

# The Utah Concurrent Credit Program's Impact On The High School Participant's Perceptions Of Agriculture And Choice of College Enrollments

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## Abstract

*The purpose of this study was to identify the influence the Utah State University College of Agriculture concurrent credit program has had on students' attitudes toward agriculture and their intention to attend Utah State University in the College of Agriculture.*

*The target population for this study was the Utah high school agricultural education students participating in the concurrent credit program. All schools that participated in the program were matched with another school that had not participated on such characteristics as school size, distance from USU, and urban or rural setting. A 100% return rate yielded 398 student responses.*

*One difference found in comparing the concurrent credit students with students that did not enroll in a concurrent credit course was high school GPA. Students with a higher GPA were enrolling in concurrent credit programs. This study revealed that students participated in the concurrent credit program to accelerate their college graduation rate. The concurrent credit program did not significantly influence the students' perceptions of agriculture. The program did serve to attract students to enroll at Utah State University. However, while influencing the student's decision to attend USU, the concurrent credit program did not necessarily encourage the students to enroll in the College of Agriculture.*

## Theoretical Base

Agriculture has served for many years as a basis for our nation's economy. This importance has long been recognized through earlier educational provisions including the Morrill Act of 1862 and the Hatch Act of 1887. The development of agriculture education classes in high schools was initiated through passage of the Smith-Hughes Act. However, as research and education began to pay great dividends in terms of farm productivity, fewer farmers continued in production agriculture. Over the past 100 years, the U.S. farm population has declined from over 80% of the total population to the current level of less than 3% (Sleight, 1988). This decrease in farm population has led to the perception by American consumers that agriculture is unimportant to the general health of the U.S. economy. This perception has contributed to a steady decline in both high school and university agricultural enrollments.

The Agriculture Education Department at Utah State University has initiated a program to attract young people into agricultural careers. The concurrent credit program was established to provide high school students the opportunity

to complete certain College of Agriculture 100-level introductory courses while enrolled in the high schools agricultural science and technology program.

The concurrent credit courses taught throughout the state of Utah are equal both in content and in method of instruction. Each course has a standard text, syllabi, course outlines, lesson plans, and tests for each course. All high school agricultural science and technology teachers participating in the concurrent credit program were required to complete an in-service program and use the course materials developed by the university professor. The success of the concurrent credit program in providing high school students college level instruction has been demonstrated by Delaney (1988), Denton (1989), and Egan (1989).

Through the establishment of concurrent credit courses, an upgraded image of agriculture can be presented that will result in an increased interest in agriculture among the youth of the state. At the same time, limited tax dollars will be more wisely spent by providing high school students a higher level of scientific training while earning college credit.

Few studies have focused on concurrent credit courses in high school agriculture programs. Alder (1984) stated that many students tended to avoid college credit courses in high school because they were afraid that the more difficult classes would lower their high school grade point average. Dillon (1986) found that colleges place considerable emphasis on the completion of advanced placement courses and that successful completion of the courses did positively affect the student's opportunities for higher education.

Hogan (1971) found that 57% of the students enrolled in advanced placement courses participated because they were interested in a particular field that was not covered adequately in a regular high school course; 43% enrolled to get a head start in college. Seventy-six percent of the students believed the advanced placement courses helped them later in their college course work.

A University of Idaho study concluded that students had a very narrow perception of the agricultural industry (Orthel, Sorensen, Lierman, and Riesenber, 1988). While most students perceived agriculture only as production agriculture, this study found that students who enroll in high school vocational agriculture classes tended to have more positive attitudes toward agriculture than those who did not. Mallory and Sommer (1986) study of high school students living in the University of California-Davis area found that students from urban areas had the most negative attitudes concerning agriculture, while rural students expressed more general knowledge about agriculture and a greater desire to seek careers in agriculture. Additionally, they found that high school students were unaware of the great range of employment opportunities that were available in agriculture-related

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fields. Compared to other forms of employment, students rated agriculture lowest for providing a secure and stable future and earning the desired amount of money. These authors recommended improving student attitudes toward agriculture by developing educational programs that exposed students to the technological advances made in agriculture-related fields.

A 1986 USDA report indicated that over the next five years the colleges and universities in the United States would not produce enough graduates in areas dealing with agriculture positions, resulting in an approximate 10% shortfall in the number of potential employees (Coulter, Stanton & Goecker, 1986). This shortfall of graduates is not equally distributed in all areas of agricultural training. Agricultural disciplines related to farming, ranching, teaching, and communication were producing more graduates than were needed while a significant shortage of graduates in fields related to the scientific and business aspects of agriculture was expected.

A study of 77 Colleges of Agriculture showed an 18% decline in the enrollment of undergraduates between the years 1981 and 1984 (Robbins, 1985). Yet, considering current practices encouraging student enrollment in colleges of agriculture, this decline is understandable. Mallory and Sommer (1986) found that 78% of the respondents in the University of California-Davis recruiting area never received information about enrolling in a college of agriculture.

Many studies have identified the factors influencing a student's decision of which college to attend and what field to study (Boone, Newcomb, Resich, & Warmbrod, 1987; Gilmour, 1981; Mallory & Sommer, 1986; Maynard, 1987). The most commonly listed factors included the influence of parents, family socio-economic background, academic preparation (GPA and course work), father's occupation, cost, distance from the major colleges and universities, friends' plans for postsecondary education, and influence of vocational agriculture teacher or high school guidance counselors.

Bitner's (1981) examination of parent's influence on vocational choice indicated that greater than 75% of the students who were making plans to attend college had fathers who had also attended college. Another significant result showed that the earlier in life a child feels pressure from parents to attend college, the more likely the child is to enroll in college. Studies by Hadsell (1982), Dunkelberger (1981), and Puffett (1983) reinforced the finding that parents played the most influential role in a child's decision to attend college.

Another important factor in the college enrollment decision related to the quality and type of curricula available to the high school student. The process that high school students go through in selecting colleges occurs early in their high school careers (Gilmour 1981). In this selection, these students identified the high school courses that prepared them for the college or university that best fit their career objectives.

Student attitudes toward agriculture indicated that students generally view agriculture in a negative way. They often view agricultural work as low paying, lacking in

security, and low in prestige. Many students felt that agricultural jobs were not highly skilled and therefore did not require higher education. These attitudes appear to have influenced student career decisions and were contributing to the current shortage of highly trained individuals needed in the agriculture-related industries.

## Objective and Purposes

The purpose of this study was to identify the influence the concurrent credit program has had on student's attitudes toward agriculture and on their intention to attend Utah State University and enroll in the College of Agriculture. School districts using the program were compared with those that did not offer a concurrent credit program. Three research questions were studied.

- ❶ Why do students enroll in courses for concurrent credit?
- ❷ How do concurrent credit courses influence student awareness of career opportunities in agriculture?
- ❸ How does concurrent credit influence a student's desire to enroll at Utah State University in the College of Agriculture?

## Methods and Procedures

The target population for this study was Utah high school students in agricultural science and technology programs participating in the concurrent credit program. To achieve a representative sample, all schools participating in the concurrent credit program in 1989 were used in the sample. To form a comparative group, each school was matched with another high school that had not been involved in the concurrent credit program. These schools were matched on the characteristics of school size (based on average number of students per grade), distance from Utah State University, and urban or rural setting. A total of 18 high schools participated in this study; nine schools in the concurrent credit group and nine schools in the comparison group. A total of 398 students participated in the study; 51% completed concurrent credit courses while 49% were from traditional agricultural science and technology courses. Access to the agricultural science teacher and appropriate follow-up activities resulted in a 100% response rate.

The design for this study was *ex post facto*. This study examined the influence of concurrent credit program on two different dependent variables; the attitudes of Utah high school students toward agriculture and the students desire to enroll in the College of Agriculture at Utah State University. The two levels of the independent variable for each of the dependent variables were the availability or non availability of a concurrent credit course in the school.

A survey approach was utilized to evaluate the general attitudes of each student who participated in the concurrent credit program as opposed to those students who did not participate in the program. Certain questions in the survey instrument were designed to account for extraneous variables present in the study. To isolate the influence of the availability of concurrent credit programs on the dependent measures, several extraneous variables were identified. The extraneous variables were distance from high school to Utah State University; parents' college enrollment, brothers' or

sisters' college enrollment, friends' college enrollment, years involved in agricultural science and technology, and scholarship awarded.

The survey instrument was developed by the researcher. The survey contained several questions with answers based on a four point Likert-scale ranging from strongly agree to strongly disagree. A category for undecided - no opinion formed was also available as a response. Other questions dealt with extraneous variable through a yes - no response.

The survey was reviewed and evaluated by a panel of experts from the College of Agriculture to determine content validity and pilot tested at area high schools not involved in the study. Using Cronbach's Alpha, overall instrument reliability was  $r = .65$ . The data were collected by mail questionnaire and analyzed using the Statistical Package for the Social Sciences (SPSS/PC+) (Norusis, 1988). Measures of central tendency were calculated for each response category of the student rated statement. The Chi-square test of independence was calculated to determine the influence of the concurrent credit program on the student's perception of agriculture and plans to enroll in the College of Agriculture at Utah State University. The level of significance for this study was established a priori at .05.

## Results and Conclusions

### Why Students Enroll in Courses for Concurrent Credit?

The first research question asked students enrolled in agriculture courses for concurrent credit why they participated in the program. The results indicated that 42% enroll in concurrent credit strictly for college credit. Furthermore, most students believed concurrent credit courses required more effort than traditional agriculture courses. A majority of the students participating in the program believed that concurrent credit courses were a valuable experience in preparing them for college. The vast majority (86%) of the students said they would recommend concurrent credit courses to friends.

These results indicated that many students were participating in concurrent credit courses as a means of gaining college credit. Most students were finding their concurrent credit courses to be a challenging and rewarding experience.

Several of the survey questions were designed to determine certain characteristics of students who participate in concurrent credit courses compared to students who did not participate. When the two groups were compared on the variables of gender, years in agricultural science and technology, ACT score and scholarship awards, no statistically significant difference was found. However, when comparing the concurrent group with the control group on the variable of high school grade point average, a statistically significant difference was found ( $p < .05$ ). This indicated that the concurrent credit courses were attracting students with higher grade point averages than were the regular agricultural science and technology courses.

### How Concurrent Credit Courses Influence Student Awareness of Agriculture Careers?

This research investigated how concurrent credit courses influenced student awareness of career opportunities in

agriculture. Four statements on the questionnaire were designed to determine the students' beliefs in this area. These statements dealt with students planning on an agriculture-related career, students believing a wide variety of careers exist in agriculture, students believing that people with agriculture training have many employment opportunities, and students believing that challenging careers could be found in agriculture. The test of independence of these statements with student participation in concurrent credit resulted in the identification of no statistically significant measures.

The survey instrument was designed to determine how students perceive agriculture. No statistically significant difference was discovered between student participation in concurrent credit courses and a student's belief that employment in agriculture-related areas can be satisfying. The statement "I believe competitive salaries are found in agriculture-related careers" was tested for independence. However, student participation in concurrent credit was not found to have a statistically significant influence on student response.

Two statements were directed only to participants in the concurrent credit program. Eighty-one percent of the program participants agreed with this statement, "I have a better understanding of career opportunities in agriculture as a result of participation in a concurrent credit course". A large majority (85%) of the concurrent students agreed that their perceptions of agriculture had improved as a result of participation in the program.

### How Concurrent Credit Courses Influence Enrollment in USU College of Agriculture?

The final objectives in this study examined how concurrent credit influences a student's desire to enroll at Utah State University in the College of Agriculture. Several extraneous variables were examined to determine the affect they have on the student's choice of a university or college. Tests of independence between students selecting a college based on its distance from their home, parents attending college, parents attending USU, siblings attending college, friends attending college, majority of parents' income coming from a farm or ranch, family economics and their affect on students' college plans, and students' plans to attend college were not statistically related to enrollment in concurrent credit courses.

A statistically significant difference was found between a student's participation in concurrent credit courses and students' siblings attending Utah State University. This indicated that when brothers or sisters had attended Utah State University, high school students were more likely to enroll in concurrent credit courses.

Statistical dependence was also found between a student's participation in concurrent credit courses and a close friend planning on attending Utah State University. This indicated that students were more likely to participate in concurrent credit courses if their close friends were planning to attend Utah State University.

Another statistically significant difference was discovered between a student's participation in concurrent credit courses and the student's own plans to attend Utah State University. This measure of independence indicated that

students who participate in concurrent credit courses are more likely to plan on attending Utah State University. However, the association between participation in concurrent credit courses and plans to attend Utah State University in the College of Agriculture was not statistically significant.

Over half of the students who participated in concurrent credit courses said that their participation had increased their desire to attend Utah State University. This indicated that the concurrent credit program had a positive influence on student perceptions of Utah State University.

### Importance of the Study

A large percentage of the students who participated in the concurrent credit program showed overwhelming satisfaction and support for the program. The researcher recommends continuation of the program. Because the program is only in its second year, the researcher believes that more time is needed for the program to become a familiar part of the educational environment. As younger students observe siblings and friends participate in concurrent credit, they will be more likely to see the benefit, developing the desire to participate.

A large proportion of students were involving themselves in concurrent credit as a means of earning college credit while still in high school. This has resulted in students with higher grade point averages becoming involved in agricultural science and technology programs. The author strongly recommends the continuation of the concurrent credit program because the addition of more and higher quality students to high school agriculture programs will aid in strengthening and improving the image and impact of the agricultural science and technology programs.

This study revealed that the majority of students intended to enroll in college. Approximately half of the students had not decided which university they would be attending, and more than 70% did not know if they would be enrolling in the College of Agriculture if they selected Utah State University. A study by the American College Testing Program (April, 1989) concluded that many high school students develop interests in specific careers and college majors during their junior of high school. Concurrent credit is offered to juniors and seniors. Therefore, the researcher recommends that the College of Agriculture maintain the program to aid in students' college and career decisions.

However, this study revealed that the concurrent credit program did not have a statistically significant influence on the students' perceptions of agriculture. Therefore, it was concluded that the concurrent credit program could not be used as a reliable tool to improve the students' image of agriculture.

Further studies of the students who participated in concurrent credit and went on to attend USU should investigate students' attitudes toward the concurrent credit program after one year in college. Research should also be conducted to evaluate student perceptions and attitudes toward agriculture before they enter the agriculture concurrent credit program. This study should continue at the end of the program to identify attitude changes that have occurred in the students.

This study revealed that the relationship of siblings and friends attending Utah State University to participation in

concurrent credit courses was statistically significant. Further studies should determine why siblings and friends are more influential than parents in selecting higher education.

Students who participate in concurrent credit courses have a higher GPA than students who do not participate. This factor should be further explored to determine how the concurrent credit program affects the attitudes of the high and low GPA students toward agriculture and their intention to attend Utah State University in the College of Agriculture.

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