

The second factor was concerned with the influence of significant others. Peers seem to be significant others who influence the decisions of these students to pursue vocational teaching. This influence, however, is minimal. The important significant others are college and university students in the same major as the vocational teacher education students. Friends in the work place also serve as significant others. High school and college teachers also seem to influence career decisions of vocational teacher education students.

Implications

Findings in this study indicate that friends in the labor force and students in the same vocational teacher education programs are the important sources through which potential students receive information about vocational teacher education programs. To increase enrollment in vocational teacher education, administrators, program planners, teacher educators, and those involved in the implementation of vocational teacher education programs should consider the use of those in the labor forces, including business enterprises as well as

individuals, as means of disseminating information about vocational teacher education to potential students. For example, occupational internship supervisors can be used as a potential source for describing the career prospects in vocational teaching to other workers. Cooperative education advisory committee members from business and industry can serve as sources of recruitment if they are provided with relevant program information.

Students majoring in vocational teacher education should be encouraged to relate program information to their peers in other programs. Utilization of collegiate chapter members of vocational student organizations, such as the Future Farmers of America, is a potential means of disseminating vocational teacher education's information to their peers. High school and community college vocational teachers as well as university teachers in related areas also may be helpful if they are provided with program information and requested to encourage their students about considering careers in vocational teaching.

Other investigators should replicate this study to confirm its findings. Replications of this study should occur in different teacher education programs in other colleges or universities to determine if variations in geographical locations and labor markets affect the characteristics of vocational teacher education students. Finally, multivariate techniques, such as discriminant analysis, should be used to describe the relationships among variables.

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APPENDICES

Appendix A

The Study Instrument

A Study of Factors Influencing the Selection
of Vocational Teacher Education by Undergraduate Students
at Oregon State University

PART I.A

1. Following are five general sources which have influenced your selection of your current major.

Relatives (e.g., parents, spouse, children, aunts, uncles, etc.).

Peers (e.g., friends in high school, college, work place, etc.).

Educational personnel (e.g., high school teachers and counselors, coaches, college professors, etc.).

Media (e.g., television, brochures, books, pamphlets).

Non-educational personnel (e.g., ministers, rehabilitation counselors, camp counselors, etc.).

Listed below are the ten possible pairs of these five sources. For each pair, select the one source which was the more influential on choosing your current major.

SELECT THE MOST INFLUENTIAL OF EACH PAIR

- | | | | | |
|---------------------------|-------|----|-------|---------------------------|
| Relatives | _____ | a. | _____ | Peers |
| Relatives | _____ | b. | _____ | Educational Personnel |
| Peers | _____ | c. | _____ | Media |
| Relatives | _____ | d. | _____ | Media |
| Educational Personnel | _____ | e. | _____ | Peers |
| Media | _____ | f. | _____ | Educational Personnel |
| Non-Educational Personnel | _____ | g. | _____ | Peers |
| Relatives | _____ | h. | _____ | Non-Educational Personnel |
| Educational Personnel | _____ | i. | _____ | Non-Educational Personnel |
| Non-Educational Personnel | _____ | j. | _____ | Media |

PART I.B

2. Listed below are the specific sources which may or may not have influenced your decision to select your current major(s). At the right of each source circle the number which best represents the extent to which you were influenced by it. Use the following values for each source:

3 = High Influence 1 = Minimal Influence
2 = Moderate Influence 0 = No Influence

	3	2	1	0
a. Parents	3	2	1	0
b. Spouse	3	2	1	0
c. Brother(s) or Sister(s)	3	2	1	0
d. Other relatives, specify	3	2	1	0
e. Male friends during high school	3	2	1	0
f. Female friends during high school	3	2	1	0
g. High school teachers or courses	3	2	1	0
h. High school counselors or guardian counselors	3	2	1	0
i. College or university professors or courses	3	2	1	0
j. College or university counselors	3	2	1	0
k. College students majoring in the same major(s) in which you are currently enrolled	3	2	1	0
l. Other college or university students	3	2	1	0
m. Teaching in high school	3	2	1	0
n. Teaching in community college	3	2	1	0
o. Teaching in military service	3	2	1	0
p. Other teaching experiences, specify	3	2	1	0
q. Full-time occupational work experiences in the military	3	2	1	0
r. Full-time civilian occupational work experiences	3	2	1	0
s. Male friends or peers in work place since high school	3	2	1	0
t. Female friends or peers in work place since high school	3	2	1	0
u. Films	3	2	1	0
v. Newspapers and magazines	3	2	1	0
w. Radio and television	3	2	1	0
x. Membership in community organizations or youth groups	3	2	1	0
y. Membership in professional organizations	3	2	1	0
z. Church ministers	3	2	1	0
zi. Rehabilitation counselors	3	2	1	0
zj. Camp counselors	3	2	1	0

PART II

3. Listed below are some reasons that are often given for choosing teaching career in your major. At the right of each reason circle the number which best represents the degree to which you agree or disagree with the reason. Use the following numbers to indicate your responses:

- 5 = Strongly agree
 4 = Agree
 3 = Neither agree nor disagree
 2 = Disagree
 1 = Strongly disagree
 0 = Not applicable

a. I enrolled in my major to acquire a degree; I do not intend to teach.	5 4 3 2 1 0
b. I was not satisfied with previous work in business, agriculture, homemaking, carpentry, etc.	5 4 3 2 1 0
c. I was not satisfied with previous working conditions in business, agriculture, homemaking, carpentry, etc.	5 4 3 2 1 0
d. I believed that jobs were available in major area.	5 4 3 2 1 0
e. Jobs were not available in the vocation of my choice at that time.	5 4 3 2 1 0
f. I would rather teach about it than do something different (i.e., metal, carpentry, agriculture, etc.)	5 4 3 2 1 0
g. Steady characteristics of teaching jobs as opposed to jobs like carpentry, forestry, child care, agriculture, etc., appealed to me.	5 4 3 2 1 0
h. Salary available to teachers of vocational subjects as compared to the on-gain, off-again jobs of carpentry, forestry, child care, agriculture, etc., appealed to me.	5 4 3 2 1 0
i. Working conditions as a teacher are very desirable to me (e.g., two weeks off at Christmas, one week off in spring, all summer off, and a working day from 8 a.m. to 4 p.m.)	5 4 3 2 1 0
j. I have found that I enjoy working with youth as well as my subject matter area.	5 4 3 2 1 0
k. I want to help youth prepare for employment.	5 4 3 2 1 0
l. I see education as a means of achieving social change and want to work toward that end.	5 4 3 2 1 0

PART III

Now we would like to know about your personal background.

4. In terms of grades in high school, were you considered as an:

- | | |
|-----------------------|-------------------------------|
| <u>1</u> "A" Student | <u>6</u> "C+" Student |
| <u>2</u> "A-" Student | <u>7</u> "C" Student |
| <u>3</u> "B+" Student | <u>8</u> "C-" Student |
| <u>4</u> "B" Student | <u>9</u> "D or below" Student |
| <u>5</u> "B-" Student | |

5. What was the job title of your father or male guardian when you were in high school?

Job title of father or male guardian _____

6. What was the job title of your mother or female guardian at the time you were in high school?

Job title of mother or female guardian _____

7. What is your current student status? (Circle one number)

- | | |
|--------------------|-----------------------------|
| <u>1</u> Freshman | <u>4</u> Senior |
| <u>2</u> Sophomore | <u>5</u> Post-baccalaureate |
| <u>3</u> Junior | <u>6</u> Special |

8. Where did you first start your collegiate work?

- | |
|---|
| <u>1</u> At community college in Oregon |
| <u>2</u> At community college outside of Oregon |
| <u>3</u> At another four-year college or university |
| <u>4</u> Here at Oregon State University |
| <u>5</u> Other, specify _____ |

9. When did you first enroll at Oregon State University?

_____ Term, 19__ year

10. Are you currently enrolled full-time or part-time?

- | |
|--------------------|
| <u>1</u> Part-time |
| <u>2</u> Full-time |

11. Have you always been in your current major while in college?

- | |
|---|
| <u>1</u> Yes |
| <u>2</u> No. Please specify the major in which you were enrolled immediately prior to your current one. _____ |

12. How many years ago did you decide to become a teacher in your major area(s)?

_____ years ago

13. When were you first interested in becoming a teacher in general and/or in your current major area(s)?

- 1 Prior to high school
- 2 During high school
- 3 Late in high school
- 4 While in community college
- 5 While attending another four-year college or university
- 6 While at Oregon State University
- 7 While in business and industry
- 8 While in the military service
- 9 Other, specify _____

14. For which of the following area(s) are you currently preparing? (Check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Accounting | <input type="checkbox"/> Vocational Business and Office Education |
| <input type="checkbox"/> Elementary Education | <input type="checkbox"/> Marketing and Distributive Education |
| <input type="checkbox"/> General Business Education | <input type="checkbox"/> Vocational Agriculture Education |
| <input type="checkbox"/> Home Economics Education | <input type="checkbox"/> Other Secondary Education, specify: _____ |
| <input type="checkbox"/> Occupational Home Economics | |
| <input type="checkbox"/> Industrial Arts Education | |
| <input type="checkbox"/> Trade and Industrial Education | |
| <input type="checkbox"/> General Office Education | |

15. What types of jobs (including occupational internship) have you held and how many years were you employed in those occupations?

Job title	Years of full-time employment (if part-time, enter full-time equivalents)
_____	_____ years
_____	_____ years
_____	_____ years
_____	_____ years

16. What is your current marital status?

- | | |
|------------------|--------------------------------|
| <u>1</u> Single | <u>3</u> Married |
| <u>2</u> Widowed | <u>4</u> Separated or Divorced |

17. What is the highest level of education completed by your father?

- | | |
|---------------------------------|-------------------------------|
| <u>1</u> Grade 8 or lower | <u>4</u> Baccalaureate degree |
| <u>2</u> High school graduation | <u>5</u> Beyond baccalaureate |
| <u>3</u> Some college | |

18. What is the highest level of education completed by your mother?

- | | |
|---------------------------------|-------------------------------|
| <u>1</u> Grade 8 or lower | <u>4</u> Baccalaureate degree |
| <u>2</u> High school graduation | <u>5</u> Beyond baccalaureate |
| <u>3</u> Some college | |

19. Please indicate whether or not each of the following members of your family have ever been teachers. (Circle one number for each)

	<u>Has Been Teacher</u>	<u>Has Not Been Teacher</u>
a. Father	1	2
b. Mother	1	2
c. Spouse	1	2
d. Brother(s) or Sister(s)	1	2
e. Other relative(s), specify _____	1	2

20. Where do you now live? (Circle one number)

- 1 Home of parent(s) or guardian
2 Own home
3 Apartment (alone or shared?) _____
4 University dormitory
5 Cooperative, sorority, or fraternity house
6 Off campus room

21. Currently, how are you financially supporting yourself in this university? Indicate the percentage contributed by each of the sources listed below. The percentages should total 100%.

_____ % Parents
 _____ % Other relative
 _____ % Your personal savings or earnings from employment
 _____ % Vocational rehabilitation or other support grants or scholarships
 _____ % Loans, such as banks and college loans
100%

22. What is your age?

_____ years old

23. What is your gender? (circle one number)

- 1 Male
2 Female

THANK YOU

Appendix B

Instructions for the Administrators
of the Instrument

A Study of Factors Influencing the Selection
of Vocational Teacher Education by Undergraduates
at Oregon State University

Instructions

The purpose of this study is to ascertain the factors which influence our undergraduate students to select specific teacher education majors. Outcomes of this research will provide insights into the types of strategies for recruiting prospective vocational teacher education students.

You may notice that the instrument has been coded. The code is for accounting purposes only. All answers that your students may are strictly confidential; no one will be able to associate the students with their responses.

There are 23 major questions in this instrument. Each of the major questions is designed to achieve a given objective of the study. Each question is followed by specific instructions. Please inform the students to read instructions for each question carefully before responding to the question. The questionnaire contains 72 items, and the participants should be encouraged to respond to all items because their responses are very vital to the success of this study. A pilot test of the instrument indicated that it takes an average of fifteen minutes to complete. Please point out to the students that their decisions to respond to the questionnaire are completely voluntary and that their participation or non-participation will in no way affect their grades in the courses you are teaching.

The enclosed "Statement to Individuals Participating in the Study" should be read to your students before administering the instrument to them. Have the students return the completed or non-completed questionnaires to you. Put them inside the enclosed self-addressed envelope. Call me to come and get it. Again, we appreciate your assistance with this important study.

*Explanations if needed

A few further explanations may be needed in some portions of the questionnaire (e.g., questions 1, 15, and 21). If any is needed, the following will be helpful.

Question 1. The most influential sources should be selected in each of the ten pairs. If a person selects Relatives in pair one, he or she can still select the same source in pair 2 if he or she feels that particular source was more influential in that pair. One source for each of the ten pairs should be checked.

Question 15. If a person worked only during summers, four full-time summer employment equals 1 year. Specification may be needed if they had worked full-time or part-time either during summers or throughout the year.

Question 21. The percentage of financial support sources should equal 100%.

STATEMENT READ BY INSTRUCTORS TO INDIVIDUALS
PARTICIPATING IN THE STUDY

"Hello Students!!" Today I have a request for your help from Tony Udo Toby, a graduate student in vocational education who is conducting research for his doctoral degree at OSU. The purpose of his study is to find out the factors which influence our undergraduate students, like yourself, to select our teacher education as majors. The questionnaire which I am to pass out has been developed to gather information from you about the study. Mr. Toby has asked if you would be willing to respond to this questionnaire so that his research purpose can be achieved.

I stress at this point that a decision to respond to the questionnaire is completely voluntary. Participation or non-participation will in no way affect your grade for this course. All responses will remain completely anonymous. Mr. Toby has asked that your names not be written anywhere on the questionnaire. The code you find on the top-right corner of the questionnaire is for accounting purposes only and Mr. Toby has assured me that nobody will be able to associate the answers you give with you.

There are three parts to this instrument. Each part is followed by instructions on how to answer each item. I ask you to read the instructions for each part carefully before you respond to the questions. Mr. Toby has also requested that I encourage you to respond to all items because your responses are very important to the success of this research. A pilot test of the instrument by Mr. Toby indicated that it takes about 15 minutes to complete it. When you are finished answering the questions, please return the questionnaire to me.

Are there any questions?

Who would be willing to respond to the questionnaire? Your help with this study is appreciated.

Appendix C

Pearson Product Moment Intercorrelation Coefficients of
Variables Used in Step-wise Discriminant Analysis

Table 27. Pearson product moment intercorrelation correlation coefficients of variables used in step-wise discriminant analysis.

	Y4	Y5	Y6	Y15a	Y16	Y17	Y18	Y22	Y23	Rel	Peers	EdPers	NonEd
Y5	.02 (304) .38												
Y6	.12 (301) .02	.15 (298) .00											
Y15A	-.23 (308) .00	-.05 (301) .17	-.15 (299) .01										
Y16	-.18 (312) .00	-.10 (305) .04	-.16 (302) .00	.34 (309) .00									
Y17	.10 (308) .03	.63 (302) .00	.17 (299) .00	-.19 (305) .00	-.20 (310) .00								
Y18	.14 (310) .01	.36 (303) .00	.39 (301) .00	-.19 (307) .00	-.19 (312) .00	.52 (309) .00							
Y22	-.32 (312) .00	-.12 (305) .02	-.19 (302) .00	.46 (309) .00	.59 (313) .00	-.23 (309) .00	-.18 (311) .00						

	Y4	Y5	Y6	Y15a	Y16	Y17	Y18	Y22	Y23	Rel	Peers	EdPers	NonEd
Y23	.32 (312) .00	.09 (305) .07	.09 (302) .07	-.21 (309) .00	-.24 (313) .00	.08 (309) .09	.12 (311) .02	-.31 (314) .00					
Rel	.11 (313) .02	.11 (306) .03	.09 (303) .06	-.04 (310) .22	-.04 (314) .24	.17 (310) .00	.25 (312) .00	-.15 (314) .00	-.10 (314) .03				
Peers	.04 (313) .25	-.14 (306) .01	-.02 (303) .35	-.03 (310) .28	-.08 (314) .07	-.14 (310) .01	-.10 (312) .04	-.01 (314) .45	-.05 (314) .17	.07 (315) .12			
EdPers	.16 (313) .00	.02 (306) .36	-.00 (303) .47	.07 (310) .12	.13 (314) .01	-.04 (310) .22	-.00 (312) .49	.03 (314) .32	-.01 (314) .43	-.06 (315) .16	-.01 (315) .42		
Media	-.01 (313) .42	.06 (306) .14	-.02 (303) .39	.09 (310) .06	-.10 (314) .04	.00 (310) .50	.02 (312) .35	-.01 (314) .41	-.00 (314) .47	-.21 (315) .00	-.12 (315) .01	-.02 (315) .39	
NonEd	.02 (313) .36	-.06 (306) .15	-.06 (303) .16	.07 (310) .12	.08 (314) .07	-.05 (310) .17	-.08 (312) .07	.01 (314) .42	-.06 (314) .16	-.11 (315) .03	-.10 (315) .03	-.01 (315) .43	-.23 (315) .00

NOTE: Statistics reported in order of correlation coefficient (r), number of subjects, and probability.

Variable Identification: Y4 = high school grade point average; Y5 = father's occupation; Y6 = mother's occupation; Y15A = work experience; Y16 = marital status; Y17 = father's educational attainment; Y18 = mother's educational attainment; Y22 = age; Y23 = sex; Rel = relatives; EdPers = educational personnel; NonEd = non-educational personnel.

*Although a dichotomous, nominal variable, sex was treated as an equal-interval scale.

Appendix D

The Result of Each Step in the
Step-wise Discriminant Analysis Procedure

Results of step-wise discriminant analysis performed at each step:

STEP 1. Sex was included in the analysis.

Wilk's Lambda = .85; DF = 2, 282; P between groups = .00
Equivalent F = 25.55; DF = 2, 282

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
Sex	1.00	25.55	

STEP 2. Work experience was included in the analysis.

Wilk's Lambda = .78; DF = 2, 2, 282; P between groups = .00
Equivalent F = 18.46; DF = 4, 562

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
Work experience	1.00	11.76	.85
Sex	1.00	23.07	.91

STEP 3. Father's education was included in the analysis.

Wilk's Lambda = .74; DF = 3, 2, 282; P between groups = .00
Equivalent F = 15.37; DF = 6, 560; P between groups = .00

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
Work experience	.99	9.50	.79
Father's education	.99	8.36	.78
Sex	1.00	21.67	.85

STEP 4. Peers included in the analysis.

Wilk's Lambda = .71; DF = 4, 2, 282
Equivalent F = 13.30; DF = 8, 558; P between groups = .00

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
Work experience	.99	9.55	.75
Father's education	.96	9.93	.76
Sex	.99	22.44	.82
Peers	.96	6.27	.74

STEP 5. Media included in the analysis.

Wilk's Lambda = .68; DF = 5, 2, 282; P between groups = .00
 Equivalent F = 11.88; DF = 10, 556

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
Work experience	.98	8.81	.72
Father's education	.95	10.52	.73
Sex	.98	23.80	.80
Peers	.93	7.96	.72
Media	.96	5.42	.71

STEP 6. Father's occupation was included in the analysis.

Wilk's Lambda = .67; DF = 6, 2, 282; P between groups = .00
 Equivalent F = 10.38; DF = 12, 554

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
Father's occupation	.62	2.57	.68
Work experience	.98	8.68	.71
Father's education	.62	4.67	.69
Sex	.98	23.43	.78
Peers	.92	8.65	.71
Media	.95	4.98	.69

STEP 7. High School GPA was included in the analysis.

Wilk's Lambda = .66; DF = 7, 2, 282; P between groups = .00
 Equivalent F = 9.11; DF = 14, 552

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
High school GPA	.88	1.44	.67
Father's occupation	.62	2.70	.67
Work experience	.94	9.14	.70
Father's education	.61	4.74	.68
Sex	.91	20.87	.76
Peers	.92	8.28	.70
Media	.95	5.04	.68

STEP 8. Non-Educational (NonEd) Personnel included in the analysis.

Wilk's Lambda = .65; DF = 8, 2, 282
 Equivalent F = 8.17; DF = 16, 550; P between groups = .00

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
High school GPA	.88	1.45	.66
Father's occupation	.62	2.65	.67
Work experience	.94	9.11	.70
Father's education	.61	4.68	.68
Sex	.91	20.54	.75
Peers	.90	7.19	.69
Media	.89	3.60	.67
NonEd personnel	.93	1.43	.70

STEP 9. Relatives included in the analysis.

Wilk's Lambda = .65; DF = 9, 2, 282
 Equivalent F = 7.39; DF = 18, 548; P between groups = .00

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
High school GPA	.88	1.53	.65
Father's occupation	.62	2.72	.66
Work experience	.94	8.87	.70
Father's education	.61	4.49	.67
Sex	.91	20.50	.74
Relatives	.88	1.12	.65
Peers	.90	7.47	.68
Media	.83	2.98	.66
NonEd personnel	.91	1.71	.66

Variables not in analysis after Step 9:

<u>Variable</u>	<u>Tolerance</u>	<u>F to Remove</u>	<u>Wilk's Lambda</u>
Mother's occupation	.95	.16	.65
Marital status	.86	.74	.64
Mother's education	.73	.42	.65
Age	.59	.41	.65
Educational personnel	.95	.97	.64

F statistics and significances between pairs of groups after Step 9--
 each F statistic has 9 and 274.0 degrees of freedom.

Group		1	2
		Vocational	Practical Arts
Group			
2	Practical Arts	3.14 .00	
3	Non-Vocational	10.87 .00	7.29 .00

Appendix E

Summary Tables of Analyses of Variance of Specific Sources
of Influence Associated with the Major Influence of Peers

Table 28. One-way analysis of variance of influence of male friends during high school by group.

Source of Variance	SS	DF	MS	F	P
Between groups	2.74	2	1.37	1.86	.16
Within groups	226.64	308	.74		
Total	229.38				

$\bar{X} = 0.64$, $S = 0.86$.

Table 29. One-way analysis of variance of influence of female friends during high school by group.

Source of Variance	SS	DF	MS	F	P
Between groups	2.46	2	1.23	1.61	.20
Within groups	236.15	309	.76		
Total	238.61				

$\bar{X} = 0.79$, $S = 0.88$.

Table 30. One-way analysis of variance of influence of college and university students in same major.

Source of Variance	SS	DF	MS	F	P
Between groups	1.23	2	.62	.48	.62
Within groups	400.45	309	1.30		
Total	401.68				

$\bar{X} = 1.47, S = 1.34.$

Table 31. One-way analysis of variance of influence of college and university students.

Source of Variance	SS	DF	MS	F	P
Between groups	5.25	2	2.62	2.96	.05
Within groups	274.73	309	.89		
Total	279.98				

Note: $F = 2.96$; $df = 2, 309$; $p = .05$. Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = .67.

Groups	N	\bar{X}	SD	Scheffe Subset
Non-Vocational	164	1.12	.96] 1
Practical Arts	76	.88	.92	
Vocational	72	.83	.91	
Total	312	.99		

Table 32. One-way analysis of variance of influences of friends at work place on the selection of majors by groups of teacher education students.

Source of Variance	SS	DF	MS	F	P
Between groups	11.90	2	5.95	7.51	.00
Within groups	243.69	308	.79		
Total	255.59				

Note: F = 7.51; df = 2, 308; p = 00. Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = .63.

Groups	N	\bar{X}	SD	Scheffe Subsets
Vocational	72	.96	.93] 2
Practical Arts	76	.84	1.02	
Non-Vocational	163	.52	.80	□ 1
Total	311	.70		

Table 33. One-way analysis of variance of influence of female friends at the work place.

Source of Variance	SS	DF	MS	F	P
Between groups	1.26	2	.63	.70	.50
Within groups	278.17	308	.90		
Total	279.43				

$\bar{X} = 0.76, S = 0.95.$

Appendix F

Summary Tables of Analyses of Variance of Specific Sources
of Influence Associated with the Major Influence of Media

Table 34. One-way analysis of variance of influences of films on the selection of majors by groups of teacher education students.

Source of Variance	SS	DF	MS	F	P
Between groups	2.17	2	1.09	1.85	.16
Within groups	181.34	308	.59		
Total	183.52	310			

$\bar{X} = 0.53, S = 0.77.$

Table 35. One-way analysis of variance of influence of newspapers and magazines.

Source of Variance	SS	DF	MS	F	P
Between groups	10.83	2	5.41	7.52	.00
Within groups	222.48	309	.72		
Total	233.31	311			

Note: $F = 7.52$; $df = 2, 309$; $p = .00$. Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = .60.

Groups	N	\bar{X}	SD	Scheffe Subsets
Non-Vocational	164	1.00	.91	□ 2
Vocational	72	.65	.81] 1
Practical Arts	76	.61	.75	
Total	312	.82		

Table 36. One-way analysis of variance of influence of radio and television.

Source of Variance	SS	DF	MS	F	P
Between groups	5.62	2	2.81	4.68	.01
Within groups	186.17	309	.60		
Total	191.79	311			

Note: $F = 4.68$; $df = 2, 309$; $p = .01$. Scheffe range test at $\alpha = .05$; ranges (tabular) = 3.48, actual value = .55.

Groups	N	\bar{X}	SD	Scheffe Subsets
Non-Vocational	164	.77	.84	
Practical Arts	76	.51	.68	
Vocational	72	.49	.71	
Total	312	.64		

Appendix G

Summary of Statistics for Variables
That Did Not Enter Discriminant Functions

Table 37. One-way analysis of variance of ages of teacher education students by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	504.63	2	252.31	11.08	.00
Within groups	7013.29	308	22.77		
Total	7517.92	310			

Note: Scheffe range test at $\alpha = .05$: ranges (tabular) = 3.48, actual value = 3.37.

Groups	N	\bar{X}	SD	Scheffe Subsets
Vocational	72	25.18	6.33	
Practical Arts	75	23.67	4.45	
Non-Vocational	164	22.08	4.07	
Total	311	23.18		

Table 38. One-way analysis of variance of prestige of occupations of mothers of teacher education students by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	1581.96	2	790.96	2.48	.09
Within groups	94608.43	297	318.55		
Total	96190.39	299			

$\bar{X} = 36.59$, $S = 17.94$.

Table 39. Chi-square analysis of mothers' educational attainment by groups.

Mothers' Educational Attainment	Groups						Total	
	Vocational		Practical Arts		Non-Vocational			
	N	%	N	%	N	%	N	%
Grade 8 or lower	1	1.4	4	5.4	5	3.0	10	3.2
High school graduate	41	56.9	26	35.1	43	26.2	110	35.5
Some college	17	23.6	19	25.7	53	32.3	89	28.7
Baccalaureate	8	11.1	18	24.3	41	25.0	67	21.6
Beyond baccalaureate	5	6.9	7	9.5	22	13.4	34	11.0
Total	72	100.0	74	100.0	164	100.0	310	100.0

NOTE: $\chi^2 = 23.71$, $\alpha = .05$, $df = 8$, $p = .00$.

Table 40. Chi-square analysis of marital status of teacher education students by groups.

Status	Groups						Total	
	Vocational		Practical Arts		Non-Vocational			
	N	%	N	%	N	%	N	%
Single	43	59.7	56	73.7	142	86.6	241	77.2
Married	22	30.6	19	25.0	19	11.6	60	19.2
Separated or Divorced	7	9.7	1	1.3	3	1.8	11	3.5
Total	72	100.0	76	100.0	164	100.0	312	100.0

NOTE: $\chi^2 = 26.17$, $df = 4$, $p = .00$.

Table 41. One-way analysis of variance of major influence of educational personnel on teacher education students by groups.

Source of Variance	SS	DF	MS	F	P
Between groups	7.36	2	3.68	2.35	.10
Within groups	483.51	309	1.56		
Total	490.87	311			

$\bar{X} = 3.12, S = 0.97.$

Table 42. Means and standard deviations of specific influences of educational personnel

Specific Source	N	\bar{X}	S
High school teachers	312	1.82	1.09
High school counselors	312	0.82	0.96
College professors	312	1.78	1.05
College counselors	311	0.93	1.08