To the Graduate Council:

I am submitting herewith a thesis written by Rodney L. Mann entitled "The Impact of Alternative Scheduling on Agricultural Education in Tennessee Schools." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agriculture and Extension Education.

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THE IMPACT OF ALTERNATIVE SCHEDULING ON THE AGRICULTURAL EDUCATION PROGRAM IN TENNESSEE SCHOOLS

A Thesis
Presented for the
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Degree
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ABSTRACT

MANN, RODNEY L. The Impact of Alternative Scheduling on the Agriculture Education Program in Tennessee Schools.

The purpose of the research was to complete an in-depth study of the impact of alternative class scheduling on agriculture education in secondary schools in Tennessee. A survey that assessed the daily schedule being followed in every agriculture educator's school for the current and past five school years; identified the impact of scheduling on the FFA, SAE and instructional programs in their schools; and assessed the teachers' attitudes toward alternative scheduling was administered to every agriculture education teacher. Data were examined, summarized and analyzed using SPSS for Windows (10.0.0).

The study found that more teachers were experiencing program changes during the six years studied as a result of alternative scheduling growing rapidly in Tennessee although the rate of growth was slowing. The results from perceptions about alternative scheduling indicated mixed findings about the best overall schedule. The study revealed that perceptions were significantly different related to each teacher's current schedule, years of teaching experience and degree held. Statistically, there was more total support for the 4 X 4

alternative schedule by agriculture teachers than the traditional schedule. Teachers had a more positive perception of their current daily schedule than of other available schedules. Most of the group of teachers who changed to an alternative schedule developed a positive attitude toward their new schedule. A complete examination of course content, curriculum materials, FFA programs, laboratory equipment, SAEP programs and classroom management methods must be conducted and revisions made to prepare for changes in schedules. Further research studies are needed to completely understand the implications of the alternative scheduling movement in Tennessee.

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CHAPTER I

INTRODUCTION

The basic daily schedule followed by the average American high school student has been unchanged for decades. The structure is based on a system known as the Carnegie Plan where student schedules typically included six or seven classes that are less than one hour in length. As education reform progressed into the 1960's, 1970's and 1980's, some school systems began to change from the traditional scheduling. In the 1990's, a majority of school systems reviewed scheduling alternatives and many began to make drastic changes.

Although a wide variation of schedules resulted, the predominant choice became block scheduling where students attend four classes each day for one half the school year and four different classes each day for the other half. Each class is held for a longer period of time than in the six and seven period schedules, with only minor changes in the total length of the school day. The first of two common models that were implemented was the semester block. Often referred to as four by four block scheduling (4 X 4), four classes are taken in the first semester and four in the second semester with students earning up to eight full credits for the year. The A-B model is being used by many systems, where students attend four different classes, every

other day throughout the school year, earning up to eight credits.

These changes in schedule along with other nationwide reforms were spurred by the publications of reports including A Nation at Risk (1983), Prisoners of Time (U. S. Department of Education, 1994), and Studies of Education Reform, The Uses of Time for Teaching and Learning (U. S. Dept of Education, 1996). Other reforms included increasing graduation requirements, establishing tech-prep programs, instituting site based management, integrating academic and vocational education, and developing new approaches to instruction (Moore, Becton, and Kirby, 1996).

The number of schools generating reform movements is growing in Tennessee. The trend toward alternative scheduling is taking place across the nation (Averett as cited in Becton, 1996). In North Carolina public high schools, alternative scheduling rose from less than ten percent in the 1993-1994 school year to over 60 percent utilizing some type of alternative scheduling system in 1995-1996 (Becton, 1996).

Statement of the Problem

The intent of this research is to focus on the alternative scheduling movement in agricultural education departments throughout the state of Tennessee. Many changes accompany the adoption of alternative scheduling. Teachers, students and

administrators must implement and adapt to these changes; however, schools lack empirical data to assist them in using alternative scheduling effectively.

Most of the research on block scheduling has been school wide or on the teaching of a specific academic subject. There has been little research on the impact of block scheduling in agricultural education. (Moore, 1996) To insure effective implementation, research needs to be conducted to determine specific needs of agriculture educators concerning block scheduling.

Significance of the Problem

As changes take place in agricultural education, attitudes of agriculture educators are expected to change. The success and quality of the program that is offered are greatly influenced by the teacher's attitude. The needs of society have demanded reform in schools. In nearly every schedule reform in Tennessee, the decision has been left to local school systems with teachers often being the deciding factor. Information must be made available to prepare teachers to make the changes, recognize the challenges of the new system, and assess the success of alternative schedules. The research conducted provides qualitative and quantitative data to assist agriculture educators and others in appraising the complete scheduling movement.

Purpose of the Study

The overall purpose of this research was to partially replicate in Tennessee an in-depth study of the impact of block scheduling on agriculture education. The original study, The Impact of Alternative Scheduling on the Complete Agriculture Education Program was completed by Linda Kay Becton (1996) in North Carolina. The research included teachers who were currently experiencing block scheduling, as in the North Carolina study, but expanded the focus of the attitudinal survey beyond the original study to also determine the attitudes of teachers who were working with traditional or other high school schedules.

Objectives

The research objectives for this study were:

1. To describe the extent to which agriculture educators are teaching in schools with alternative scheduling in Tennessee.
2. To determine the impact of alternative scheduling on the agricultural education program.
3. To determine the attitudes of agricultural educators concerning alternative scheduling including teachers in traditional schedule and alternative schedule programs.
4. To study the relationship between the attitudes of agricultural educators concerning alternative scheduling

and selected demographic variables including age, degree held and years of teaching experience.

Limitations of the Study

This study was limited to the agricultural education programs located in high schools in Tennessee. The high schools to be studied present different versions of traditional and alternative schedules. This study does not address whether different schedules have differing impacts on student performance or perceptions. The data in this report deal only with attitudinal assessment. Direct statistical analysis of factors that evaluate a schedule's effectiveness is not included. The study includes teachers in multiple teacher departments; therefore, data may be reported more than once for each school from differing perspectives.

Some disadvantages related to using the survey method in this study are considered limiting factors. Surveys lack flexibility, can lead to more unanswered questions, have a lower response rate than interviews, make no record of spontaneous reaction or nonverbal response and will not allow a complex format.

The study gathers information about the schedule being followed in each school over a six-year period, but the study does not reveal data to assess whether the teacher responding was working in the school during those school years. Teachers may

have responded to a statement about their schools, even if they were not teaching in the schools during that school year.

CHAPTER 2

REVIEW OF RELATED LITERATURE

A review of related literature was conducted to identify resources including books, articles, conference papers, research reports and government documents relevant to the problem. Such resources may provide data or discussion supporting the researcher's hypothesis, or they may contain findings in disagreement with the researcher's own work. The review was conducted using indexes and journal abstracts available on campus at the University of Tennessee, Knoxville; the Educational Resources Information Center (ERIC) database; and the World Wide Web.

Education History

School reform efforts have been a part of American education for decades and yet, the basic structure of the secondary school is still essentially the same as it was a century ago (Fletcher, 1996) Most of America's high schools have begun to respond to the severe criticism leveled at secondary schools by several national reports including *A Nation at Risk,* a report of the National Commission on Excellence in Education (Carroll, 1990).

Analyst Paul Cooperman drew this conclusion in A Nation at Risk:

> "Each generation of Americans has outstripped its parents in education, in literacy, and in economic attainment. For the first time in the history of our country, the educational skills of one generation will not surpass, will not equal, will not even approach those of their parents." (1983, p.11) According to this study, the average achievement of high school students on most standardized tests was lower than it has been in the previous 26 years. Approximately 13 percent of all 17 year-olds in the United States can be considered functionally illiterate. Among minority youth, this percentage increases to 40 percent (Becton, 1996).

The National Commission on Excellence in Education concentrated on secondary education in this report, although it was authorized to address all levels of education. There followed a flood of reports and studies that supported the judgment of the national commission that serious, nationally proportioned problems plagued high schools. The traditional high school is characterized as an impersonalized, unproductive, frenetic environment (Carroll, 1990). Prisoners of Time (U.S. Dept. of Education., 1994), a report of the National Education Commission on Time and Learning, describes the uniform six-hour

day as unyielding and relentless, an unacknowledged design flaw in American education. A common theme among this and other reports was a call for restructuring America's high schools.

School Reform

At its simplest, restructuring means redesigning the various components of a system to produce better results (Cawelti, 1995). Schools are implementing changes to overcome long-standing weaknesses in response to the call for restructuring high schools. The growth of student enrollment nationwide is producing an increase in the size of many American high schools. There is evidence that larger school size tends to have a negative affect on attendance, student attitudes toward school and a sense of belonging, all of which in turn may have a negative affect on student achievement. Many school leaders are determined to restructure high schools in order to reduce student indifference toward school by getting students more involved in learning, developing a sense of loyalty to the school, and permitting faculty to engage in team planning to improve learning opportunities for all students. (Cawelti, 1993)

Copernican Plan

The Copernican Plan: Restructuring the American High School by Joseph M. Carroll (1990) proposed major restructuring of virtually all the basic systems within a high school to increase efficiency and increase effectiveness. Nicolaus Copernicus made

a major contribution to 16th-century astronomy when he proposed simple change that was a revolutionary idea. Copernicus proposed that the sun was the center of the universe, not the earth. The title of Carroll's research is based on this event. Relating the revolutionary change proposed by Copernicus, Carroll referred to the fundamental change in his own proposal, the change in schedule, as the *Copernicus* change. The *Copernicus* change included expanded "macroclasses" and other elements to individualize instruction (Carroll, 1990). Classes are taught in longer periods and they meet for only part of the school year. The specific advantages projected for high schools using the Copernican Plan included decreasing class size, increasing course offerings, reducing number of students per teacher per day, providing student seminars, and increasing mastery of information by students (Carroll, 1994).

Traditional Scheduling

The schedule that many high schools follow today is known as the Carnegie Plan. The Carnegie Foundation for the Advancement of Teaching was established in 1905 (Krug as cited in Becton, 1996). The Carnegie unit has dominated the structure of American High Schools for almost a century where teachers typically teach five 45-minute classes with 125 students or more daily. Students typically will be in 9 different locations each

day. The structure fosters lecture centered, large-group-oriented instruction (Carroll, 1994).

Alternative Scheduling

Variations of the common schedule for all students in larger high schools began to appear in the 1960's and 1970's and there clearly is a revival of the idea as different alternatives are appearing in larger numbers than ever before (Cawelti, 1993).

A rapidly growing alternative to traditional school organizations is the block schedule, which provides students with a markedly different environment of learning within four periods daily of 80-90 minutes duration each. Adoption of block schedules and other flexible scheduling policies at the school level have mushroomed in recent years (Adelman, Ed., 1995). Block scheduling is used to reduce fragmentation, encourage teachers to use a variety of learning strategies, and help provide more individual attention to students. Block schedules give faculty members more opportunity to respond to individual students needs within large high schools. Teams of teachers work together, thus affording more opportunity for interdisciplinary teaching and greater flexibility in the use of time. Teachers have fewer students each semester and spend less time on administration and student control issues caused by the

frequent changing of classes under a conventional schedule (Cawelti, 1993).

A widely cited reference and source of background information for alternative schedules is a book by Canady and Rettig (1995). It provides descriptions of types of block schedules and steps for implementing block scheduling.

The model being introduced in most schools in Tennessee seems to be essentially a four by four (4 X 4) plan where fixed 90-minute schedules are planned for a maximum of four periods per day. Teachers teach for three of these four periods and students take four classes--one for each period. Most classes are scheduled for only one semester but there are some modifications where a full year is taken for a course (Fletcher, 1996).

Impact on Students, Teachers and Schools

Canady and Rettig (1993) found the following advantages of the block schedule: students have the ability to move ahead with consecutive courses in one year; summer school equivalent sessions can be offered during the regular academic year; and community service programs can be conducted during school hours without affecting academics

Doubling the number of chances students have to take and pass their courses was expected to immediately improve high school graduation rates. The four period day and semester-length courses afford career-bound students the opportunity to obtain

appropriate career specific post-secondary training while in high school (Edwards, 1995).

A study of agricultural education programs in North Carolina found 24 percent of North Carolina high schools not on block schedules without immediate plans to do so. Thirty-one percent were not on block schedules but planned to do so in the future, and 45 percent of the schools were on block schedules. In the same study, Becton (1996) reported an increase on average of 33 students per program enrolling in agricultural classes.

In a paper presented using data from the same study, Moore, Becton, and Kirby (1996) concluded that North Carolina agriculture teachers generally have a positive attitude toward block scheduling.

In a Maryland evaluation of block scheduling, Guskey and Kifer (1995) reported student and teacher attitudes toward a new system of block scheduling. Ninety-five percent of the teachers and 69 percent of the students indicated they would like to remain on the new system. Sixty-four percent of the teachers felt that their students were doing better on mastery of important concepts and 68 percent felt they were providing opportunities for students to think critically and analytically. Teachers are more likely to use new instructional approaches and respond favorably toward their teaching effectiveness. Forty-nine percent of the students feel they are learning more under

block scheduling while only 11 percent feel they are learning less.

A study of four Colorado high schools indicated that students made positive improvements in writing. Approximately 90 percent of teachers favor the new schedule. Forty-five percent of students reported improvements in achievement while 43 percent reported decreases or no change in achievement. (Reid, 1995)

In North Carolina, teacher's average number of preparations decreased from 3.2 to 2.3 preparations per day, thus allowing more concentration on teaching variety and individualized work. The average number of students per day also decreased from 116 students to 63 students. The average class size dropped from 30 students to 25 students. This allowed for more individualized instruction (Averett as cited in Becton, 1994).

Donald Hackmann (1995) identified indicators to evaluate the schedule's effectiveness. They included student discipline referrals, attendance data, dropout rates, graduation rates, student enrollment in upper-level courses, grade point averages, standardized test scores, honor roll data, self esteem indicators, and feedback from surveys of teachers, parents, and students.

A research review conducted by the Office of Educational Research and Improvement reported that there is little or no rigorous research evidence demonstrating that longer blocks of

instructional time produce improved student outcomes (Adelman, Ed., 1995).

In an extensive review of over twenty research studies, Richard Fletcher (1996) summarized that the literature indicated that at least two-thirds of both students and faculty appear to be satisfied with the block scheduling movement preferring it over the traditional schedule. The literature indicates that students do as well academically under the block scheduling plan as under the traditional scheduling format. Fletcher continues to draw conclusions on block scheduling with a study of six high schools in the Upper Cumberland Region of Tennessee.

Perceptions of modified block schedules by students in a central Texas high school indicated that students had more time for homework in their block class; the teacher gave them more individual attention; they learned more under the block format because it was easier to concentrate; they understood the lessons better, they felt less stressed and rushed; and the teacher had a hard time switching activities to keep us from being bored. (Skrobarcek, et.al., 1997).

An informative study by Shortt and Thayer stated that a potential concern for students is retention of information if a student elects to take the first course in a sequenced program in the first semester and the second course is not offered until semester one or two of the next school year. The variety of block schedules creates a challenge for transfer students. If a

student transfers to a school that is on a different schedule than the sending school, problems are presented. Support should be provided to assist students enrolling in a new course at any time during the school year. Block scheduling can enable students to "buy" a block of time in the senior year for special projects. Staff development initiatives should include team teaching, interdisciplinary teaching, cooperative learning, student assessment, classroom and time management, curriculum integration, leadership skills, learning styles, and the use of technology (Shortt and Thayer, 1995).

Positive perceptions of modified block schedules by teachers in a central Texas high school included: agreement that teacher innovation and creativity are fostered; adequate timing is allowed for planning; fragmentation of instructional time is reduced; teaching benefits from less time taking attendance, start-up, and clean-up; more student evaluation, communication, and individualized instruction time are allowed; fewer students and records improve teaching quality; students are more interested and involved; students do not feel burdened by increased material; less homework is given; and diverse teaching methods are used. Negative perceptions in the same school included: students have difficulty catching up on work; students have more time for co-curricular activities; students are less motivated and more bored; and students have lower attendance rates (Scrobarcek, et al. 1997).

Based on first year data from Clarence M. Edwards, Jr. in Virginia, semester length courses make it easier for capable motivated students to improve their grades, although students who fall behind or have attendance problems are more likely to fail (Edwards, 1995).

The cost factor is important to consider when moving into block scheduling. Additional staff members may be required or a larger student-teacher ratio may result. Additional electives may require additional funding. Fewer textbooks will be needed (Shortt and Thayer, 1995).

Summary

In summarizing the studies Fletcher (1996) reviewed, he stated:

> There seems to be sufficient evidence from the studies that the school climate is improved as a result of changing to a block scheduling format… Overall the positives favoring the block scheduling format far outweigh the negatives when both achievement and attitudinal measures are considered… The movement to some form of block scheduling plan… is in the best interest of the teachers and students in secondary school programs.

"There is some evidence that block scheduling is having an adverse affect on the operation of agricultural education programs," according to Moore, Becton and Kirby. (1996).

The literature reviewed indicated widespread reform taking place and a need for continued reform. Substantial research has been conducted related to alternative schedules, although little information is available specifically for agriculture education in Tennessee.

CHAPTER 3

METHODOLOGY

Introduction

The purpose of the research was to complete an in-depth study of the impact of alternative scheduling on agriculture education. The study partially replicated the methodology of a study by Becton (1996) in North Carolina.

The first of five divisions of the procedures and methodology for the study is a description of the research design. The population and size of the population are the second division. The third division records the development of the instrument and pilot testing of the instrument. The data collection procedures comprise the fourth division. The last division includes analysis of the data reported by objectives, followed by a summary of the procedures and methodology.

Research Design

A descriptive research design that provided both qualitative and quantitative data was employed using *ex post facto* research where causes were studied after they presumably have exerted their affect on another variable. The survey approach was used because the cost of sampling respondents over a wide geographic area, as in this study, is lower and the time

required to collect data is typically much less than with the interview approach (Gall, Borg & Gall, 1996)

Population and Sample

The population for the study included all agricultural education teachers in secondary schools in Tennessee. The population frame of 262 teachers, was generated from the Tennessee Agricultural Education Teachers Resource Guide, 1998-99 (Tennessee Dept. of Education, 1998). In addition, participants in the 1999 Tennessee Vocational Conference who were part of the population but who were not listed in the directory were included. The population included 85 teachers from the East Tennessee region, 107 from the Middle Tennessee Region and 75 from the West Tennessee Region. The sample for the field test of the instrument included 14 secondary school agricultural education teachers from South Carolina.

Instrumentation

The instrument used to collect the qualitative and quantitative data for the study was a survey in the form of a questionnaire. The survey was developed after reviewing literature and questionnaires used in similar studies. The survey instrument was developed based upon the instruments used by Becton (1996) and Fletcher (1996) with modifications for teachers in schools with traditional schedules. A copy of the survey used for this study is located in APPENDIX A.

The instrument included four sections related to the objectives of the study. The first objective was to describe the extent to which agriculture educators are teaching in schools with alternative scheduling in Tennessee. Part I of the survey assessed the status of the school concerning the type of schedules that the school has used in recent years. Six questions were asked for general data on the schedule being followed by each respondent's school during the previous five school years and the upcoming school year with close-ended response categories. A description of each category was included in the survey (See APPENDIX A). An open-ended question was included in this section that asked teachers who had made a change in schedule to describe the history of the change.

Part II and Part III of the survey were designed to assess data for the second objective of the study which was to determine the impact of alternative scheduling on the agricultural education program. Thirty five statements in Part II with scheduling alternatives as close-ended responses asked for perceptions of the positive or negative impacts of any one particular type of class scheduling. After field testing of the instrument, an additional response of "undecided or no difference" was added to this section because several respondents suggested that the change needed to be made. Part III of the survey asked respondents to choose the schedule alternative that

would deliver the most effective agricultural education program and elaborate as necessary in an open ended question.

The third objective was to determine the attitudes of agricultural educators concerning alternative scheduling including teachers in traditional schedule and alternative schedule programs. The first three parts of the survey provided the information needed to meet this objective.

To study the relationship between the attitudes of agricultural educators concerning alternative scheduling and selected demographic variables was the fourth objective. Questions in Part III of the survey asked for personal demographic data in open ended questions.

The survey was reviewed by a panel of experts consisting of the researcher's graduate committee to determine content validity. With suggested revisions, approval by the committee and the Human Subjects Committee of the University of Tennessee at Knoxville was granted.

The initial outline of the instrumentation included the assumption that the field test was to be completed outside the state of Tennessee with assistance from not more than 20 agriculture education teachers to determine the validity and reliability of the instrument. A group of 14 South Carolina agriculture teachers from throughout the state attending FFA Leadership Camp were asked to respond to the survey in a slightly modified form with additional responses for participants to make

comments, list ambiguous questions, add additional responses, highlight changes that needed to be made and note the time necessary to complete the survey. See Appendix B for a copy of the initiation letter, cover letter and survey. Twelve surveys were returned and served as field test data. As a result of the field test a change was made in part II of the survey that was noted earlier. In addition, a response in part II of the survey was separated into two separate responses. Some questions were edited to improve the validity of the survey and insure accurate data collection.

Data Collection Procedures

Identical copies of the survey, a cover letter, and a removable instruction page with questions to avoid mailing multiple surveys to teachers who completed the survey at conference (see APPENDIX A) were distributed to agriculture educators attending the Tennessee Vocational Conference in August, 1999. The cover letter explained the purpose of the study, explained to teachers that participation was totally voluntary, and assured respondents' that their names and schools would not be linked to their responses. One hundred twenty-five surveys were returned at the conference. Instruction sheets were separated and responses became anonymous. Identical surveys were mailed to non-attendees with a different instruction sheet (See APPENDIX B), and a self-addressed, stamped envelope. A follow up

mailing was completed after the survey return deadline. Thirty-seven mailed responses were returned for a total of 162. The resulting final return rate was 61.8 percent. A copy of the cover letter and follow-up letters used in data collection are located in APPENDIX A.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences for Windows (SPSS 10.0.0).

The first objective of the study was to describe the extent to which agriculture educators are teaching in schools with alternative scheduling in Tennessee. Data from Part I of the survey where teachers were asked for general data on the schedule being followed were reported by frequency and percentage as well as described.

The second research objective was to determine the impact of alternative scheduling on the agricultural education program. A thematic analysis of data gathered from an open-ended question in Part I of the survey that asked teachers to describe aspects of a change in schedule and in Part III that asked teachers to describe the schedule that they preferred was completed and results were reported. Part II of the survey determined teachers' perceptions of the positive or negative impacts of class scheduling. A descriptive analysis was used to report the data by frequency and percentage.

The third objective of the study was to determine the attitudes of agricultural educators concerning alternative scheduling including teachers in traditional schedule and alternative schedule programs. Alpha levels were established before the analyses were completed at .05 to determine any significant differences in inferential data. The data analysis procedure included underlying assumptions about expected frequencies. Data were categorized into non-overlapping categories for the purpose of analysis. The cross tabulation format and Pearson's chi-square tests (χ^2) for statistical significance were used to analyze the differences between respondents' current class schedule alternative and their perceptions of the impact of scheduling alternatives. Results were reported in frequencies and percentages for each response. Statistical significance was reported in chi-square values, degrees of freedom, and probability values.

The fourth objective was to study the differences between the attitudes of agricultural educators concerning alternative scheduling and selected demographic variables. Three analyses were completed, where differences in each of three demographic variables, age, degree held and years of teaching experience and perceptions of the impact of alternative scheduling were studied. As in the analysis for objective three, alpha levels were tested at .05. Data were categorized into non-overlapping categories and Pearson's chi-square tests (χ^2) for statistical significance

were used. to analyze the differences. Results were reported in frequencies and percentages for each response. Statistical significance was reported in chi-square values, degrees of freedom, and probability values.

Summary

The study employed a descriptive research design using the survey method. The survey was field tested in South Carolina and revised. Identical surveys were presented to 262 secondary agricultural teachers in Tennessee either at the Tennessee Vocational Conference or by mail. A return rate of 61.8 percent was achieved. The data were analyzed using SPSS 10.0.0 for Windows. Data were reported as frequencies, and percentages. Chi-square tests (χ^2) were used to determine significance with alpha levels of .05 to determine any significant differences in inferential data. The data revealed numbers and percentages of schedules being followed, perceptions regarding alternative scheduling and demographic data. In addition, data were analyzed to determine the differences between these factors.

CHAPTER 4

PRESENTATION OF THE DATA

Two hundred sixty two agriculture education teachers were surveyed to complete an in-depth study of the impact of alternative scheduling on agriculture education. One hundred twenty five surveys (77.2%) were returned at the Tennessee Vocational Conference and 37 (22.8%) were returned by mail. In order to study potential bias in response, an analysis of differences in responses between those teachers completing the survey at the conference and those who completed and returned it by mail was performed. Those who returned the survey by mail were considered to be "late responders". Since late responders are similar to non-responders (Miller and Smith, 1983), no additional follow-up was considered necessary. Out of 46 variables studied, only one variable was found to be significantly different with regard to early and late response. Alpha levels had been established at .05 to determine any significant differences in inferential data. A significant difference existed among teachers who completed the survey at conference and who completed the survey by mail in regard to the 1995-1996 schedule being followed by the teachers. During this year, 83 percent of the teachers who completed the survey at conference were following a traditional schedule and 17.0 percent were following a 4 X 4 schedule. A much smaller percentage

(63.6%) of the teachers who completed the survey by mail were following a traditional schedule and a higher percentage (36.4%) were following a 4 X 4 schedule. A chi-square test revealed a .017 significance for this variable.

Ninety-three teachers (83%) who completed the survey at conference were following a traditional schedule during the 1995-1996 school year. Nineteen teachers (17%) who completed the survey at conference were following a 4 X 4 schedule during the 1995-1996 school year. Twenty-one teachers (63.6%) who completed the survey by mail were following a traditional schedule. Twelve teachers (36.4%) who completed the survey by mail were following a 4 X 4 schedule.

Schedules of Tennessee Agricultural Education Teachers

The first objective of the study was to describe the extent to which agriculture educators were teaching in schools with alternative scheduling in Tennessee. Data in Table 1 describe the number and percentages of teachers following class schedules in four categories for six school years beginning with 1994-1995 and ending with the 1999-2000 school year. The data on the 1999-2000 school year were reported by respondents during the summer and early fall as that school year began. The first of the four categories was a traditional schedule where the school had a traditional six, or seven period day not including a

Table 1. Daily Schedule of Agricultural Education Instructors.

Schedule by school year		Respondents N	Respondents %
1999-2000			
Traditional Schedule		47	29.0
4 X 4 Schedule		108	66.7
A / B Schedule		4	2.5
Other Schedule		3	1.9
	Total	162	100.0
1998-1999			
Traditional Schedule		49	30.2
4 X 4 Schedule		106	65.4
A / B Schedule		4	2.5
Other Schedule		3	1.9
	Total	162	100.0
1997-1998			
Traditional Schedule		57	35.2
4 X 4 Schedule		91	56.2
A / B Schedule		4	2.5
Other Schedule		4	2.5
Non-responses		6	3.7
	Total	162	100.0
1996-1997			
Traditional Schedule		88	54.3
4 X 4 Schedule		58	35.8
A / B Schedule		4	2.5
Other Schedule		3	1.9
Non-responses		9	5.6
	Total	162	100.0
1995-1996			
Traditional Schedule		114	70.4
4 X 4 Schedule		31	19.1
A / B Schedule		2	1.2
Other Schedule		3	1.9
Non-responses		12	7.4
	Total	162	100.0
1994-1995			
Traditional Schedule		142	87.7
4 X 4 Schedule		6	3.7
A / B Schedule		0	0.0
Other Schedule		2	1.2
Non-responses		12	7.4
	Total	162	100.0

homeroom or activity period. In the second category, the school had a four by four block schedule (4 X 4) with four courses per semester, approximately 90 minutes in length, two semesters per school year not including homeroom or activity period. The school had an alternate day or rotating schedule (A / B) in the third category with eight classes, four each taught alternately on a Monday-Wednesday-Friday or Tuesday-Thursday schedule. All other schedule alternatives were grouped as category 4, "other".

The prevalent pattern was for the schools to make a change from a traditional schedule to a 4 X 4 block schedule during the six years covered by the study. Numbers and percentages of teachers working with a traditional schedule declined from 142 (87.7%) during 1994-1995, 114 (70.4%) during 1995-1996, 88 (54.3%) during 1996-1997, 57 (35.2%) during 1997-1998, 49 (30.2%) during 1998-1999, to 47 (29%) during the 1999-2000 school year. In the same six years, numbers and percentages of teachers working with a 4 X 4 schedule increased from six (3.7%) during 1994-1995, 31 (19.1%) during 1995-1996, 58 (37.9%) during 1996-1997, 91 (58.3%) during 1997-1998, 106 (65.4%) during 1998-1999, to 108 (66.7%) during the 1999-2000 school year. Numbers and percentages of teachers working with an A / B schedule changed from zero (0.0%) during 1994-1995, two (1.2%) during 1995-1996, four (2.5%) during 1996-1997, four (2.6%) during 1997-1998, four (2.5%) during 1998-1999, to four (2.5%) during the 1999-2000 school year. "Other" schedule was reported by two teachers

(1.2%) during 1994-1995, three (1.9%) during 1995-1996, three (1.9%) during 1996-1997, four (2.6%) during 1997-1998, three (1.9%) during 1998-1999, and three (1.9%) during the 1999-2000 school year. Responses for the category "other" during the 1998-1999 and 1999-2000 years asked respondents to describe the type schedule. The other schedules being followed were described as: 1) a 2 X 2 block with two semesters, 2) a traditional six period schedule with zero period and seventh period optional classes, and 3) a 4 X 4 block with 80 minute classes and a 40 minute learn block.

Impact of Alternative Scheduling in Tennessee

The second objective of the study was to determine the impact of alternative scheduling on the agricultural education program. Teachers were asked to respond to the following statement: "If you have made a change in schedule, please briefly describe the history of the change, including the events that proceeded the change, the involvement of teachers in the implementation process, the advantages of the new schedule compared to the previous schedule and the disadvantages of the new schedule.

A thematic analysis of similar responses related to teachers' involvement in a change in schedule was completed and the statements are listed in Appendix C. In fifteen similar statements, teachers indicated that teacher groups in their

schools made visits to other schools where a change was made to an alternative schedule. In fourteen statements, teachers indicated that they were involved in various aspects of the planning and development of the change to a new schedule. In 12 statements, teachers indicated that the decision to change schedules was not made by teachers but by administrators or school board members. In 12 statements, teachers indicated that schools held various types of meetings to prepare for the change. In ten statements, teachers indicated that they had no input or little input into the decision or implementation of a change. In six statements, teachers indicated that they voted on the decision to change schedules or were involved in making the decision to change schedules. In five statements, teachers indicated that they were polled or surveyed for their opinion about the change. Two teachers indicated that they had no input or little training before making the change in schedule. Also in two statements, teachers indicated that they had entertained guests or guest speakers from other schools who had made a change in schedule. Two teachers indicated that after implementation most of the teachers in their schools preferred 4 X 4 scheduling.

Thematic analysis was also used to analyze similar responses related to the advantages of a change in schedule. A complete list of statements is found in Appendix C. In 15 statements, teachers indicated that an advantage of the 4 X 4 schedule was more time for hands on activities and more

laboratory time. Seven teachers indicated that the 4 X 4 schedule works well for laboratory and shop activities giving more time to complete projects. Seven teachers indicated more planning time for the teacher using the 4 X 4 schedule. In three statements, teachers indicated that their students were able to earn eight credits per year with the 4 X 4 schedule instead of six using the traditional schedule. Two teachers indicated that they were able to use various techniques to keep students on task using the 4 X 4 schedule. Two teachers indicated that they had fewer classes to prepare for each day using the 4 X 4 schedule. Two teachers indicated that students wasted less time changing classes using the 4 X 4 schedule. Two teachers indicated that there were fewer interruptions and disruptions to class using the 4 X 4 schedule. In two statements, teachers indicated that there was more time to go in depth with students and cover more in depth material. Two teachers indicated that the 4 X 4 schedule gives more time to cover lessons and create a mix of lecture, activities and labs. In two statements, teachers responded that the A / B schedule allows more planning time.

A thematic analysis was also completed to analyze similar responses related to the disadvantages of a change in schedule. A complete list of statements is found in Appendix C. In 12 statements, teachers indicated that there is a problem using 4 X 4 scheduling with FFA activities when students are only in an

agriculture class for one semester. Six teachers indicated that there was less total time in class each year using the 4 X 4 schedule and they were unable to cover as much material in class. Six teachers indicated that the 4 X 4 schedule has a negative affect on the FFA program. In three statements, teachers indicated that it was difficult to keep classes on task for longer blocks and more planning is required using the 4 X 4 schedule. Three teachers indicated that student participation in the FFA was lower. Two teachers indicated that it was difficult to provide enough activities to keep students busy for longer blocks. Two teachers indicated that student attention span is less than the 90-minute blocks in the 4 X 4 schedule. Two teachers indicated a disadvantage in the 4 X 4 schedule when students complete more of their academic classes in their early high school years and take elective classes as juniors or seniors that were traditionally freshman or sophomore level. Two teachers indicated a disadvantage of the 4 X 4 schedule as loss of retention from non-consecutive blocks or poor sequencing of courses. Two teachers indicated that it is difficult to get students to participate in FFA career development events using the 4 X 4 schedule. In two statements, teachers indicated that students are overwhelmed and exhausted by the pace of the 4 X 4 schedule. Two teachers indicated increased paperwork as a disadvantage of the 4 X 4 schedule. Two teachers indicated that a disadvantage of the 4 X 4 schedule was inability to take field

trips. In two statements, teachers indicated that students meet graduation requirements too early using the 4 X 4 schedule.

Alternative Scheduling Impact Statements

This division of the chapter continues to meet the second research objective which was to determine the impact of alternative scheduling on the agricultural education program. Teachers were asked to respond to the following statement: "If you had the ability to choose any of the scheduling alternatives mentioned in this study, which one would you select, assuming your goal was to deliver the most effective agricultural education program you could offer to your students. Please elaborate as necessary." Similar responses that appeared more than once were summarized into categories, listed, and noted for frequency in Table 2.

Among 143 responses that appeared more than once, 52 statements in some form indicated that the teachers preferred the 4 X 4 schedule. In 51 statements the respondents preferred the traditional schedule. In ten statements the teachers preferred the 4 X 4 schedule reluctantly, stating some disadvantage to the 4 X 4 each time. In 14 statements the respondents preferred the A / B schedule. In ten statements, teachers indicated that they preferred the traditional schedule for FFA activities and 4 X 4 for classroom activities. Two respondents preferred a part block, part traditional day schedule categorized as other.

Table 2. Perceptions of the most effective schedule alternative by agriculture educators.

Summary of statements	Respondents N
Prefer 4 X 4	52
Prefer traditional	51
Prefer 4 X 4 reluctantly	10
Prefer A / B	14
Prefer traditional for FFA activities, 4 X 4 for classroom	10
Prefer other schedule, part block, part traditional day	2
Prefer 4X4, except for problem with single semester students	2
Prefer 4X4 for instruction time	2

Data that continue to describe the impact of alternative scheduling are shown in Table 3, which describes the number and percentages of responses to statements related to the potential positive or negative impacts of class scheduling. Each teacher was asked to indicate the scheduling alternative that most closely matched his/her response to the statement. Several statements refer to the FFA, which is the vocational student organization for agricultural education students. Another grouping of statements is centered on supervised agricultural experience programs (SAEP's), student school to career projects.

Table 3. Perceptions Regarding the Impact of Scheduling on Agricultural Education.

Category Potential Impact Schedule Response	Respondent N	 %
Instructional Program		
Overall instructional program will be best delivered using:		
Traditional Schedule	68	42.0
4 X 4 Schedule	57	35.2
A / B Schedule	6	3.7
Undecided or no difference	25	15.4
Non-responses	6	3.7
Total	162	100.0
More material will be covered in the classroom and laboratory using:		
Traditional Schedule	67	41.4
4 X 4 Schedule	68	42.0
A / B Schedule	5	3.1
Undecided or no difference	18	11.1
Non-responses	4	2.5
Total	162	100.0
It is easier to cover all competencies outlined in course description using:		
Traditional Schedule	84	51.9
4 X 4 Schedule	41	25.3
A / B Schedule	6	3.7
Undecided or no difference	26	16.0
Non-responses	5	3.1
Total	162	100.0
School attendance rates will be highest using:		
Traditional Schedule	30	18.5
4 X 4 Schedule	58	35.8
A / B Schedule	3	1.9
Undecided or no difference	65	40.1
Non-responses	6	3.7
Total	162	100.0
Discipline problems are more likely to occur using		
Traditional Schedule	23	14.2
4 X 4 Schedule	74	45.7
A / B Schedule	9	5.6
Other	1	.6
Undecided or no difference	48	29.6
Non-responses	7	4.3
Total	162	100.0

Table 3. continued.

Category Potential Impact Schedule Response	Respondent N	 %
The schedule that will require the least budget for materials and supplies is:		
Traditional Schedule	70	43.2
4 X 4 Schedule	18	11.1
A / B Schedule	8	4.9
Undecided or no difference	59	36.4
Non-responses	7	4.3
Total	162	100.0
Teacher Benefits		
I personally prefer:		
Traditional Schedule	63	38.9
4 X 4 Schedule	70	43.2
A / B Schedule	10	6.2
Other Schedule	1	.6
Undecided or no difference	15	9.3
Non-responses	3	1.9
Total	162	100.0
Overall teacher benefits will be greater using:		
Traditional Schedule	37	22.8
4 X 4 Schedule	80	49.4
A / B Schedule	11	6.8
Undecided or no difference	30	18.5
Non-responses	4	2.5
Total	162	100.0
School teams and teachers working on cooperative projects are better able to meet using:		
Traditional Schedule	57	35.2
4 X 4 Schedule	64	39.5
A / B Schedule	7	4.3
Other	1	.6
Undecided or no difference	29	17.9
Non-responses	4	2.5
Total	162	100.0
Teachers have more planning time in:		
Traditional Schedule	13	8.0
4 X 4 Schedule	125	77.2
A / B Schedule	8	4.9
Undecided or no difference	7	4.3
Non-responses	9	5.6
Total	162	100.0

Table 3. continued.

Category Potential Impact Schedule Response	Respondent N	 %
Teachers will have less difficulty planning for classes using:		
Traditional Schedule	69	42.6
4 X 4 Schedule	63	38.9
A / B Schedule	6	3.7
Undecided or no difference	17	10.5
Non-responses	7	4.3
Total	162	100.0
Student Benefits		
Needs of students with differing levels of ability and readiness will be best met using:		
Traditional Schedule	53	32.7
4 X 4 Schedule	61	37.7
A / B Schedule	10	6.2
Other	1	.6
Undecided or no difference	31	19.1
Non-responses	6	3.7
Total	162	100.0
Overall students would prefer		
Traditional Schedule	43	26.5
4 X 4 Schedule	67	41.4
A / B Schedule	8	4.9
Other	1	.6
Undecided or no difference	38	23.5
Non-responses	5	3.1
Total	162	100.0
Students will be more successful in meeting graduation requirements using:		
Traditional Schedule	28	17.3
4 X 4 Schedule	88	54.3
A / B Schedule	12	7.4
Undecided or no difference	29	17.9
Non-responses	5	3.1
Total	162	100.0
Student retention of information will be highest using:		
Traditional Schedule	72	44.4
4 X 4 Schedule	39	24.1
A / B Schedule	5	3.1
Undecided or no difference	38	23.5
Non-responses	8	4.9
Total	162	100.0

Table 3. continued.

Category Potential Impact Schedule Response	Respondent N	 %
Student achievement in classroom will benefit most using:		
Traditional Schedule	52	32.1
4 X 4 Schedule	64	39.5
A / B Schedule	7	4.3
Undecided or no difference	34	21.0
Non-responses	5	3.1
Total	162	100.0
Grades will tend to be higher using:		
Traditional Schedule	44	27.2
4 X 4 Schedule	53	32.7
A / B Schedule	4	2.5
Undecided or no difference	54	33.3
Non-responses	7	4.3
Total	162	100.0
Agricultural Education Program		
Enrollment in agriculture class positively effected by:		
Traditional Schedule	51	31.5
4 X 4 Schedule	71	43.8
A / B Schedule	13	8.0
Undecided or no difference	15	9.3
Non-responses	12	7.4
Total	162	100.0
Number of college bound agricultural education students will increase using:		
Traditional Schedule	40	24.7
4 X 4 Schedule	65	40.1
A / B Schedule	8	4.9
Other Schedule	1	.6
Undecided or no difference	44	27.2
Non-responses	4	2.5
Total	162	100.0
Students with high grade point averages are more likely to enroll in agricultural education programs using:		
Traditional Schedule	42	25.9
4 X 4 Schedule	61	37.7
A / B Schedule	9	5.6
Other	1	.6
Undecided or no difference	44	27.2
Non-responses	5	3.1
Total	162	100.0

Table 3. continued.

Category Potential Impact Schedule Response	Respondent N	 %
Student interest in agricultural education curriculum will be higher using:		
Traditional Schedule	53	32.7
4 X 4 Schedule	58	35.8
A / B Schedule	6	3.7
Other	1	.6
Undecided or no difference	37	22.8
Non-responses	7	4.3
Total	162	100.0
Agricultural education curriculum materials that are currently available will be most effective using:		
Traditional Schedule	70	43.2
4 X 4 Schedule	43	26.5
A / B Schedule	6	3.7
Undecided or no difference	36	22.2
Non-responses	7	4.3
Total	162	100.0
Laboratory and SAEP Programs		
Labs are used more effectively in:		
Traditional Schedule	12	7.4
4 X 4 Schedule	130	80.2
A / B Schedule	13	8.0
Undecided or no difference	4	2.5
Non-responses	3	1.9
Total	162	100.0
Student achievement in the laboratory will benefit most using:		
Traditional Schedule	20	12.3
4 X 4 Schedule	111	68.5
A / B Schedule	9	5.6
Undecided or no difference	13	8.0
Non-responses	9	5.6
Total	162	100.0
More school time for internships, shadowing experiences, and apprenticeships will be available using:		
Traditional Schedule	24	14.8
4 X 4 Schedule	81	50.0
A / B Schedule	9	5.6
Undecided or no difference	41	25.3
Non-responses	7	4.3
Total	162	100.0

Table 3. continued.

Category Potential Impact Schedule Response	Respondent N	 %
Most successful schedule for hands on activities is:		
Traditional Schedule	15	9.3
4 X 4 Schedule	121	74.7
A / B Schedule	12	7.4
Undecided or no difference	10	6.2
Non-responses	4	2.5
Total	162	100.0
Preparation of students to conduct SAE programs will be highest using:		
Traditional Schedule	21	13.0
4 X 4 Schedule	80	49.4
A / B Schedule	16	9.9
Undecided or no difference	40	24.7
Non-responses	5	3.1
Total	162	100.0
Student interest in SAE programs will be highest using:		
Traditional Schedule	82	50.6
4 X 4 Schedule	20	12.3
A / B Schedule	3	1.9
Other	1	.6
Undecided or no difference	52	32.1
Non-responses	4	2.5
Total	162	100.0
Visiting students to supervise SAEP's will be more difficult using:		
Traditional Schedule	29	17.9
4 X 4 Schedule	56	34.6
A / B Schedule	10	6.2
Other	1	.6
Undecided or no difference	60	37.0
Non-responses	6	3.7
Total	162	100.0
FFA Program		
Membership in the FFA will be lower using:		
Traditional Schedule	11	6.8
4 X 4 Schedule	91	56.2
A / B Schedule	13	8.0
Other	2	1.2
Undecided or no difference	40	24.7
Non-responses	5	3.1
Total	162	100.0

Table 3. continued.

Category Potential Impact Schedule Response	Respondent N	 %
Field trips and activities are harder to get approved using:		
Traditional Schedule	26	16.0
4 X 4 Schedule	101	62.3
A / B Schedule	7	4.3
Undecided or no difference	23	14.2
Non-responses	5	3.1
Total	162	100.0
Overall FFA program is most negatively impacted by:		
Traditional Schedule	12	7.4
4 X 4 Schedule	104	64.2
A / B Schedule	15	9.3
Undecided or no difference	26	16.0
Non-responses	5	3.1
Total	162	100.0
Easier to develop FFA Program of Activities using:		
Traditional Schedule	106	65.4
4 X 4 Schedule	20	12.3
A / B Schedule	6	3.7
Other	1	.6
Undecided or no difference	24	14.8
Non-responses	5	3.1
Total	162	100.0
Preparation for FFA career development events and contests will be most positively effected by:		
Traditional Schedule	90	55.6
4 X 4 Schedule	41	25.3
A / B Schedule	7	4.3
Undecided or no difference	20	12.3
Non-responses	4	2.5
Total	162	100.0
Attendance at FFA meetings will be highest using:		
Traditional Schedule	97	59.9
4 X 4 Schedule	17	10.5
A / B Schedule	7	4.3
Undecided or no difference	34	21.0
Non-responses	7	4.3
Total	162	100.0

Table 3. continued.

Category Potential Impact Schedule Response	Respondent N	 %
More FFA members are likely to attain higher FFA degrees of membership using:		
Traditional Schedule	89	54.9
4 X 4 Schedule	19	11.7
A / B Schedule	5	3.1
Undecided or no difference	42	25.9
Non-responses	7	4.3
Total	162	100.0

For discussion, potential positive and negative impact statements and responses are grouped by related statements in the following categories: 1) instructional program, 2) teacher benefits, 3) student benefits, 4) agricultural education program, 5) laboratory and SAE program, and 6) FFA program. The responses for each statement are explained in corresponding divisions of the chapter.

Impact on the Instructional Program:

In 42 percent of the responses, teachers indicated that overall the instructional program will be best delivered using the traditional schedule, while 35.2 percent indicated the 4 X 4 schedule. In 42 percent of the responses, teachers indicated that more material will be covered in the classroom and laboratory using the 4 X 4 schedule, while nearly as high a percentage, (41.4%) indicated the traditional schedule. Most of

the teachers (51.9%) indicated that it is easier to cover all the competencies outlined in the course description using the traditional schedule, while 25.3 percent chose the 4 X 4 schedule. In 40.1 percent of the responses, teachers indicated that they were undecided or there was no difference in schedules for the statement, "School attendance rates will be highest using…", while 35.8 percent indicated the 4 X 4 schedule. In 45.7 percent of the responses, teachers indicated that discipline problems are more likely to occur using the 4 X 4 schedule, while 29.6 responded with undecided or no difference. In 43.2 percent of responses, teachers responded that the schedule that will require the least budget for materials and supplies is the traditional schedule, while 36.4 indicated undecided or no difference.

Teacher Benefits:

In 43.2 percent of the responses, teachers personally preferred the 4 X 4 schedule, while 38.9 percent personally preferred the traditional schedule. Almost one half (49.4%) of the teachers indicated that overall teacher benefits will be greater using the 4 X 4 schedule, and 22.8 percent responded with the traditional schedule. In 39.5 percent of the responses, teachers indicated that school teams and teachers working on cooperative projects are better able to meet using the 4 X 4 schedule, while 35.2 percent indicated the traditional schedule.

Most teachers (77.2%) responded that teachers have more planning time using the 4 X 4 schedule. Teachers indicated in 42.6 percent of the responses that they will have less difficulty planning for classes using the traditional schedule, while 38.9 indicated the 4 X 4 schedule.

Student Benefits:

In 37.7 percent of the responses, teachers indicated that the needs of students with differing levels of ability and readiness will be best met using the 4 X 4 schedule, while 32.7 percent indicated the traditional schedule. In 41.4 percent of the responses, teachers indicated that overall students would prefer the 4 X 4 schedule, while 26.5 percent responded with the traditional schedule and 23.5 percent responded with undecided or no difference. More than one half the teachers (54.3%) indicated that students will be more successful in meeting graduation requirements using the 4 X 4 schedule while 17.9 percent indicated undecided or no difference and 17.3 percent chose the traditional schedule. Teachers indicated in 44.4 percent of the responses that student retention of information will be highest using the traditional schedule, while 24.1 percent indicated the 4 X 4 schedule, and 23.5 indicated undecided or no difference. In 39.5 percent of the responses, teachers indicated that student achievement in the classroom will benefit most using the 4X4 schedule, while 32.1 percent indicated the traditional schedule.

Teachers were undecided or indicated no difference in schedules in 33.3 percent of the responses to the statement, "Grades will tend to be higher using…", while 32.7 indicated the 4 X 4 schedule, and 27.2 indicated the traditional schedule.

Impact on the Agricultural Education Program:

In 43.8 percent of the responses, teachers responded that enrollment in agriculture class can be expected to be most positively affected by 4 X 4 scheduling and 31.5 percent chose the traditional schedule to complete this statement. In 40.1 percent of the responses, teachers indicated that the number of college bound agricultural education students will increase using the 4 X 4 schedule, while 27.2 percent indicated undecided or no difference and 24.7 percent chose the traditional schedule. In 37.7 percent of the responses, teachers indicated that students with high grade point averages are more likely to enroll in agricultural education programs, while 27.2 percent responded with undecided or no difference and 25.9 percent indicated the traditional schedule. In 35.8 percent of the responses, teachers indicated that student interest in agricultural education curriculum will be higher using the 4 X 4 schedule, while 32.7 percent indicated the traditional schedule and 22.8 percent responded with undecided or no difference. In 43.2 percent of the responses, teachers indicated that the agricultural education curriculum materials that are currently available will be most

effective using the traditional schedule, while 26.5 percent responded with the 4 X 4 schedule and 22.2 percent responded undecided or no difference.

Impact on the Laboratory and SAEP Programs:

Most of the teachers (80.2%) responded that labs are used more effectively in the 4 X 4 schedule. Most of the teachers (74.7%) responded that the schedule that is most successful for hands on activities is the 4 X 4 schedule. Most of the teachers (68.5%) responded that student achievement in the laboratory will benefit most using the 4 X 4 schedule. One-half of the teachers indicated that more school time for internships, shadowing experiences, and apprenticeships will be available using the 4 X 4 schedule, while 25.3 percent responded with undecided or no difference. In 49.4 percent of the responses, teachers indicated that preparation of students to conduct SAE programs will be best using a 4 X 4 schedule, while 24.7 percent indicated undecided or no difference, 13.0 percent indicated the traditional and 9.9 percent indicated the A / B schedule. Most of the teachers (50.6%) indicated that student interest in SAE programs will be highest using the traditional schedule, while 32.1 percent indicated undecided or no difference. In 37 percent of the responses, teachers indicated that they were undecided or there was no difference in schedules for the statement, "Visiting

students to supervise SAEP's will be more difficult using…", while 34.6 percent indicated the 4 X 4 schedule.

Impact on the FFA Program:

Most of the teachers (56.2%) responded that membership in the FFA will be lower using the 4 X 4 schedule, while 24.7 indicated undecided or no difference. Most teachers (62.3%) responded that field trips and FFA activities are more difficult to get approved using the 4 X 4 schedule. Most teachers (64.2%) responded that the overall FFA program will be most negatively impacted by the 4 X 4 schedule, while almost 10 percent responded with the A / B schedule. More teachers (65.4%) indicated that it was easier to develop a FFA program of activities using the traditional schedule. More teachers (55.6%) indicated that preparation for FFA career development events and contests will be most positively affected by the traditional schedule, while 25.3 percent indicated the 4 X 4 schedule. Most of the teachers (59.9%) indicated that attendance at FFA meetings will be highest using the traditional schedule, while 21 percent indicated undecided or no difference. Most of the teachers (54.9%) indicated that more FFA members are likely to attain higher FFA degrees of membership using the traditional schedule, while 25.9 percent indicated undecided or no difference.

Differences in Current Schedule and Perceptions

The third research objective was to determine the attitudes of agricultural educators concerning alternative scheduling including teachers in traditional schedule and alternative schedule programs. For 17 out of 36 responses to impact statements, there were significant differences between agriculture education teachers' current schedules and their perceptions of alternative scheduling. Table 4 reports the differences between the teachers' current daily schedule and perceptions of the impact of scheduling that were reported in Table 3. The A / B schedule averaged less than six percent of the total responses and the other schedule averaged less than one percent of the total responses to the potential impact statements. There were too few responses to use them in an inferential test so the A / B and Other schedules were dropped from this analysis.

Current Schedule and Instructional Program:

For three out of six statements related to the instructional program, a significant difference existed between teachers using different schedules. A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "The overall instructional program will be best delivered using…". Slightly over 59 percent of the teachers

Table 4. Differences between Class Schedule Alternative and Perceptions regarding the Impact of Scheduling on Agricultural Education.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
Instructional Program				
Overall instructional program will be best delivered using:				
Traditional Schedule	25	59.5	41	39.4
4 X 4 Schedule	9	21.4	47	45.2
Undecided or no difference	8	19.0	16	15.4
Total	42	100.0	104	100.0
Statistical Test χ^2=7.323; df= 2; P=.03				
More material will be covered in the classroom and laboratory using:				
Traditional Schedule	20	46.5	46	43.8
4 X 4 Schedule	16	37.2	50	47.6
Undecided or no difference	7	16.3	9	8.6
Total	43	100.0	105	100.0
Statistical Test χ^2=2.468; df= 2; P=.291				
It is easier to cover all competencies outlined in course description using:				
Traditional Schedule	26	63.4	55	52.4
4 X 4 Schedule	8	19.5	32	30.5
Undecided or no difference	7	17.1	18	17.1
Total	41	100.0	105	100.0
Statistical Test χ^2=1.941; df= 2; P=.38				

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
School attendance rates will be highest using:				
Traditional Schedule	13	30.2	15	19.0
4 X 4 Schedule	7	16.3	50	38.8
Undecided or no difference	23	53.5	39	42.2
Total	43	100.0	104	100.0
Statistical Test χ^2=13.768; df= 2; P=<.01				
Discipline problems are more likely to occur using:				
Traditional Schedule	0	0.0	22	22.0
4 X 4 Schedule	25	64.1	48	48.0
Undecided or no difference	14	35.9	30	30.0
Total	39	100.0	100	100.0
Statistical Test χ^2=10.274; df= 2; P=<.01				
The schedule that will require the least budget for materials and supplies is:				
Traditional Schedule	15	37.5	51	50.5
4 X 4 Schedule	6	15.0	12	11.9
Undecided or no difference	19	47.5	38	37.6
Total	40	100.0	101	100.0
Statistical Test χ^2=1.943; df= 2; P=.378				
Teacher Benefits				
I personally prefer:				
Traditional Schedule	30	73.2	32	30.8
4 X 4 Schedule	6	14.6	62	59.6
Undecided or no difference	5	12.2	10	9.6
Total	41	100.0	104	100.0
Statistical Test χ^2= 25.24; df= 2; P=<.01				

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
Overall teacher benefits will be greater using:				
Traditional Schedule	19	47.5	17	16.3
4 X 4 Schedule	11	27.5	68	65.4
Undecided or no difference	10	25.0	19	18.3
Total	40	100.0	104	100.0
Statistical Test χ^2=19.423; df= 2; P=<.01				
School teams and teachers working on cooperative projects are better able to meet using:				
Traditional Schedule	17	42.5	38	36.2
4 X 4 Schedule	15	37.5	47	44.8
Undecided or no difference	8	20.0	20	19.0
Total	40	100.0	105	100.0
Statistical Test χ^2=.675; df= 2; P=.71				
Teachers have more planning time in:				
Traditional Schedule	7	18.9	3	2.9
4 X 4 Schedule	27	73.0	96	93.2
Undecided or no difference	3	8.1	4	3.9
Total	37	100.0	103	100.0
Statistical Test χ^2=12.00; df= 2; P=<.01				
Teachers will have less difficulty planning for classes using:				
Traditional Schedule	21	51.2	45	43.7
4 X 4 Schedule	12	29.3	49	47.6
Undecided or no difference	8	19.5	9	8.7
Total	41	100.0	103	100.0
Statistical Test χ^2=5.566; df= 2; P=.06				

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
Student Benefits				
Needs of students with differing levels of ability and readiness will be best met using:				
Traditional Schedule	20	52.6	32	31.1
4 X 4 Schedule	9	23.7	51	49.5
Undecided or no difference	9	23.7	20	19.4
Total	38	100.0	103	100.0
Statistical Test χ^2=8.098; df= 2; P=.02				
Overall students would prefer:				
Traditional Schedule	18	45.0	23	22.1
4 X 4 Schedule	8	20.0	57	54.8
Undecided or no difference	14	35.0	24	23.1
Total	40	100.0	104	100.0
Statistical Test χ^2=13.624; df= 2; P=<.01				
Students will be more successful in meeting graduation requirements using:				
Traditional Schedule	12	33.3	15	14.3
4 X 4 Schedule	16	44.4	71	67.6
Undecided or no difference	8	22.2	19	18.1
Total	36	100.0	105	100.0
Statistical Test χ^2=7.651; df= 2; P=.02				

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
Student retention of information will be highest using:				
Traditional Schedule	23	57.5	46	48.3
4 X 4 Schedule	8	20.0	30	26.6
Undecided or no difference	9	22.5	27	25.2
Total	40	100.0	103	100.0
Statistical Test χ^2=2.045; df= 2; P=.36				
Student achievement in classroom will benefit most using:				
Traditional Schedule	20	48.8	31	29.5
4 X 4 Schedule	11	26.8	52	49.5
Undecided or no difference	10	24.4	22	21.0
Total	41	100.0	105	100.0
Statistical Test χ^2=6.809; df= 2; P=.03				
Grades will tend to be higher using:				
Traditional Schedule	17	40.5	26	25.2
4 X 4 Schedule	8	19.0	44	42.7
Undecided or no difference	17	40.5	33	32.0
Total	42	100.0	103	100.0
Statistical Test χ^2=7.612; df= 2; P=.02				
Agricultural Education Program				
Enrollment in agriculture class positively effected by:				
Traditional Schedule	27	73.0	24	25.3
4 X 4 Schedule	8	21.6	60	63.2
Undecided or no difference	2	5.4	11	11.6
Total	37	100.0	95	100.0
Statistical Test χ^2= 25.64; df= 2; P=<.01				

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
Number of college bound agricultural education students will increase using:				
Traditional Schedule	16	42.1	20	18.9
4 X 4 Schedule	13	34.2	52	49.1
Undecided or no difference	9	23.7	34	32.1
Total	38	100.0	106	100.0
Statistical Test χ^2=8.067; df= 2; P=.02				
Students with high grade point averages are more likely to enroll in agricultural education programs using:				
Traditional Schedule	20	51.3	20	28.0
4 X 4 Schedule	8	20.5	53	42.7
Undecided or no difference	11	28.2	31	29.4
Total	39	100.0	104	100.0
Statistical Test χ^2=16.606; df= 2; P=<.01				
Student interest in agricultural education curriculum will be higher using:				
Traditional Schedule	22	53.7	30	29.1
4 X 4 Schedule	7	17.1	50	48.5
Undecided or no difference	12	29.3	23	22.3
Total	41	100.0	103	100.0
Statistical Test χ^2=12.806; df= 2; P=<.01				

Table 4. Continued.

Category / Potential Impact / Schedule Response	Current Schedule Alternative: Traditional N	Traditional %	4X4 N	4X4 %
Agricultural education curriculum materials that are currently available will be most effective using:				
Traditional Schedule	23	57.5	45	42.9
4 X 4 Schedule	8	20.0	34	32.4
Undecided or no difference	9	22.5	26	24.8
Total	40	100.0	105	100.0
Statistical Test	χ^2=2.919; df= 2; P=.24			
Laboratory and SAE Programs				
Labs are used more effectively in:				
Traditional Schedule	10	27.8	2	1.9
4 X 4 Schedule	24	66.7	102	96.2
Undecided or no difference	2	5.6	2	1.9
Total	36	100.0	106	100.0
Statistical Test	χ^2; unable to produce valid test			
Student achievement in the laboratory will benefit most using:				
Traditional Schedule	8	21.1	12	11.8
4 X 4 Schedule	25	65.8	84	82.4
Undecided or no difference	5	13.2	6	5.9
Total	38	100.0	102	100.0
Statistical Test	χ^2=4.513; df= 2; P=.105			

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
More school time for internships, shadowing experiences, and apprenticeships will be available using:				
Traditional Schedule	10	27.0	12	11.5
4 X 4 Schedule	16	43.2	63	60.6
Undecided or no difference	11	29.7	29	27.9
Total	37	100.0	104	100.0
Statistical Test χ^2=5.692; df= 2; P=.06				
Most successful schedule for hands on activities is:				
Traditional Schedule	5	13.9	10	9.3
4 X 4 Schedule	26	72.2	92	86.0
Undecided or no difference	5	13.9	5	4.7
Total	36	100.0	107	100.0
Statistical Test χ^2; unable to produce valid test				
Preparation of students to conduct SAE programs will be highest using:				
Traditional Schedule	6	16.7	11	11.2
4 X 4 Schedule	21	58.3	57	58.2
Undecided or no difference	9	25.0	30	30.6
Total	36	100.0	98	100.0
Statistical Test χ^2=.900; df= 2; P=.638				
Student interest in SAE programs will be highest using:				
Traditional Schedule	27	61.4	52	50.0
4 X 4 Schedule	4	9.1	15	14.4
Undecided or no difference	13	29.5	37	35.6
Total	44	100.0	104	100.0
Statistical Test χ^2=1.766; df= 2; P=.41				

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 % 	 4X4 N	 %
Visiting students to supervise SAEP's will be more difficult using:				
Traditional Schedule	11	28.2	16	16.0
4 X 4 Schedule	14	35.9	40	40.0
Undecided or no difference	14	35.9	44	44.0
Total	39	100.0	100	100.0
Statistical Test χ^2=2.715; df= 2; P.26				
FFA Program				
Membership in the FFA will be lower using:				
Traditional Schedule	1	2.7	9	9.1
4 X 4 Schedule	29	78.4	59	59.6
Undecided or no difference	7	18.9	31	31.3
Total	37	100.0	99	100.0
Statistical Test χ^2=4.444; df= 2; P=.11				
Field trips and activities are harder to get approved using:				
Traditional Schedule	9	22.5	14	13.3
4 X 4 Schedule	24	60.0	75	71.4
Undecided or no difference	7	17.5	16	15.2
Total	40	100.0	105	100.0
Statistical Test χ^2=2.18; df= 2; P=.34				
Overall FFA program is most negatively impacted by:				
Traditional Schedule	4	10.5	5	5.1
4 X 4 Schedule	30	78.9	73	74.5
Undecided or no difference	4	10.5	20	20.4
Total	38	100.0	98	100.0
Statistical Test χ^2=2.805; df= 2; P=.25				

Table 4. Continued.

Category Potential Impact Schedule Response	Current Schedule Alternative Traditional N	 %	 4X4 N	 %
Easier to develop FFA Program of Activities using:				
Traditional Schedule	30	73.2	74	71.2
4 X 4 Schedule	4	9.8	15	14.4
Undecided or no difference	7	17.1	15	14.4
Total	41	100.0	104	100.0
Statistical Test χ^2=.642; df= 2; P=.73				
Preparation for FFA career development events and contests will be most positively effected by:				
Traditional Schedule	25	61.0	62	59.0
4 X 4 Schedule	9	22.0	31	29.5
Undecided or no difference	7	17.1	12	11.4
Total	41	100.0	105	100.0
Statistical Test χ^2=1.357; df= 2; P=.507				
Attendance at FFA meetings will be highest using:				
Traditional Schedule	34	81.0	60	58.8
4 X 4 Schedule	2	4.8	14	13.7
Undecided or no difference	6	14.3	28	27.5
Total	42	100.0	102	100.0
Statistical Test χ^2=6.567; df= 2; P=.04				
More FFA members are likely to attain higher FFA degrees of membership using:				
Traditional Schedule	28	70.0	58	55.8
4 X 4 Schedule	5	12.5	13	12.5
Undecided or no difference	7	17.5	33	31.7
Total	40	100.0	104	100.0
Statistical Test χ^2=3.086; df= 2; P=.21				

currently following a traditional schedule responded with traditional schedule and only 21.4 percent responded with the 4 X 4 schedule while nearly as many (19.0%) responded with undecided or no difference. Among those teachers following a 4 X 4 schedule, only 45.2 percent responded with 4 X 4 schedule while 39.4 percent preferred the traditional schedule for the overall instructional program.

A significant difference also existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "School attendance rates will be highest using…". Teachers currently following a traditional schedule used undecided or no difference in 53.5 percent of their responses, traditional in 30.2 percent of their responses and 4 X 4 in only 16.3 percent of their responses. Among those teachers following a 4 X 4 schedule, 48.1 percent responded with 4 X 4 schedule, 14.4 percent responded with the traditional schedule and 37.5 percent responded with undecided or no difference when choosing the schedule to complete the statement.

A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Discipline problems are more likely to occur using:…". Teachers currently following a traditional schedule were far more critical of the 4 X 4 schedule in relation to increased discipline problems than teachers

following the 4 X 4 schedule. Among those teachers following a 4 X 4 schedule, 22.0 percent responded with the traditional schedule and 48 percent responded with the 4 X 4 schedule to complete this statement. In both cases a higher percentage of teachers responded that discipline problems are more likely using the 4 X 4 schedule than other responses.

Current Schedule and Teacher Benefits:

For two out of five statements related to teacher benefits, a significant difference existed between teachers using different schedules. A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "I personally prefer…". Teachers currently following a traditional schedule were far more likely to personally prefer the traditional schedule (73.2%) than the 4 X 4 schedule (14.6%). Among those teachers following a 4 X 4 schedule, 59.6 percent responded with the 4 X 4 schedule and 30.8 percent would prefer the traditional schedule. In both cases the majority of teachers preferred the schedule that they were currently following.

A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Overall teacher benefits will be greater using…". Teachers were more likely to respond with the schedule that they were currently following. Slightly

over 47 percent of the teachers currently following a traditional schedule responded with traditional schedule and 25 percent chose undecided or no difference. Teachers following the 4 X 4 schedule responded with 4 X 4 more often (65.4%) than other schedules and 18.3 percent responded with undecided or no difference. Only 16.3 percent of teachers following the 4 X 4 schedule recognized the overall teacher benefit as being greater with the traditional schedule.

Current Schedule and Student Benefits:

For five out of six statements related to student benefits, a significant difference existed between teachers using different schedules. A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "The needs of students with differing levels of ability and readiness will be best met…". In both cases the majority of teachers preferred the schedule that they were currently following. Teachers currently following a traditional schedule were far more likely to respond with the traditional schedule (52.6%) than the 4 X 4 schedule (23.7%) for this statement. Among those teachers following a 4 X 4 schedule, 49.5 percent responded with 4 X 4 schedule and 31.1 percent responded with the traditional schedule to complete the statement.

A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Overall students would prefer…". A higher percentage of teachers following the traditional schedule (35.0%) responded with undecided or no difference for this statement than teachers following a 4 X 4 schedule (23.1%). Only 20 percent of the traditional schedule teachers perceived that students would prefer the 4 X 4 schedule, while 54.8 percent of 4 X 4 teachers chose the 4 X 4 as most preferred by students.

A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Students will be more successful at meeting graduation requirements…". A higher percentage of teachers currently following a traditional schedule (44.4%) responded with the 4 X 4 schedule for this statement. Teachers following the 4 X 4 schedule responded with 4 X 4 much more often (67.6%) than other schedule. Only 14.3 percent of teachers following the 4 X 4 schedule recognized the overall teacher benefit as being greater with the traditional schedule.

A significant difference also existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Grades will tend to be higher using…". High percentages of undecided or no difference responses were recorded for teachers following a

traditional schedule (40.5%) and teachers following a 4 X 4 schedule (32%) for this statement. Also in both cases a higher percentage of teachers preferred the schedule that they were currently following as a response to the statement. Teachers currently following a traditional schedule were more likely to respond with the traditional schedule (40.5%) than the 4 X 4 schedule (19%) for this statement. Among those teachers following a 4 X 4 schedule, 42.7 percent responded with 4 X 4 schedule and 25.2 percent responded with the traditional schedule to complete the statement.

A significant difference also existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Student achievement in the classroom will benefit most using…". In both categories a higher percentage of teachers preferred the schedule that they were currently following as a response to the statement. Teachers currently following a traditional schedule were more likely to respond with the traditional schedule (48.8%) than the 4 X 4 schedule (26.8%) for this statement. Teachers currently following a 4 X 4 schedule were more likely to respond with the 4 X 4 schedule (49.5%) than the traditional schedule (29.5%) to complete the statement.

Current Schedule and Agricultural Education:

Four out of five statements related to the agricultural education program produced a significant difference between teachers using different schedules. A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "The number of college bound students enrolling in agricultural education classes will increase most using…". Teachers were more likely to respond with the schedule that they were currently following. Slightly over 42 percent of the teachers currently following a traditional schedule responded with traditional schedule and 34.2 percent responded with the 4 X 4 schedule to complete the statement. Teachers following the 4 X 4 schedule responded with 4 X 4 more often (49.1%) than those teachers currently following a 4 X 4 that responded with the traditional schedule (18.9%).

A significant difference also existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Students with high grade point averages are more likely to enroll in agricultural education programs using…". Among both groups a higher percentage of teachers preferred the schedule that they were currently following as a response to the statement. Teachers currently following a traditional schedule were more likely to respond with the traditional schedule (51.3%) than the 4 X 4

schedule (20.5%) for this statement. Among those teachers following a 4 X 4 schedule, 51 percent responded with 4 X 4 schedule and 19.2 percent responded with the traditional schedule to complete the statement.

A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Enrollment in agricultural education classes can be expected to be most positively affected by…". A higher percentage of teachers following the traditional schedule (73.0%) responded with the traditional schedule and a higher percentage of teachers following the 4 X 4 schedule responded with 4 X 4 (63.2%).

A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Student interest in the agricultural education curriculum will be higher using…". In both cases a higher percentage of teachers preferred the schedule that they were currently following as a response to the statement. Teachers currently following a traditional schedule were far more likely to respond with the traditional schedule (53.7%) than the 4 X 4 schedule (17.1%) for this statement. Among those teachers following a 4 X 4 schedule, 48.5 percent responded with 4 X 4 schedule and 29.1 percent responded with the traditional schedule to complete the statement.

Current Schedule and the Laboratory:

One out of seven statements related to the laboratory and SAE programs produced a significant difference between teachers using different schedules. A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "More school time for internships, shadowing experiences, and apprenticeships will be available using…". Although a higher percentage of both groups responded with 4 X 4 schedule to complete the statement, only 11.5 percent of the teachers currently following the 4 X 4 schedule responded with traditional, while 27 percent of the teachers following a traditional schedule indicated more time for internships, apprenticeships, and shadowing was available in the traditional schedule.

Current Schedule and the FFA:

One out of seven statements related to FFA program produced significant differences between teachers using different schedules. A significant difference existed among teachers currently following a traditional schedule and those following a 4 X 4 schedule in response to the statement, "Attendance at FFA meetings will be highest using…". Although a majority of teachers currently following both schedules chose the traditional schedule to complete the statement, a much higher percentage

(81.0%) of the teachers following the traditional schedule indicated that the FFA meeting attendance would be highest using the traditional schedule, while only 58.8 percent of teachers following a 4 X 4 schedule chose the traditional response. The latter group indicated the undecided or no difference response a higher percentage than the traditional schedule group.

Alternative Scheduling and Demographic Variables

The fourth research objective was to study the relationship between the attitudes of agricultural educators concerning alternative scheduling and selected demographic variables including age, degree held and years of teaching experience. The differences among perceptions of each statement and the teachers' demographic information are explained in this division of the chapter. To study the differences between the attitudes of agricultural educators concerning alternative scheduling and demographic factors including age, degree held, and years of teaching experience, certain categories were dropped or collapsed. As in the previous analysis, only traditional, 4 X 4 and undecided or no difference responses were analyzed because of frequency of response.

Differences in Perceptions and Age:

In the analysis of age, two categories were used: 1) 22 to 39 years old and 2) 40 to 64 years old. The mean age for the population was 40.8 years, the median age was 42, and the

standard deviation was 10.2. The youngest respondent was 22 and the oldest was 64. Table 5 reports the differences between perceptions of the impact of scheduling that were reported in Table 3 and the teachers' age. Overall results indicated that there were negligible differences between attitudes by agriculture education teachers and their age. Only three statements revealed significant differences in perceptions and age. All three statements were in the FFA program category. A significant difference existed between younger teachers and older teachers for the statement, "Overall the FFA program will be most negatively impacted by the 4 X 4 schedule…". Seventy five percent of the older teachers indicated that FFA membership will be lower in the 4 X 4 schedule, while only 52.4 percent of the younger teachers indicated the same response. The younger teachers responded with a higher percentage in the traditional and undecided or no difference categories than the 40-64 age group.

According to 65.4 percent of the teachers surveyed, it will be easier to prepare a FFA program of activities using the traditional schedule. A significant difference existed between teachers that are 22-39 years of age and teachers that are 40-64 years of age in response to this statement. Seventy nine percent of the older teachers responded with the traditional schedule for this statement, while only 59.4 percent of the younger teachers

Table 5. Differences between Age and Perceptions regarding the Impact of Scheduling on Agricultural Education. (Note: Only statistically significant data are shown)

Category Potential Impact Schedule Response	Age Category 22 to 39 N	 %	 40 to 64 N	 %
FFA Program				
Membership in the FFA will be lower using:				
Traditional Schedule	9	14.3	2	2.6
4 X 4 Schedule	33	52.4	57	75.0
Undecided or no difference	21	33.3	17	22.4
Total	63	100.0	76	100.0
Statistical Test $\chi^2 = 10.149$; df= 2; P=<.01				
Easier to develop FFA Program of Activities using:				
Traditional Schedule	38	59.4	65	79.3
4 X 4 Schedule	11	17.2	8	9.8
Undecided or no difference	15	23.4	9	11.0
Total	64	100.0	82	100.0
Statistical Test $\chi^2 = 6.938$; df= 2; P=.03				
Preparation for FFA career development events and contests will be most positively effected by:				
Traditional Schedule	30	46.9	58	69.9
4 X 4 Schedule	23	35.9	16	19.3
Undecided or no difference	11	17.2	9	10.8
Total	64	100.0	83	100.0
Statistical Test $\chi^2 = 8.044$; df= 2; P=.02				

indicated the same response. The younger teachers responded with a higher percentage in the 4 X 4 and undecided or no difference categories than the 40-64 age group.

Preparation for FFA career development events, and contests, will be most positively affected using the traditional schedule according to 55.6 percent of the teachers surveyed. A significant difference existed between younger teachers and older teachers. Seventy percent of the older teachers responded with the traditional schedule for this statement, while only 46.9 percent of the younger teachers indicated the same response. The younger teachers responded with a higher percentage (35.9%) with the 4 X 4 schedule than the 40-64 age group (19.3%).

Differences in Perceptions and Degree of Training

The two categories for degree of training held by the teacher were 1) Bachelors degree, and 2) Masters degree or above. Table 6 showed the differences between perceptions of the impact of scheduling that were reported in Table 3 and the teachers' degree of training. Only the eight statements that had a significant difference were reported in the table.

Degree of Training and Teacher Benefits:

In response to the statement, "I personally prefer…", a higher percentage of teachers with Bachelors degrees responded with undecided (16.9%) than teachers with Masters degrees (4.6%). Teachers with Bachelors degrees chose the 4 X 4 schedule more

Table 6. Differences between Highest Degree Held and Perceptions regarding the Impact of Scheduling on Agricultural Education. (Note: Only statistically significant data are shown)

Category Potential Impact Schedule Response	Degree Held Category Bachelors N	 %	 Masters or above N	 %
Teacher Benefits				
I personally prefer:				
Traditional Schedule	20	33.9	43	49.4
4 X 4 Schedule	29	49.2	40	46.0
Undecided or no difference	10	16.9	4	4.6
Total	59	100.0	87	100.0
Statistical Test χ^2= 7.633; df= 2; P=.02				
Student Benefits				
Needs of students with differing levels of ability and readiness will be best met using:				
Traditional Schedule	14	23.7	38	45.2
4 X 4 Schedule	28	47.5	32	38.1
Undecided or no difference	17	28.8	14	16.7
Total	59	100.0	84	100.0
Statistical Test χ^2=7.492; df= 2; P=.02				
Laboratory and SAEP Program				
Student achievement in the laboratory will benefit most using:				
Traditional Schedule	3	5.2	17	19.8
4 X 4 Schedule	54	93.1	57	66.3
Undecided or no difference	1	1.7	12	14.0
Total	58	100.0	86	100.0
Statistical Test χ^2=14.284; df=2; P=<.01				

Table 6. Continued.

Category Potential Impact Schedule Response	Degree Held Category Bachelors N	 %	 Masters or above N	 %
More school time for internships, shadowing experiences, and apprenticeships will be available using:				
Traditional Schedule	4	6.8	20	23.5
4 X 4 Schedule	39	66.1	41	48.2
Undecided or no difference	16	27.1	24	28.2
Total	59	100.0	85	100.0
Statistical Test χ^2=7.879; df= 2; P=.02				
Most successful schedule for hands on activities is:				
Traditional Schedule	1	1.7	14	16.5
4 X 4 Schedule	54	91.5	65	76.5
Undecided or no difference	4	6.8	6	7.1
Total	59	100.0	85	100.0
Statistical Test χ^2=8.258; df= 2; P=.02				
FFA Program				
Membership in the FFA will be lower using:				
Traditional Schedule	9	15.5	2	2.4
4 X 4 Schedule	31	53.4	59	71.1
Undecided or no difference	18	31.0	22	26.5
Total	58	100.0	83	100.0
Statistical Test χ^2= 9.429; df= 2; P=<.01				

Table 6. Continued.

Category Potential Impact Schedule Response	Degree Held Category Bachelors N	 %	 Masters or above N	 %
It is easier to develop FFA Program of Activities using:				
Traditional Schedule	35	58.3	69	78.4
4 X 4 Schedule	12	20.0	8	9.1
Undecided or no difference	13	21.7	11	12.5
Total	60	100.0	88	100.0
Statistical Test χ^2= 7.037; df= 2; P=.03				
Preparation for FFA career development events and contests will be most positively effected by:				
Traditional Schedule	26	43.3	63	70.8
4 X 4 Schedule	24	40.0	16	18.0
Undecided or no difference	10	16.7	10	11.2
Total	60	100.0	89	100.0
Statistical Test χ^2= 11.784; df= 2; P=<.01				

often (49.2%) than the traditional schedule (33.9%) as their personal preference. Teachers with Masters degrees or above were fairly evenly divided between the traditional (49.4%) and 4 X 4 (46.0%) schedule as their personal preference

Degree of Training and Student Benefits:

A higher percentage of teachers with Bachelors degrees (47.5%) indicated that the 4 X 4 schedule rather than the traditional schedule (23.7%) would best complete the statement "The needs of students with differing levels of ability and readiness will be best met…". More teachers with Bachelors degrees responded with undecided or no difference for this statement (28.8%) than teachers with Bachelors degrees that responded with the traditional schedule. Teachers with Masters or above indicated the traditional (45.2%) rather than the 4 X 4 (38.1%) schedule as their preference to complete the statement.

Degree of Training and the Laboratory:

Significant differences existed among teachers with different degrees of training in response to the statements, "The schedule that is most successful with hands-on-activities is…", and "Student achievement in the laboratory will benefit most using:". A higher percentage of responses from teachers with Bachelors degrees indicated that the 4 X 4 schedule would be most successful for hands on activities (91.5%) and student laboratory achievement (93.1%) while only one teacher with a Bachelors

degree indicated the traditional schedule would be best for hands on activities and only three teachers indicated that the traditional schedule would be best for student achievement in the laboratory. A much lower percentage of teachers with Bachelors degrees (5.2%) perceived that the traditional schedule would be most successful for achievement in the laboratory than teachers with Masters degrees or above (19.8%) although a majority of both groups responded with the 4 X 4 schedule for this statement.

A higher percentage of teachers with Bachelors degrees (66.1%) preferred the 4 X 4 schedule to complete the statement, "More school time for internships, shadowing experiences, and apprenticeships will be available using…", than teachers with Masters degrees or above (48.2%) Teachers with Bachelors degrees chose the traditional schedule for only 6.8 percent of the responses while teachers with Masters degrees or above responded with the traditional schedule 23.5 percent of the time.

Degree of Training and the FFA:

A significant difference existed between teachers with a Bachelors degree and those with a Masters degree for the statement, "Overall the FFA program will be most negatively impacted by the 4 X 4 schedule…". Although a majority of both groups indicated that the 4 X 4 schedule best completes the statement, a significantly lower percentage of teachers with

Bachelors degrees (53.4%) chose the response than the teachers with Masters degrees or above (71.1%).

A significant difference existed between teachers with a Bachelors degree and those with a Masters degree or above for the statement, "It will be easier to prepare a FFA program of activities using…". Although a majority of both groups indicated that the traditional schedule best completes the statement, a significantly higher percentage of teachers with Masters degrees or above (78.4%) chose the response than the teachers with Bachelors degrees (58.3%). Teachers with Bachelors degrees chose the 4 X 4 and undecided or no difference for a higher percentage of responses than teachers with Masters degree or above when considering program of activities preparation.

A significant difference existed between teachers with a Bachelors degree and those with a Masters degree in response to the statement, "Preparation for FFA career development events, and contests, will be most positively affected using…". A significantly higher percentage of teachers with Masters degrees or above (70.8%) chose the traditional schedule response than the teachers with Bachelors degrees (43.3%). Teachers with Bachelors degrees chose the 4 X 4 schedule nearly as often (40.0%) as the traditional schedule (43.3%) when considering FFA career development event preparation.

Differences in Perceptions and Teaching Experience

Categories used for years of experience were 1) 0-19 years and 2) 20 or more years. The minimum and maximum years were 0 and 39, respectively. The mean number of years was 15.7, the median was 16.0 and the standard deviation was 10.4. Table 7 reported the differences between perceptions of the impact of scheduling that were reported in Table 3 and the teachers' years of teaching experience. Only the statements where significant differences existed are reported in the table.

Years of Experience and Student Benefits:

A significant difference existed among teachers of different years of teaching experience in response to the statement "The needs of students with differing levels of ability and readiness will be best met using…". Only 28.0 percent of teachers with 0-19 years of teaching experience responded with the traditional schedule and 28 percent responded with undecided or no difference to complete the statement. Over forty-seven percent of teachers with more than 20 years teaching experience responded using the traditional schedule and only 13.1 percent responded with undecided or no difference.

A significant difference existed among teachers of different years of teaching experience in response to the statement "Overall students would prefer…". A higher percentage of teachers with 0-19 years of teaching experience (32.1%)

Table 7. Differences between Years of Teaching Experience and Perceptions regarding the Impact of Scheduling on Agricultural Education. (Note: Only statistically significant data are shown)

Category Potential Impact Schedule Response	Years of teaching experience 0 to 19 N	 %	 20 or more N	 %
Teacher Benefits				
I personally prefer:				
Traditional Schedule	30	36.1	33	52.4
4 X 4 Schedule	41	49.4	28	44.4
Undecided or no difference	12	14.5	2	3.2
Total	83	100.0	63	100.0
Statistical Test χ^2= 7.13; df= 2; P=.03				
Student Benefits				
Overall students would prefer:				
Traditional Schedule	19	22.6	24	38.7
4 X 4 Schedule	38	45.2	27	43.5
Undecided or no difference	27	32.1	11	17.7
Total	84	100.0	62	100.0
Statistical Test χ^2=6.001; df= 2; P=.050				
Needs of students with differing levels of ability and readiness will be best met using:				
Traditional Schedule	23	28.0	29	47.5
4 X 4 Schedule	36	43.9	24	39.3
Undecided or no difference	23	28.0	8	13.1
Total	82	100.0	61	100.0
Statistical Test χ^2=7.427; df= 2; P=.024				

Table 7. Continued.

Category Potential Impact Schedule Response	Years of teaching experience 0 to 19 N	 %	 20 or more N	 %
Agricultural Education Program				
Enrollment in agriculture class positively effected by:				
Traditional Schedule	29	36.7	22	38.6
4 X 4 Schedule	36	45.6	34	59.6
Undecided or no difference	14	17.7	1	1.8
Total	79	100.0	57	100.0
Statistical Test χ^2= 8.96; df= 2; P=.01				
Laboratory and SAE Programs				
Most successful schedule for hands on activities is:				
Traditional Schedule	4	4.9	11	17.7
4 X 4 Schedule	72	87.8	47	75.8
Undecided or no difference	6	7.3	4	6.5
Total	82	100.0	62	100.0
Statistical Test χ^2=6.262; df= 2; P=.044				
Student interest in SAE programs will be highest using:				
Traditional Schedule	38	43.2	43	67.2
4 X 4 Schedule	14	15.9	6	9.4
Undecided or no difference	36	40.9	15	23.4
Total	88	100.0	64	100.0
Statistical Test χ^2=8.580; df= 2; P=.014				

Table 7. Continued.

Category Potential Impact Schedule Response	Years of teaching experience 0 to 19 N	 %	 20 or more N	 %
FFA Program				
Membership in the FFA will be lower using:				
Traditional Schedule	10	12.0	1	1.7
4 X 4 Schedule	45	54.2	45	77.6
Undecided or no difference	28	33.7	12	20.7
Total	83	100.0	58	100.0
Statistical Test χ^2=9.634; df= 2; P=<.01				
Easier to develop FFA Program of Activities using:				
Traditional Schedule	52	60.5	52	83.9
4 X 4 Schedule	14	16.3	6	9.7
Undecided or no difference	20	23.3	4	6.5
Total	86	100.0	62	100.0
Statistical Test χ^2=10.244; df= 2; P=<.01				
Preparation for FFA career development events and contests will be most positively effected by:				
Traditional Schedule	43	50.6	46	71.9
4 X 4 Schedule	30	35.3	10	15.6
Undecided or no difference	12	14.1	8	12.5
Total	85	100.0	64	100.0
Statistical Test χ^2=8.102; df= 2; P=.017				
Attendance at FFA meetings will be highest using:				
Traditional Schedule	47	56.6	49	77.8
4 X 4 Schedule	12	14.5	4	6.3
Undecided or no difference	24	28.9	10	15.9
Total	83	100.0	63	100.0
Statistical Test χ^2=7.202; df= 2; P=.027				

responded with undecided or no difference for this statement than teachers who had taught for more than 20 years (17.7%). Only 22.6 percent of teachers with 0-19 years of teaching experience perceived that students would prefer the traditional schedule, while 38.7 percent of teachers with more than 20 years teaching experience chose the traditional schedule.

Years of Experience and Agricultural Education:

A significant difference existed among teachers of different years of teaching experience in response to the statement, "Enrollment in agriculture classes will be most positively effected by…". A higher percentage of teachers with 0-19 years of teaching experience (45.6%) perceived that the 4 X 4 schedule would best complete the statement while 59.6 percent of teachers with 20 years or more teaching experience chose the traditional schedule. Few teachers (1.8%) with 20 years or more teaching experience responded with undecided or no difference for the schedule that positively affected enrollment.

Years of Experience and the Laboratory:

Significant differences existed among teachers with differing years of experience in response to the statement "Student interest in SAEP's will be highest using:…". A higher percentage of responses from teachers with 0 to 19 years teaching experience responded with undecided or no difference (40.9%) for this statement than teachers with 20 or more years of teaching

experience (23.4%). The highest percentage of teachers with 20 or more years teaching experience responded that student interest in SAEP's would be highest using the traditional schedule (67.2%).

Years of Experience and the FFA:

Four out of seven statements related to the FFA Program produced a significant difference between less experienced and more experienced teachers. A significant difference also existed between teachers with a 0-19 years of experience and those with a 20 or more years of teaching experience for the statement, "Overall the FFA program will be most negatively impacted by the 4 X 4 schedule…". Although a majority of both groups indicated that the 4 X 4 schedule best completes the statement, a significantly lower percentage of the less experienced group (54.2%) chose 4 X 4 than the more experienced group(77.6%). The less experienced group of teachers chose the traditional schedule with a higher percentage of response than the more experienced group.

A significant difference also existed between teachers with 0-19 years of experience and those with a 20 or more years of teaching experience for the statement, "It will be easier to prepare a FFA program of activities using…". Although a majority of both groups indicated that the traditional schedule best completes the statement, a significantly lower percentage of

teachers with 0-19 years experience (60.5%) chose the response than the teachers with 20 or more years experience (83.9%). The less experienced group of teachers chose the 4 X 4 schedule and undecided or no difference with a higher percentage of response than the more experienced group.

A significant difference also existed between teachers with a 0-19 years of experience and those with 20 or more years of teaching experience in response to the statement, "Preparation for FFA career development events, and contests, will be most positively affected using…". Although a majority of both groups indicated that the traditional schedule best completes the statement, a significantly higher percentage of teachers with 20 years or more experience (71.9%) chose the traditional schedule than teachers with 0-19 years experience (50.6%). The less experienced group of teachers chose the 4 X 4 schedule to complete the statement with a higher percentage of response than the more experienced group.

In response to the statement, "Attendance at FFA meetings will be highest using…", a significant difference existed between teachers with 0-19 years of experience and those with 20 or more years of teaching experience. Although a majority of both groups indicated that the traditional schedule best completes the statement, a significantly higher percentage of teachers with 20 years or more experience (77.8%) chose the traditional schedule than teachers with 0-19 years experience (56.6%). The less

experienced group of teachers chose the 4 X 4 schedule and undecided or no difference to complete the statement with a higher percentage of response than the teachers with more experience.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND DISCUSSION

The basic daily schedule followed by the average American high school student has been unchanged for decades. The trend toward alternative scheduling was taking place across the nation. The intent of this research was to focus on the alternative scheduling movement in agricultural education departments throughout the state of Tennessee. The overall purpose of this research was to complete an in-depth study of the impact of alternative scheduling on agriculture education. The study partially replicated the methodology of a study by Becton (1996) in North Carolina.

The research objectives for this study were:

1. To describe the extent to which agriculture educators are teaching in schools with alternative scheduling in Tennessee.
2. To determine the impact of alternative scheduling on the agricultural education program
3. To determine the attitudes of agricultural educators concerning alternative scheduling including teachers in traditional schedule and alternative schedule programs.
4. To study the relationship between the attitudes of agricultural educators concerning alternative scheduling

and selected demographic variables including age, degree held and years of teaching experience.

Summary of Procedures

A survey instrument was developed by the researcher and pilot tested in South Carolina. Revisions were made and identical surveys were presented to every agricultural education teacher (N=262) in secondary schools in Tennessee at the Tennessee Vocational Conference or by mail in August, 1999. The survey assessed the daily schedule being followed in each teacher's school for the current and past five school years. It also identified the impact of scheduling on the FFA, SAE and instructional programs in their schools, and assessed the teachers' attitudes toward alternative scheduling. In open ended questions in the survey, teachers were asked to identify the schedule alternative that would deliver the most effective agricultural education program and those who had made a change in schedule were asked to describe the history of the change. A follow-up administration of the instrument was mailed and a total of 162 instruments were returned for a 62 percent response rate.

Qualitative data from the survey were examined and summarized. Quantitative data were analyzed using Statistical Package for Social Sciences for Windows. The cross tabulation format and the chi-square test for statistical significance was calculated for inferential data.

Summary of Findings

The first objective was to describe the extent to which agriculture educators are teaching in schools with alternative scheduling in Tennessee. The four categories of schedules studied were: a traditional schedule where the school has a traditional six, or seven period day; four by four block schedule (4 X 4) with four courses per semester, approximately 90 minutes in length, two semesters per school year; the alternate day (A / B) schedule with eight classes, four each taught alternately on a Monday-Wednesday-Friday or Tuesday-Thursday schedule; and all other schedule alternatives. Numbers and percentages of teachers following a 4 X 4 schedule steadily increased throughout the six years assessed during the study as numbers and percentages of teachers following a traditional schedule steadily decreased. Two thirds of the teachers will be following a 4 X 4 schedule through the 1999-2000 school year. The use of the A / B schedule or other schedule alternatives increased by a few teachers in the first three years of the study, but no teachers began to use these schedules throughout the last three years. A summary of information collected in the study on the daily schedule of Tennessee agricultural education instructors is graphically presented in Figure 1.

The second objective was to determine the impact of alternative scheduling on the agricultural education program. Significant statements made by teachers about their involvement

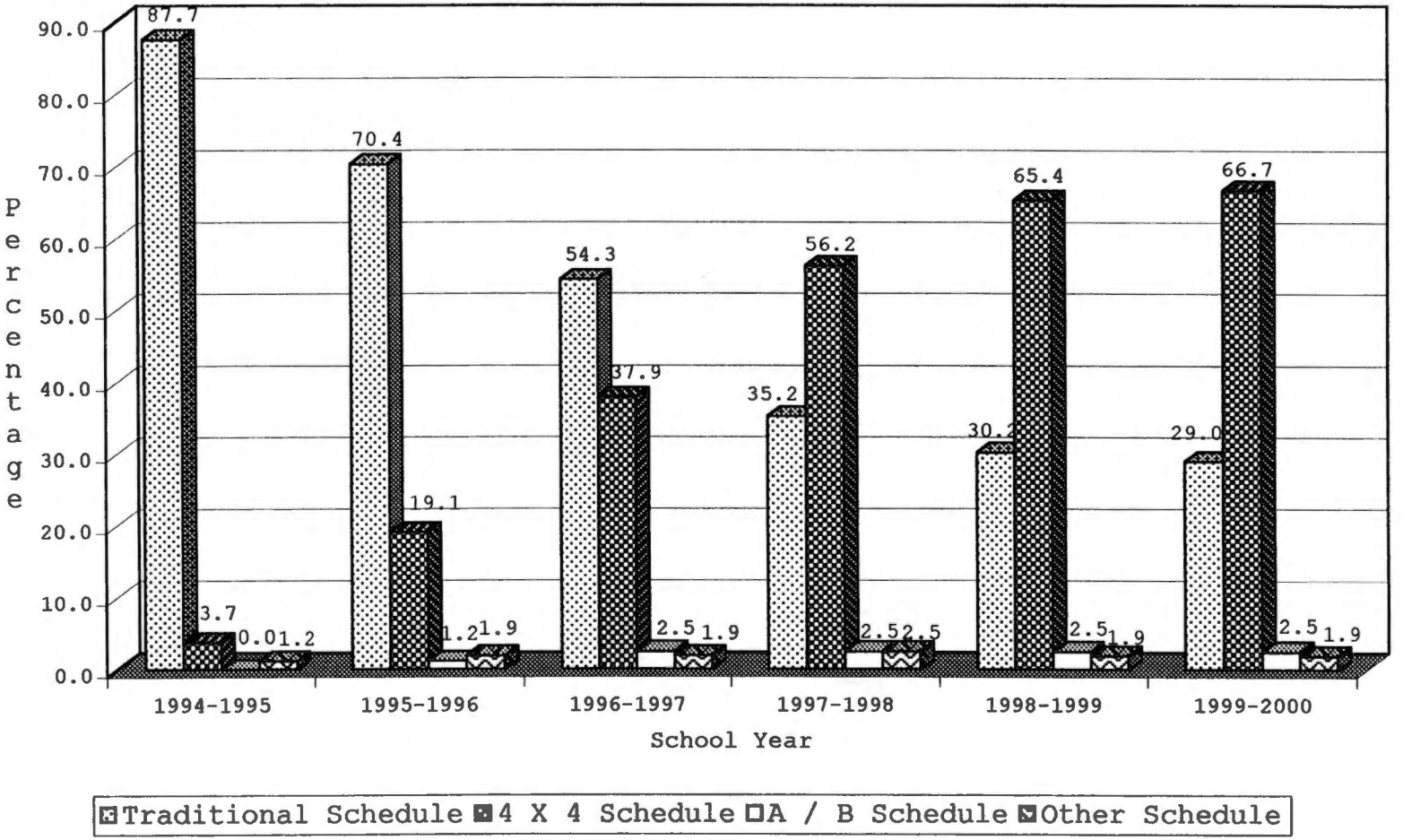

Figure 1. Daily schedule of Tennessee agricultural education instructors.

(Note: Annual totals do not equal 100% due to non-responses.)

in decision making relative to a schedule change can be divided into two distinct groups. The decision was made at the administrative or school board level, and teachers had little or no input about the change summarizes similar negative responses received from 10 or more teachers. Responses also received from 10 or more teachers were more positive about the change. In summary, teachers made visits to other schools on a similar schedule; schools held in-services, information meetings and/or teacher discussions to prepare for the change; and teacher committees were involved in the planning, material development and/or implementation of the change. The traditional schedule received the highest percentage of responses for 12 out of 35 statements. The highest percentage of responses indicated that agriculture education teachers assess the traditional schedule as best for the overall instructional program delivery, highest retention of information by students, easiest to cover the competencies outlined in the course description, and the most effective schedule related to curriculum materials currently available. In addition, responses indicated that the traditional schedule was perceived by the highest percentage of teachers as less likely to have discipline problems, the schedule requiring the least budget for materials and supplies, and the schedule that will lead to the highest student interest in SAEPs.

More than 55 percent of teachers surveyed indicated that the traditional schedule was best for preparation for FFA career

development events, attendance at FFA meetings, and students to attain higher FFA degrees. The negative statements related to the FFA all received a response rate of 56 percent or more indicating that the 4 X 4 schedule most negatively impacted the program, activities were more difficult to get approved and membership in the FFA will be lower using 4 X 4. Statements made by more than 10 teachers about the disadvantage of the 4 X 4 schedule were characterized in the theme: Students that are only in one semester of classes each year are a problem with FFA activities.

The 4 X 4 schedule was viewed as most positive by teachers to 23 out of 35 statements. The highest percentage of teachers surveyed indicated that they personally prefer the 4 X 4 schedule, teachers have more planning time in the 4 X 4 schedule, overall teacher benefits will be greater using the 4 X 4 schedule, overall students would prefer the 4 X 4 schedule and students will be more successful at meeting graduation requirements using the 4 X 4 schedule. In addition the highest percentage of teachers indicated that the number of college bound students enrolling in agricultural education classes will increase most using the 4 X 4 schedule; students with high grade point averages are more likely to enroll in agricultural education programs using the 4 X 4 schedule; enrollment in agricultural classes can be expected to be most positively affected by the 4 X 4 schedule; student achievement in the

classroom will benefit most using the 4 X 4 schedule; and more school time for internships, shadowing experiences, and apprenticeships will be available using the 4 X 4 schedule.

The most significant data related to the 4 X 4 schedule were in the category of laboratory work. More than two-thirds of all teachers indicated that labs can be utilized more effectively using 4 X 4, student achievement in the laboratory will benefit most using 4 X 4 and the schedule that is most successful with hands-on-activities is the 4 X 4. When responding to an open-ended question about the advantages of the 4 X 4 schedule, more than 10 teachers statements were summarized as follows: "More time is available for hands on activities and laboratory assignments."

The highest percentage of teachers were undecided or found no difference in the schedule that positively affects school attendance rate, and the schedule that is more difficult when visiting students to supervise SAEPs. Although it was not the highest response category, nearly one-third of teachers were undecided or found no difference in the schedule that would have more discipline problems associated with it.

The data analysis for the third objective, to determine the attitudes of teachers concerning alternative scheduling including teachers in traditional schedule and alternative schedule programs, revealed a common pattern. There were 17 statements where significant differences existed in how teachers following a

traditional schedule and teachers following a 4 X 4 schedule responded to the statements. For eleven of those statements, the highest percentage of teachers responded with the schedule that they were currently following.

The fourth objective was to study the relationship between the attitudes of agricultural educators concerning alternative scheduling and selected demographic variables. In nearly every analyses where years of experience was significant (N=8), less experienced teachers were much more likely to respond undecided or no difference than more experienced teachers.

Two patterns emerged in the data related to attitudes of teachers and the degree held. The first pattern emerged in positive statements that were related to the FFA where the degree held variable was significant. Teachers with Masters degrees or above were less likely to choose the undecided or no difference response than teachers with Bachelors degrees. Although both groups indicated the traditional schedule to complete each statement for the highest percentage of responses for each significant statement, the Masters degree or above group was consistently above 70 percent. Less than 60 percent of the responses from the teachers with Bachelors degrees chose the traditional schedule and a higher percentage of undecided or no difference responses were used. The same pattern emerged with a negative statement related to the FFA. Both groups indicated that FFA membership would be lower using the 4 X 4 schedule. The

teachers with Masters degrees responded above 70 percent to the statement and teachers with Bachelors degrees indicated undecided no difference for a higher percentage of responses than teachers with Masters or above.

The second pattern that emerged in the data was related to degree held. The pattern was recognized in statements not related to the FFA. Results from eight statements that indicated significant differences in response between teachers with Masters degrees or above and teachers with Bachelors degrees were similar. Teachers with Masters degrees completed the statements with traditional schedule for a higher percentage of responses than teachers with Bachelors degrees, and teachers with Bachelors degrees indicated the 4 X 4 schedule for a higher percentage of responses than teachers with Masters degrees in three out of 4 statements. Teachers with Bachelors degrees indicated undecided or no difference for a higher percentage of responses than teachers with Masters degrees.

Overall, results indicated that there were negligible differences between attitudes by agriculture education teachers and their age.

Conclusions

After reviewing, analyzing and summarizing data, the following conclusions were drawn:

1. More teachers were experiencing program changes as the result of alternative scheduling growing rapidly in Tennessee although the rate of growth was slowing.
2. Too few non-traditional schedule alternatives other than the 4 X 4 are being used to report reliable information about teachers' perceptions of those schedules.
3. The results from perceptions about alternative scheduling indicated mixed findings about the best overall schedule. More teachers responded to the survey that overall they prefer the 4 X 4 schedule. In constrast, more teachers chose the traditional schedule as their response for the best schedule for overall program delivery.
3. The study revealed that there were some significant differences among teacher perceptions related to each teachers' current schedule, years of experience and degree held.
4. Statistically there was more total support for the 4 X 4 schedule by agriculture teachers than the traditional schedule.
5. Teachers had a more positive perception of their current daily schedule than of other available schedules.

6. Teachers with less years of experience and less advanced degrees of training were more undecided or find no difference in scheduling choices than teachers with more years of experience and higher degrees of training.
7. Most teachers agreed that the traditional FFA program and 4 X 4 scheduling were not fully compatible at the time of this study.
8. Hands-on-activities and laboratory activities were more effective using the 4 X 4 schedule.

Discussion and Recommendations

The data clearly indicated two distinct groups that were by far the majority of teachers who participated in the study. The teachers in the first group have continuously taught using a traditional schedule. The second group changed at some point from a traditional schedule to a 4 X 4 schedule. The researcher for this study values the opinion of the group who has experienced both schedules more than the opinion of the group who has only experienced the traditional schedule. Most of the group who changed schedules developed a more positive attitude toward their new schedule. Teachers following a traditional schedule need to receive more information about the positive aspects of 4 X 4 scheduling from the group using the schedule.

A complete evaluation of course content, curriculum materials, FFA programs, laboratory equipment, SAEP programs and

classroom management methods must be conducted and revisions made to prepare for the recognized problems with the 4 X 4 block. Most of the problems can be attributed to semesters when students preparing for careers in agriculture do not have agriculture classes. Many active agriculture students can be expected to be encouraged to take an agriculture class every semester under the 4 X 4 system. Agriculture teachers must recognize that full time agriculture students using the 4 X 4 schedule will graduate with one fourth of their education in agriculture, which is not necessarily a limitation but is an important consideration.

The overwhelming response by teachers relating to the FFA program and the negative relationship to the 4 X 4 schedule must be addressed. Teachers will have to devote more time and funding to the FFA program to maintain or increase their level of success. Teachers should design some type of communication system with FFA members that are not enrolled in agriculture classes (Becton, 1996).

Theoretically, the schedule for the FFA career development event program throughout the state should be built around the most common course calendar for the agriculture teachers who participate in these events. For example, if 80 percent of teachers teach units related to horses and units related to livestock in the same animal production course that is only offered once per year, the regional and state livestock and horse career development events should be held in the same semester.

Gathering information to create a calendar of events that is suitable for both the traditional and 4 X 4 schedule would require such an extraordinary amount of time by members of the Tennessee FFA Association that it might be considered an impossible task.

Teachers will need more self-study materials for students who are not attending class during a semester but are participating in a program. For example, SAEP's for agriculture students enrolled in a second semester course might include a self explanatory guide and record book provided at the start of the school year that leads students into the SAE program with limited teacher input.

Recommendations for Further Study

The following are recommendations for research studies to be conducted:

1. A study needs to be completed to determine the implications of the adoption of a new schedule alternative by a school system and the relationship to how the change was made.
2. Well-controlled studies should be completed relating to student achievement and alternative schedules over an extended time period.
3. A study should be conducted to determine teacher success using different schedules over an extended time period.

4. A study should be conducted nationwide to determine agricultural education teachers' attitudes and perceptions on scheduling alternatives.
5. A study to determine the attitudes and perceptions of administrators on scheduling alternatives needs to be completed.
6. Well-controlled studies of other vocational student organizations and the affect of alternative scheduling on those organizations need to be completed.

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APPENDICES

APPENDIX A

August 1, 1999
2085 Andersonville Highway
Clinton, TN 37716

Dear fellow agriculture teacher:

The attached survey concerned with alternative scheduling in high schools in Tennessee is part of a statewide study I am completing in fulfillment of the thesis requirement for my Master's degree at the University of Tennessee, Knoxville in Agriculture and Extension Education. This project is concerned specifically with determining the attitudes of agriculture teachers toward alternative schedules.

Your response to this study is voluntary and will be held in strictest confidence. The introductory page to the survey asks for data to identify responders but will be separated from the surveys making them completely anonymous. It will be appreciated if you will complete the survey and return it in the stamped envelope enclosed prior to August 30, 1999. I welcome any comments that you may have concerning any aspect of the survey.

Your experience as an agriculture teacher will contribute significantly toward overcoming obstacles we face in this important area of education. The accompanying survey has been tested with a small group of agriculture teachers in South Carolina and I have revised it in order to obtain the necessary data while requiring a minimum of your time. The average time required for teachers in the pilot group was 10 minutes.

I will be pleased to send you a summary of the survey results if you desire. Thank you for your cooperation.

Sincerely yours,

Rodney L. Mann

Instructions for mailed survey:

It will be appreciated if you complete and return the survey in the enclosed stamped envelope by August 30, 1999.

Your response to this study is voluntary.

You may use either pen or pencil

Please read the definitions carefully before answering questions.

Please respond to every statement.

When returning the survey, this sheet will be separated from the rest of the survey to insure anonymity.

Please complete the information below in order to avoid being mailed another survey form.

Name: _____

School: _____

FFA Chapter Name: _____

County: _____

Instructions for survey at conference:

It will be appreciated if you will complete the survey while at the conference and return it to the designated booth.

If you are unable to complete and return the survey by the end of conference, stamped return address envelopes will be available at the booth. It will be appreciated if you return it by August 30, 1999.

You may use either pen or pencil.

Please read the definitions carefully before answering questions.

Please respond to every statement.

When returning the survey, this sheet will be separated from the rest of the survey to insure anonymity.

Please complete the information below in order to avoid being mailed another survey form.

Name: _____

School: _____

FFA Chapter Name: _____

County: _____

Alternative Scheduling Survey
Part I - School Data

In this section of the survey, I am seeking general data on the schedule being followed by your school. Please circle the letter of the schedule that most closely matches your situation. Following is a description that will help you clearly understand my definitions of each scheduling alternative.

Traditional	The school has a traditional 6, or 7 period schedule not including a homeroom or activity period.
4 X 4	The school has a four by four block schedule (4 courses per semester, approximately 90 minutes in length, 2 semesters per school year not including homeroom or activity period).
A/B	The school has an alternate day or rotating schedule (8 classes, 4 each taught alternately on a M-W-F or T-TH schedule).
Other	The school uses another schedule alternative.

1. During the 1999-2000 school year, which statement above best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other: (please describe): _____
   _____
   _____
   _____

2. During the 98-99 school year, which statement above best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other: (please describe): _____
   _____
   _____
   _____

3. During the 97-98 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
4. During the 96-97 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
5. During the 95-96 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
6. During the 94-95 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
7. If you have made a change in schedule, please briefly describe the history of the change, including the events that proceeded the change, the involvement of teachers in the implementation process, the advantages of the new schedule compared to the previous schedule and the disadvantages of the new schedule:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Part II - Perceptions

In this section of the survey, I would like to learn your perceptions about the positive or negative impacts of any one particular type of class scheduling. Please circle the letter of the scheduling alternative that most closely matches your response to the statement. Please respond to every statement. So that you may clearly understand my definitions, following is a description of each of the scheduling alternatives with the letter abbreviations.

T	A traditional 6, or 7 period schedule not including a homeroom or activity period.
4X4	A four by four block schedule (4 courses per semester, approximately 90 minutes in length, 2 semesters per school year).
A/B	An alternate day or rotating schedule (8 classes, 4 each taught alternately on a M-W-F or T-TH schedule).
O	Any other schedule alternative.
U	Undecided or no difference

8.	Labs can be utilized more **effectively** using:	T 4X4 A/B O U
9.	Enrollment in agricultural education classes can be expected to be most **positively** effected by:	T 4X4 A/B O U
10.	I personally **prefer:**	T 4X4 A/B O U
11.	Teachers have **more** planning time using:	T 4X4 A/B O U
12.	The schedule that is most **successful** with hands-on-activities is:	T 4X4 A/B O U
13.	Field trips and FFA activities will be more **difficult** to get approved by administration using:	T 4X4 A/B O U
14.	The overall FFA program will be most **negatively** affected using:	T 4X4 A/B O U
15.	Students will be more **successful** at meeting graduation requirements using:	T 4X4 A/B O U
16.	The number of college bound students enrolling in agricultural education classes will **increase** most using:	T 4X4 A/B O U
17.	Students with high grade point averages are **more likely** to enroll in agricultural education programs using:	T 4X4 A/B O U
18.	Overall teacher benefits will be **greater** using:	T 4X4 A/B O U
19.	The needs of students with differing levels of ability and readiness will be **best met** using:	T 4X4 A/B O U

T Traditional
4X4 Four X Four Block
A/B Alternating Day
O Other
U Undecided or No Difference

20.	School teams, and teachers working on cooperative projects are **better able** to meet using:	T 4X4 A/B O U
21.	It will be **easier** to develop an FFA Program of Activities using:	T 4X4 A/B O U
22.	Student achievement in the classroom will **benefit** most using:	T 4X4 A/B O U
23.	Preparation for FFA career development events, and contests, will be most **positively** affected using:	T 4X4 A/B O U
24.	More material will be covered in the classroom and laboratory using:	T 4X4 A/B O U
25.	Preparation of students to conduct supervised agricultural experience programs (SAEP) will be more **difficult** using:	T 4X4 A/B O U
26.	School attendance rates will be **highest** using:	T 4X4 A/B O U
27.	Attendance at FFA meetings will be **highest** using:	T 4X4 A/B O U
28.	Student interest in SAEP's will be **highest** using:	T 4X4 A/B O U
29.	It will be **easier** to cover all the competencies outlined in the course description using:	T 4X4 A/B O U
30.	The overall instructional program will be best **delivered** using:	T 4X4 A/B O U
31.	Visiting students to supervise SAEP's, and other agricultural experience programs will be more **difficult** using:	T 4X4 A/B O U
32.	Discipline problems are more **likely** to occur using:	T 4X4 A/B O U
33.	More school time for internships, shadowing experiences, and apprenticeships will be **available** using:	T 4X4 A/B O U
34.	Overall students would **prefer**:	T 4X4 A/B O U
35.	Student interest in the agricultural education curriculum will be **higher** using:	T 4X4 A/B O U
36.	Membership in the FFA will be lower using:	T 4X4 A/B O U
37.	Agricultural education curriculum materials that are currently available will be most **effective** using:	T 4X4 A/B O U

T Traditional
4X4 Four X Four Block
A/B Alternating Day
O Other
U Undecided or No Difference

38.	The schedule that will require the **least** budget for materials and supplies is:	T 4X4 A/B O U
39.	Grades will tend to be **higher** using:	T 4X4 A/B O U
40.	Student retention of information will be **highest** using:	T 4X4 A/B O U
41.	Teachers will have **less difficulty** planning for classes using:	T 4X4 A/B O U
42.	More FFA members are likely to **attain** higher FFA degrees of membership using:	T 4X4 A/B O U
43.	Student achievement in the laboratory will **benefit** most using:	T 4X4 A/B O U

Part III - Summary

44. Finally…If you had the ability to choose any of the scheduling alternatives mentioned in this study, which one would you select, assuming your goal was to deliver the most effective agricultural education program you could offer to your students. Please elaborate as necessary.

_____
_____
_____
_____
_____
_____

Part IV - Personal Data

45. Age:_____

46. Degree of training (bachelors, Masters +15, etc)_____

47. How many years of teaching experience do you have?_____

APPENDIX B

Instructions for pretest group

It will be appreciated if you complete and return the survey in the enclosed stamped special delivery envelope by July 15, 1999.

Your response to this study is voluntary.

You may use either pen or pencil.

Please read the definitions carefully before answering questions.

Please respond to every statement.

When returning the survey, this sheet will be separated from the rest of the survey to insure anonymity.

Please complete the information below in order to avoid being mailed another survey form.

Name: _____

School:_____

FFA Chapter Name:_____

County:_____

Rodney L. Mann
Agriculture Teacher
Anderson County Career and Technical Center
2085 Andersonville Highway
Clinton, TN 37716

June 18, 1999

Tommy Gladden
South Carolina Agricultural Education Leader
Clemson University
109 Barre Hall
Clemson SC 29634

Dear Mr. Gladden:

The enclosed material includes the surveys concerned with alternative scheduling in high schools in Tennessee that are a part of a statewide study I am completing in fulfillment of the thesis requirement for my Master's degree at the University of Tennessee, Knoxville in Agriculture and Extension Education.

I appreciate your assistance in conducting the pretest of the questionnaire. I have provided space throughout the survey for the test group to make comments about the survey questions. They have been asked to indicate if questions seem ambiguous, whether provisions should be made for responses not included, and any other points that can lead to improving the questionnaire.

Their response to this study is voluntary and will be held in strictest confidence. The introductory page to the survey asks for data to identify responders but will be separated from the surveys making them completely anonymous. I have included twenty copies of the cover letter, instructions and survey for the group. Please let me know if you need more. You may choose either to allow each responder to return their survey in the included stamped, return envelopes or use the large stamped return envelope to collect and return them together. Please give them instructions related to the method you wish for them to use.

Their experiences as agriculture teachers will contribute significantly toward overcoming obstacles we face in this important area of education. The accompanying survey will be distributed to every agriculture teacher in Tennessee in August. I will be pleased to send you a summary of the survey results if you desire. Thank you for your cooperation.

Sincerely yours,

Rodney L. Mann

Rodney L. Mann
Agriculture Teacher
Anderson County Career and Technical Center
2085 Andersonville Highway
Clinton, TN 37716

June 28, 1999

Dear fellow agriculture teacher:

The attached survey concerned with alternative scheduling in high schools in Tennessee is part of a statewide study I am completing in fulfillment of the thesis requirement for my Master's degree program at the University of Tennessee, Knoxville in Agriculture and Extension Education. This project is concerned specifically with determining the attitudes of agriculture teachers toward alternative schedules.

You have been chosen to participate in a pretest of the questionnaire. Your response to this study is voluntary. I have provided space throughout the survey for you to make comments about the survey questions. Please indicate if questions seem ambiguous, whether provisions should be made for responses not included, and any other points that can lead to improving the questionnaire.

Your responses to this study will be held in strictest confidence. The introductory page to the survey asks for data to identify responders but will be separated from the surveys making them completely anonymous. It will be appreciated if you will complete the survey and return it in the method indicated.

Your experience as an agriculture teacher will contribute significantly toward overcoming obstacles we face in this important area of education. The accompanying survey will be distributed to every agriculture teacher in Tennessee in August.

I will be pleased to send you a summary of the survey results if you desire. Thank you for your cooperation.

Sincerely yours,

Rodney L. Mann

Alternative Scheduling Survey for Pretest Group
Part I - School Data

(Pretest Group, Please be prepared to record the time needed to complete the survey at the end)

In this section of the survey, I am seeking general data on the schedule being followed by your school. Please circle the letter of the schedule that most closely matches your situation. Following is a description that will help you clearly understand my definitions of each scheduling alternative.

Traditional	The school has a traditional 6, or 7 period schedule not including a homeroom or activity period.
4 X 4	The school has a four by four block schedule (4 courses per semester, approximately 90 minutes in length, 2 semesters per school year not including homeroom or activity period).
A/B	The school has an alternate day or rotating schedule (8 classes, 4 each taught alternately on a M-W-F or T-TH schedule).
Other	The school uses another schedule alternative.

1. During the 1999-2000 school year, which statement above best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other: (please describe): _____
   _____
   _____
   _____

2. During the 98-99 school year, which statement above best describes the status of your school in regard to alternative scheduling:
   E. Traditional
   F. 4 X 4
   G. A/B
   H. Other: (please describe): _____
   _____
   _____
   _____

Pretest group, please use the area below for comments, to list ambiguous questions, additional responses to be included or highlight any change that needs to be made

3. During the 97-98 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
4. During the 96-97 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
5. During the 95-96 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
6. During the 94-95 school year, which statement best describes the status of your school in regard to alternative scheduling:
   A. Traditional
   B. 4 X 4
   C. A/B
   D. Other
7. If you have made a change in schedule, please briefly describe the history of the change, including the events that proceeded the change, the involvement of teachers in the implementation process, the advantages of the new schedule compared to the previous schedule and the disadvantages of the new schedule:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

(Pretest group, please use the area below for comments, to list ambiguous questions, additional responses to be included or highlight any change that needs to be made.)

Part II - Perceptions

In this section of the survey, I would like to learn your perceptions about the positive or negative impacts of any one particular type of class scheduling. Please circle the letter of the scheduling alternative that most closely matches your response to the statement. Please respond to every statement. So that you may clearly understand my definitions, following is a description of each of the scheduling alternatives with the letter abbreviations.

T	A traditional 6, or 7 period schedule not including a homeroom or activity period.
4X4	A four by four block schedule (4 courses per semester, approximately 90 minutes in length, 2 semesters per school year).
A/B	An alternate day or rotating schedule (8 classes, 4 each taught alternately on a M-W-F or T-TH schedule).
O	Any other schedule alternative.

8.	Labs can be utilized more **effectively** using:	T 4X4 A/B O
9.	Enrollment in agricultural education classes can be expected to be most **positively** effected by:	T 4X4 A/B O
10.	I personally **prefer**:	T 4X4 A/B O
11.	Teachers have **more** planning time using:	T 4X4 A/B O
12.	The schedule that is most **successful** with hands-on-activities is:	T 4X4 A/B O
13.	Field trips and FFA activities will be more **difficult** to get approved by administration using:	T 4X4 A/B O
14.	The overall FFA program will be most **negatively** affected using:	T 4X4 A/B O
15.	Students will be more **successful** at meeting graduation requirements using:	T 4X4 A/B O
16.	The number of college bound students enrolling in agricultural education classes will **increase** most using:	T 4X4 A/B O
17.	Students with high grade point averages are **more likely** to enroll in agricultural education programs using:	T 4X4 A/B O
18.	Overall teacher benefits will be **greater** using:	T 4X4 A/B O
19.	The needs of students with differing levels of ability and readiness will be **best met** using:	T 4X4 A/B O

(Pretest group, please use the area below for comments, to list ambiguous questions, additional responses to be included or highlight any change that needs to be made.)

T Traditional
4X4 Four X Four Block
A/B Alternating Day
O Other

20.	School teams, and teachers working on cooperative projects are **better able** to meet using:	T 4X4 A/B O
21.	It will be **easier** to develop an FFA Program of Activities using:	T 4X4 A/B O
22.	Student achievement in the classroom and laboratory will **benefit** most using:	T 4X4 A/B O
23.	Preparation for FFA career development events, and contests, will be most **positively** affected using:	T 4X4 A/B O
24.	More material will be covered in the classroom and laboratory using:	T 4X4 A/B O
25.	Preparation of students to conduct supervised agricultural experience programs (SAEP) will be more **difficult** using:	T 4X4 A/B O
26.	School attendance rates will be **highest** using:	T 4X4 A/B O
27.	Attendance at FFA meetings will be **highest** using:	T 4X4 A/B O
28.	Student interest in SAEP's will be **highest** using:	T 4X4 A/B O
29.	It will be **easier** to cover all the competencies outlined in the course description using:	T 4X4 A/B O
30.	The overall instructional program will be best **delivered** using:	T 4X4 A/B O
31.	Visiting students to supervise SAEP's, and other agricultural experience programs will be more **difficult** using:	T 4X4 A/B O
32.	Discipline problems are more **likely** to occur using:	T 4X4 A/B O
33.	More school time for internships, shadowing experiences, and apprenticeships will be **available** using:	T 4X4 A/B O
34.	Overall students would **prefer**:	T 4X4 A/B O
35.	Student interest in the agricultural education curriculum will be **higher** using:	T 4X4 A/B O
36.	Membership in the FFA will be lower using:	T 4X4 A/B O
37.	Agricultural education curriculum materials that are currently available will be most **effective** using:	T 4X4 A/B O

T Traditional
4X4 Four X Four Block
A/B Alternating Day
O Other

38. The schedule that will require the **least** budget for materials and supplies is: T 4X4 A/B O

39. Grades will tend to be **higher** using: T 4X4 A/B O

40. Student retention of information will be **highest** using: T 4X4 A/B O

41. Teachers will have **less difficulty** planning for classes using: T 4X4 A/B O

42. More FFA members are likely to **attain** higher FFA degrees of membership using: T 4X4 A/B O

Part III - Summary

43. Finally…If you had the ability to choose any of the scheduling alternatives mentioned in this study, which one would you select, assuming your goal was to deliver the most effective agricultural education program you could offer to your students. Please elaborate as necessary.

_____
_____
_____
_____
_____
_____

Part IV - Personal Data

44. Age:_____

45. Degree of training (bachelors, Masters +15, etc)_____

46. How many years of teaching experience do you have?_____

How much time was required to complete the questionnaire?_____

(Pretest group, please use the area below for comments, to list ambiguous questions, additional responses to be included or highlight any change that needs to be made)

APPENDIX C

List of statements describing the implementation of a schedule change:

Teachers had no/little input
No inservice
Entertained guest speakers
Had inservices and extra faculty meetings
Recognized need for more credits
Visited schools on alternative schedule,
System decided to change
System jumped on the bandwagon
Administrative decision at board level
idea sharing, discussion on help and hinder
Teachers voted on schedule choice
Committee of teachers met
Discussed positive and negative
Faculty involved in decision to change
Teachers involved in planning and implementation
Our school changed first, other high schools in county all followed
Teachers were polled about decision to change
Teachers were surveyed about decision to change.
Teachers were unprepared for the change
Teachers learned new system on their own
Teachers were polled but did not make decision
Teachers developed materials to prepare for a change
Some teachers supported change, some opposed, after 1 year 95 percent prefer 4X4
Teachers voted against a change, the system changed anyway
Teachers were given an option to return after 1st year
Changed because feeder schools changed

List of advantages of an alternative schedule:

More students enrolled in ag.
Time for hands on activities, more lab time
Students earn more credits per year
Students take more electives
Teachers use various techniques and creativity to keep students on task
Labs are easier
Works well for lab and shop
Works well for field trips and guest speakers
More planning time
Less classes to prepare for
All teachers seem to like it
Less time wasted changing classes
Less disruption

List of advantages continued

Less behavior problems
More time to go in depth with students, more intensive 2
More one on one with students
Less classes for grades (etc)
Ability to engage in more activities
Less homework for students
Less class load for students
Gives time to cover lessons in the classroom and lab in the same period, mix of lecture, activities and labs
Students mindset and concentration levels are higher level
Increases enrollment
Easier to arrange field trips
A/B gives students a break from the same class every day
A/B less rushed than 4X4
A/B allows the teacher to see students all year
Gives students more credit than traditional

List of disadvantages of an alternative schedule:

Difficult to have enough hands on activities to keep busy
Preparation for multiple preps. difficult with one plan period
Student attention span is less than 90 minutes
Less total time in class each year
Students in only one semester are a problem with FFA activities
Students in only one semester, difficult to schedule time for after school activities
Students complete academics first, then electives, more first year juniors and seniors
Loss of retention from non consecutive blocks
Must plan more than one type activity
Restroom break is needed
Non-consistency in FFA membership
Occasional poor sequencing of courses
Requires different teaching methods
Lower grades
Difficult to supervise sae's
FFA officers not in class full year
Larger class loads
Students overwhelmed by pace
Increased paperwork
Students exhausted by second term
No field trips
Increase in loss of credit because of absence
Additional funding needed

VITA

Rodney L. Mann was born in Ronceverte, West Virginia on March 4, 1966 and grew up in rural Monroe County, West Virginia, where he attended schools in the public system. He graduated from Peterstown High School in June 1984 and he entered Virginia Polytechnic Institute and State University (VA TECH), Blacksburg, Virginia during August 1984. He completed an internship at Pulaski County High School, Pulaski, Virginia in January 1988, and in May 1988, he received the Bachelor of Science degree in Agricultural Education with teaching certification in secondary education. After graduating, he was employed as an agricultural education instructor and FFA advisor at Graham High School in Bluefield, Virginia for one year. He was a resource conservationist for the South Carolina Land Resources Commission in Aiken, South Carolina from February 1989 to August 1991. He was employed by the Aiken County School System as an agriculture education instructor at Ridge Spring Monetta High School in Monetta, South Carolina for 4 years. In August 1996, Rodney was employed by the Anderson County school system in Tennessee where he currently is an agriculture education instructor at Anderson County Career and Technical Center. He entered evening school at the University of Tennessee, Knoxville in August 1996, pursuing a Master's of Science Degree in Agriculture and Extension Education.

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