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ABSTRACT

Three studies compared the characteristics, preparation, and job satisfaction of male and female vocational agriculture teachers. The first was a national survey of teacher educators and administrators from 64 institutions (of 79 originally contacted) that prepare high school agriculture teachers. The other two studies examined the entire population of California high school vocational agriculture teachers who received their credentials between 1975 and 1984. Despite the drastic decline in the number of graduates from credential programs over the past 10 years, the percentage placed in high school teaching programs has remained fairly stable. Women have a consistently lower placement rate than men despite women's slightly higher availability. The placement problems of women varied with the region of the country. Although the California men were more likely than women to use their credentials, men and women were not significantly different in such areas as length of tenure, likelihood to switch schools or quit, or ability to handle a single-person department. Women still experience incidences of discrimination and generally have more difficulty in finding jobs and attaining acceptance as vocational agriculture teachers than do their male counterparts. A high percentage of credential recipients never teach high school, and many quit teaching fairly quickly. For those persons that remain in teaching, however, the level of satisfaction is quite high. (Appendixes include a six-page bibliography and the survey instruments.) (MN)

PROFILE OF VOCATIONAL AGRICULTURE TEACHERS:

Trends in Number, Sex, Preparation, and Satisfaction of Credential Recipients

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Preface

Whether social scientist, teacher, or student, those who seek to understand agricultural education in the United States hold certain assumptions about the need for such programs and the type of person who is most likely to benefit from participation. For the past two decades Professor Orville Thompson has worked and guided professionals in examining these assumptions and the resulting programs. This monograph represents his three most recent studies which, when combined, analyze the status of agricultural education programs both nationally and in California.

The first study was completed in 1984 by Douglas Gwynn, a research sociologist. Its initial purpose was to gather nationwide data on the number of men and women receiving agriculture teaching credentials, number available to teach, and number actually placed in teaching positions. Also, teacher educators nationwide were asked their opinions about the problems faced by female agriculture teachers. This study serves as a baseline for subsequent surveys allowing for analysis of trends in vocational education.

This information raised questions about how California compared to the nation, leading to a second study which examined teachers who received their credentials in California between 1975-1984. Then, a random group of California teachers were interviewed by phone for more detailed information. These studies were conducted by Virgil L. Palmer III and Rhonda Fisher Eaker, graduate research assistants. Research and writing was completed in 1986.

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Summary

In the past decade an increasing proportion of the students entering vocational agriculture teaching credential programs have been female. This trend has raised concerns about the ability of women to survive in agricultural education, an occupation with a particularly strong tradition of male dominance. This study sought to clarify the issues that these women confront, and to gain an overall understanding of the agriculture teaching profession of the 1970s and 1980s.

Nationwide there has been a drastic decline in the number of graduates from credential programs over the last ten years, but the percentage placed in high school teaching programs has remained fairly stable. Women have a consistently lower placement rate than men, despite women's slightly higher availability. The placement problems of women, as perceived by teacher educators, varied with the region of the country.

A more detailed look at California Vocational Agriculture Teachers revealed fewer actual differences between male and female teachers than expected. Men were more likely than women to use their credential after receiving it, but after entering the profession men and women were not significantly different in areas such as length of tenure, likelihood to switch schools, likelihood to quit, or ability to handle a single person department. However, evidence indicates that some women still experience incidences of discrimination and women in general have more difficulty finding jobs and attaining acceptance as agriculture teachers. Despite these difficulties, few women expressed a desire for more female role models or women's support groups.

In addition to a surprisingly high percentage of credential recipients who never teach high school agriculture, many of those who take teaching positions quit fairly quickly. However, a frequent reason for quitting was because the school's agriculture program was cut. For those that remain in agriculture teaching, the level of satisfaction is quite high. They are also generally happy with their college preparation for teaching, although a need for more FFA training and more hands-on experience was evident. Low pay was a problem for some teachers (particularly men), but did not seem to be an overwhelming concern. The benefit of a strong agricultural background was an important factor in the success of an agriculture teacher.

INTRODUCTION

It began as only a trickle of a few brave female teachers of agriculture blazing the way for others to follow. Recently however, the percentage of female vocational agriculture teachers has begun to increase rapidly. The introduction of female vocational agriculture teachers and the dramatic progress they have made is one of the most important events in vocational agriculture education in the last few decades.

Spurred on by the admission of females into the Future Farmers of America organization and the passage of federal anti-discrimination legislation, the influx of females into agriculture, beginning in secondary schools, has reverberated throughout the educational system. Now approximately 40% of all students in vocational agriculture credential programs in California are female. Other states have experienced similar increases of female students, and women even outnumber males in some colleges and universities. Despite these successes, questions still remain about a woman's ability to teach in what has been categorized a "man's occupation." These questions kindled the researchers' interest into the problems encountered by women pursuing a career in this non-traditional field.

This report is comprised of three studies conducted by the University of California at Davis to gauge the progress and problems experienced by women in the traditionally male field of vocational agriculture teaching. The research was designed and initiated to aid decision makers in vocational agriculture education to better service the needs of teachers and students as the change in sex ratio of agriculture teachers becomes even more pronounced. In addition to data and analysis relating to gender differentiation, a welcome byproduct of this research has been the identification of trends in teacher preparation and satisfaction.

Purpose of the Studies

The first of the three studies was an examination into the national trends in the gender ratio of those preparing to teach agriculture, and to uncover the issues this change has created. Of importance was the availability and placement of females as compared to males. Data, including

the number of graduates, number available for placement, and number actually placed, was collected from 64 of the nation's 79 teacher preparation programs for 1978 through 1984. In a subsequent survey teacher educators and administrators at each of the 79 institutions reported their perceptions of problems and concerns in placing female graduates. A second study was conducted to track credential recipients from California institutions, with the same general goals of examining the gender ratio and placement characteristics of graduates. This more detailed study tracked each of the students awarded a credential in a 10 year period beginning in 1975. This time span was chosen because of the great increase in female students preparing to teach agriculture during this period, and to encourage subsequent studies in similar time intervals. The examination resulted in descriptive data, including the sex ratio of teachers, year graduated, the year placed after graduation, number of years teaching, the number of years at each placement and whether or not the department was single or multiple person. The above findings were matched against hypotheses developed by the researchers.

The results of the second study inspired a third. Through a telephone interview of a stratified random sample drawn from the California teacher population, the researchers sought a deeper understanding of the attitudes, perceptions, experiences, and expectations of the credential holders. The result was a composite picture of vocational agriculture teachers. Once again, special attention was given to women's issues in both college preparation and teacher experience.

Historical Background

Most agricultural education journals report that the passage of the Smith Hughes Act of 1917 was the cornerstone of vocational education in the United States. This legislation designated secondary school vocational agriculture as student preparation for farming through the implementation of a farm practices program, and provided federal funding on a national scale (Camp and Crunkilton, 1985). It is interesting to note that, after the passage of this Act, 18 women were among the 859 students enrolled in secondary agriculture teacher courses at the 40 agricultural colleges. But men were the primary beneficiaries of the Act. As Debora Kren of Cornell's

College of Agriculture points out, "The progress of those 18 women is today, buried in history."

The next landmark in secondary vocational agriculture occurred in 1925 with the founding of the Future Farmers of America (FFA) at Virginia Polytechnic Institute by Professor Henry Groseclose and others who were instrumental in establishing its constitutions and bylaws. The value of this organization is often extolled. However, it was a "boys only club" (Camp and Crunkilton, 1985; Thompson, 1984). Consequently, though no legal restrictions prevented women from teaching in the field, vocational agriculture remained in the sphere of male dominated professions.

Two events in the early 1960s precipitated the expansion of women into the profession. The FFA amended its rules in 1962 to include female members, and the Vocational Education Act of 1963 (Public Law 88-210) was passed (Wood and Thompson, 1981). The latter expanded the role of agricultural training beyond production agriculture into more diverse occupational areas (Camp and Crunkilton, 1985). This provided for growth in the specialized fields of agriculture that were more acceptable for women, giving them an "in" into vocational agriculture education. Finally, the Vocational Education Act of 1976 (Public Law 94-482) stipulated that men and women be given equal access to vocational education programs. Therefore, the law became a positive factor in providing entrance for women into agriculture teaching.

REVIEW OF LITERATURE

Most high school teachers are women, and have been since the establishment of public education in the United States. For many years teaching provided one of the few career choices acceptable for women. In California, women still account for 65.5% of all high school teachers. But the teacher of agriculture was almost invariably a male.

Traditionally, it was not considered appropriate for a woman to major in agriculture, let alone to teach it, even if she was reared on a farm and was accustomed to doing the things associated with the occupation. Especially taboo were areas such as dehorning, animal reproduction,

castration, etc. Societal restraints discouraged any woman who thought otherwise (Knotts and Knotts, 1975).

Society has changed, however. There has been a dramatic transformation in the role expectations of women during the last two decades. The 1968 Supreme Court ruling baring practices of sexual discrimination in the workplace, the women's movement, affirmative action, and the need for two-income families are contributing factors for the entrance of women into the agricultural industry. The resulting influx of credentialed women into what had formerly been exclusively a man's profession has many implications for administrators, educators, and decision makers in the profession.

A woman who decides to teach vocational agriculture is subjected to the same lingering doubts which plague all women who enter nontraditional career fields, does she possess enough skills or have enough strength to perform competently, will family commitments interfere with her job responsibilities, will co-worker relations be a problems, will resistance from the administration and the community prove insurmountable, or will her own self doubt or the stereotyped attitudes of family and friends prevent her success in a nontraditional field? The Quinlan and Carter Study of University of Montana's Agriculture Department (1981) typifies the commonly held beliefs about women in agriculture. The study's respondents believed that the following problems would hinder women in the agricultural industry: lack of agricultural experience, lack of mechanical skills, societal considerations, employer rejection, and lack of role models. The logic for excluding women from production agriculture, i.e., lacking physical strength or experience, is also used against female agriculture teachers. If a woman cannot perform in production agriculture, how can she teach it? Obviously, this type of reasoning prevents women from enjoying equal access to teaching agriculture as well as other nontraditional career paths. The ramifications are both internal, including conditioning, lack of self confidence, concern for femininity; and external, including sex stereotyping, finances, child care, vocational preparation, social attitudes, harassment, isolation, and discrimination (Cauley, 1981).

Teaching vocational agriculture is a very demanding job. So, on top of the barriers confronting women who enter this male-intensive field are the difficulties facing any agriculture teacher regardless of sex. Vocational

agriculture teachers must work long hours, substantially more than other secondary teachers, since vocational education is experiential as well as academic. In addition to students, teachers must consider the needs, demands and wishes of the school board, administrators, and the community. In their 1979 study, Moore and Camp surveyed former vocational agriculture teachers, their replacements, and their principals in order to ascertain how candid the departing teachers were in citing reasons for leaving. Each group ranked long hours, inadequate salary, and different occupational goals among their top four selections. Moreover, a survey of 150 former vocational agriculture teachers in Ohio found that the five highest ranking factors influencing their decision to leave were long range goals different from teaching, students in class who should not have been in vocational agriculture, inadequate advancement opportunities, long hours, and inadequate salary (Knight, 1978). In a Washington State University study, teachers of agriculture perceived themselves as having greater teaching loads than their academic counterparts, and were also generally younger than their academic cohorts (Orlich and Rust, 1975).

Another obstacle facing teachers of both sexes, particularly vocational agriculture instructors, is teacher socialization and adjustment. Beginning teachers go through a marked socialization phase, after which they arrive at a plateau where the values of the teaching subculture are internalized and the prospect of stability is greater (McArthur, 1979). Hence, the initial adjustment period is critical for teachers. Not surprisingly then, attrition among agriculture teachers is greatest in the first few years.

Many studies have examined the relationship between career aspirations and sex role socialization. Researchers have sought to discover the extent to which background characteristics affect a woman's decision to pursue a nontraditional career by explicating the differences between nontraditional and traditional career women (Lyson and Brown, 1982). However, the results have been inconclusive. Some have reasoned that variables apart from sex-role ideology prompt women into sex segregated occupations. Wolfe and Betz (1981) found that women make atypical occupational career choices consistent with their personality type; they found no significant relationship between sex-role orientation and either congruence or traditionality. This supports Holland's theory (1973) that vocational satisfaction depends on the

congruence between one's personality and the environment. Another study concerned with the influence of significant others on adolescent females' vocational choices found support for its hypothesis that the attitudes of parents, teachers, administrators, peers, and the girls themselves affect the development of work-role/sex-role attitudes of adolescent females (Handley and Walker, 1981). Though it is virtually impossible to specify the extent of the influence of prior education, work experience, background characteristics, and peer pressure on a woman's decision to enter an atypical or typical career, it can be assumed that society's changing expectations of the role of women will no doubt slowly erode the rigid delineation of male and female stereotyped occupations.

An interesting dichotomy is raised in the literature between those who view traditional thinking and stereotyping as the critical barrier for women to overcome, and those who view the inherent difficulties of vocational education as the culprit. For example, Houser and Garvey examined the amount of support, encouragement, and discouragement that 470 women received when taking male-intensive vocational courses. Nontraditional students received more support than the traditional students, except from significant males (1983). In a study of female truck drivers, the tensions suffered due to being in a nontraditional occupation were less than expected, largely due to the influence of male support and sponsorship (Lembright and Riemer, 1982).

The literature seems to support the Houser and Garvey (1983) findings. However, receiving support in a nontraditional educational program is different from finding a job in a nontraditional occupation. For example a survey of men and women at DuPage College in Illinois evaluated potential sources of female sex bias and sex stereotyping in nontraditional occupational programs. Both groups indicated that they did not believe their sex precluded entry into the college program. Consequently, potential sources of sex bias at the college were consistently rated lower than potential sources of sex bias outside the college (Bakshis and Godshalk, 1978). In their study of college graduates in vocational agriculture, Wood and Thompson (1981) found that women appeared to perceive little sexism in the educational setting, but with their entry or attempted entry into the labor force the situation changed. Results from certain studies may

indicate that barriers also impede women from obtaining vocational agriculture teaching placements.

The difficulties of the profession and the pressures created by multiple roles can easily discourage a young teacher. But there is evidence to indicate that women in nontraditional occupations possess greater resistance than their counterparts in traditional occupations (Curtiss, 1984). According to interviews with 86 California females between the ages of 22-30 who entered nontraditional occupations in the mid-70s, the strongest source of either satisfaction or dissatisfaction within the first year on the job was the challenge of mastering skills, increasing self-confidence, and getting along with often troublesome male co-workers and supervisors. However, those who remained in their positions a year later had become less concerned with these issues and more preoccupied with the usual sources of satisfaction or dissatisfaction found in blue collar work (McIlwee, 1982). This finding tends to coincide with a teacher's initial adjustment and socialization phase. Many studies indicate that satisfaction may be a function of the interaction of personal and context variables (Bledsoe and Baber, 1979).

The literature is replete with references to the need for, and lack of role models for women in vocational agriculture. Indeed, many of the problems associated with the training, placement, and success of female vocational agriculture teachers might be lessened if women were more visible in the profession. Lunneborg, in considering the plight of nontraditional career women, recommended that counselors encourage women to locate role models and mentors if they intend to pursue atypical careers (1982). Another study of 50 female college seniors entering scientific and business careers found that these women were supported by family, friends, certain faculty, and other personal experiences. But the findings also indicated a need for more female role models and improved career advising (Vollmer, 1983). Still another study asked 530 freshman women to complete a 78 item inventory used to examine the differences between those who chose conventional careers and those who chose nontraditional occupations. The findings suggested that in addition to having higher achievement orientations and better study habits, the nontraditionals were also more encouraged to explore nontraditional avenues and had more exposure to

nontraditional role models (Kingdon and Sedlacek, 1982).

Despite the recognized need for more female role models, men still remain the primary influencers of women who make vocational career choices. In fact, it was identified in one report that most students of both genders were influenced by males, particularly fathers (Weishaar, et al, 1981). Although a notable number of female students were influenced by female role models, especially in traditional fields, students' primary influencers were from closely related fields to their own vocational choices.

One deterrent to a woman's entry into vocational agriculture teaching is a lack of skills, whether actual or perceived. Vocational educators should be masters of specific professional competencies. Teachers of agriculture are responsible for a wide breadth of subjects, and it is virtually impossible to pick up all the required skills and knowledge during a five-year college enrollment. Having some skills before post-secondary training is almost a necessity, and this issue has predominated the concerns of vocational agriculture educators about women teachers. The need for adequate strength has also been a concern. Do women have the skills and strength required?

The above question underlies the reasoning behind arguments used against placing women in single teacher departments. The assumption is that there is always a need for at least one man in the department. Actually, some research exposes the bias of such logic, because women may well perform better alone in a single person department than with others. Some respondents have reported that not dealing with uncooperative male teachers may contribute to their success, causing one researcher to assert, "The concern that may exist when considering the hiring of a woman to be the sole teacher in an agriculture department should be much less when hiring a woman in multiple teacher department" (author unknown).

The issue of possessing adequate skills is germane to the profession regardless of sex. Using Holland's (1973) model of vocational choice, Chapman (1982) investigated the relationship of selected skills, values, and professional accomplishments of high school and elementary school teachers to their career satisfaction. Intervening variables of age, sex and income were controlled, and it was determined that satisfaction of high school teachers was significantly related to their self-rated skills. The

teachers' career satisfaction was significantly related to their professional achievements consistent with Holland's model. Consequently, a supposition can be made that at minimum a teacher can be happy if he or she is confident in his or her ability and if his or her competency is recognized by others.

Despite the concerns about women possessing the necessary skills to teach agriculture, data has indicated that women who choose nontraditional careers have more academic ability, feel better prepared in math or had more math and science courses in high school, and have different work-oriented attitudes than women who chose traditional careers (Peng and Jaffe, 1979; Carney and Morgan, 1981).

The perceptions and interactions of others acutely affects the success of a female agriculture teacher. A woman may match the skills and abilities of her male predecessor, but if her students are negative toward her, or if her colleagues are biased, then a barrier exists. Women in nontraditional careers often report having to prove themselves to coworkers or superiors more than their male counterparts. Women in other sectors of agriculture experience this resistance too. Consider a Yale survey of a heterogeneous sample of 291 public high school teachers which found that the teachers' perceived role and the school climate, especially relationships with school administrators, may be an important factor in predicting job stress. Unexpectedly, the teachers' coping resources were unrelated to job satisfaction (Litt and Turk, 1985).

Amberson and Bishop (1982) identified four major categories of the role of the vocational agriculture teacher: classroom teaching, coordinating supervised occupational experience projects (SOEP), advising a chapter of the Future Farmers of America (FFA), and instructing both youth and adults in production agriculture and agribusiness. The required knowledge and experience, coupled with the extent of interpersonal contact with people who represent different interests, makes teaching vocational agriculture a demanding job. But it is far more of a challenge for those teachers who lack the background in one of the four facets of teaching vocational agriculture. Consider the disadvantage students have if their instructor never had an SOE project or participated in FFA. Involvement in these activities prior to teaching is imperative for all teachers, of either

gender. The concern is the possibility that women may not have equal access to these ventures.

A similar, but slightly different perspective was offered by Dickerson (1984). He felt that the success of vocational agriculture is found in four areas also, albeit of different components: the SOEP, to provide a functional and realistic basis for instruction; curriculum and teaching approach that emphasizes problem solving and rational thinking; the FFA, which provides motivation and incentive; and "well prepared teachers with requisite skills to utilize these basic tools."[1]

Dickerson wrote, "the ideal learning situation--a problem situation--which results in the most important learning attainable, is the ability of an individual to identify and solve problems of life" (1984). In the same vein, agriculture teachers bring with them a background of knowledge and experience before entering college. A case can be made that a potential vocational teacher's aspirations are influenced by his or her background and experience. However, there is an alarming decline among vocational agriculture programs in the use and involvement of SOEPs and FFA participation. Although all students regardless of gender suffer as a result, it is not unreasonable to conclude that women are hurt more due to bias and stereotyping that already exist.

SOEPs have always been a training ground for agriculture students to develop occupational abilities. This fact applies to potential teachers as well as students entering other areas of agriculture. But McCraken (1983) reported a trend of less student involvement in SOEPs. Evidence indicates that more than 40% of vocational agriculture students have no SOE projects (Iverson, 1980). Several studies (Lee, 1980) have revealed a declining interest among teachers in using SOEPs. These findings place the responsibility for the decline in the use of SOEPs firmly on the shoulders of the teachers.

Another undesired downward trend is detected in FFA student participation. In 1966, 87% of all vocational agriculture students belonged

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[1] It should be noted that Dickerson's rationale was influenced by McCracken (1983) who suggested that vocational agriculture education is comprised of a body of knowledge and set of attitudes. He asserted, "We have believed in SOEPs, the intracurricular FFA organization, year round programs, problem solving as an approach to teaching and learning, and continuing education for adults."

to an FFA chapter. However, this percentage declined to 75% in 1982 (McCracken, 1983). FFA activities take vocational agriculture out of the classroom and into experiential learning in the field. And, in addition to developing agricultural skills, FFA is important because members learn leadership, citizenship, and cooperation.

Aristotle is credited with the expression that roughly translates, "What we learn, we learn by doing." Learning by doing is an integral part of vocational education. Many researchers and observers, including McMillion and Auville (1976) have commented on the advantage of learning through hands-on experience. Experiential learning in vocational education was recognized in 1940 as essential by officials, and probably much earlier by many practitioners.

> More and more, teachers and others are recognizing that instruction in agriculture becomes genuinely vocational to the degree that experiences are provided in the types of thought and action which lead to the development of abilities needed for success in a given type of farming (U.S. Office of Education, 1940).

The critical threat of diminishing hands-on involvement not only jeopardizes the quality of future teachers, but also threatens the quality of education that students will receive if this trend continues. To illustrate, Cooper and Nelson (1983) made a random selection of 5% of the vocational agriculture teachers in 15 states of the eastern FFA region to determine the extent of teacher contact in that organization. The following findings were reported: 41% had special courses on FFA, 59% had a unit on FFA in some course and 63% had experience with FFA while student teaching. Further, 50% of these teachers reported that their first experience with FFA was as a member in high school, 10% reported first contact as a collegiate FFA member, 13% said their first involvement occurred during student teaching, while 21% first encountered FFA during their first teaching assignment, 1% were categorized as "other" and 5% reported "never." Therefore, a substantial 26% of these teachers started to teach vocational agriculture with no prior FFA experience or formal training for advising an FFA chapter.

It is interesting to note that several studies have identified SOEPs, and less frequently FFA activities, as sources of difficulties for teachers (Sunderhaus and Miller, 1971; King and Miller, 1985; Miller and Scheid,

1984). Vocational education is vocational only if students are provided with opportunities to learn and develop skills required to succeed in a vocational career. Reductions in the experiential components of agricultural education just do not make sense.

The assumption could be made that the decline in these components of vocational agricultural education are internal to the profession. But external threats have arisen to further compound these conditions. The desire of legislators and the public to reduce taxes has made decision makers scrutinize funding strategies more closely. In addition, there has been a movement to promote an improvement in the quality of academic education by tightening up high school requirements which, it appears, will impinge negatively upon vocational education. For example, the Chancellor's Office of the California State University system, which includes four campuses with vocational agriculture credential programs, recently announced that entering freshman will be required to have completed four years of high school English, three years of math, two years of science, three years of social science, two years of a foreign language, one year of visual or performing arts, and physical education for a total of 17 periods. In a four year schedule of five period days only three elective periods are left open, not much for a student considering a vocational career after college. Consider the alarming findings of a California study which interviewed 100 administrators and decision makers, and surveyed 68 school districts: between the years of 1978 and 1984, 60% of the districts surveyed reported declining enrollments, funding, and course offerings in vocational education, whereas only 30% of the districts reported increases in these areas, and 10% said they have maintained the same level during the seven years of the study (Price, 1985). A movement away from vocational education is evident.

The quality of preparation of agriculture teachers leads to another issue. How is this preparation used? A significant percentage of credential holders do not seek a teaching position at all, and a sizable portion of those placed quit rather quickly. Craig's national study (1983) of the demand and supply of vocational agriculture teachers concluded that only about 50% of the agricultural education graduates in 1982 entered the field. The California average is slightly higher (63% for 1975-84).

Cole (1983) identified the quality of technical agricultural preparation as a major concern of vocational agriculture teachers in Oregon, leading him to speculate that quality of technical preparation could be a contributing factor in a graduate's decision not to teach vocational agriculture. He recommends that "students who have been involved in a total program in vocational agriculture, with special attention to SOEP and FFA involvement, should be recruited as agricultural education majors." In a subsequent paper Cole contends that teacher preservice programs must address the issue of building student interest in vocational agriculture, especially when SOEP and FFA are competing with other school activities.

Another important issue for vocational agriculture is teacher longevity, or lack of it. Teachers in California last an average of about two and a half years in vocational agriculture. Obviously, this matter outweighs gender considerations and enters the realm of job satisfaction. Since they work long hours and feel isolated from their academic counterparts and administrators, vocational agriculture teachers often carry their burden alone.

Let the reader for a moment consider Chapman's theoretical model of social learning (1984), suggesting that a teacher's psychological functioning is best explained in terms of the interaction of personal characteristics, previously learned behavior, and environmental determinants. These factors, combined with educational preparation and commitment to teaching, influence the teacher's career satisfaction and ultimately affect the decision to stay or leave the field.

In view of the importance of personal, demographic and background experiences, the necessity of attracting qualified teachers should begin well before the credentialing process. One expert suggests that vocational education training should start prior to middle school (Wolfe, 1985). The relevancy and timing of when to select potential teachers may be open to debate, but it is no wonder that the October, 1985 issue of Golden Slate, the official newsletter of the California Agricultural Teachers' Association, contained an article entitled, "Are You a Teacher of Teachers?" which instructed its readership to set a goal of encouraging "at least one student" to pursue a teaching career, and promoted the concept of providing students with actual teaching experiences.

All of these issues and concerns deal with the quality of the preparation of vocational agriculture teachers and are critical for all future teachers regardless of gender. But the ramifications are particularly acute for women who may have been denied opportunities to develop skills, may not have a strong self perception, or may lack support from significant others.

METHODOLOGY

This comprehensive look at the sex and trends of vocational agriculture teachers is actually three studies conducted over a period of four years beginning in 1982. The first study was national in scope, and calculated the male-female ratio of graduates in agricultural teacher education programs and compared the placement of females to males across the nation. The problems perceived by educators and administrators in placing female teachers of agriculture were also assessed. After its completion, the researchers took a local look at the sex ratio and trends among California credential holders to see how California compared to the nation.

The Nationwide Study

The nationwide study began by mailing a questionnaire to each college or university with a credential program in agriculture. The questionnaire requested data for number of graduates, number available for placement, and number placed in teaching positions upon graduation. Of the 79 institutions that prepare teachers of agriculture in the United States, complete data were obtained from 64. This includes responses from all but one Land Grant institution and from all but one state, which incidently, has a small program. It is estimated that over 90% of those who prepared to teach are represented in these data. The data collected from the colleges and university teacher preparation programs questionnaire were simple and straightforward, and free from non-response bias.

The nationwide study continued in 1984 when a survey was mailed to teacher educators and administrators at each institution asking them a series of questions on problems and concerns they had encountered in the

placement of female teachers. See Appendix A for the survey instrument which was sent after being reviewed by an informed panel and pretested. Completed surveys were received from all but one (78) of the institutions contacted. A review of the responses collected from the 14 informants whose campuses did not participate in the initial half of the study suggests little difference in their attitudes and opinions from those expressed by the 64 schools that responded.

The California Studies

The California high school vocational agriculture teachers study consisted of two separate phases. The first study was purely descriptive in content and included the entire population who received credentials within the 10 year period, 1975 to 1984. The second and more comprehensive part consisted of a telephone survey to a stratified random sample drawn from the total 10 year population.

The descriptive study began with an automated library search using the Educational Resources Information Center (ERIC) database to identify relevant literature. After much deliberation, the researchers set forth the following hypothesis:

1) Fewer credentialed women than men will actually work as agriculture teachers.

2) Women will have more difficulty than men in finding a teaching job.

3) Women agriculture teachers will quit sooner than men.

4) Women will be under-represented in single person departments because they are unable to handle the the responsibilities and duties alone.

The researchers then compiled a comprehensive list of the 713 graduates who, out of a total California vocational agriculture teacher population of 2,631 received their credentials within the school years 1975 to 1984 (California State Department of Education, CBED, 1986).

The lists of credential holders were obtained from the five California institutions with vocational agriculture credential programs. Department chairs at CSU Chico, CSU Fresno, California Polytechnic Pomona, Cal Poly San Luis Obispo, and the University of California at Davis were asked to provide the names and, if possible, addresses and phone numbers of graduates who

received credentials during the target years. Each institution was sent a cover letter explaining the purpose of the request.

With this complete list, each graduate who was placed in California was located in the applicable yearly issue of California Vocational Agriculture Teacher Directory, which contains the entire secondary vocational agriculture teacher population of California. Each credential holder was located in every subsequent directory until her or his name could no longer be found.

The above process yielded data that were analyzed in terms of sex ratio; year credential received; percentage placed in an agricultural teaching position in the first, second, or third year after graduation; how often each teacher changed schools and the time spent at each placement; and the mean length of tenure of those who left the profession.

A breakdown analysis of the data using the Statistical Package for the Social Sciences (SPSSx) program produced averages, means, and frequencies of the data. Crosstabulations and Pearson correlation matrices were also run. The initial descriptive phase of the California study was designed to determine the validity or falseness of the hypotheses using clear and replicable quantitative procedures.

The second portion of the California study was explanatory in nature, and sought to explain or refute the stereotypes and commonly held attitudes about female agriculture teachers reported in the literature. Furthermore, it was hoped that general characteristics common to all agriculture teachers would be identified. Hence, the following hypotheses were generated to address the additional focus of the explanatory phase of the study:

1) Women still experience discrimination in certain areas of vocational education.

2) Teacher success and longevity is enhanced by appropriate background experiences in vocational agriculture before the credentialing process begins--for men as well as for women.

3) A dichotomy exists between those credentialed who specialized in typically rural, farm oriented agricultural practices and those whose specialties are more in place at a city school.

Still paramount in importance were the findings as they reflect on female teachers of agriculture. This second California study was, however,

designed to be more comprehensive than its predecessors. As a result, a sample group from the California study population was needed.

California consists of a transitory population. The requests made to each campus for the teachers' addresses and phone numbers proved only partially successful. Other strategies to find credential recipients were employed, including consulting telephone directories, or contacting alumni associations, district vocational agriculture officials, teachers, friends and businesses for the addresses and phone numbers.

Approximately a third of the credentials awarded during the study's 10 year period were earned by females. Nevertheless, the sample was stratified equally by sex for a more valid comparison between the sexes.

Within the two gender subgroups, each of the 713 credential holders had an equal chance of being selected to be among the 120 chosen for the study. Black and Dean (1976) report that the most common rule of thumb in deciding how large a sample should be is the "1/10 rule" (Norusis, 1986). But the researchers were concerned with the representativeness of the sample, so 60 men and 60 women (17%) were selected for the sample. Alternates were selected as substitutes for those who could not be contacted. As it turned out, 95 from the original selection participated with only one refusal, more cases than dictated by the "1/10" rule. In addition, 25 alternates were interviewed. Subsequent analysis showed no significant difference between the two homogenous groups.

The most efficient means of collecting pertinent data was through telephone interviews using Dillman's Total Design Method (1978). After a careful review of the related literature, experts and practitioners, both administrative and teaching, were contacted regarding their perceptions of problems and issues confronting female vocational agriculture teachers. From this information, the questions were formulated (Appendix B). The questionnaire was pretested extensively in the field, and presented to informed teacher educators and social statisticians to insure face validity. Internal consistency, would the instrument measure what it purported to, was a major consideration.

Much attention was also given to the clarity and conciseness of the instrument. Closed-ended questions were used whenever possible. However, the categories of answers supplied by this methods do not pick up the depth

of the experiences of the respondents. Therefore, a few open ended questions were included for qualitative purposes and for elaboration. Quotes from some of the respondents are included in the results to sensitize the entire research effort and to reproduce the feelings behind the answers.

A letter was sent to each person in the sample explaining the study's objectives and asking for cooperation. Soon thereafter, the subjects were called and interviewed at their convenience. The interview questionnaire was divided into several sections. Respondents first verified the professional history which the researchers had collected through the agriculture teacher directories. Then they answered several questions regarding background. After the general questions, specific sections of questions were addressed to those who never taught, to those who left teaching, to those still teaching, and to women or men only. The interview closed after obtaining basic demographic information from each respondent. Several questions were presented in slightly varying forms to verify consistency and reliability. These variables showed a positive correlation when tested.

After coding, the data were analyzed through SPSS. Descriptive statistics provided measures of central tendency and dispersion. Statistics such as crosstabulations and Pearson correlation coefficients were used to measure the characteristics of variables that were expected to differ by stratum. From this analysis a picture of California secondary vocational agriculture teachers emerged.

RESULTS

The three sections of this study, the nationwide analysis of the sex ratio of agriculture teachers and nationally perceived problems of female teachers, the study of California trends in numbers of teachers and length of tenure, and the survey of California teachers for preparation and satisfaction, each built upon the others to provide a comprehensive picture of vocational agriculture teachers across the nation and in California.

National Trends in Number of Teachers

The nationwide study included 64 of the 79 institutions that produce vocational agriculture teachers nationally. It is believed that these 64 schools presented a reliable picture since they encompassed over 90% of the nation's vocational agriculture credential holders and represented all but one state.

Between 1978 and 1984, the colleges and universities in the sample prepared 7,860 teachers, of whom 6,292 or 80.1% were male (Table 1). As reported in other sources, there has been a marked decline in the number of teachers prepared in the last decade. The total number decreased uniformly from 1,330 in 1978 to 1,002 in 1984 for an overall decline of 24.6%. Male credential recipients accounted for a precipitous fall in total numbers, dropping from a high of 1,126 in 1978 to 761 and 791 in 1983 and 1984 respectively, an aggregate decline of 29.8%. This decline was offset somewhat by the modest increase of 5% among female graduates, rising from a low of 204 in 1978 to a high of 247 in 1983. Therefore, although the actual numbers of females is not increasing significantly, they are becoming more visible since they are becoming a larger proportion of the total.

Table 1

Graduates in Agricultural Education

64 Colleges/Universities from 1978-1984

	Numbers Prepared			Graduates Available to Teach					Graduates Placed				
Year	Men	Women	Total	Men	%	Women	%	Total	Men	%	Women	%	Total
1978	1126	204	1330	809	71.8	136	66.6	945	706	62.7	94	46.0	800
1979	927	232	1159	650	70.1	173	74.6	823	533	57.5	124	53.4	657
1980	958	210	1168	707	73.8	153	72.9	860	578	60.3	111	52.9	689
1981	864	227	1091	600	69.4	159	70.0	759	523	60.5	115	50.7	638
1982	865	237	1102	574	66.4	169	71.3	743	534	61.7	114	48.1	648
1983	761	247	1008	522	68.5	184	74.5	706	453	59.5	110	44.5	563
1984	791	211	1002	518	65.5	153	72.5	671	424	53.6	84	39.8	508
Total	6292	1568	7860	4380	69.6	1127	71.9	5507	3751	59.6	752	48.0	4503

The average national placement rate of 48% for females and 59.6% for males remained relatively consistent, but with a slightly downward trend, over the seven year period. The proportion of graduates available to seek teaching positions remained relatively constant at about 70%. Surprisingly, the female group's 71.9% availability average was slightly higher than males who were available for placement 69.6% of the time, thereby questioning the stereotype that women are less willing to take positions. Ironically however, the average placement rate for those students available to teach was 84.2% for males and 66.7% for females. The reason that fewer women were placed despite their higher availability is open to conjecture, but one can speculate that teaching vocational agriculture is still a man's domain.

Stratification by geographic region revealed an interesting contrast in the number of female credential recipients. While the gross numbers of females prepared were higher in the Central and Southern Regions, the proportion of females to males was higher in the East and West. Furthermore, the proportion of women to men graduated, available, and placed was consistently higher in the East than any other region in the nation despite the fact that the East had fewer agriculture teaching jobs available. Conversely, the female/male ratio was negative in the Southern and Central Regions. The relationship in the West was less clear, but it tended to be positive with one notable exception; after a significant positive association in 1983 ($r = .20$), the increasing proportion of females graduated, available and placed reversed itself in 1984 ($r = -.27$).

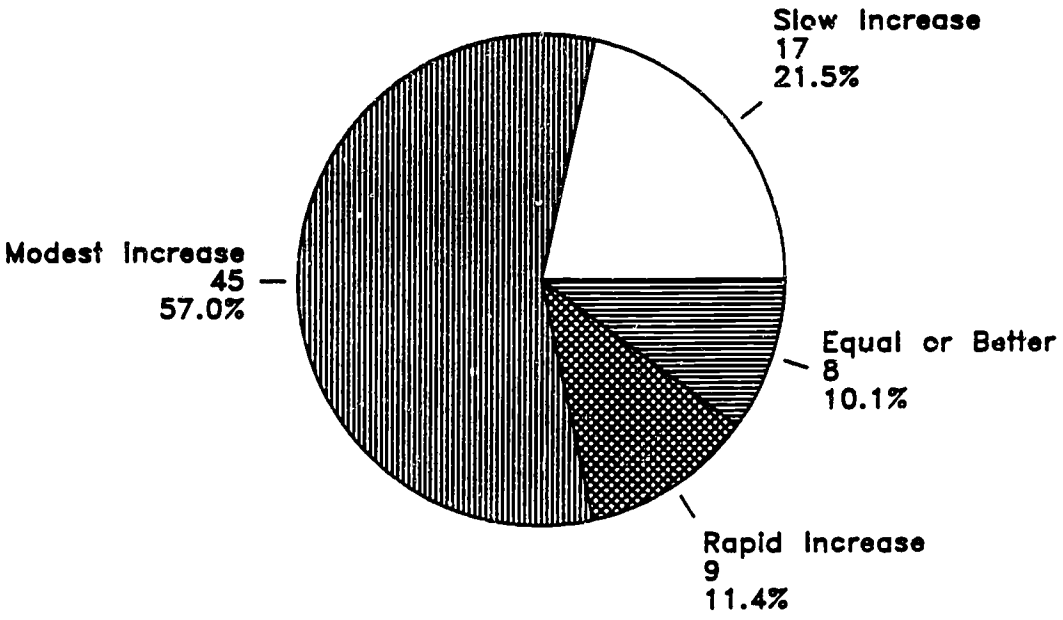
Regional differences in the employment of women are not unique to vocational agriculture teaching. Preliminary findings of a 1985 survey confirmed that New England is the best region for women who want to work in any occupation (Hellmich, 1986). Of the nine regions studied, New England had the highest percentage of women who work outside the home and the second highest percentage of professional women. While the West (Pacific and Mountain Regions) also showed good employment conditions, most of the Central and Southern Regions had noticeably lower percentages of working women in general and lower percentages of professional women. This suggests that the regional differences found in the placement of vocational agriculture teachers is a reflection of a larger employment phenomenon.

After the collection of raw data concerning the number of students

credentialed and placed, a teacher educator or administrator at each institution was asked to predict the trend in the demand for vocational agriculture teachers over the next five years (Appendix A). Only in the Central Region was there a perceived decline in the demand for teachers for this time period (r =-.27). The West showed the strongest perception of a growing demand for vocational agriculture teachers (r =.23). This coincides with the shared perception among western schools that a higher percentage of their students trained as vocational agriculture teachers actually obtain jobs (r =.18). This perception is correct since in reality the actual number of graduates getting jobs in the West is higher (r =.21) than in the East (r =-.23).

Figure 1: Trends in Numbers of Female Teachers

79 Teacher Educators



Respondents also gave their prediction of the long term trend in the female to male ratio of teachers. Figure 1 indicates that the overwhelming majority of the educators foresee a modest to slow increase in the number of

female teachers. Only 21.5% of them indicate more than a modest increase. Again however educators in different regions had distinctively different perceptions. The responses in the East were strongly associated (r =.55) with a perceived increase in proportion of females teaching vocational agriculture. In contrast, those surveyed in the South believed that an increase in the female composition will not take place (r =-.31). The Central Region agreed with the South, but less strongly (r =-.24). Those surveyed in the West tended to believe that the ratio of women teachers will increase, but the association is much weaker than in the East (r =.18).

National Problems in Placement

About a third of those surveyed reported no special problems in placing females who were mobile and possessed credentials equal to those of their male counterparts (Table 2). Nonetheless, 12.7% found that females were hard to place, and 16.5% found all females other than those in horticulture hard to place. Only 15.2% found females as easy to place as males. The remaining 22.8% experienced only fair success in placing females.

Table 2

Success in Placing Female Teachers

79 Teacher Educators

Success in Placements	No. of Responses	%
No problems if qualified and mobile	26	32.9
Fair in recent years	18	22.8
Good only in fields like horticulture	13	16.5
No different than placing males	12	15.2
Females are hard to place	10	12.7

The problems unique to placing females in vocational agriculture teacher positions are summarized in Table 3. As might have been predicted, a lack of mechanical/practical skills was the most common concern. Other frequent responses included a lack of mobility and a rather vague "just harder to place." Over one-third acknowledged that negative stereotypes of

Table 3

Problems in the Placement of Female Agriculture Teachers

79 Teacher Educators

Problems in Placing Female Teachers	No. of Responses	%
Lack mechanical/practical skills	38	48.1
Less mobile	33	41.2
Just harder to place	32	40.5
Negative stereotypes of female teachers	27	34.2
Have more family constraints	26	32.9
More difficulty in a one person department	19	24.1
Same problems as faced by males	19	24.1

female teachers create placement problems. However, other problems such as family constraints and lower mobility could also reflect negative stereotypes. Respondents from the various geographical regions each expressed unique concerns. For example, the East displayed a negative association with the variable measuring stereotypes (r =-.27) and the variable measuring difficulty in placing women (r =-.24) suggesting that these two considerations are not perceived as problems. But in the South, placement of women in general is a problem (r =.32), and placing women in single person departments was the strongest specific difficulty (r =.20). Surprisingly, a lack of skills in working with agricultural equipment, the major nationwide concern, was not perceived as a problem (r =-.28) in the South. Unlike the Southern Region, those in the West did not perceive single person departments as a obstacle for female teachers (r =.21), but skills (r =-.27) and mobility (r =-.18) were concerns, though the latter is weak. Lack of mobility due to marriage and family considerations is not seen as a problem in the East (r =.13) or South (r =-.27), but is perceived as a problem in the Central part of the country (r =.16).

California Profile

The variation in trends of vocational agriculture teachers, and the regional differences in attitudes toward women's concerns led the

researchers to question how California teachers compared to their national counterparts. The two part study that resulted from this inquiry first examined the entire population of California vocational agriculture teachers who received credentials between 1975 and 1984. The second element involved a survey of a sample group from this population.

During the ten year period of the study, 713 students (and two missing cases) received a vocational agriculture teaching credential in California. Over a third of them graduated from California Polytechnic University at San Luis Obispo. The remainder were divided fairly equally among the other four credentialing institutions (Table 4). Like the nation as a whole,

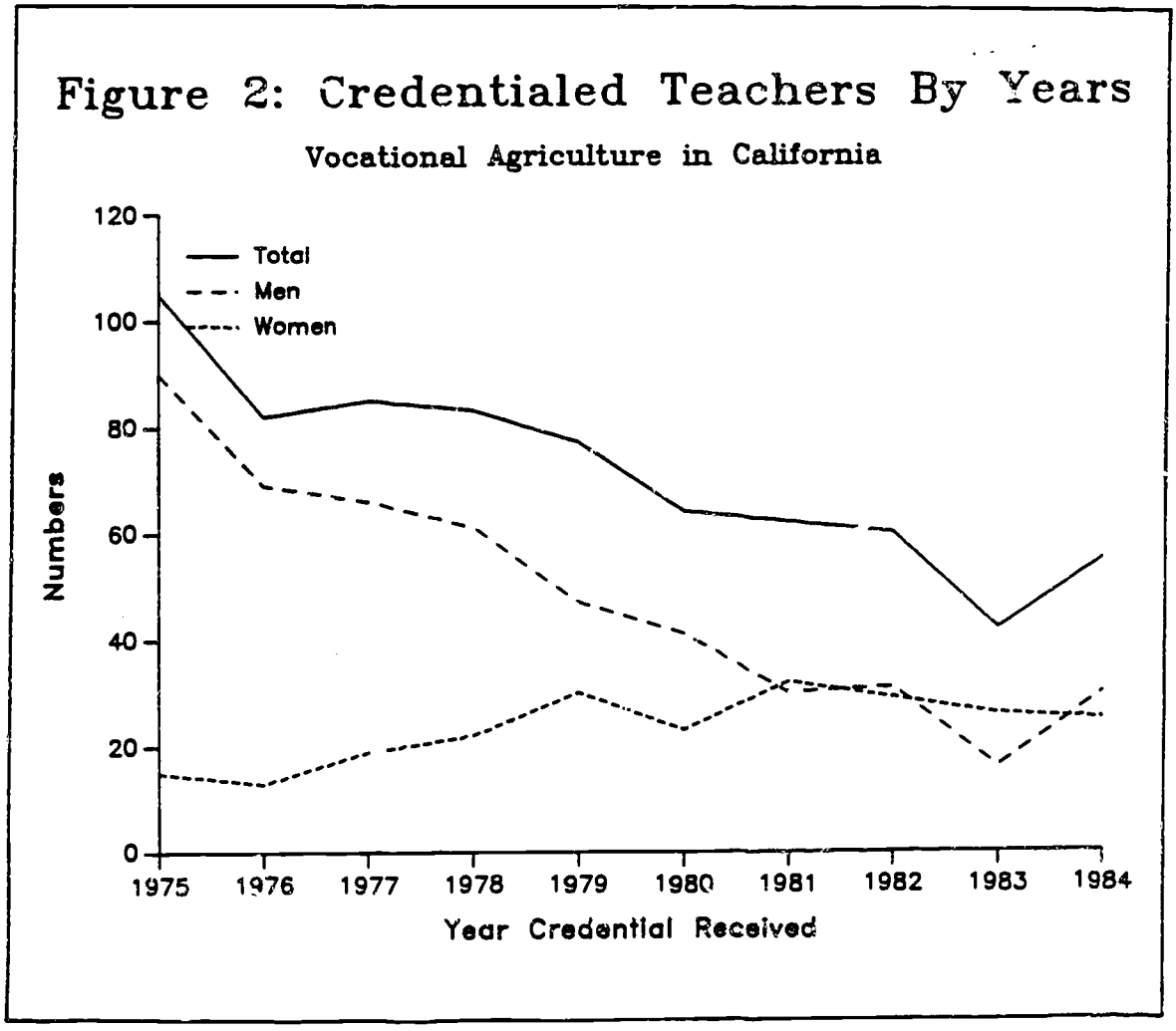
Table 4

California Vocational Agriculture Teaching Credential Recipients

By Year Graduated, By Institution, and By Gender

	CSU Chico		CSU Fresno		Cal Poly Pomona		Cal Poly SLO		UC Davis		Total
	M	W	M	W	M	W	M	W	M	W	
1975	14	3	25	1	4	2	29	4	18	5	105
1976	17	2	14	3	10	2	19	5	9	1	82
1977	14	2	8	3	8	3	21	9	15	2	85
1978	13	4	6	3	7	3	22	10	13	2	83
1979	11	1	12	6	4	7	14	13	6	3	77
1980	5	0	9	3	3	10	16	6	8	4	64
1981	6	6	4	6	5	6	11	12	4	2	62
1982	7	5	6	3	4	5	12	14	2	2	60
1983	3	3	4	3	1	3	5	6	3	11	42
1984	5	6	4	4	6	0	10	10	5	5	55
Total	95	32	92	35	52	41	159	89	83	37	715
(%)	(18)		(18)		(13)		(35)		(17)		

California is experiencing a drastic decrease in the number of new teachers prepared each year (Figure 2). In 1975, 105 students received a credential, but by 1984 this number had declined to 55. Of the 713 students, 234 or one-third were female, which is slightly higher than the Western Region's 1978-84 average of 25.8% credentialed females. The proportion of females to males prepared increased significantly from 16.6% in 1975 to 45% in 1984, and women actually exceeded men in 1981 and 1983. Nationally, slightly less than 20% of vocational agriculture teachers prepared were women, so this upward trend in the percentage of female credential holders in bellwether California could indicate a future trend for the entire country.



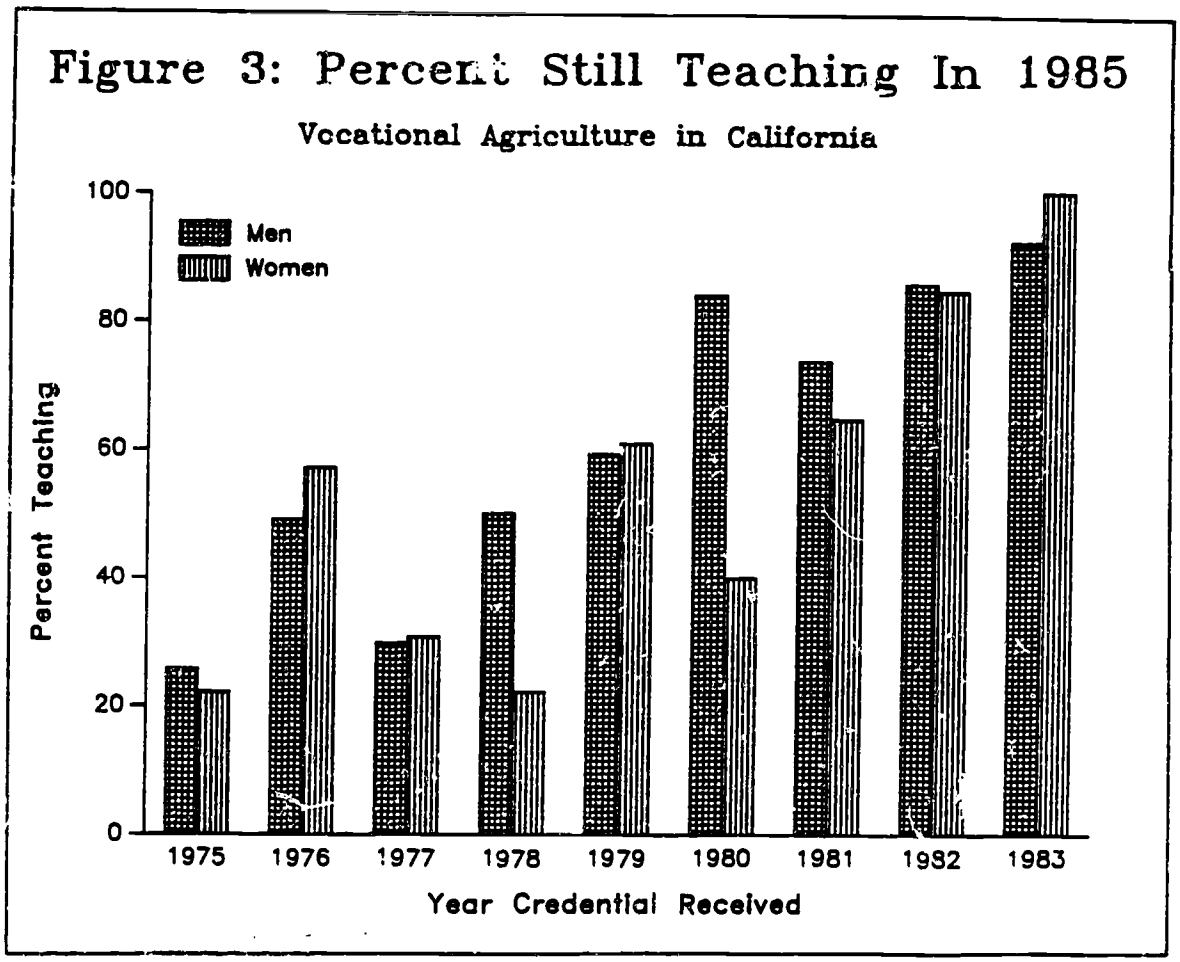
Analysis of the placement of California credential recipients revealed both accuracies and inaccuracies in the hypotheses formulated for the California study. Results confirmed that female graduates are less likely to get a job teaching vocational agriculture than male graduates. Overall, 37% of all graduates did not take a teaching position in California. A breakdown by sex showed that 48% of the females did not take a teaching position, compared to only 33% of the males. Table 5 illustrates the gender make-up of those placed and not placed. Whether or not it can be assumed that women have greater difficulty finding placement because of their sex as hypothesized is unknown, since descriptive data does not allow for statements about causality. Nonetheless, this result seems to confirm the literature and the national study's findings that discrimination in the hiring of female teachers probably exists. No other explanation seems plausible.

Table 5

Graduates Placed in California Secondary Vocational Agriculture By Year Graduated, and By Gender

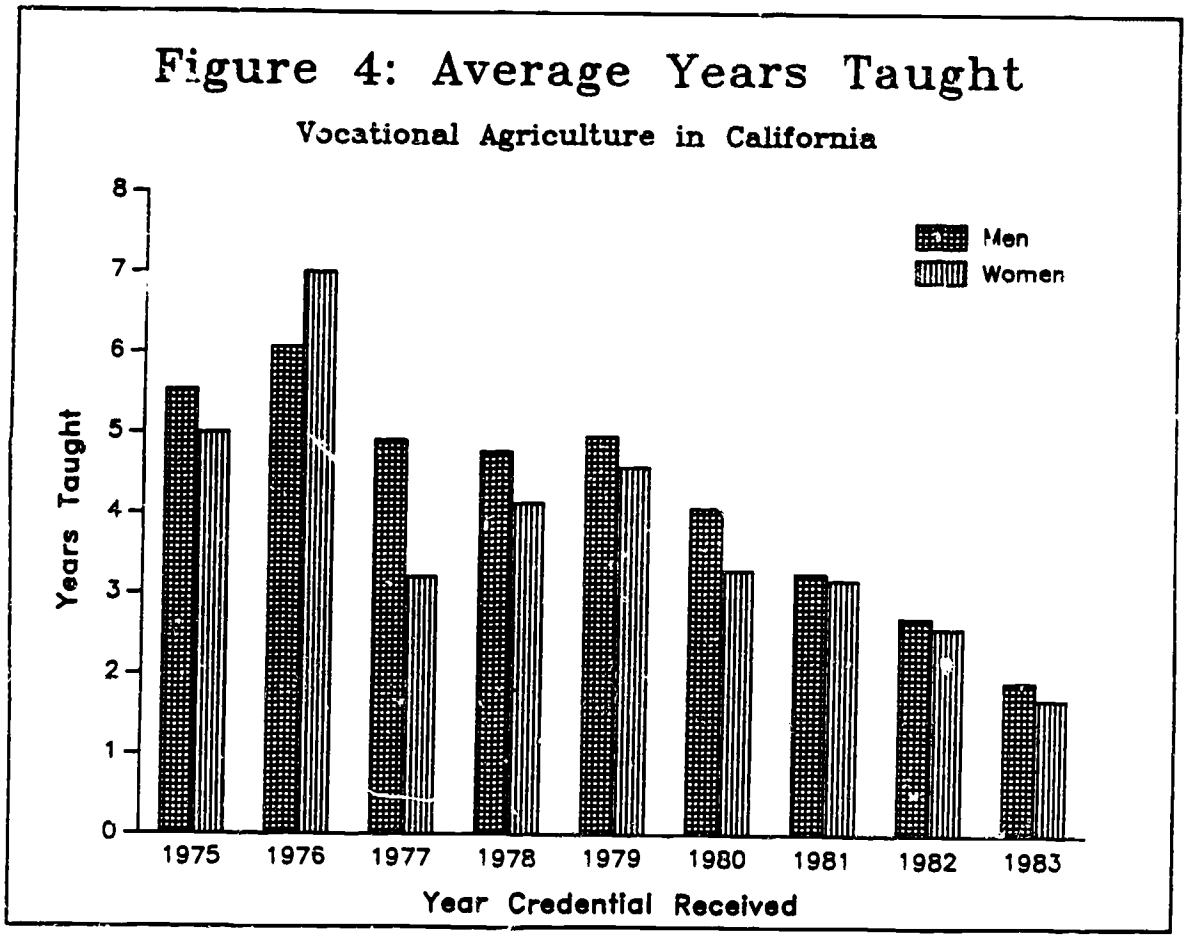
	Graduated		Placed				Total
	M	W	M	%	W	%	%
1975	90	15	66	73	9	60	71.4
1976	69	13	51	74	7	54	70.7
1977	66	19	47	71	13	68	70.6
1978	61	22	30	49	9	41	47.0
1979	47	30	27	57	23	77	64.9
1980	41	23	25	61	10	43	54.7
1981	30	32	19	63	17	53	58.1
1982	31	29	21	68	13	45	56.7
1983	16	26	13	81	10	38	54.8
1984	30	25	18	60	11	44	52.7

The fact that 37% of the credential recipients never teach secondary vocational agriculture is somewhat unsettling. Furthermore, of the 63% of credential holders that were placed, half had quit by the fall of 1985. In other words, of the 713 teachers prepared in the 10 year period, only 242 or 34.3% were teaching agriculture in the secondary classroom in California in 1985. However, it should be noted that some of those who were tabulated as no longer teaching agriculture could be teaching in another state, teaching another subject, teaching agriculture in a community college or college, or working in a related field, so it should not be assumed that these people are not using the skills gained while pursuing their credential. Figure 3 which shows the percentage of placed graduates who are still teaching, reveals no consistent difference between men and women. The sex ratio of those still teaching remained close to constant, with females comprising a little less than a third. If the total population is aggregated, 61% of all females placed are still teaching, whereas only 53% of the males are still



teaching. However, these statistics are skewed due to the greater influx of women in the later years of the study, making it hazardous to offer assumptions based on the raw percentages.

Not surprisingly, over 90% of those teachers who took teaching jobs in California were placed the first year after graduation. After placement, men and women show little difference in length of tenure. Figure 4 shows only a small difference in average years taught by men and women. And, although the female average is generally slightly lower, an analysis of variance of years taught indicates that this relationship is not statistically significant. In other words, when a new agriculture teacher is hired, gender has no relationship to the number of years of service to be expected from that teacher. This finding contradicts one of the initial hypotheses of this study, i.e. that women agriculture teachers will quit sooner than men. Since women are fairly new in the profession, there is no way to know if this will remain consistent over time. Only future studies can determine that.



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Among the population placed, 23% quit or changed schools after the first year on the job. Of the 102 teachers that switched schools, 49% did so after only one year at their first placement, and 86% of them did so within three years after beginning their teaching careers. This phenomenon indicates that job dissatisfaction with the school or profession manifests itself rather quickly in the form of resignation or changing locations. However, frequent job changing is not unusual for recent college graduates, and in some professions it is considered quite normal. Once again, this trend did not vary between men and women.

Telephone Survey

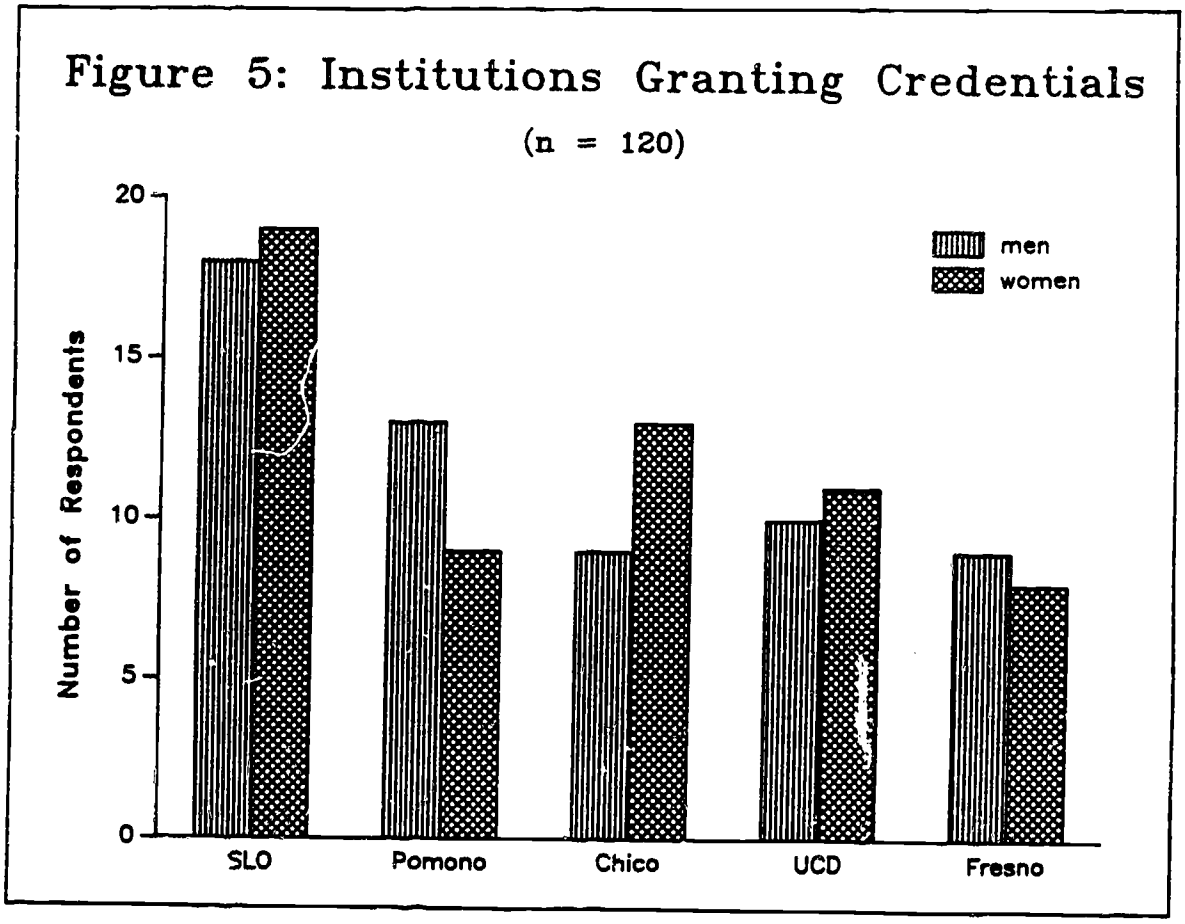
Although tracking the 713 California agriculture teachers to determine placement, tenure, and movement revealed some interesting data, it did not reveal many major differences between male and female agriculture teachers. However, the study was initially formulated with the intent of examining the impact and experience of female vocational agriculture teachers, so when the differences between women and men did not appear as stark as anticipated, the research was redirected. Therefore, the telephone survey for vocational agriculture teachers was designed to provide a profile of the preparation and satisfaction of all agriculture teachers. This focus grew from a concern about the large number of credential recipients who never teach, and to find out how to encourage more teachers to remain in the profession. The results offer an in-depth analysis of sexual bias and discrimination, job satisfaction, the quality of preparation, career goals, and self-rated skills, in addition to important data on the teachers' demographic characteristics and background.

Profile of Respondents

One hundred and twenty credential recipients were surveyed, 60 men and 60 women. The majority of them were married (69.3%), but 20 women and 13 men (27.5%) were single and the remainder (4.2%) were separated or divorced. The median age of the population was 30, with the majority between 27 and 32. The three youngest respondents were 24, and six were over 40, the eldest being 63 years old. Just over half, 24 men and 37 women, had no children, 18.3% had one child, 20% had two children, and the remainder had

three or more children. Since 21.7% more females than males reported not having children, one could conjecture that women in nontraditional careers might be less likely to make a family commitment than males who may have a more traditional family arrangement.

Figure 5 shows that the breakdown of the respondents by the school they attended is similar to the entire California population. Table 6 summarizes the respondents' Grade Point Averages.



Reasons for Entry

The literature stresses the importance of the influence of vocational agriculture teachers over a student's decision to enter teaching. This sample confirms this observation, since a third of the respondents identified their high school agriculture teachers as the major influence on their decision to seek a credential (22 males and 18 females). Furthermore,

Table 6

Grade Point Averages

(n = 120)

GPA	Total %	Men	Women
3.5 - 4.0	19.2	10	13
3.0 - 3.49	45.8	28	27
2.5 - 2.99	32.5	20	19
under 2.5	2.5	2	1

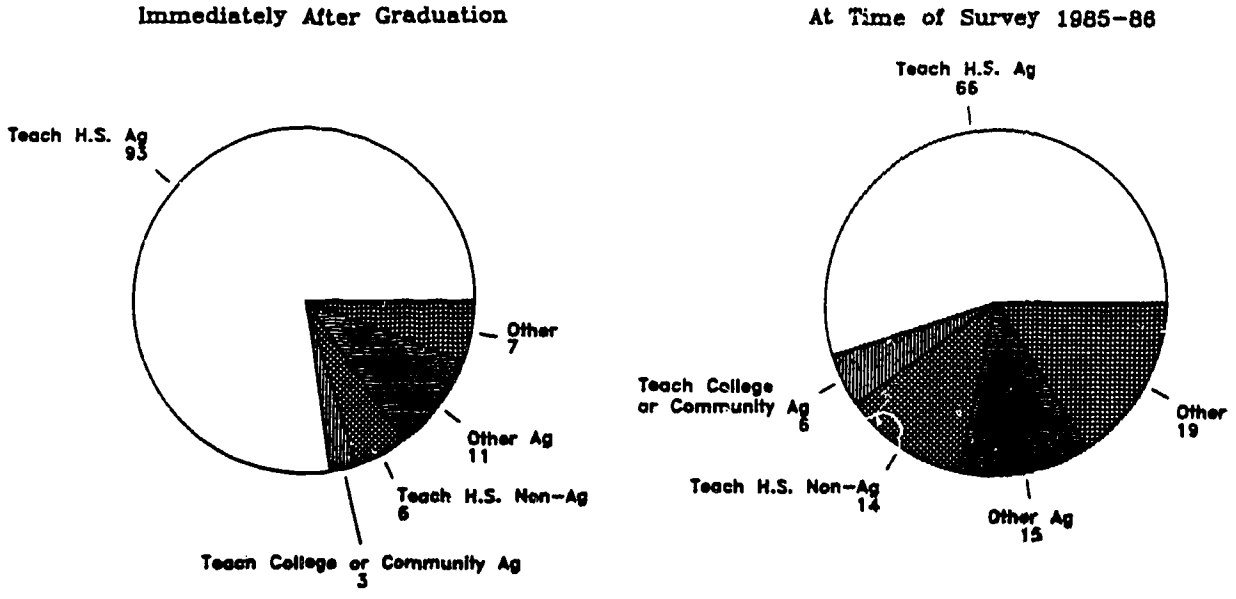
an additional 15% said they were influenced by their college agriculture teachers. The rest of the reasons for entering the profession included "wanted to improve agriculture" (8.3%), "desire to teach young people" (6.7%), peers (4.2%), parents or family members (4.2%), college counselors (4.2%) and a variety of miscellaneous reasons.

Job Placement

Of the 120 in the sample, 96 have taught agriculture. Ninety-three took teaching positions in high school agriculture programs; 78 the first year after graduation, 9 the second year, and 6 the third year or later. Sixty-six are still teaching high school agriculture, 63 of them in California. Additionally, three credential recipients obtained positions teaching agriculture in college or community programs immediately after graduation, and six currently teach in such programs. Twenty-four credential recipients who were placed in high school vocational agriculture programs have left the profession. Combined with the 24 who never taught, these 48 respondents currently fall into three major categories: 15 in agriculturally related non-teaching occupations, 14 teaching other subjects, and 19 in neither teaching nor agricultural occupations. Figure 6 illustrates the employment status of the survey respondents, both immediately after graduation and at the time of the survey.

This survey tends to over-represent members of the population who have taught or are teaching agriculture. This is because the original sample was supplemented with alternates who replaced subjects who could not be located.

Figure 6: Employment of 120 Survey Respondents



Since many of the respondents were found through high school records and information provided by colleagues, it was generally those that had never entered teaching that had to be replaced by alternates. Consequently, only 20% of the sample have never taught agriculture as opposed to 37% of the total California population of 715 who never taught agriculture.

Finding a teaching position in agriculture was easy for 70% of the population. However, there was a distinct difference in the experiences of men and women. While almost 80% of the men felt getting a job was easy only 59% of the women fell into this group. Women were twice as likely to express difficulty in finding a job. This reconfirms the possibility that some sexual bias and discrimination in hiring must exist. Seventy-one respondents, with no differences between the genders, reported that they received adequate assistance from their university placement office while looking for a job; only 12 were not satisfied.

Reasons for not Teaching

Although the number of respondents who decided not to pursue a career in vocational agriculture teaching is under-represented in this sample, some observations can still be made concerning them. This group, which consisted of 21 women and 3 men, reflected the greater likelihood that women will not teach high school agriculture. Of these, six took teaching jobs in another subject, 11 pursued non-teaching agricultural careers, and seven entered unrelated occupations. Ten members of this group, (nine women and one man) did not even look for a job teaching vocational agriculture. The others sought positions, but were unsuccessful.

The reasons for not teaching were varied, and many respondents had several motivations. Sixteen responses in some way indicated the lack of an acceptable job offer. The top response, mentioned 10 times, was that no job was offered in the desired location. Three others could not get a job offer in their chosen subject area, and another three gave no reason except that they simply could not get a job. Since these responses were all given by women, discrimination against women is suggested once again. Interestingly, all three males (and one woman) identified low salary as the reason for not teaching. But, because there are so few men to begin with, it may be dangerous to make many assumptions from this. Another reason for not teaching agriculture, mentioned by four people, was that they did not feel properly prepared to teach or had a bad student teaching experience.

Reasons for Quitting Vocational Agriculture Teaching

Despite the fact that some teachers were unable or unwilling to find employment as agriculture teachers, many who found a job did not remain in the profession. A fundamental question for those 24 respondents who left vocational agriculture teaching is "why?" Their responses revealed only one consistency. A third (eight respondents) said that their agriculture program was cut. Beyond this, responses varied widely. Three women started families and two others got married and changed plans. Two men and one woman quit because of low pay, a commonly held concern. The others each provided different reasons including finding a better job, returning to school, feeling inadequate for the job (a man's response), and difficulty with their school administration.

College Preparation for Teaching

A major concern of teacher educators is how credential holders evaluate their preparation for a career as an agriculture teacher. Teacher suggestions shown in Table 7 indicate that 21 (17.5%) could not think of anything that could improve their preparation. The major improvement that was suggested was for more FFA and extracurricular activities training. The ever present need for more hands-on farming experience was also a concern, particularly for women. The opportunity for more coursework and teaching experience also gained some attention from both sexes. Despite the plethora of references in the literature about the need or desire for female role models, only one woman mentioned this. None of the female respondents mentioned a need for women's support groups, assertiveness training classes or being made aware of possible bias against women in agriculture. The other responses ranged over a wide variety of issues.

Table 7

Suggested Improvements For Teacher Preparation

(n = 120)

Improvement Needed	No. of Responses
FFA Training	24
Nothing	21
More Hands-On Farm Experiences	17
More Teaching Experience	16
Learning to Budget Resources	14
More Coursework	13
Exposure to Reality	10
Time Management	10
Dealing with Administration/Politics	10
Learning to Discipline	8
Maintaining Interest	5
Curriculum Development	4
Dealing with Parents	4
Other	3

* Some respondents gave more than one response

While several respondents wanted more teaching experience, a vast majority (80.3%) of the teachers believed that the limited experience they did get as student teachers was satisfactory.

The teachers graded their overall teaching preparation quite highly. One hundred and three respondents (85.8%) ranked their overall preparation for teaching as good or excellent. Fourteen teachers (11.7%) believed their preparation was fair, and only three rated their preparation as poor.

Respondents were asked if, while they were still students, they had any special concerns about what they would encounter as a vocational agriculture teacher? Twenty-three teachers (12 males and 11 females) or 19.7% mentioned student discipline or rejection problems as their primary concern. Seven males and 11 females (15.4%) expressed concern over their lack of agricultural skills. Long hours were cited as a concern by 11 people (9.2%). A like number had no special concerns. It should be mentioned that seven women felt that their biggest obstacle was overcoming the tradition of men teaching agriculture and four indicated apprehension in dealing with the negative stereotypes of women in agriculture. Thus, 11 of the 60 females (18.5%) were concerned with overcoming barriers associated with the male tradition in vocational agriculture. However, none of these females suggested that their university preparation should have addressed these issues.

The issue of acquiring adequate hands-on skills is constantly recurring. Table 8 summarizes the experiences teacher candidates had while in college. The total number of responses in all the categories was 579, which is a mean of almost five areas of experience per student. Although there was little difference between men and women in the total number of hands-on experiences, there was a slight stereotyping in the types of experiences. For instance, fewer females than males had experiences in hands-on commercial farming. Of those who replied, 58.5% were male, revealing a weak negative association to the female variable ($r = -.18$). This suggests that commercial farm production is still male intensive, and that women are probably subjected to discrimination. Slightly more women (90%) had animal production experiences than men (80%). Likewise, women had more experience showing livestock. Men had the majority of the hands-on irrigation and farm mechanics experiences in college. This "hands-on"

variable was aggregated for later examination against other salient variables. It associated positively with both aggregate variables measuring pre-university experience (r =.31) and youth groups experience (r =.19).

Table 8

Hands-On College Experiences

(n = 120)

	No. of Responses	
Type of Experience	Men	Women
Internships	28	27
Commercial Farm Experience	38	27
Farm Mechanics	45	39
Plant Production	47	45
Animal Husbandry	48	54
Water Science and Irrigation	34	24
Natural Resources and Recreation	17	20
Preparing Animals for Show	40	46
Total	297	282

The Experience of Women as Students

The respondents were asked if they perceived a difference in the treatment of women while in college, and if so, was the difference positive or negative. Although for all five topics the majority of respondents saw no difference in the treatment of women, Table 9 shows a striking perception of negative differences in the opportunity for commercial farm experience. This area also reveals a distinct difference between men's and women's responses. The opportunity to work with farm equipment was a distant second in the perception of negative treatment. On the other hand, women were perceived as receiving much positive encouragement from professors and colleagues to take part in hands-on class experiences. Overall, women were more likely to see either negative or positive differences in their

treatment, while men were more likely to see no differences. However, except for commercial farm experience, no strong statistical associations existed between men and women.

Table 9

Perceived Difference in Opportunities for Women while in College

(n = 120)

	Positive			No Difference			Negative		
	M	W	%	M	W	%	M	W	%
Opportunity for Agricultural Internships	6	7	10.9	48	44	77.3	6	8	11.8
Opportunity for Commercial Farm Experience	8	1	7.6	37	35	60.5	15	23	31.9
Encouragement to take part in hands-on class work	15	28	36.1	42	28	58.8	3	3	5.0
Opportunity to work with heavy animals	13	16	24.4	43	33	63.9	4	10	11.8
Opportunity to work on farm equipment	12	15	22.9	36	31	56.8	12	12	20.3

Some of the comments made by respondents on this subject provide insight into these quantitative results. Thirteen women chose to give their opinions about the treatment of females. "Women were treated differently," said one disgruntled teacher, "we weren't wanted." Another said, "Women belonged in the home and couldn't manage animals." For two, the difference was a problem with one or two males. "My master teacher and his subordinates were not receptive. They were real macho guys, both overtly and covertly," reported one, while another said, "Some instructors had negative attitudes about women entering the field." Other negative comments included, "there was preferential treatment of men in the meat lab," and

"women were not provided enough information about employment or career opportunities." A couple of responses specifically mentioned mechanics classes. Certain study variables showed a negative correlation between women and participation in farm mechanics. One woman said that there had been, "a lack of farm mechanics," when considering the difference in treatment between men and women. Another said, "especially in the mechanics classes."

On a more positive note, two women spoke of encountering only an initial barrier. "At first," explained one informant, "a woman must prove herself, but it's fine after that. I had no problems." Noting this transformation, another woman said, "Their (the men's) attitudes were negative at first, but that wore off in a semester's time." One woman did not notice a difference because "there were only two men in my program." Finally, one said there was no difference, that it was "equal, they wanted us to match the men in skills," while another felt that there was "no real distinction in treatment between men or women, but there should've been for our sakes."

Ten men expounded when asked if they perceived a difference in the treatment of women in their college program. The responses ran the gamut, from "having to endure sexual harassment" to "there are more opportunities for women--a demand of the times." Regarding negative treatment, one man said, "Females are subjected to more discouragement in agricultural education than encouragement." Another male simply said, "women are given a hard time." One who saw the issue more subtly said, "Teachers were slightly more interested in the male students." Contemplating what he saw as an unequal condition, one male observed, "Women were present a lot more and did most of the work in club activities, but once in the job market the men received more support." Those who saw the difference in treatment as positive included one teacher who said, "The teachers liked women in the class and made sure they were taken care of." Agreeing with this contention, another teacher said, "They were given every opportunity, the teachers weren't biased." Two men saw a preference in treatment in two special areas; one said that there was "positive encouragement for women to enter rural recreation," and another said, "There's a positive push on towards women showing animals, and in recruitment."

A categorization of the specific types of difficulties faced by women reveals that seven (11.9%) of the females who replied reported the presence of discrimination. Nineteen (32.2%) of the 59 females who responded said that they had experienced inappropriate off-color jokes or remarks. The feeling of patronism from professors or male students was experienced by 23.7% or 14 females. This patronism variable also showed a positive association with the off-color jokes variable (r =.47), indicating that women who perceived patronism were also subjected to inappropriate remarks. However, when asked if they "found those involved to be supportive of me," a surprising 89.8% or 53 of the 59 females answering stated yes. This may suggest that many women experienced isolated incidents of discrimination, patronism, or off-color remarks, but found their overall experience in a nontraditional program to be positive.

When asked to elaborate some women said that a little resentment or a few crude remarks from men was to be expected, but a few unpleasant occurrences did not discolor their attitudes about what otherwise was a supportive environment, a condition prompting one informant to say, "Most men were pretty good, but there's always one jerk." Others reported similar, singular occurrences. "There's always one or two men who feel threatened by the competition. But a lot of times they looked to you for help--I guess they were alright." In the same vein, another added, "There was some resentment from males during competition." Another exclaimed, "You have to prove you can do the job." Despite a reassuring personal experience, one woman said, "I got lots of support from my master teacher, but the other women didn't."

On the other hand, some women perceived no impartiality at all. The most fascinating report came from one of the earliest women to receive a credential who reported receiving "nothing but support." One woman stated laconically that she thought the treatment of women in her program was, "impartial," whereas another said that these problems were, "not specifically aimed at women." Another female said she, "never experienced bias as a woman in the program, but I think it depends upon an individual's attitude." One women said, "I never felt that I wasn't an equal, so it was never a problem with me." These incongruities suggest that incidences of discrimination and bias exist in certain situations, but it is not a

consistent problem for all women.

The above findings are especially illuminated by the association between the encouragement variable and teacher satisfaction (r =.33). In other words, females who saw fellow male students and significant other males as giving them positive support in the college program were also more likely to be satisfied with their career choice. This correlation upholds the exhortations in the literature to provide support for women in nontraditional occupations.

The Experience of Women as Teachers

All college students must eventually proceed out of the realm of the educational setting and enter the "real world." For female vocational agriculture teachers this means leaving one nontraditional setting only to enter another one, but now they are even more of a minority. As in the university setting, their experiences after graduation varied widely. For example, the effect of being female in the job search for a vocational agriculture teaching position is divided between being a deterrent to actually being a benefit. For nine women (25%), being female was a benefit (positive), for 19 (53%) there was no effect, but for eight (22%) being female was a hinderance in the job search. Interestingly, when asked to elaborate, some of those who identified their sex as a positive influence reported that the department or school district, or in one case a female principal, specifically wanted women. "The district was all males, but they had three openings when I was interviewed, and three females, including me, were hired." Another informant said, "My co-worker wanted a woman on the staff." Similarly, one woman perfunctorily reported, "It was a four-person department, and they hired two other ladies before me." On the other hand, those who cited their sex as having a negative effect often reported encountering stereotypical and biased rationale against women teachers of agriculture. Speaking metaphorically, one teacher said, "I had to jump through the hoop more than a man with the same qualifications would have had to." Still another said, "I almost didn't get a job because of being a woman." The worst account given by a woman who reported having a "difficult time finding a position," and said she encountered, "hostile atmospheres in interviews. Later," she reported, "I had a hard time being accepted by the

community." For one female it was, "negative for the first year and a half until I met a principal who wanted a woman." One found that administrators were concerned that she lacked enough strength, while another said, "There is a bias against women in agriculture."

Many of the informants had ambivalent feelings, seeing both good and bad in being a female job seeker. One woman simply stated that being female, "in some respects gave me an added push and in some ways it detracted, but overall the positive outweighed the negative." Another women said that, "some parents questioned a woman's presence, but the staff was always supportive." A third teacher also had a story of contrasts to tell. "The interviewers in the San Diego area told me they didn't want a woman," she said, "but the Los Angeles area was actively recruiting women. Up north, it's (being female) a detriment. The cities are more open to women teachers than the rural areas." The latter observation of a difference in attitude among the city and country schools toward women agriculture teachers was identified by others, including one understanding person who said, "I teach in a very rural community comprised of old fashioned men--I had to prove myself." Lastly, one female saw good in what some would consider a disadvantage, "For one thing, if you're female all the boys in class think they can do it if you can. It's not the same thing if a big, ole man does it. I think it inspires those who'd otherwise fail."

Finding a job however, is only the first step in gaining acceptance. Once on the job, 23 women said they had not encountered difficulties, but 15 responded that they had. Of those, 12 reported that their problems were due to discrimination, and two reported problems due to physical limitations. One female said, "Look, I'm at a very rural school, and I'm the only female teacher in the entire county. Definitely a place where women are not accepted. I'm always being tested." Another report by a woman teaching at a rural school began, "My students' fathers are area farmers, and I don't think they like me being a lady." Others reported problems with male students, teachers, administrators or all of the above. One teacher who had experienced gender related difficulties on the job reported having problems with, "male students and teachers, and her lack of strength." One reported problems with "a few parents--its a man's world." Consider the annoyance one teacher felt when she said, "Yes, the questioning attitudes people have

toward me and my skills compared to a man." One teacher, said that she "personally feels that women experience more problems than a man, but, on the other hand, some things about being a woman are positive, like respectful male students." The varied experiences of women pursuing agriculture credentials, seeking employment, and working in a nontraditional atmosphere leads to the conclusion that the role of female vocational agriculture teacher is changing. Much discrimination and inequity exists, but there are many women who have escaped these problems.

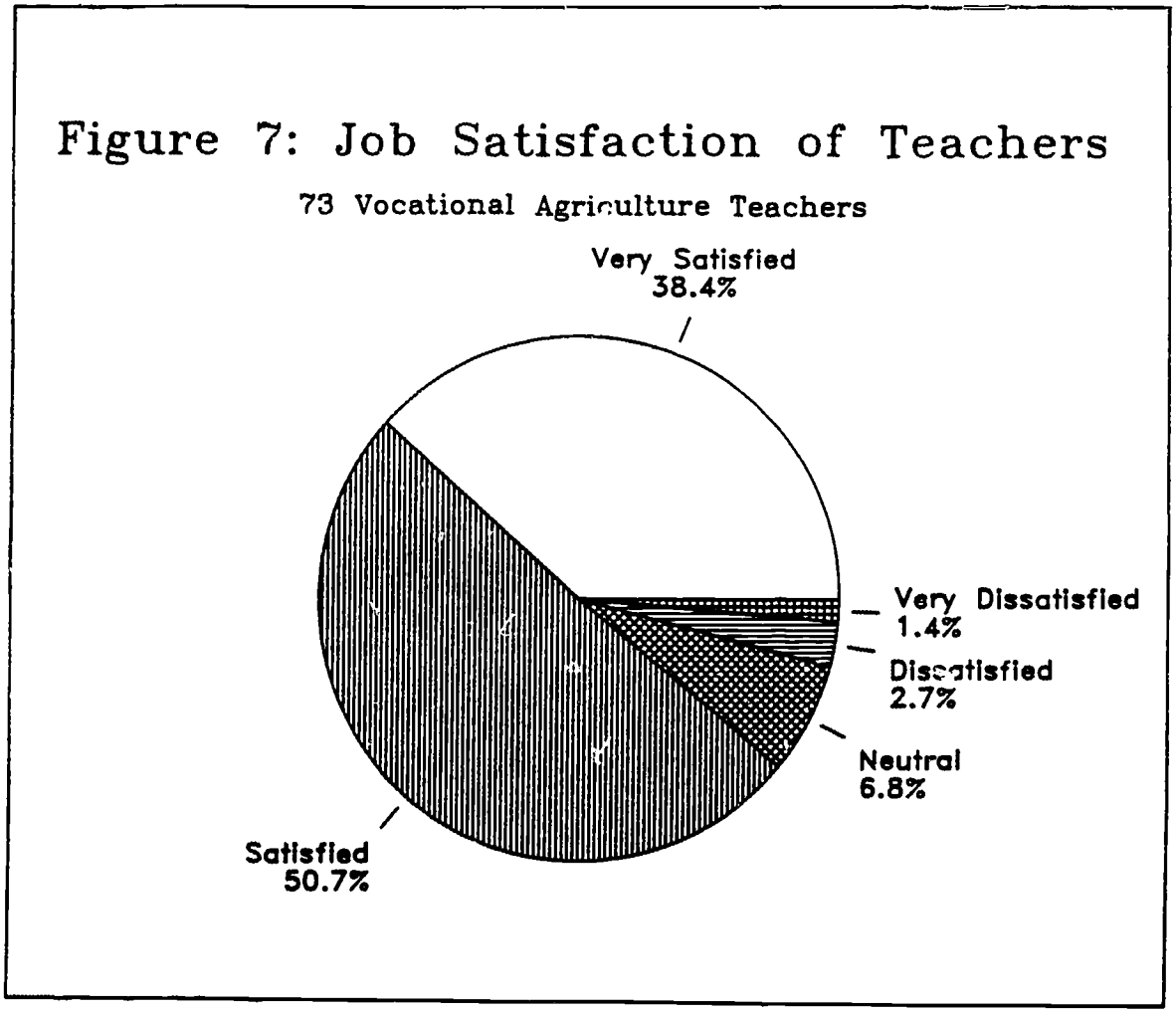
Women in a Single Person Department

The most surprising finding in the California study concerns the final hypothesis regarding single teacher departments. Rather than being under-represented in single person departments as expected, women were equally represented. This trend persisted among women who changed schools, suggesting that teaching in a single person department poses no threat to female teachers or the people hiring them.

Satisfaction With Teaching

Despite the problems of some female vocational agriculture teachers and the discouraging news concerning the length of tenure of both male and female teachers, the level of satisfaction among those credential holders still teaching was extremely high. In fact, almost 90% of them reported they were satisfied or very satisfied with their career choice (Figure 7). Only three respondents expressed that they were dissatisfied or very dissatisfied, and the remainder expressed neutrality. To further confirm this finding, 80% affirmed that if they had the choice to make over again, they would still enter agriculture teaching. Women's satisfaction level was as high, or a bit higher, than men's.

Many researchers and educators alike contend that particular personalities are attracted to teaching. Among the personality characteristics ideal for a teacher would be a love or desire to work with young people. Indeed, this was the favorite aspect of the job for 67 of the 96 respondents who have taught agriculture. Nine reported "flexibility and variety," seven said FFA activities, five reported the "challenge" of teaching and four said "everything" about vocational agriculture was their



favorite part of teaching. Since FFA is a student oriented component of vocational agriculture education, one can conclude that 75 of the responses to this question involved a desire to work with young people, an overwhelming majority (78%). Twenty-four respondents volunteered their second favorite part of the job also. These responses included 11 who enjoyed working with FFA as their second favorite part of the job and two who reported working with students. No apparent gender-related differences existed in the responses.

The literature indicates that vocational agriculture teachers often fall prey to unsupportive administrators, staff, academic colleagues, and excessive time demands. When asked their least favorite part of teaching, 30 teachers (31%) reported dealing with the bureaucracy, 24 (25%) indicated

a lack of support from the administration, 23 (24%) identified excessive time demands, while only 7% said that dealing with remedial or unmotivated students was the least savory aspect of teaching. The latter confirms the literature which asserts that dealing with remedial or unmotivated students appears to have no effect upon teacher satisfaction. Furthermore, only two respondents, both men, listed lack of pay or prestige as a negative factor.

Favorite Subjects

Those who taught or are teaching agriculture rated their feelings about teaching each of the seven taxonomic areas of vocational agriculture. Table 10 summarizes their responses. Overall the most popular subjects were FFA and Animal Science. These two subjects were particularly popular with women. Furthermore, FFA, Plant Science, and Animal Science were taught by virtually every teacher suggesting that these are the most common subjects offered by the high schools. Food Processing and Production and Natural

Table 10

Level of Enjoyment of Teaching Various Subject Areas

98 Current and Past California Vocational Agriculture Teachers

	Men				Women				Overall			
Subject	Enjoy	Indifferent	Dislike	Never Taught	Enjoy	Indifferent	Dislike	Never Taught	Enjoy	Indifferent	Dislike	Never Taught
Ornamental Horticulture	61%	11%	3%	25%	71%	10%	5%	15%	65%	10%	4%	20%
Agricultural Business	51	26	2	21	46	22	2	29	49	25	2	25
Natural Resources and Rural Recreation	39	9	5	47	34	7	12	56	36	8	4	51
Agricultural Mechanics	86	7	0	7	63	5	0	32	77	6	0	17
Plant Science	77	14	7	2	78	7	7	7	77	11	7	4
Animal Science	71	12	9	7	89	6	0	6	80	9	5	6
Food Processing and Production	16	18	2	65	17	15	0	68	17	17	1	66
FFA Work	77	12	7	4	88	10	0	2	82	11	4	3

Resources and Rural Recreation were unfamiliar to most of the teachers, suggesting that these subjects are not widely taught.

Agricultural Mechanics was the most popular area of teaching for men, with no one reporting dislike for this area. The fact that no women disliked this area is rather surprising, considering the stereotypes of women not performing well in masculine professions. However, a third of the women had never taught mechanics, compared to only 7% of the men. It could be that those women who dislike or lack skills in mechanics, are not expected to teach it.

Long Term Career Goals of Teachers

Given the high level of job satisfaction of the current agriculture teachers it is not surprising that the majority of them plan to continue teaching agriculture. Table 11 indicates that this is the desire of 41 (56%) of the respondents. This figure included 26 males and 15 females, a gender ratio which roughly represents the current percentage of male and female teachers in the 10 year period. Furthermore, almost half of those who have other career goals want to continue teaching agriculture, but in a more advanced setting (community college or university). Most of the others are working toward other positions in either education or agriculture. In

Table 11

Long Term Career Goals

73 Current Agriculture Teachers

Continue Teaching Agriculture	56%
Teach Agriculture in a Community College	21
Teach Agriculture in a University	1
Pursue Another Area of Agriculture	8
School Administration	4
Leave Agriculture and Teaching	4
Graduate School	3
Other	3

fact, only three teachers (4%) want to leave agriculture and teaching altogether. This finding seems to indicate that once the initial "weeding out" is completed, those that remain as agriculture teachers are happy with their career choice and dedicated to the profession.

Agriculture Teachers' Background

Some of the literature mentions that a teacher's background is a critical element that helps determine satisfaction and longevity in the profession. Background is particularly important in vocational agricultural education where so many skills usually learned prior to college are expected and needed from a teacher.

Less than half of the vocational agriculture teachers in the sample grew up on farms, but a majority did come from a rural environment. Twenty-seven males and 23 females or 41.7% indicated that they spent most of their youth in a rural farming area, and an additional 20%, or 12 males and 12 females, grew up in a rural non-farming area. So, although a substantial minority of 46 respondents (38.3%) described their childhood environment as urban, the majority of the credential holders in this study have a rural background (61.7%), and many have farm experience. Since most of California's population is located in urban areas, this supports the hypothesis that background has some influence upon a person's career aspiration.

Pre-college agricultural and youth group experiences are summarized in Table 12. It is interesting to note that men and women had approximately the same number of youth group experiences, but that men had approximately 38% more experiences in agriculture than women.

The most popular activity among the agricultural experiences was to raise a garden or livestock as a child. Almost 90% had done this. Furthermore, this is the only agricultural category in which women outnumbered men. One of the largest differences between the genders was in commercial farm experience which involved fully twice as many men as women. Another stark difference was found in the area of farm machinery operation, 70% of the males and 44.1% of the females were involved, suggesting that the stereotype hindering women from working in mechanics may have prevented some women from acquiring mechanical skills.

Table 12

Pre-College Agriculture and Youth Group Experiences

(n = 120)

	No. of Responses	
	Men	Women
Agricultural Experiences		
Helped out on Farm	41	34
Raised a Garden or Livestock	52	55
Commercial Farm Experience	28	14
High School Agriculture Classes	40	28
SOEP	35	24
Farm Machinery or Irrigation	42	26
Part-time Agricultural Experience	49	39
Nursery/Landscaping	12	0
Veterinary/Animal Hospital Experience	7	5
Other	15	7
Total Agricultural Experiences	321	232
Youth Group Experiences		
4-H Member	19	34
FFA Member	37	24
FFA Officer	27	19
Boy/Girl Scouts	34	45
Judging Teams	33	28
Church Youth Groups	25	30
YMCA/YWCA	18	3
Student Government	24	34
Athletic Teams	48	35
Other	16	31
Total Youth Group Experiences	281	283

The socialization of teachers begins in childhood and adolescence. Consequently, membership in youth groups is an integral part of the process. Although men were more likely to be involved in FFA, an agriculturally related youth group, women were more likely to be active in 4H, Scouts, or student government. There were no other major differences in activities, other than the absence of female involvement in the YWCA.

The above variables are considered indicators which may help determine the success or failure of a teacher based on their absence or presence. These factors were aggregated into two sole variables--pre-university agriculture experience and youth group experience. Each was correlated with other pertinent variables in order to determine if any significance existed between them. A negative correlation was found between pre-university experience and the sex variable (r =-.34), a significant finding in itself. This suggests that fewer women than men gained skills through hands-on experiential activities before entering college. The youth group aggregate variable was modestly correlated with the occupational variable (r =.18) implying that those who took teaching positions in vocational agriculture are slightly more likely to have been involved in clubs and organizations as a youth than those who did not teach. Another interesting find was the relationship between the two aggregate variables. A strong positive correlation of (r =.47) was found, suggesting those who worked in agriculturally related activities also tended to be involved in youth groups. This confirms the beliefs expressed in the literature of the importance of the experiential element of vocational education.

The differences between respondents raised in an urban setting and those in non-urban areas proved startling when cross-tabulated with pre-university experiences. The urban teachers had a mean of 3.4 experiences and a mode of four. On the other hand, the rural/farming and rural/non-farming teachers represented a mean of 5.3 with a mode of seven. Furthermore, several of the pre-university agriculture experience variables had a high correlation to the urban versus rural upbringing variable (positive movement is away from urban). These included working on a relative's or friend's farm before college (r =.39), raising a garden before college (r =.25), high school agriculture classes (r =.39), SOEP involvement (r =.39), worked on farm mechanics prior to college (r =.43), and part time agriculturally related employment before entering college (r =.30). This suggests, quite understandably, that those raised in a rural area had more of the experiences expected for a career in teaching agriculture.

Rural Versus Urban Characteristics

In the research process new perspectives and viewpoints can emerge as

initial hypotheses and questions are tested and answered. The researchers were concerned with the influence of background experiences on the success or failure of vocational agriculture teachers, and whether potentially successful teachers can be selected on the basis of experiences and skills before the credentialing process begins. During this process an increasingly evident relationship between the urban and rural aspects of teacher's background surfaced.

There appears to be a negative correlation between the basic, conventional components of vocational agriculture; plant and animal science, farm mechanics, and other related variables on the one hand; and involvement with the more urban components of agriculture; ornamental horticulture, natural resources and parks, and landscaping on the other hand. This dichotomy between the conventional, hard-core rural agriculture and the urban landscaping and recreation oriented activities can be illustrated through a variety of correlation coefficients. Table 13 illustrates some of the significant negative associations between rural and urban components, and as well as some of the significant positive correlations between various rural components and between various urban components.

Having been a member or officer in FFA, a traditional aspect of vocational agriculture, correlates positively with many of the more rural aspects of agriculture, and negatively with the urban aspects (Table 14). Furthermore FFA membership correlates positively with most of the hands-on skills components necessary in agriculture teaching. This supports the literatures' contention that FFA is an important aspect of vocational agriculture and deserves to be serviced by teachers knowledgeable in its activities and benefits.

CONCLUSIONS

The findings support in general the following conclusions:

1. There has been a substantial decrease in the numbers of teachers of agriculture credentialed nationwide and this decline is primarily among men. Numbers of female credential holders has increased slowly nationwide, and more quickly in California. The east and west coasts have a greater

Table 13

Correlations Between Various Urban and Rural Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PRE-COLLEGE EXPERIENCES																						
1. Raised in rural area																						
2. Helped on farm	.39+																					
3. Garden or livestock exp.	.25+	.12																				
4. Commercial farm exp.	.40+	.28+	.20*																			
5. H.S. agriculture classes	.39+	.05	.24+	.18*																		
6. SOEP	.39+	.14	.29+	.15	.67+																	
7. Mechanics and irrigation	.43+	.37+	.18*	.43+	.25+	.25+																
8. P-T agricultural job	.30+	.31+	.21*	.25+	.20*	.25*	.54+															
9. 4-H member	.42+	.17	.15	.09	.27+	.37+	.20*	.08														
10. Scouts member	-.23*	-.09	-.09	-.36+	-.13	-.21*	-.28+	-.24	-.17													
11. Judging team experience	.30+	.06	.19*	.09	.69+	.67+	.28+	.20*	.37+	-.18												
12. YMCA/YWCA	-.21*	-.10	-.05	.03	-.04	.03	.03	-.02	-.19*	.01	.06											
COLLEGE EXPERIENCES																						
13. Commercial farm exp.	.07	.19*	.11	.22*	.04	.10	.17	.28*	.01	.03	.10	.16										
14. Horticulture exp.	-.04	-.07	.13	.09	-.03	-.12	.03	.00	-.03	.11	-.26	.09	.20*									
15. Livestock exp.	.12	.06	.08	.11	.10	.23*	.10	.12	.19*	-.16	.19*	.01	.08	-.26+								
16. Water science, irrigation	-.04	.09	.12	.23+	.04	.08	.21*	.02	-.09	-.08	.05	.34+	.19*	.14	.17							
17. Ranching	-.10	-.14	.13	.04	-.08	-.12	.03	-.06	-.13	.17	-.13	-.04	.09	-.07	.16	.04						
ENJOYMENT OF TEACHING																						
18. Enjoy Horticulture	-.23*	-.21	-.06	-.12	-.16	-.09	-.19	-.14	-.07	.08	-.21	.22*	.03	.18	-.21*	.10	-.28+					
19. Enjoy Agbusiness	.13	.10	.07	.13	.33+	.46+	.16	.15	.20*	-.13	.39+	-.26	.19	-.28+	.19	-.12	.12	-.02				
20. Enjoy Natural Resource and Rural Recreation	-.24*	-.12	-.02	-.01	-.19	-.27+	-.17	-.13	-.26+	.02	-.27+	.10	-.22*	-.06	-.13	.06	.14	.01	-.15			
21. Enjoy Ag Mechanics	.18	.06	.17	.10	.12	.10	.13	.10	-.02	-.16	.06	-.03	.24*	.02	.14	-.06	.04	-.02	.20	.15		
22. Enjoy Animal Science	.15	-.05	.18	.13	.11	.13	.17	.20	.10	-.04	.21*	-.18	.10	-.40+	.40+	-.13	.15	-.23*	.28+	-.01	.17	
23. Last job was rural	.23*	.09	.11	.02	.21*	.20*	.12	.14	.20	-.05	.18	-.04	-.04	-.10	.18	-.07	-.11	-.27+	.22*	-.13	.20	.16

* .05 level of significance
\+ .01 level of significance

Table 14

Correlations between FFA Experiences and Other Variables

	FFA Member	FFA Officer	Satisfied with Teaching FFA
Hands-on Hort. Experience	-.13	-.19*	-.23*
Scouts as a Youth	-.18*	-.19+	-.01
Other Extracurricular Involvement	-.21*	-.12	.11
Enjoy Teaching Recreation and Natural Resources	-.33+	-.24+	-.05
Female Involvement	-.22*	-.14	.14
Raised Rural	.41+	.32+	.19
SOEP Experience	.80+	.73+	.04
4-H Member	.34+	.37+	.20*
Pre-college Farm Mechanics	.35+	.27+	-.07
Pre-college Judging Teams	.80+	.67+	.07
Pre-college gardening	.25+	.22+	.19
Pre-college P-T Farm Work	.24+	.24+	.21*
Pre-college Farming	.10	.19+	.04
Other Pre-college Agriculture Experiences	.18*	.17	.10
College Farm Mechanics Experience	.19*	.14	-.12
College Livestock Exp.	.15	.24+	.24*
Enjoy Teaching Animal Science	.17	.23+	-.23+
Enjoy Teaching Agbusiness	.41+	.37*	.14
Last or Current Teaching Job Was Rural	.23+	.23+	.20*
Overall Teacher Satisfaction	-.06	-.02	.23*

* .05 level of significance
\+ .01 level of significance

percentage of females and may be bellwether states.

2. Placement of females continues to lag that of males, and does not appear to be improving, as evidenced in both the national and California studies.

3. The drop-out rate for teachers of agriculture appears to be high in California. While leaving teaching means a higher paying job for many, the fact that only two-thirds who prepare to teach take jobs, and a third of these were gone by 1985 is disturbing to many. Nationwide data on placement and attrition is needed.

4. There is no difference between men and women in length of tenure in the California study. This refutes a common belief that females will only be temporary in the labor force. Again, nationwide data on longevity is needed for further consideration.

5. The data seems to indicate in the California study that the commonly held notion about the inability of females in handling a single person teaching department is erroneous. Contrary to this assumption, some women appear to prefer a single teacher assignment.

6. There is still discrimination and reluctance in the hiring of female teachers in California and nationwide. The causes of reticence and retrenchment should be investigated further.

7. Extracurricular agricultural activities, i.e., SOEPs and FFA, are not only essential to vocational agriculture, but also as requisites for teacher preparation. The decline in this area, due to legislative considerations or teacher apathy, should be reversed. The concern that females lack skill could be rectified by promoting these activities and insuring the involvement of female students. The researchers conclude from studying the movement of selected variables that those teachers who report pleasure in teaching in a particular area usually have some experiential background in the subject matter, giving them expertise and appreciation of the subject.

8. The possible relationship between background experiences in agriculture and upbringing in a farm atmosphere encourages the idea that vocational agriculture teachers bring with them a thorough framework and knowledge of agricultural practices before entering a credential program. Vocational agriculture teachers should concentrate on promoting the

advantages in gaining experience both in activities and organizations in agriculture both on and off campus.

9. There appears to exist, in the California sample, a dichotomy between those with background and preparation experiences in production-type agriculture and those with horticulture/landscape/recreation/urban characteristics. Those students specializing in horticulture, parks and landscaping should be directed toward pursuing positions at urban schools. Matching an applicant to a location more suitable to his or her skills and interests will help eliminate discouragement and teacher attrition. Women who want to work at rural schools should be educated and prepared for possible resistance and retrenchment against a female agriculture teacher by the community, school and students.

10. It appears that women are still being denied equal access to certain activities and experiences considered masculine, particularly mechanics. Females should be encouraged to partake equally in opportunities to work with farm equipment and training in mechanics in vocational agricultural education.

11. Production agriculture is still off-limits to women. However, for the sake of breaking down the barriers and promoting equal opportunities, college departments should seek to insure equal access for women to participate in commercial agricultural internships sponsored through the institution.

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"Should We Encourage Women to Enter Agricultural Education?"

APPENDIX A

Nationwide Survey Form for Teacher Educators

UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

DEPARTMENT OF APPLIED BEHAVIORAL SCIENCES

DAVIS, CALIFORNIA 95616

Institution: _____

Location: _____

Survey of Graduates in Agricultural Education

1. Please record the number of students (by gender) who have received teaching credentials in agriculture in each of the past three years. Also indicate how many were available for teaching positions and the number placed by September 1, 1984.

	# Graduated		# Available for Placement		# Placed	
	Female	Male	Female	Male	Female	Male
1981/82						
1982/83						
1983/84						

2. What do you see as the long term trends in the female/male ratio of teachers in agriculture? Note: Mark only one of the responses given below:

_____ a. The number of female teachers will remain low relative to male teachers with little if any change.

_____ b. There will be a modest or slow increase in the number of female teachers relative to male teachers.

_____ c. There will be a fairly rapid increase in female teachers but it will nevertheless level out below the number of male teachers.

_____ d. The number of female teachers will equal the number of male teachers.

_____ e. The number of female teachers will exceed the number of male teachers.

3. What has been your general success in placing female graduates as opposed to males?

Mark only one response:

_____ a. Not good since they are harder to place.

_____ b. Not good except in a few areas like horticulture.

_____ c. Fair since "barriers" to their employment have for the most part broken down although men are still easier to place.

_____ d. No problem in placing them if they have as good or better qualifications as the male graduates and are willing to be flexible in accepting assignments anywhere.

_____ e. Equally good as male graduates.

_____ f. Easier to place than male graduates.

4. Please mark any particular problems/concerns you have experienced which are unique in placement of female teachers.

Mark as many of the following as are applicable to your situation.

_____ a. No special problems or concerns different from that experienced by male teachers.

_____ b. Generally harder to place.

_____ c. Negative stereotypes of female teachers.

_____ d. Lack of mobility.

_____ e. Lack of mechanical/shop skills/practical skills.

_____ f. Family constraints that males do not have.

_____ g. Difficulty of females teaching in one person departments.

_____ h. Tendency of females to view teaching as short term.

_____ i. Lack of physical strength or possibility of job related injuries.

_____ j. Discipline problems in the classroom.

_____ k. Please list any other problems you noted:

_____

_____

_____

5a. What do you see as the trends in your state over the next five years in the demand for teachers of vocational agriculture?

_____ increase (percentage _____)

_____ remain the same

_____ decrease (percentage _____)

b. What has been the general trend in demand for vocational agriculture teachers in your state in the past five years?

_____ increase (percentage _____)

_____ remain the same

_____ decrease (percentage _____)

6. Ordinarily, what proportion of the teachers you prepare obtain/take jobs in vocational agriculture?

_____ 90-100%

_____ 80-90%

_____ 70-79%

_____ 60-69%

_____ 50-59%

_____ below 50%

7. What has been the trend in your state in the gender composition of students holding leadership positions in FFA over the past five years?

_____ Change in proportion of females from _____ to _____%.

_____ No change

8a. In what section of the US do you believe there is the most opportunity for female agriculture teachers? Check one response.

_____ East

_____ Central

_____ South

_____ West

_____ No difference since its the same all over.

b. Why do you think this?

9a. In what section of the US do you believe there is the least opportunity for female agriculture teachers? Check only one response.

_____ East

_____ Central

_____ South

_____ West

_____ No difference since its the same all over.

b. Why do you think this?

10. Currently what percent of the total number of teachers of agriculture in your state are female? (If you are not certain make the best guess you can.)

_____%

11. If there is any additional information you would like to contribute, please use this space. If you need more space, please use the back of this page.

Please return to O. E. Thompson, Department of Applied Behavioral Sciences, University of California, Davis, 95616 by September, 1984.

Thank you very much for your assistance with this portion of our study.

APPENDIX B

Questionnaire for California Telephone Survey

Sex _____

VOCATIONAL AG ED QUESTIONNAIRE

QUESTIONS FOR EVERYONE:

1. If you are not teaching vocational agriculture, what is your current occupation? _____

_____

2. How would you describe the setting in which you spent most of your youth. (READ THE RESPONSES)
   _____Rural farming area
   _____Rural non-farming area
   _____Urban

3. What types of experiences did you have in agriculture before entering college? (READ THE RESPONSES)
   _____Helped out on relative's or friend's farm
   _____Raised a garden or livestock
   _____Full-time commercial farm experience
   _____High school agriculture courses -- How many semesters? ____
   _____SOEP (Supervised Occupational Experience Program)
   _____Worked with farm machinery or irrigation methods
   _____Part-time farming or agriculturly related work experience
   _____Other _____

_____

4. What types of youth group experiences have you had? (READ RESPONSES)
   _____4-H member
   _____FFA member
   _____FFA officer
   _____Boy/Girl Scouts, Camp Fire Girls
   _____Judging teams
   _____Church youth organizations
   _____YMCA/YWCA
   _____Student government
   _____Athletic teams
   _____Other _____

5. What or who influenced you to enter your vocational agriculture teaching credential program? (OPEN, STESS WHAT & WHO)

circle one

_____High school counselors (sex: m or f)
_____High school teachers (sex: m or f)
_____College counselors (sex: m or f)
_____College teachers (sex: m or f)
_____College advisors (sex: m or f)
_____Parents
_____High school agriculture classes
_____Other high school classes
which ones? _____
_____

_____Peers
_____Wanted to be different
_____FFA experiences
_____Previous ag experiences
_____Desire to teach young people
_____Wanted to improve agriculture
_____Chance
_____Couldn't get into vet school

_____Others_____

_____

6. Which of the following hands-on agricultural experiences did you have in college? (READ RESPONSES)

_____Internships in agriculture/farming
_____Commercial farm experiences
_____Farm mechanics experience
_____Plant production experience
_____Animal husbandry practices
_____Water science and irrigation experiences
_____Natural resources and rural recreation experiences
_____Preparing animals for show
_____Other _____

_____

7. While in college, did you perceive a difference in the treatment of women in any of the following respects? If so, specify if the difference was positive or negative. (READ RESPONSES. ANSWER CODE: NO=BLANK, POSTIVE=P, NEGATIVE=N.)

_____Opportunity for agriculture internships
_____Opportunity for commercial farm experience
_____Encouragement by professors and classmates to take part in hands-on class experiences
_____Opportunity to work with heavy animals
_____Opportunity to work on farm equipment
_____Other _____

_____

8 . (FOR WOMEN RESPONDENTS) As a female in a traditionally male program, did you experience any of the following? (READ RESPONSES)

_____Sexual harassment
_____Inappropriate off-color jokes or remarks
_____Patronism from professors or male students
_____I found those involved to be supportive of me
_____Other _____

_____

9. What special concerns did you think you might encounter as a vocational agriculture teacher? (OPEN)

_____Student rejection/discipline problems
_____Concern about lack of agricultural skills
_____Long hours
(WOMEN ONLY)
_____Overcoming the tradtion of men teaching agriculture
_____Dealing with negtive stereotypes of women in agriculture
(ALL)
_____No special concerns
_____Other _____

_____

10. What could have been done to better prepare you for vocational agriculture teaching?

_____More coursework
_____More female role models
_____More teaching experience
_____More help from faculty and staff
_____More hands-on farming experience
(RESPONSES FOR WOMEN ONLY)
_____Women's support groups
_____Assertiveness training classes
_____More awareness of possible bias against women in agriculture
(ALL)
_____Other _____

_____

11. Do you think that your student teaching experience was satisfactory in preparing you for teaching vocational agriculture?

_____yes _____no

12. How would you evaluate your overall preparation for teaching?

_____Excellent
_____Good
_____Fair
_____Poor

FOR RESPONDENTS WHO NEVER TOOK A TEACHING JOB:

13. Did you look for a job teaching vocational agriculture?
_____yes _____no
If yes, did you receive adequate assistance while looking for one?
_____yes _____no

14. Why did you choose not to teach agriculture after receiving your credential?
_____Better employment offer
_____No teaching job was offered in my subject area
_____No teaching openings near my home
_____Don't like teaching
_____Don't like working with young people
_____Teaching salary was too low
_____Lack of prestige
_____Lack of opportunity for career growth
_____Didn't feel competent or properly prepared
_____Other _____

_____

FOR RESPONDENTS WHO ARE TEACHING, BUT NOT IN VOCATIONAL AGRICULTURE

15. Why did you get a dual credential? (OPEN)
_____Fearful that I wouldn't like teaching agriculture
_____Concerned that I couldn't get a job teaching vocational agriculture
_____Felt I would be more qualified in another field
_____Flexibility
_____Wanted more opportunities in a specified location
_____Wasn't sure I could handle the workload in agriculture
_____Other _____

_____

FOR RESPONDENTS WHO HAVE TAUGHT VOCATIONAL AGRICULTURE

16. How difficult was it for you to find a job teaching agriculture? (READ RESPONSES)
_____Difficult
_____Somewhat difficult
_____Somewhat easy
_____Easy

17. Did you get adequate assistance from the university placement service while looking for a vocational agriculture teaching job?

_____yes _____no

18. Please rate your feelings about teaching the following areas of agriculture. (READ THE RATING SCALE AND CATEGORIES)

1--enjoy teaching it 2--indifferent about it 3--dislike teaching it 4--have never taught it

_____Ornamental Horticulture
_____Agricultural Business
_____Natural Resources and Rural Recreation
_____Agricultural Mechanics
_____Plant Science
_____Animal Science
_____Food Processing and Production
_____FFA work

19. What do/did you like most about your teaching job? (OPEN)

_____Responsibility/importance
_____Working with students
_____Flexibility/variety
_____Challenge
_____Working in agriculture
_____Everything
_____Comaraderie among ag teachers
_____Open _____

_____

20. What do/did you dislike most about your job? (OPEN)

_____Bureaucracy/paperwork
_____Environment/pressure
_____Lack of support/approval from the administration
_____Excessive time demands
_____Negative stereotypes/bias/discrimination
_____Lack of pay/prestige
_____Disciplining unmotivated students
_____Other _____

_____

FOR WOMEN VOCATIONAL AGRICULTURE TEACHERS

21. Did being female have a positive or negative effect on you in obtaining a vocational agriculture teaching position?

_____positive _____negative _____no effect

Explain:_____

_____

_____

22. Do you feel that you have encountered difficulties on the job because of being a woman? _____yes _____no

Explain:_____

_____

_____

FOR THOSE STILL TEACHING

23. Why are you still teaching? (OPEN)
_____Job satisfaction
_____Lack of transferable skills
_____Love working with young people
_____Like the challenge of teaching
_____Need the money
_____Other _____

_____

24. Overall, how satisfied are you with vocational agriculture teaching? (READ THE RESPONSES)
_____very satisfied
_____satisfied
_____neutral
_____dissatisfied
_____very dissatisfied

25. What are your long term career goals?
_____Continue teaching agriculture
_____Seek a career in school administration
_____Teach in a community college
_____Teach in a university
_____Quit work to become a full-time wife/mother
_____Go into another line of agriculture
_____Leave agriculture and teaching -- explain:_____

_____

_____

26. If you had it to do over again, would you still go into teaching agriculture?
_____yes
_____maybe
_____no

FOR THOSE WHO HAVE LEFT TEACHING:

64. Why did you leave teaching?

_____Got a better job
_____Dissatisfied with pay
_____Spouse transfered to another location where no teaching opportunities existed for me
_____Got married and changed plans
_____Started a family
_____Teacher burnout
_____Returned to school
_____Couldn't handle the job
_____Other _____

QUESTIONS FOR EVERYONE

27. What was your undergraduate major? _____

28. What was your undergraduate G.P.A.? _____

29. Marital Status:

_____married
_____single
_____separated/divorced
_____widow/widower

30. Age _____

31. Number of children: _____ preschool?_____elementary_____