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Roger B. Clayton

Date

June 6, 1979

DEDICATION

To Mom and Dad for their continued faith,
understanding and assistance in completing
this project.

A FOLLOW-UP OF THE 1969, 1971, 1973, 1975 AND 1977
GRADUATES OF THE COLLEGE OF AGRICULTURE
AT MONTANA STATE UNIVERSITY

by

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A professional paper submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Agricultural Education

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May, 1979

ACKNOWLEDGMENTS

The writer wishes to express his sincere appreciation to those persons whose assistance has contributed to this study.

To his major advisor and graduate committee chairman, Dr. Douglas Bishop, for his assistance, interest and guidance in developing the graduate program and conducting this study.

To Dr. Max Amberson and Dr. Lark Carter for their continual assistance in conducting this study.

To Dr. Charles Rust and Dr. Gene Payne for serving on the writer's graduate committee.

To Dr. Irvin R. Smith and his staff for their assistance in the use of the Sigma 7 computer for data analysis.

To Ms. Noelle El-Negoumy for her aid and expertise in arranging and typing this manuscript.

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ABSTRACT

This is a follow-up study of graduates of the College of Agriculture at Montana State University for the years 1969 to 1977. It was concerned with graduate assessment of subject matter, administrative performance, personal development and promotion of the College of Agriculture. Data were also collected on the employment patterns, mobility patterns and educational patterns of graduates.

The survey identified areas of concern to the College of Agriculture as well as areas of program success. Major findings were as follows:

It was found that development of technical skills was adequate but development of professional competencies was inadequate and that it was becoming increasingly more difficult to provide adequate educational programs.

There was an overall decline in the learning environment provided by the College of Agriculture as evidenced in poorer ratings for facilities and services in all areas in more recent years.

Student-administrative rapport was less than satisfactory with indications that students should have more opportunity to participate in the administrative process.

Promotion of the College of Agriculture has primarily been a by-product of a satisfied clientele with much potential for improved formal promotional programs initiated by the College.

Graduates were generally satisfied with their overall education in terms of employment opportunity.

This study provides detailed evaluative information for use in curriculum improvement in the College of Agriculture, Montana State University.

CHAPTER I
THE PROBLEM AND ITS SETTING

INTRODUCTION

Evaluation and accountability have, in the past decade, become household words throughout the education community. Educators in almost every field and at every level have been asked to prove the worth of their programs. The public is no longer content with what has traditionally been offered them by educators and has demanded that education programs be more responsive to their needs. As well they have required that educators furnish concrete evidence of the success of their programs in meeting those needs. With the increasing cost of education and the public tax revolt of the seventies, education has been forced to become accountable for the cost-effectiveness of its programs.

Duncan wrote of educators in 1971 that:

The idea that we need to bring rationality to the decision-making process and to establish an objective basis for resource allocation is clear . . .

. . . the need to measure our [educators] output is crucial and the public will no longer permit its neglect.

Evaluating the output of educational programs provides a data base for accountability and as such has become a useful tool for educators. This process was described by Armstrong (1978) as follows:

Program evaluation has the general aim of assessing the effectiveness of particular programs. For ongoing programs, evaluation is a feedback mechanism which makes it possible for decision-makers to become aware of the direction in which programs are headed and compare that with where they are intended to go. A key element in this overall process in an educational institution is the periodic collection of information from program graduates.

The College of Agriculture at Montana State University has not ignored the accountability movement. As part of their commitment to providing adequate and responsive educational programs, the administrators of the College have expressed a desire for periodic comprehensive program appraisals by graduates of the College of Agriculture.

PURPOSE OF THE STUDY

The purpose of this study was to assess the educational experiences of the 1969 to 1977 graduates of the College of Agriculture while at Montana State University,

and the impact of those experiences on their ensuing careers.

NEED FOR THE STUDY

John Goodlad (Good lad, 1976) commented in 1976 that the curriculum belonged to the American people, not the educators. As such it becomes the responsibility of the educator to make curricular adjustments which accomodate changing needs in our society. Before change can occur, we must first determine our present situation and identify deficiencies in our programs. By conducting follow-up studies of graduates we can assess the appropriateness of our current offerings and determine areas of inadequacy. As well, by gathering information on employment patterns and potentials of graduates we can better counsel our students on career choices and alternatives.

Program evaluation is a continuing process that demands periodic repetition if an institution is to remain viable and responsive to its clientele in planning and executing change.

The follow-up study of graduates has been used as an evaluative tool by educational institutions across the

nation and has been utilized as part of an evaluation program in the College of Agriculture at Montana State University in the past.

The last comprehensive study of graduates of the College of Agriculture was conducted in 1971. In that study the researcher urged that a similar study be carried out every five years as part of a continuing evaluation program (Bickle, 1971). No such data have been gathered since that time.

An assessment of the relevance of curriculum offerings by graduates of the College of Agriculture is overdue and must be updated. With that in mind, this study was initiated.

OBJECTIVES OF THE STUDY

The following objectives were developed to accomplish the purpose of the study:

1. To determine the extent to which past course offerings of the College of Agriculture provided adequate training for its graduates.
2. To determine the extent to which the administrative structure of the College of Agriculture met the needs

of the students.

3. To determine the extent to which the social, academic and physical environment of the College of Agriculture succeeded in promoting the professional identity and responsibility of its graduates.

4. To collect data on the education and employment patterns of graduates of the College of Agriculture.

5. To assess the image of the College of Agriculture among its graduates.

6. To assess formal and informal avenues of promotion for the College of Agriculture.

ASSUMPTIONS

In carrying out a study of this nature, a researcher needs to assume some factors to be true and that they would therefore not be included in this study. In this study the researcher assumed the following:

1. That the sampling procedure utilized in this study resulted in an unbiased, representative sample of the population under study.

2. That the judgement of past graduates of the College of Agriculture was a reliable indicator of the value of

the educational experiences they received.

3. That this follow-up of graduates as an evaluative technique will result in improved curriculums within the College of Agriculture.

LIMITATIONS

The limitations of this study are as follows:

1. The use of a mailed questionnaire to collect data is subject to the following inherent weaknesses which may have had an effect on the ultimate results.

- a. All respondents may not have interpreted the questions in the same way.
- b. The views of non-respondents may or may not have been consistent with those of the respondents.

2. The results of this study were limited to the responses of the graduates surveyed.

DEFINITIONS

The following terms have been defined as their use pertains to this study.

Ag Supplies/Services - businesses which provide

supplies to farmers and ranches and subsequently provide services needed to utilize these supplies (e.g. hardware, feed store, fertilizer plant).

Ag Mechanics - businesses which sell and service agricultural power units, machinery, and related equipment (e.g. farm implement dealer, agricultural mechanics shop, irrigation, milking equipment, etc.).

Ornamental Horticulture - businesses which produce, distribute, and utilize ornamental crops principally for ornamental or aesthetic purposes (e.g. greenhouses, nursery, landscaping, lawn and turf management).

Ag Resources - businesses concerned with the principles and practices necessary to conserve and improve our natural resources (e.g. ASCS, SCS, FHA, game management).

Ag Products - businesses which assemble, sort, test, grade, store and market farm and ranch products (e.g. elevator, feed mills, dairy processing plant).

Forestry - businesses involvement in the production, processing, management and utilization of forest products (e.g. logging operations, tree farms, sawmills, wood product plants).

Curriculum - the program of formal and informal events

provided by an educational institution which contributes to the total educational experience of students at that institution.

Degree area/degree program - the prescribed course of studies leading to a specific degree offered by the College of Agriculture.

Education patterns - the program of formal education beyond the B.S. degree.

Employment patterns - the job histories of graduates of an institution.

Internship program - an on-the-job working experience offered for credit through an educational institution.

Mobility patterns - the change of residence and place of employment.

Professional competency - those competencies and skills that are primarily concerned with cognitive thought processes as opposed to technical or manipulative skills.

Technical competency - the necessary skills that enable one to perform successfully the tasks encountered in a working situation for which one has been specifically trained.

Methodology and Procedure

This is a descriptive survey research paper aimed at evaluating the curriculum of the College of Agriculture at Montana State University through the use of the follow-up of graduates technique.

Through consultation with Dr. Lark Carter, Associate Dean of the College of Agriculture, Montana State University, and Dr. Douglas Bishop, Professor of Agricultural Education, Montana State University, and with due regard to related research, a rationale and objectives for the study were formulated, the population to be studied was determined and a preliminary instrument was developed.

Population and Sampling Procedure

The population to be studied consisted of the graduates of the College of Agriculture, Montana State University. The last follow-up study of this population (Bickle, 1971) included graduates from 1950 to 1967. It was decided that this study should focus on graduates of the last ten years, i.e. 1967 to 1977. The size of this population and budgetary constraints suggested utilizing a sampling procedure rather than attempting to work with the entire population. Initially, the sample population was confined

to those graduates who graduated in every other year of the ten years under investigation, or graduates of 1969, 1971, 1973, 1975 and 1977. This population was identified by using the names of those graduates which appeared in commencement programs for the years under study.* This yielded a population of 721 Bachelor Degree graduates of the College of Agriculture. Using procedures suggested by Warmbrod (1965) and Krejcie and Morgan (1978), it was determined that a sample size of one-third of the population or 240 of 721 graduates would be sufficient to collect valid and usable data while still being a practical number to work with considering the limited resources available for the project.

The commencement programs allowed the researcher to identify graduates in each of the degree programs for each of the years included in the study and thus, allowed the use of stratification in the sampling procedure. A

*Because students who graduate summer or fall quarter of one year appear in commencement programs for June of the following year, there was some discrepancy between year of graduation as identified by the researcher from commencement programs and the actual year of graduation reported by some respondents. This resulted in 30 responses indicating a year of graduation other than the five years selected for study as shown in Table 2, page 41. Data from these questionnaires were included in data analysis by "degree areas" but were not included in data pertaining to "years of graduation."

proportional stratified random sample was drawn to approximate one-third of the graduates in each degree program for each of the five years under study as shown in Table 1.

Randomization was achieved by assigning each person in each strata a consecutive two-digit number and utilizing a table of random numbers to select the individuals included in the sample.

The most current addresses for the graduates in the sample were obtained from the alumni address file of Montana State University.

Instrument Design and Development

Broad areas of concern to the College of Agriculture were assessments of subject matter, graduate employment, administrative performance and personal development. It was decided that a mail questionnaire would be the most practical approach and an instrument was developed for use in systematically gathering information from past graduates which could provide a data base for evaluation of the programs and endeavors of the College of Agriculture in each of these four areas.

The first section of the questionnaire dealt with general information about the respondents and included personal statistical information, i.e. name, address, age,

TABLE 1

SAMPLING FORMULA

Degree Area	Year of Graduation												Total Sample N by Degree Area
	1969		1971		1973		1975		1977				
	Pop	N	Pop	N	Pop	N	Pop	N	Pop	N	Pop	N	
Ag Business	28	9	36	12	34	12	34	11	28	9		53	
Ag Education	11	4	15	5	15	5	12	4	11	4		22	
Ag Produc.	51	17	50	17	69	23	91	30	100	33		120	
Ag Science	20	7	21	7	21	7	18	6	22	7		34	
Industrial Arts	--	--	--	--	11	4	14	5	6	2		11	
Totals	110	37	122	41	153	51	169	56	167	55		240	

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Pop = Population
Samp = Sample

past and present educational status, reasons for choosing MSU College of Agriculture, employment and mobility data, and adequacy of degree titles. The remainder of the questionnaire pertained to the stated objectives of the College of Agriculture.

The existing role and scope statement for the College of Agriculture, Montana State University, provided a basis from which four objectives were developed. These objectives were:

- Objective 1: To offer degree programs which provide a variety of courses and experiences which will enable students to develop technical and professional competencies required of graduates employed in agricultural occupations.
- Objective 2: To provide an environment for students within the College of Agriculture which encourages learning experiences that promote the development of professional identity and responsibility.
- Objective 3: To maintain an administrative policy which promotes cooperative participation of students in the administrative process.
- Objective 4: To promote the MSU College of Agriculture among its potential clientele.

Using procedures suggested in related research (see Chapter II, Review of Literature), several criterion questions were developed for each of the objectives. The criterion

questions were designed to indicate the degree to which the stated objectives were being met. In order to determine the answers to the criterion questions, a series of indicators were developed. Responses to each indicator question provided information from which to formulate answers to criterion questions which in turn indicated the status of programs, procedures and structures within the College, aimed at attaining the stated objectives.

For questionnaire items where a rating scale was necessary, a scale of from 1 to 4 (in some cases a zero was also used to indicate a "not applicable" response) was utilized, thus forcing respondents to make a directional decision rather than selecting a "middle of the road" stance as is possible with the more commonly used 1 to 5 scale. Space was also provided for any additional comments and suggestions respondents wished to make.

Validation of the Instrument

The instrument was pre-tested using 12 post-graduates of the College of Agriculture who resided in the Bozeman area and who were not included in the sample population to be surveyed for the actual study.

These people were asked to complete the questionnaire and comment on any ambiguities or problems they encountered as well as to make suggestions for improvements.

The instrument was also presented to at least one staff member in each department of the College of Agriculture for further evaluation. Appropriate changes and improvements in the instrument were made and a final draft was completed and readied for use in the survey.

Gathering and Compilation of Data

A copy of the questionnaire along with an introductory cover letter (see Appendix, p 127) and a stamped pre-addressed envelope, for use in returning the questionnaire, were mailed to the 240 individuals in the sample on March 10, 1977. By April 10, 1977 a total of 121 usable returns had been received constituting a return rate of 50.4%. On April 12, 1977 a follow-up letter was mailed to all those whose responses had not been received at that time. By May 1, 1977, the predetermined cut-off date, an additional 33 usable returns had been received. This made a total of 154 usable returns or a usable response rate of 64.2%. There were six late returns and 11 unusable returns for a total of 171 questionnaires returned or 71.3%.

A number coding system was developed to record all data from the questionnaires onto IBM sheets. As the responses were received they were numbered and the data recorded on IBM sheets. The data were then transferred to computer cards for use in the Sigma 7 computer located at Montana State University.

With the aid of Dr. Irvin Smith, computer analyst, College of Agriculture, Montana State University, the data were adapted to utilize the SPSS (Statistical Package for the Social Sciences) (Nie et al, 1975) computer program. Through the use of this program, data were separated by degree area* and selected years of graduation; tabulations, percentages, means and a variety of other statistical measures were determined. While complex statistical data were made available, measures other than percentages and means were determined to be beyond the scope and intent of this study and their usefulness and validity are

*The Industrial Arts degree program was not under the jurisdiction of the College of Agriculture until 1973. A small enrollment coupled with only three years of graduates included in the survey resulted in a very low sample N for this category. Data for these respondents was included in the "all areas" category and in the appropriate "year of graduation" category, but was not analyzed as a separate degree area.

questionable. For these reasons, they were not included in the data analysis section of this report.

Additional comparisons and analyses were made by the use of sorting and hand work where the computer could not be used.

This study was designed to identify opinion trends of past graduates of the College of Agriculture and results should not be interpreted as quantitative measures.

CHAPTER II

REVIEW OF SELECTED LITERATURE

The review of literature focuses on the concept of accountability in education through the process of evaluation and the development of the follow-up study as a useful evaluative technique.

The Press for Accountability Through Evaluation

Educators have always been concerned with the effectiveness of their programs. This was evident in their efforts to determine the amount of learning taking place and in the development of numerous and varied teaching techniques and materials designed to enhance the learning of their students. Norris (1969) related that:

The recognition of the need to gather information about the effectiveness of education is certainly not new. When the U.S. Office of Education was first established in 1867, one of the duties given the Commissioner of Education was to determine the progress of education.

.

Only within the last 25 years has anyone begun to seriously question the content of educational curriculums. Traditionally, the problem of "what to teach" has been left up to the educators themselves and the educators have been primarily concerned with whether or not students have learned what has been taught. Only recently have we come to realize that the ultimate measure of education is not necessarily the students' scholastic achievement, but rather his success in the career he pursues.

By determining the success of our students in their subsequent endeavors we can assess not only their learning quotient while at school but also whether or not what they were taught was what they needed to know to successfully perform in the working world.

With the increasing cost of education and the trend toward more and more specialization in career choices, it became more important than ever before to ensure that curriculum content was adequate and complete. It became necessary to study the outcomes of educational programs and to attempt to measure program success in these terms. Thus, the education community came to understand that the value of its programs lay in the success of its graduates.

In the 1960's the public began to question the validity of the educational community's claim to an increasing amount of the tax dollars they were providing. The demand went out for tangible proof of the value of educational programs. For the first time educators were being held accountable for their programs. Straubel (1971) recounted that:

President Nixon, in his special message to Congress on Educational Reform of March 3, 1970, introduced the nation to the accountability concept. In his message he conceded that to achieve educational reform based on measurable learning outcomes it undoubtedly would be necessary, in his words, "to develop broader and more sensitive measurements of learning than we now have." (Straubel, 1971)

Leon Lessinger (1970), often referred to as the father of accountability in education, put Nixon's challenge in more concrete terms. He further stated the problem as follows:

An important change has taken place in what Americans expect of their public schools. The optimism about the value of education is still there and continues to be strong, but serious doubts have arisen about the public school system's ability to actually deliver on its promises.

The shift in attitude becomes apparent through analysis of the questions being asked at hearings by elected officials of both parties at every level of government, from Congress to

state legislatures and local city councils. The same line of questioning can be heard among businessmen, at school board conventions, at various citizen group meetings and in the highest circles of the executive branches of government. Seekers of educational funds have always talked in terms of books, staff, materials, equipment, and space to be acquired or used, together with students to be served and programs to be offered. Questioners in the past were content to listen to accounts of resources allocated. This has changed. Today the questions focus on results obtained for resources used. The questions are pointed, insistent, and abrasive. The public school system is being held accountable for results. Accountability is the coming sine qua non for education in the 1970's. How to engineer accountability for results in public education is the central problem for the education profession.

Lessinger's views are further supported by Duncan who, in 1971, wrote:

The idea that we need to bring rationality to the decision-making process and to establish an objective basis for resource allocation is clear and for this attempt we are to be commended in our press for educational accountability.

and he goes on to say:

. . . the need to measure our [the educators'] output is crucial and the public will no longer permit its neglect.

Thus, the need for accountability in education had become firmly established.

Evaluation in an Educational Institution

Educators were quick to realize that if they were to retain control of their programs they must be the ones to provide information leading to accountability. McComas spoke to this in 1971:

One of the central concerns regarding accountability is the need for leaders in education to take the initiative in developing appropriate programs.

He suggested that this was preferable to educational changes initiated from outside the profession and as such, educational institutions must seek means through which to provide accountability.

Evaluation of programs, as a means of achieving accountability had been used in the private business sector, the military, and in many government agencies. That the education community should adopt this procedure was a natural consequence of accountability demands on their profession as well.

House (1978) put evaluation in these terms:

The case for evaluation is based upon the premise that people will, if they can, make changes based upon information. It is thus assumed that decisions about policies, programs, students and

services will be more rational if good information is available when needed.

Evaluation is an ongoing process. It is part of a continuing assessment of needs and progress in meeting those needs coupled with the assumption that programs are dynamic rather than static and must continually undergo changes which accommodate the changing needs of a program's clientele.

The Training Guide for Identifying, Meeting and Evaluating Training Needs (1977) utilized by the Federal Department of Highways described the role of evaluation in a program planning model:

We may evaluate not to reward or punish, but to help ourselves and others to set more adequate goals and to discover more effective ways of achieving them.

Through fact-finding and appraisal we identify problems that need to be prevented or solved, weaknesses that need to be overcome--things that need to be brought up to standard. We plan and carry out training to do this. Then to find out "how we are doing," we repeat the fact-finding and appraisal--in short, we evaluate the situation again. Thus, we have a complete cycle: need determination (resulting from evaluation), program planning, program implementation, and evaluation--followed by re-planning, reimplementation, and reevaluation.

Armstrong and Pressley (1978) pointed out that:

. . . a key element in this overall process in an educational institution is the periodic collection of information from program graduates.

Patterson (1976) supported the inclusion of program graduates in the evaluation process by noting that:

The success of an educational institution can best be measured by the success of its graduates. The institution's greatest commodity is its graduates; therefore, we must maintain a high level of demand for them by designing the most unique and competent curricula possible. As a result, the graduates of such programs will be qualified, sensitive and productive employees.

To develop curricula, input must come from faculty, administration, and advisory committees combined with graduate and employer evaluation of the institution's major areas of training.

Thus we have determined the role of evaluation in accountability and have the suggestion that graduates can provide useful evaluative information.

The Follow-up Study as a Method of Evaluation

The follow-up study has been defined as follows (McKinney and Oglesby, 1971):

A follow-up study is a procedure for accumulating pertinent data from or about individuals after they have had similar or comparable experiences.

In this case, the reference is to "educational" experiences. The follow-up study, then, is a method by which to study the outcomes of educational experiences.

Henard (1978) discussed the nature of outcome studies:

Educators must respond to the pressures of governmental agencies to provide outcome data related to employment and income, but they must also insure that the noneconomic values of education are an integral part of evaluations of educational benefit.

He noted that federal and state governmental agencies and committees had increasingly requested that post-secondary educational institutions supply outcome data related to the employment and income of degree recipients, and that surveys of college and university graduates had provided information to meet these accountability demands. He went on to say, however, that when outcomes data were used for academic planning and resource allocation, it should include assessments of intellectual, personal and social development resulting from the educational experience. To quote Henard (1978) further:

The increasing importance of information provided by surveys of graduates, as measures of educational outcomes, motivates institutions of higher education to engage in this type of research and to share the results. The cumulative information can help higher education assume leadership in demonstrating the benefits of the educational experience that include intellectual, personal, and social development as well as occupational outcomes.

Christenson (1975) pointed out that one of the major reasons for conducting surveys of graduates was that they could provide perspectives for action. He noted that surveys could be utilized as research and educational tools to create and stimulate both public interest and participation in the decision-making process and that they could aid in developing policy, planning programs and directing future change.

Shrode (1975) noted that opinions of former students had the distinct advantage of being largely a reflection of lasting impressions of teachers and courses. His opinion was that the unquestionable value of evaluations and suggestions by former students made them well worth the effort to obtain them.

The Design of the Follow-up Study

In determining the areas to be examined in a follow-up study, one must first look at the goals of the program under investigation.

Stufflebeam noted in 1972 that the essence of evaluation was value judgements and that these were made in relation to standards and the standards almost always were goals. He noted that goal statements at least provided hypotheses as to what some of the variables were.

In concurrence, Hernard (1978) said that educational experiences should be evaluated in terms of roles, goals and the educational objectives of an institution.

The determination of an institution's goals and objectives is beyond the scope of this study. What we are concerned with here is obtaining information which assists in determining the extent to which the existing goals and objectives of an educational system are being met.

McComas (1971) provided clues, however, as to the scope of the follow-up study. He said:

It should be noted that various publics probably are more vocal in their concern for students' emerging values than for technical competence. Therefore, measures of the affective domain must be attempted together with the cognitive domain.

This points to the conclusion that follow-up studies should collect data which goes beyond an assessment of employment and income patterns generally required for accountability and should also investigate the value of curricular inclusions aimed at personal and professional development. Thus, broad program objectives or goals become the basis for follow-up design.

McKinney and Oglesby (1971) in their discussion of follow-up study design stated that:

The program objectives become the basis for stating the criterion questions and consequently, the follow-up instrument.

A criterion question is merely one which states the objective in such a way that an answer is called for which will measure the attainment of that objective . . .

. . . Following the statement of criterion questions, the next step is to develop or select as many items as will be needed to obtain sufficient information for answering the criterion questions.

Using this format, the extent of the follow-up study becomes a function of the number of objectives to be assessed, and the number of criterion questions needed to adequately determine the degree of success in objective attainment.

Evolution of the Follow-up Study

Follow-up studies in the past (discussed later in this chapter) have been narrower in scope than more recent ones. They have been chiefly concerned with the results of education such as employment, income and mobility of graduates, with only marginal interest in graduate assessment of the programs, policies, structures and facilities making up the total educational experience. As well they have been limited to specific populations with little or no longitudinal utility.

More recently, follow-up studies have been more comprehensive but at the same time have been designed in such a way that objective assessment can be cross-departmental, cross-institutional and cross-annual. In this way data can be provided which allows researchers to determine if progress has been made in correcting problematic areas that prior follow-ups have identified. As well, administrators can accurately compare the status of their programs with those of similar institutions and more informed decisions can be made in determining resource allocation within a university by providing a means for comparing the performance of various departments.

This was the goal of "Project Follow-up" (Reed and Cox, 1976) initiated by the Texas Junior and Community College System. The purpose of Project Follow-up was to develop, test and validate a state-wide management information system for follow-up of Texas public junior and community college students. A major objective of Project Follow-up was to develop a flexible system so colleges could adapt it to their unique needs in order to obtain consistent information for use in local planning and evaluation.

The main aim of this project was to provide a comprehensive follow-up instrument which could be used in all colleges and universities. Reed and Cox (1976) described the types of information their graduate questionnaire collected as follows:

- Attendance objectives
- Sex and ethnic data
- College enrollment status
- Relation of employment to program completed
- Prior employment in area related to program completed
- Opinion of program completed
- Opinion of student service(s) area
- Name of transfer college, status and GPA
- Usefulness of training to job performance
- Transfer problem areas
- Salary information
- Job title and name of employer
- Reason(s) for employment in areas unrelated

- to program completed
- Relation of program completed to career plans
- Opinion of educational experience
- Job outlook information
- Mobility information
- Suggestions for improvements of programs and/
or services
- General comments

At the University of Illinois, Urbana, work is continuing on a similar follow-up project called "Program Evaluation Survey" or PES (Bessai et al, 1977). This survey is also a cross-departmental measure and has been administered to 53 academic departments since 1974. In her report, Bessai described the PES system:

The current version of PES contains six biographical items (sex, class level, cumulative GPA, transfer status, graduation status and reason for choosing a major). On the remaining 24 items, which include a five-point bipolar response format, students indicate the level of difficulty and structure of their major programs, admission standards, their attitude toward major program and satisfaction with 18 programmatic areas of their department (e.g. well-integrated set of courses, academic contact with faculty, quality of vocational guidance, value of program).

Bessai (1977) went on to explain that PES was designed to provide information upon which comparative judgments among departments and identification of weaknesses and strengths within a department could be made. PES

could also be used to compare yearly attitudinal change, could be used for graduates and undergraduates, and used optional items to allow for collection of specific departmental information.

The more longitudinal and lateral a follow-up instrument becomes the more one must question the usefulness of quantitative analysis of responses. In coping with this problem, supporters of this type of follow-up system have suggested that quantitative analysis should be used only to indicate observable trends.

House (1977) addressed this issue as follows:

Indeterminacy and unspecifiability are essential parts of evaluation whether based on hard data or soft. This ambiguity necessitates personal judgements on the part of both evaluators and audiences. It also suggests that overall judgement is more important than precise calculation in most evaluative reasoning.

Indications are that future follow-up studies will adopt a standard form which provides information that will be consistent for comparison purposes. It will be of a general non-quantified nature that addresses directional trends in the opinions of graduates in regard to their educational experiences. These trends will not be defined in absolute quantitative terms.

Another type of follow-up study utilizes employers of program graduates. A study of this type at Amarillo College in Texas in 1976 (Patterson, 1976) concluded that employer follow-ups can be a valuable tool for developing an accountability model. The greatest utility of employer follow-ups is that they can provide information from which to determine the goals and objectives of an educational institution. As such, the use of the follow-up of graduate employers does not replace the follow-up of graduates, but rather complements it as another useful part of a total evaluation program. Follow-ups of graduate employers are not a factor in this study and will not be discussed further in this chapter.

Review of Related Graduate Follow-up Studies

In the past decade, follow-up studies of graduates have become a common and accepted element in educational evaluation. Because studies in the past have seldom been longitudinal, a thorough analysis of the results of these studies is not particularly useful. However, a brief description of previous follow-up studies of graduates of agriculture-related programs at other institutions and

some of the factors they looked at provides clues as to what kinds of things other educators in our field have been concerned with.

Follow-up studies of graduates of vocational technical education programs have primarily been concerned with graduate success in employment. Little (1970) studied job histories and placement of graduates. Lewis (1972) was concerned with characteristics of present employment positions and ratings of preparation for employment.

Graduate follow-ups at the university level have also concentrated on employment patterns. Studies of College of Agriculture graduates at Kansas State University (Carpenter, 1964), University of Missouri (Van Eaton, 1969) and University of Wisconsin (Schwarz, 1970) collected information about employment, salaries and advanced education with only secondary concern for program evaluation. In all three cases, program evaluation concentrated on technical competence.

This approach is understandable in view of the types of data required to meet accountability demands. However, more recent follow-up studies have been more comprehensive. Researchers have realized that evaluations by former students can not only provide the necessary data to satisfy

those demanding accountability, but can also provide useful information for the educators themselves in determining the effectiveness of their curriculums. As discussed previously, follow-up studies of graduates can be used to assess intellectual, personal and professional development as well as employability (Hernard, 1978). Follow-up studies have also become more longitudinal.

A study of 3,315 baccalaureate and advanced degree recipients at the University of Colorado, Denver, conducted in 1976 (Hernard, 1978), included survey items on the following: income, relationship of jobs to degree, mobility patterns, estimates of intellectual and personal development experienced, and evaluations of instruction, academic advising and career counseling. In this study, degree related data were aggregated by the school or college in which the degree work was completed. This is representative of the types of follow-ups now being done across the nation.

At Montana State University, the only comprehensive follow-up survey of College of Agriculture graduates was done by Bickle in 1971. In his study he evaluated graduate employment, mobility and advanced education patterns and the value rankings of education received in the

College of Agriculture major area, and the assistance received from major advisor. For purposes of comparison Bickle's major findings are listed as follows:

Mobility Patterns

The following conclusions concern themselves with the characteristics of the mobility of the graduates.

1. As mobility in terms of number of positions held increases, the percent of graduates leaving the state increases.
2. Of every 100 students who attended the College of Agriculture at Montana State University 88.8 percent were residents of the state of Montana prior to attending college, 11.2 percent resided outside of Montana. Of those receiving a B.S. degree in the College of Agriculture 61.6 percent reported their residence as being from Montana; 27.2 percent are residing outside of Montana. The balance 11.2 percent of the graduates resided outside of Montana prior to attending college and now list their residence outside of Montana. Of the 61.6 percent of the graduates who reported their residence as being in Montana only three or 1.9 percent listed their residence prior to attending college as being from out of the state of Montana.
3. The majority, forty-seven or 66.2 percent of the graduates who were Montana residents prior to college attendance, but presently reside outside the state, are residing in the Western Region of the United States.
4. There was a significant percentage, fifty-three or (21%) of the graduates who show no residential mobility. This means that

if they were residents of Montana, they have always resided in the same county. If they were residents of a region or foreign country, they have always resided in the same country.

5. Graduates who stay in state tend to cluster around the larger metropolitan communities, which can be seen by the large number of positions held in the respective counties. This leaves many of the sparsely populated counties short-changed on professionally prepared people.

Employment Patterns

1. Agriculture Education graduates have the highest mean salary for the first position held since graduation of those curriculums offering a Bachelor of Science in the College of Agriculture at Montana State University.
2. The graduates who have pursued advanced studies, degree or non-degree, have consistently received a higher salary than those who have not completed any advanced studies.
3. As the number of positions held increases, the percent of positions classified as managerial increases.
4. Technical and managerial jobs account for over 50 percent of all positions held by Montana State University College of Agriculture graduates.
5. Pay was the major reason for the termination of positions.
6. Family, housing and prestige are unimportant as reasons for terminating positions, regardless of the educational level.

Advanced Education

1. Of the graduates pursuing non-degree credits none have completed over 59 credits.

2. Many of the graduates who have received advanced degrees have also completed advanced non-degree studies.
3. Sixty-four or 25.4 percent of the graduates of the College of Agriculture have completed advanced degrees.

Evaluation

1. Graduates tend to value the education they receive in their major areas within the College of Agriculture higher than the assistance they receive from their major advisor on a comparable rating scale.
2. Advisory programs have improved by comparison from 1950 to 1967 as indicated by ratings given by graduates.
3. Education received by students has improved within their major from 1950 to 1967 as indicated by value ratings given by students.

Bickle made two recommendations of note (Bickle, 1971).

The first was that:

Some of the curriculums within the College of Agriculture have experienced curriculum and advisory problems according to the evaluations made by their graduates and [those involved with these curriculums] should therefore look with greater detail at some of their problems.

A second recommendations was that more comprehensive follow-up studies should be made of College of Agriculture graduates, preferably one every five years. This study is an attempt to do just that.

Educational accountability through evaluation is here to stay. We are only just beginning to discover the use potential of comprehensive follow-up studies of graduates not just for accountability purposes but also for a broad spectrum of other applications throughout the total evaluation programs of educational institutions.

CHAPTER III

ANALYSIS OF DATA

1. Introduction

The data analysis section is presented in eight parts. Section 1 is an introduction to this chapter. Section 2 contains general information about College of Agriculture graduates surveyed. This is followed by Sections 3 through 6 which deal with data pertaining respectively to each of the four objectives of the program of studies of the College of Agriculture being evaluated, as stated in the questionnaire (see Appendix, page 121). Section 7 consists of selected additional comments and observations of the respondents as recorded on their questionnaires. The last section, Section 8, is a summary of this chapter.

Data analysis was based on responses obtained from 154 returned questionnaires as shown in Table 2. This represents a 64.2% return. Data analysis procedure utilized the Statistical Package for the Social Sciences (SPSS) computer program (Nie et al, 1975).

N values for each category examined in this chapter can be obtained from Table 2. In the category labeled

TABLE 2

NUMBER OF RESPONSES MAKING UP SAMPLE N'S USED IN
EACH CATEGORY IN DATA ANALYSIS

Degree Area	Returns by Year of Graduation												Total for Degree Area
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977			
Ag Business	6	2	2	5	2	6	2	3		8			34
Ag Education	3	3	3	2	1	4		3		3			19
Ag Production	1	10	1	11	6	9	4	13	5	16			76
Ag Science	3			7	1	3	1	2		2			19
Industrial Arts						2	1	1		1			5
Unclassified								1					1
Total	1	22	6	25	10	24	8	23	5	30			154

"all areas," the N value is 154 and includes all degree areas and all years of graduation. The researcher did not assign separate values for the Industrial Arts degree area or for the following years of graduation: 1968, 1970, 1972, 1974, 1976 (refer to Methodology, page 9) because of very low sample N's. It was felt that with so few responses in these categories, any generalizations made from these figures may be misleading.

The researcher urges readers to note that much of the data considered in this section is expressed in proportions by percentages rather than in actual numbers. This format is followed to aid readers in applying the data to the college as a whole. The sample N's from which these percentages are derived appear in Table 2. Please refer to Table 2 if actual numbers in addition to those given in the text are desired.

Percentage values shown in the following tables are percentages of sample N's in each category as indicated. Where percentage totals for rows or columns do not equal 100%, the difference is due to some respondents not indicating an answer in that category or indicating more than one choice per category. Means shown represent the means for sample N's in each category calculated from responses

chosen on a scale of 1 to 4. Except as noted, 1 is the most negative response and 4 is the most positive response. With such a restricted scale, small differences in mean values are noteworthy. Unless otherwise noted, mean values of less than 2.50 represent more negative than positive responses in that category; mean values of more than 2.50 represent more positive than negative responses in that category. It should also be noted that in categories with smaller N values, the validity of generalization to a larger population becomes more questionable.

This study was specifically designed to indicate directional trends in the areas being investigated as determined by the respondents. An attempt to quantify these trends is not justified.

2. General Information

Age of respondents ranged from 20 to 44 years with a mean age of 27.8 and a mode of 26. The average respondent in the survey was in his/her mid-twenties.

A rather significant number, 40, or 26% of those responding, indicated that they transferred from other colleges or universities. Of those indicating that they were

college transfer students, 12 indicated that they held a previous college degree before coming to MSU. The areas of the previous degree and the college transferred from varied with no notable trends. Thus, the data indicate that 7.8% of College of Agriculture graduates held a previous degree before entering the College of Agriculture.

TABLE 3

HIGHEST DEGREE NOW HELD BY GRADUATES
Shown in Actual Numbers - Sample N 154

Degree Area	B.S./B.A.	Masters	Ph.D.
All Areas	139	10	5
Ag Business	31	1	2
Ag Education	18	1	
Ag Production	72	3	1
Ag Science	12	5	2
Selected Years of Graduation			
1969	21	0	1
1971	19	3	3
1973	22	2	
1975	23		
1977	30		

NOTE: Advanced degrees were not necessarily obtained from MSU College of Agriculture.

As indicated by the data presented in Table 3, 30 or 19.5% of graduates went on to earn a more advanced college degree. Of those responding, 20 or 13.0% received a master's degree and 10 or 6.5% earned a doctorate degree. As would be expected, the number of advanced degrees increased with length of time since graduation.

A number of reasons for choosing MSU College of Agriculture are presented in Table 4. The largest proportion of all respondents (33.8%) cited "best ag program" as their number one consideration in choosing this university. About one-fourth, or 23.4%, indicated it was the only school considered. Other areas of importance were proximity to home (18.2%) and the fact that MSU was thought to be the most economical (15.67%) for the student involved. More than one-third, or 36.8%, of graduates in Agricultural Science reported "closeness to home" as the primary influence in choosing MSU. Financial aid did not appear to be an influencing factor, and economics and closeness to home were of less importance to the more recent graduates. Offering of desired electives was of little concern but became more important in recent years. A feeling that MSU had the best programs became increasingly important. Of 1969 graduates, 22.7% reported this as the number one

TABLE 4
REASON FOR CHOOSING MSU COLLEGE OF AGRICULTURE
BY DEGREE AREA AND SELECTED YEARS OF GRADUATION

Reason	% By Degree Area					% By Year of Graduation (includes all degree areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975	1977
Had best ag program	33.8	38.2	47.4	34.2	21.1	22.7	36.0	29.2	43.5	40.0
Most economical	15.6	8.8	21.1	15.8	15.8	13.6	20.0	16.7	8.7	10.0
Close to home	18.2	17.6	10.5	17.1	36.8	13.6	20.0	25.0	8.7	10.0
Friends/relatives at MSU	7.1	5.9	15.8	3.9	15.8	9.1	12.0	4.2	4.3	10.0
Relatives alumni	1.9	5.9	0.0	0.0	5.3	9.1	0.0	0.0	0.0	0.0
Wanted to see another part of the country	3.2	8.8	0.0	2.6	0.0	0.0	4.0	0.0	0.0	6.7
Only ag school considered	23.4	20.6	26.3	25.0	15.8	36.4	16.0	25.0	17.4	20.0
Offered specific program wanted	10.4	11.8	10.5	6.6	15.8	13.6	8.0	8.3	17.4	3.3
Offered financial aid	1.9	0.0	0.0	2.6	5.3	9.1	4.0	0.0	0.0	0.0
Offered desired electives	1.9	2.9	0.0	2.6	0.0	0.0	0.0	0.0	4.3	3.3
Other	7.8	5.9	10.5	5.3	10.5	0.0	4.0	8.3	8.7	20.0

reason for choosing MSU College of Agriculture. Forty percent of 1977 graduates chose it as their number one reason. Other reason of note were MSU Rodeo Team and desirability of the quarter system particularly for students involved in farming and ranching.

TABLE 5

GRADUATES PLACE OF ORIGIN VS. PRESENT LOCATION OF EMPLOYMENT

Location of Present Job	Place of Origin		Total
	In State	Out of State	
In State	70.1%	6.5%	76.6%
Out of State	13.0%	10.4%	23.4%
Total	83.1%	16.9%	100.0%

The matrix presented in Table 5 shows that 83.1% of all respondents originated in the state of Montana, and 16.9% of respondents originated out of state. From Table 5, at the time of this survey, 76.6% of all respondents were employed in the state of Montana and 23.4% were employed elsewhere. Although not shown in tabular form, 20 of 128 graduates originating in-state, or 15.6%, found employment out of state. Conversely, 10 out of 26, or 38.5%, of out-of-state students were presently working in Montana.

Again from Table 5, by subtracting the percentage of respondents presently employed in Montana, 76.6%, from the percentage originating in Montana, 83.1%, it can be seen that there is a net loss to the state of 6.5%.

Questionnaire items 6, 10, and 11 (see Appendix, page 121) collected data on place of origin of respondents and locations of first and present jobs. These data were not tabulated but purusal of the questionnaires returned allowed the researcher to compare locations of origin to locations of present jobs. These data indicate that 43.8% of in-state students returned to their home county to find employment. Data also indicate that 56.2% of in-state graduates relocated elsewhere most often in more urbanized counties, particularly Yellowstone and Gallatin Counties, constituting a possible loss to rural counties of agriculturally educated persons. There is some indication that the majority of students returning to their home counties may be returning to family farming and ranching operations as suggested by the large percentage of respondents, 34.5% (see Table 6), presently employed in Agricultural Production.

TABLE 6

EMPLOYMENT PATTERNS OF GRADUATES
Shown as % of Total N in Each Category

Categories of Employment	First Job After Graduation	Present Job
Ag Supplies/Service	14.9%	20.7%
Ag Mechanics	2.0	0.7
Ornamental Horticulture	2.0	1.3
Ag Resources	25.3	18.2
Ag Products	5.2	4.5
Forestry	2.0	1.3
Ag Production	35.7	34.5
Non-Agricultural	11.0	16.2
Unemployed	1.9	2.6
Total	100.0%	100.0%

Items 10 and 11 of the questionnaire referred also to first and present job titles of graduates surveyed. The job titles reported by the respondents were classified by the researcher into the six agri-business taxonomy areas utilized in the Montana Agri-Business survey (Amberson et al, 1979) (see definitions). This classification appears in Table 6.

Employment patterns of respondents, presented in Table 6, indicated that the largest proportion found first employment in agricultural production, 35.7%; followed by

agricultural resources, 25.3%; and agricultural supplies and services, 14.9%. Data indicate the most common areas of present employment as follows: 34.5% in agricultural production, 20.7% in agricultural supplies and services, and 18.2% in agricultural resources. Further perusal of individual responses indicated the most common positions in agricultural supplies and services were management, sales representatives, and agricultural finance positions. Agricultural resource positions were almost exclusively in areas of education or research in agriculture through some government agency.

The researcher also noted shifts from first employment in ag resources to present employment in ag services and supplies and non-agricultural areas; from ag production to supplies and services and from all areas to agricultural production. The proportion of respondents in agricultural production remained nearly constant although about 15.0% moved out of production and a similar percentage moved into production from other areas. It was also of note that 16.2% of respondents were presently employed in non-agricultural areas and that this proportion had increased from first job after graduation to present employment.

Responses to item 15 in the questionnaire revealed that more than one-third of all graduates (37.7%) reported that their present job was not in their specific area of college degree training. Data presented in Table 7 can be used to examine various reasons for this phenomena.

The two reasons most often cited for taking employment in other areas were that respondents either found a better paying job in another area or preferred to work in another area. Better pay was a major factor (17.6%) for those graduating with an Ag Business degree. In Ag Education, 47.4% of those respondents graduating in this degree area preferred work in another area. In all degree areas, a shortage of jobs in a particular area of training or location were also factors contributing to graduates seeking employment in other fields. None of the graduates felt that they lacked qualifications for employment in their degree area. There was no discernable trend toward changes in this pattern over the years surveyed. Several respondents also stated that rather than seeking employment in their specific degree area, they returned to active farming and ranching. Figures in Table 6 bear this out.

TABLE 7

REASON FOR PRESENT JOB NOT IN AREA OF COLLEGE DEGREE TRAINING
Shown as % of Sample N by Degree Area and Selected Years of Graduation

Reason	Degree Area				Year of Graduation (Including All Degree Areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975 1977
Found no job related to training	4.5	5.9	0.0	0.0	5.3	4.5	8.0	4.2	0.0 3.3
Not qualified in degree area	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0
Preferred work in another area	11.0	5.9	47.4	6.6	5.3	22.7	4.0	12.5	17.4 3.3
Found better paying job in another area	13.0	17.6	10.5	13.2	5.3	22.7	12.0	16.7	17.4 0.0
Qualified for a different job	3.9	2.6	5.3	3.9	5.3	4.5	12.0	0.0	4.3 0.0
No jobs in area I wished to live	7.1	8.8	5.3	6.6	5.3	9.1	4.0	12.5	4.3 6.7
Entered military service	0.6	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0 0.0
Other	11.7	14.7	10.5	9.2	21.1	13.6	12.0	16.7	8.7 13.3

TABLE 8
RATINGS OF JOB AVAILABILITY OR BUSINESS OPPORTUNITY IN PRESENT OCCUPATIONAL
FIELD AS % OF SAMPLE N BY DEGREE AREA AND SELECTED YEARS OF GRADUATION

Rating	Degree Area					Year of Graduation (includes all degree areas)					
	All Areas	Ag	Bus	Educ	Ag	Ag Sci	1969	1971	1973	1975	1977
		Ag	Prod								
Very good	13.6	17.6	42.1	2.6	15.8	9.1	8.0	33.3	17.4	6.7	
Good	45.5	47.1	42.1	47.4	42.1	54.5	44.0	29.2	34.8	56.7	
Poor	25.3	20.6	10.5	31.6	21.1	22.7	36.0	16.7	34.8	23.3	
Very poor	3.9	5.9	0.0	5.3	0.0	4.5	4.0	8.3	0.0	3.3	
Don't know	10.4	8.8	0.0	11.8	21.1	9.1	4.0	12.5	13.0	10.0	

Ratings of job availability or business opportunity in present occupational fields were generally good (see Table 8) with 45.5% of all respondents indicating opportunities as good and 13.6% as very good. For Agricultural Education graduates, a total of 84.2% rated employment opportunities as good or very good. Slightly more than one-quarter overall (25.3%) and almost one-third (31.6%) in Agricultural Production rated opportunities in their field as poor. Looking at years of graduation, it appeared that 1973 graduates had the best outlook in employment prospects with 33.3% reporting prospects very good.

As shown in Table 8, graduates in earlier and later years reported slightly less opportunities in their fields with less reporting very good but more reporting good. Combining the categories good and very good (see Table 8), from about 1/2 to 2/3 of graduates in all years reported satisfactory job opportunities.

Yearly income ranges of graduates in this survey (shown in Table 9) are not particularly reliable due to reluctance to report on the part of respondents and the detailed breakdown presented, which resulted in extremely low N values in several categories. However, some trends can be identified. Mean income consistently increased

TABLE 9
YEARLY SALARY SHOWN AS % BY DEGREE AREA
AND BY SELECTED YEARS OF GRADUATION

Degree Area	Range (In Thousands of Dollars)								Mean Salary in \$	
	under 8	8-12	12-16	16-20	20-24	24-28	28-32	over 32		
1969 Graduates										
All Areas	9.1	22.7	13.6	22.7	18.2	4.5	0.0	9.1	22	15091
Ag Bus	16.6	16.6	16.6	16.6	33.3	0.0	0.0	0.0	6	13333
Ag Educ	0.0	0.0	33.3	0.0	33.3	33.3	0.0	0.0	3	18667
Ag Prod	0.0	50.0	10.0	20.0	10.0	0.0	0.0	10.0	10	13600
Ag Sci	33.3	0.0	0.0	66.6	0.0	0.0	0.0	0.0	3	12000
1971 Graduates										
All Areas	16.0	4.0	16.0	20.0	20.0	8.0	0.0	4.0	22	15091
Ag Bus	20.0	20.0	20.0	20.0	20.0	0.0	0.0	0.0	5	12000
Ag Educ	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	1	24000
Ag Prod	27.2	0.0	9.1	27.2	27.2	0.0	0.0	9.1	11	14910
Ag Sci	0.0	0.0	40.0	20.0	20.0	20.0	0.0	0.0	5	16800
1973 Graduates										
All Areas	25.0	16.7	16.7	20.8	4.2	0.0	0.0	8.3	20	12182
Ag Bus	20.0	20.0	40.0	0.0	0.0	0.0	0.0	20.5	5	13600
Ag Educ	0.0	25.0	25.0	25.0	0.0	0.0	0.0	25.0	4	17000
Ag Prod	37.5	12.5	0.0	50.0	0.0	0.0	0.0	0.0	8	12500
Ag Sci	66.6	0.0	33.3	0.0	0.0	0.0	0.0	0.0	3	<8000
1975 Graduates										
All Areas	8.7	34.8	21.7	13.0	8.7	4.3	0.0	0.0	19	11619
Ag Bus	0.0	0.0	66.6	33.3	0.0	0.0	0.0	0.0	3	13333
Ag Educ	0.0	33.3	33.3	0.0	33.3	0.0	0.0	0.0	3	13333
Ag Prod	18.2	45.5	9.1	18.2	9.1	0.0	0.0	0.0	11	10182
Ag Sci	0.0	0.0	50.0	0.0	0.0	50.0	0.0	0.0	2	18000

(continued on next page)

TABLE 9

Degree Area	Range (In Thousands of Dollars)								Mean Salary in \$	
	under 8	8-12	12-16	16-20	20-24	24-28	28-32	over 32		
1977 Graduates										
All Areas	22.2	51.9	25.9	0.0	0.0	0.0	0.0	0.0	27	8148
Ag Bus	12.5	75.0	12.5	0.0	0.0	0.0	0.0	0.0	8	8000
Ag Educ	33.3	66.6	0.0	0.0	0.0	0.0	0.0	0.0	3	<8000*
Ag Prod	14.2	42.9	42.9	0.0	0.0	0.0	0.0	0.0	14	9143
Ag Sci	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	<8000
All Years Combined										
All Areas	15.6	26.0	22.7	14.3	8.4	3.2	0.0	3.9	143	12138
Ag Bus	17.6	29.4	23.5	11.8	8.8	0.0	0.0	5.9	33	11758
Ag Educ	5.3	31.6	26.3	5.8	10.5	10.5	0.0	5.3	18	13778
Ag Prod	14.5	27.6	19.7	18.4	7.9	1.3	0.0	3.9	71	12056
Ag Sci	26.3	0.0	31.6	15.8	5.3	10.5	0.0	0.0	17	12235

*< = less than

with number of years since graduation with a mean income of \$8148 for 1977 graduates and \$15091 for 1969 graduates. As can be seen from Table 9, for graduates in Agricultural Production, initial income was higher than for other degree areas but did not rise as rapidly or as much as in other areas. Conversely, Agricultural Education graduates started out with a lower relative income level than others but this level rose quickly and became the highest average income category. Figures for Agricultural Education may not realistically reflect income levels for employment in Agricultural Education-related fields as 47.4% of graduates in this degree area stated that their present employment was in another field (see Table 6). The average yearly income of all graduates surveyed was \$12,138, Agricultural Education leading with \$13,778 per annum, followed by Agricultural Science at \$12,235, Agricultural Production at \$12,056, and Agricultural Business at \$11,758 yearly.

Difficulties encountered in obtaining the first job after graduation are presented in Tables 10 and 11. The data in Table 10 show that of those surveyed in all areas, 7.1% reported difficulty in finding first employment. Those graduating in Agricultural Science appear to have had the most problems with 21.1% indicating some difficulty. The most

TABLE 10

DIFFICULTY IN OBTAINING FIRST JOB AFTER GRADUATION
Shown as % by Degree Area and Selected Years of Graduation

Response	Degree Area				Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975 1977
Yes	7.1	5.9	5.3	5.3	21.1	4.5	16.0	4.2 0.0 10.0
No	87.0	88.2	89.5	88.2	73.7	90.9	80.0	87.5 82.6 90.0

TABLE 11

REASONS FOR DIFFICULTY IN OBTAINING FIRST JOB
Shown as % by Degree Area and Selected Years of Graduation

Reason	Degree Area				Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975 1977
Over-qualified	1.3	0.0	0.0	1.3	5.3	0.0	0.0	4.2 0.0 3.3
Under-educated	0.6	0.0	0.0	1.3	0.0	0.0	0.0	0.0 0.0 0.0
Employer wanted experience	3.9	8.8	5.3	0.0	10.5	0.0	4.0	4.2 4.3 6.7
Salaries too low	3.2	8.8	0.0	1.3	5.3	0.0	0.0	4.2 8.7 3.3
Did not know how or where to look for a job	1.9	2.9	0.0	1.3	5.3	0.0	4.0	0.0 0.0 3.3
No interview training	2.6	5.9	0.0	1.3	5.3	0.0	4.0	0.0 0.0 3.3
No jobs in area I wished to live	3.2	2.9	0.0	3.9	5.3	0.0	4.0	4.2 0.0 3.3
Other	2.6	0.0	0.0	3.9	5.3	4.5	8.0	4.2 0.0 0.0

common reason for difficulty in securing a first job, as shown in Table 11, was lack of experience, particularly in Agricultural Business and Agricultural Science areas. This suggests that an internship program of some type may be of benefit in these degree areas. Data in Table 11 also indicated lack of experience was a growing problem with noone reporting that problem in 1969 and 6.7 reporting it in 1977. Inadequate salaries and lack of interview training also contributed significantly to the difficulties of Agricultural Business graduates. A perusal of Tables 10 and 11 indicates a slight trend toward more difficulties among the more recent graduates for a variety of reasons. Additional comments on some questionnaires again referred to lack of experience as the primary reason for difficulty in obtaining first employment after graduation.

Information regarding the adequacy of degree names for the programs offered by the College of Agriculture is presented in Table 12. For all respondents, 48.1% indicated that their degree name adequately described the training they received. Another 29.9% indicated partial satisfaction with their degree name. "Agricultural Production" appeared to be the least satisfactory with only 38.2% of respondents in that degree area saying it adequately described

TABLE 12
EVALUATION OF DEGREE NAMES
Shown as % by Degree Area and Selected Year of Graduation

Rating	Degree Area				Year of Graduation			
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975 1977
Adequately Described Training Received								
Yes	48.1	55.9	57.9	38.2	52.6	40.9	48.0	50.0 73.9 23.3
Partially	29.9	26.5	26.3	38.2	10.5	27.3	24.0	29.2 13.0 50.0
No	6.5	5.3	7.9	15.8	9.1	8.0	4.2	4.3 13.3
Employers Understood Degree Designation								
Yes	44.2	35.3	57.9	42.1	47.4	50.0	44.0	45.8 56.5 33.3
Partially	26.0	29.4	21.1	31.6	10.5	18.2	20.0	29.2 13.0 46.7
No	7.1	2.9	7.9	21.1	9.1	8.0	8.7	6.7
Degree Name Comparable to Similar Institutions								
Yes	47.4	52.9	68.4	38.2	52.6	36.4	44.0	62.5 60.9 36.7
Partially	16.9	14.7	10.5	22.4	5.3	22.7	8.0	12.5 13.0 23.3
No	4.5		6.6	10.5	9.1	4.0		13.3

their training. While satisfaction among respondents increased up to 1975, data indicate a severe drop in ratings by 1977 graduates.

Data in Table 12 indicate that employers had some difficulty in interpreting the educational programs the degree names implied. This was particularly true of Agricultural Business with only 35.3% of respondents in that category indicating employers understood their degree designation. This too appeared to be a greater problem among the more recent graduates with only 33.3% indicating no difficulties in this area.

Slightly less than half the respondents, 47.4%, felt that the degree name for their particular educational program was comparable to that of similar institutions. Table 12 indicates that the Agricultural Education designation appeared to be most consistent with other institutions while the majority of Agricultural Production graduates felt that their degree name was somewhat dissimilar to those used by other institutions with only 38.2% indicating that they felt the Agricultural Production designation was comparable. Here again, the more recent graduates indicated that they felt there was considerably less comparability of degree names used by the College of

Agriculture at MSU with those used for similar educational programs at other institutions.

In summary, Agricultural Production appeared to be the least satisfactory degree name and Agricultural Business encountered significant difficulty in interpretation by employers. Also the most recent graduates surveyed indicated substantially less satisfaction with their degree names.

3. Evaluation of Curriculum

This section deals with the analysis of data pertaining to Objective 1, stated in the questionnaire as follows: "To offer degree programs which provide a variety of courses and experiences which will enable students to develop technical and professional competencies required of graduates employed in agricultural occupations."

The following data can be used to examine the adequacy of the curricular experiences of the graduates in this survey in meeting the above stated objective. The researcher reminds readers that the primary purpose of this study is not to rigorously examine any specific item in question, but to identify areas where more intensive

investigation may be of interest.

The data in Table 13 indicate what percentage of respondents in each category examined were exposed to at least one course in each subject area investigated.

Perusal of the data in Table 13 indicate the following trends. Approximately one quarter (25%) or less of the graduates surveyed took courses in Horticulture, Recreation Area Management or Agricultural Education. Animal and Soil Science and the general education areas including Mathematics, Physical and Biological Sciences, and written communication were popular, with over 90% of those surveyed indicating exposure to these subject areas. However, these courses were often required courses in the various degree programs under study.

Data in Table 13 indicate a notable decline in interest in the Plant Science areas including Range, Plant Pathology, Crop Production and Management, and Horticulture among the more recent graduates. Areas of increased interest in more recent years were Speech Communication and management-related fields including Agricultural Business, Agricultural Economics and Recreation Area Management.

Close scrutiny of Table 13 indicates that graduates in Agricultural Education appeared to be the most

TABLE 13
NUMBER OF GRADUATES TAKING ONE OR MORE COURSES IN EACH SUBJECT AREA
Shown as a % by Degree Area and Selected Years of Graduation

Subject Area	Degree Area					Year of Graduation (Includes all degree areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975	1977
Technical Knowledge and Understanding										
Range Science	74.7	58.8	94.7	82.9	63.2	81.8	80.0	79.2	82.6	63.3
Animal Science	90.9	91.2	100.0	92.1	94.7	95.5	96.0	87.5	87.0	86.7
Plant Pathology	46.8	32.4	68.4	46.1	57.9	54.5	52.0	45.8	52.2	36.7
Crop Production & Management	71.4	50.0	89.5	80.3	73.7	63.6	76.0	62.5	87.0	66.7
Horticulture	25.5	8.8	31.6	31.6	26.3	13.6	20.0	33.3	34.8	23.3
Recreation Area Management	13.6	0.0	10.5	21.1	10.5	9.1	16.0	12.5	13.0	16.7
Soil, Soil Technology & Management	93.5	94.1	89.5	98.7	100.0	90.9	96.0	91.7	91.3	93.3
Vet Science	50.6	23.5	78.9	61.8	42.1	54.5	40.0	54.2	43.5	43.3
Ag Business	61.7	91.2	84.2	53.9	26.3	59.1	72.0	66.7	47.8	63.3
Ag Economics	84.4	100.0	94.7	82.9	68.4	95.5	88.0	75.0	78.3	93.3
Ag Education	20.8	5.9	94.7	9.2	5.3	13.6	20.0	33.3	21.7	20.0
Industrial Arts	34.4	14.7	89.5	30.3	10.5	27.3	20.0	37.5	34.8	46.7
Ag Mechanics	37.0	14.7	94.7	36.8	10.5	31.8	36.0	33.3	47.8	30.0
General Education										
Mathematics	96.8	100.0	100.0	93.4	100.0	95.5	100.0	100.0	95.7	100.0
Physical and Biological Sciences	91.4	94.1	89.5	88.2	100.0	86.4	88.0	95.8	91.3	96.7
Written Communication	96.8	97.1	100.0	94.7	100.0	95.5	96.0	95.8	82.6	100.0
Speech Communication	79.9	76.5	73.7	81.6	78.9	63.6	64.0	79.2	87.0	96.7
Social Science & Humanities	87.0	91.2	94.2	86.8	78.9	72.7	88.0	83.3	95.7	93.3
Education	26.0	11.8	94.7	17.1	0.0	9.1	20.0	41.7	30.4	23.3
Economics	77.9	97.1	78.9	72.4	68.4	77.3	84.0	83.3	82.6	80.0

educationally diversified with a high percentage taking courses in most subject areas, while Agricultural Business and Agricultural Science graduates pursued more specialized programs of study. Outside of the Agricultural Education degree program, very few respondents indicated any background in Agricultural Education or education subject areas which may impair ability of graduates in the other degree areas to pass on to others in their fields the knowledge they have obtained.

Table 14 presents mean ratings of the preparation provided by courses in each of the subject areas investigated. It should be remembered that the rating scale ranged from "1", very poorly prepared, to "4", very well prepared. Subject areas which received mean ratings of less than "3" may be considered to be in need of improvement. Data in Table 14 indicate generally weak areas as being in spoken and written communication and in education with mean ratings of 2.53, 2.63 and 2.39 respectively. Notably strong subject areas, all with ratings of 3 or more, were Range, Animal and Vet Science, and Industrial Arts and Agricultural Mechanics. Specific strong and weak areas can be identified from Table 14 in each degree area and may be of particular interest to those involved with singular

TABLE 14
RATING OF PREPARATION RECEIVED IN EACH SUBJECT AREA
Shown as a Mean* by Degree Area and Selected Years of Graduation

Subject Area	Degree Area					Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975	1977
Technical Knowledge and Understanding										
Range Science	3.24	3.10	3.06	3.37	3.18	3.20	3.20	2.89	3.42	3.26
Animal Science	3.22	2.97	3.24	3.29	3.53	3.24	3.14	3.30	3.30	3.15
Plant Pathology	2.61	2.50	2.62	2.59	3.00	2.44	2.83	2.25	2.77	2.64
Crop Production & Management	2.84	2.75	2.73	2.90	2.91	2.73	2.69	2.67	3.05	2.85
Horticulture	2.62	2.80	2.33	2.73	2.40	2.00	3.20	2.25	2.75	3.00
Recreation Area Management	2.64	2.33	2.50	2.75	2.00	2.50	2.60	2.00	3.33	2.75
Soil, Soil Technology & Management	2.61	2.52	2.53	2.60	2.83	2.37	2.55	2.86	2.70	2.57
Vet Science	3.17	3.43	2.71	3.23	3.38	3.18	3.20	3.15	3.10	3.00
Ag Business	2.82	3.50	3.13	2.26	2.60	2.42	2.94	2.94	2.91	2.89
Ag Economics	2.68	3.36	3.00	2.30	2.18	2.10	2.71	2.88	2.89	2.74
Ag Education	2.77	2.53	3.22	1.83	0.0**	3.00	2.25	2.78	2.80	2.60
Industrial Arts	3.08	2.67	3.29	3.00	3.00	2.83	2.75	3.20	3.13	3.17
Ag Mechanics	3.24	3.00	3.39	3.08	3.50	3.67	3.22	3.63	3.00	2.78
General Education										
Mathematics	2.75	3.09	2.82	2.53	2.71	2.67	2.97	2.67	2.59	2.75
Physical & Biological Science	2.91	2.81	2.50	2.94	3.35	2.88	2.95	2.59	2.95	2.96
Written Communication	2.63	2.58	2.41	2.76	2.69	2.29	2.57	2.43	2.83	2.66
Speech Communication	2.53	2.62	2.57	2.60	2.29	2.50	2.44	2.55	2.55	2.33
Social Science & Humanities	2.47	2.66	2.33	2.34	2.53	2.27	2.50	2.40	2.70	2.27
Education	2.37	2.83	2.28	2.17	3.00	1.50	2.17	2.50	2.43	2.00
Economics	2.65	3.28	2.63	2.36	2.18	2.47	2.75	2.64	2.58	2.70

*NOTE: Mean ratings include only those respondents indicating that they took at least one course in a specified subject area.

**No one in this category indicated a response.

degree programs.

Subject areas of decreasing preparedness as noted by responses of the more recent graduates were Soil Science, Agricultural Education and Education, and Agricultural Mechanics. Increased ratings of preparedness were noted in Horticulture and Recreation Area Management.

Evaluation of class schedules, prerequisites and credits awarded was generally satisfactory as indicated by the data in Table 15. Serious scheduling conflicts were generally not a problem but were of some concern to Agricultural Education graduates and the problem appeared to have increased among the more recent graduates. This trend can likely be attributed to increased student populations in more recent years. Similarly, more recent graduates indicated that required courses were not repeated often enough with data in Table 15 indicating this to be a particular problem in Agricultural Production. This same trend was recognized in regard to offerings of enough course sections.

Satisfaction of respondents with prerequisite requirements and course credits awarded was generally high. However, these too underwent a notable decline among the more recent graduates as shown in Table 15.

TABLE 15
EVALUATION OF CLASS SCHEDULES, PREREQUISITES AND CREDITS AWARDED
Shown as Means by Degree Area and Selected Years of Graduation

Criteria	Degree Area					Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975	1977
There were serious scheduling conflicts*	2.06	2.06	2.26	1.97	2.17	1.91	2.00	2.17	2.00	2.21
Required courses repeated often enough	2.93	3.00	2.89	2.84	3.28	3.23	3.21	2.96	2.87	2.62
Enough course sections offered	3.05	3.09	2.89	2.99	3.44	3.14	3.13	3.17	2.87	2.86
Required prerequisites were appropriate	2.96	2.94	3.17	2.93	3.00	3.09	3.09	3.13	2.86	2.83
Course credit matched course	3.01	2.97	3.00	3.00	3.22	3.05	2.92	3.04	3.09	2.83

*In this particular category, mean ratings of lesser magnitude indicate more positive responses.

TABLE 16
EVALUATION OF FRESHMAN COMMON CORE COURSES
Shown as Means by Degree Area and Selected Years of Graduation

Course	Degree Area					Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975	1977
Ag Orientation (Ag 100)	2.52	2.75	2.28	2.40	3.09	2.52	2.75	2.56	2.50	2.50
Animal Science in Agri- culture (Ag 101)	3.12	3.14	3.22	3.11	3.09	3.09	3.14	3.22	2.87	3.25
Plant Science in Agri- culture (Ag 102)	3.06	3.00	3.26	3.05	3.00	2.91	2.91	3.17	3.18	3.15
Economics of American Agriculture (Ag 103)	2.59	3.12	2.80	2.31	2.33	3.10	2.38	2.38	2.45	2.50

Evaluation of freshman common core courses, shown in Table 16, indicated that Animal Science in Agriculture (Ag 101) and Plant Science in Agriculture (Ag 102) served as adequate introductions to their respective areas of the curriculum with mean ratings of 3.12 and 3.06 respectively. Economics of American Agriculture (Ag 103) was not rated as highly by respondents in all areas with a mean rating of 2.59. Agricultural Production and Agricultural Science graduates were particularly critical of this course. Ratings of Agricultural Orientation (Ag 100) also indicated room for improvement with a mean rating of only 2.52 by all areas. Introductory Animal Science and Plant Science (Ag 101 and 102) showed improved ratings among the more recent graduates while introductory Agricultural Economics (Ag 103) declined in ratings in more recent years. There was no significant change in ratings of Agricultural Orientation (Ag 100) over the years surveyed.

As indicated by the data in Table 17, 43.1% of all graduates surveyed changed their curriculum while attending Montana State University. Figures in the table indicate the percentage of respondents changing into degree programs. Data in Table 17 revealed that just under half of respondents receiving a degree at MSU, or 43.1% overall, did not start

TABLE 17
CURRICULUM CHANGES WHILE AT MSU
Shown as % by Degree Area and Selected Years of Graduation

Response	Degree Area				Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975 1977
Yes	43.1	44.1	47.4	40.0	47.4	22.7	52.0	33.3 39.1 50.0
No	56.9	55.9	52.6	60.0	52.6	77.3	48.0	66.7 60.9 50.0

TABLE 18
REASONS FOR CHANGING CURRICULUM WHILE AT MSU
Shown as % of Sample N by Degree Area and Selected Years of Graduation

Reason	Degree Area				Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975 1977
Dissatisfied with curriculum	11.7	5.9	21.1	7.9	21.1	9.1	0.0	12.5 13.0 16.7
Dissatisfied with instruction	5.8	5.9	10.5	2.6	10.5	0.0	8.0	4.2 13.0 3.3
Loss of interest	7.8	8.8	5.3	6.6	5.3	0.0	0.0	8.3 17.4 13.3
Personal problems	3.2	2.9	0.0	2.6	10.5	0.0	4.0	4.2 0.0 0.0
Limited job opportunities	7.8	8.8	15.8	7.9	0.0	0.0	0.0	12.5 17.4 13.3
Lack practical background experience	5.2	5.9	10.5	2.6	5.3	0.0	0.0	4.2 4.3 6.7
Parental objections	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0
Advisor's recommendations	3.2	2.9	0.0	5.3	0.0	9.1	4.0	0.0 0.0 3.3
Changed career goals	27.9	26.5	31.6	26.3	31.6	13.6	40.0	20.8 26.1 30.0
Other	7.1	11.8	10.5	3.9	10.5	4.5	20.0	20.8 0.0 3.3

out in that degree program. Also, the proportion of graduates surveyed saying "yes" to a change in curriculum more than doubled from 1969 (22.7%) to 1977 (50.0%).

Table 18 is an array of reasons for changing curriculum. It should be noted that data in this table show percentages of respondents changing into degree programs listed. For example, 21.1% of respondents in Agricultural Education reported making a change because of dissatisfaction with their previous curriculum, thus, implying that they found the Agricultural Education program more curricularly attractive.

The most common reason given in Table 18 for a change in curriculum by all graduates was a change in career goals (27.9%), followed by a dissatisfaction with previous curriculum (11.7%). Limited job opportunities were a major factor in changing to Agricultural Education and were a more important consideration among the more recent graduates.

A perusal of individual responses to item 21 of the questionnaire (see Appendix A) yielded the following additional information. About one-half of the curriculum changes were made within the College of Agriculture for a variety of reasons with no identifiable trends, with the exception of Pre-vet as a common previous curriculum.

The balance of those indicating a change in curriculum came from a broad spectrum of other programs, particularly several areas of engineering. An additional comment of interest was that one respondent reported changing from Crop Science to Animal Science and then to Agricultural Business in order to take the exact courses he wanted. This implied that some type of general agriculture degree program free of specific curricular constraints may be attractive to some students.

Data presented in Table 19 indicate that respondents were generally satisfied with the resource and textbook materials used in their respective programs and, with the exception of Agricultural Business respondents, those surveyed felt that the College of Agriculture for the most part kept abreast of new techniques and ideas. The use of the most current resource material appeared to have declined somewhat in later years possibly reflecting a growing shortage of funds to update material available.

Data in Table 19 did reveal, however, a feeling on the part of respondents that the college did not have a deep enough involvement with the agricultural industry as indicated by the lower mean ratings of 2.56 and 2.77 in the categories referring to use of industry resource personnel

TABLE 19
EVALUATION OF HOW WELL COLLEGE OF AGRICULTURE FACULTY KEPT
ABREAST OF CHANGING JOB REQUIREMENTS
Shown as a Mean by Degree Area and Selected Years of Graduation

Criteria	Degree Area					Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975 1977
Used current resource material	3.03	3.00	3.26	2.99	3.06	3.14	2.88	3.04	3.09 2.97
Exposed to new techniques and ideas	3.05	2.85	3.11	3.12	3.17	2.95	2.92	3.09	3.09 3.07
Made effective use of industry resource people	2.56	2.50	2.37	2.65	2.44	2.67	2.28	2.70	2.78 2.47
Involved with agriculture industry	2.77	2.71	2.84	2.79	2.72	2.76	2.72	2.91	2.65 2.86
Used current textbook material	3.07	3.12	2.95	3.03	3.28	3.05	2.92	3.09	3.09 3.20

TABLE 20
EVALUATION OF COLLEGE PREPARATION IN PERSONAL SKILL AREAS
Shown as a Mean by Degree Area and Selected Years of Graduation

Skill Area	Degree Area					Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975 1977
Learning skills	3.01	2.97	3.05	3.07	2.89	2.95	2.76	3.22	3.00 3.03
Social skills	2.69	2.62	2.89	2.71	2.58	2.73	2.44	2.91	2.70 2.63
Communication skills	2.72	2.59	2.63	2.85	2.58	2.68	2.56	3.00	2.91 2.36
Self-understanding	2.82	2.88	2.58	2.91	2.63	2.73	2.52	2.87	2.96 2.83

and involvement with the agricultural industry, respectively. This implied a need for a closer working relationship with the industry which involved more industry resource people and experiences. This was observed in all degree areas and years investigated.

Preparation in personal skill areas, shown in Table 20, appeared to be in need of attention. Respondents indicate that while learning skills had generally improved in more recent years, indicated by increased rating by the more recent graduates, those graduating in Agricultural Business and Agricultural Science felt they could have been better prepared, as indicated by lower mean ratings in these categories. In social and communicative skill areas data indicate need for improvement in all degree areas. Additional comments noted a need for more training designed to enable graduates to more effectively convey their knowledge to others. Data in Table 20 also indicate a decline in these skill areas among the more recent graduates, possibly a result of greater student populations causing increasing impersonalization in the education process.

Graduates surveyed indicate that maturation through self-understanding was moderately aided through efforts of the educational programs offered by the College of

Agriculture. Agricultural Education and Agricultural Science graduates found their programs least helpful in this respect, with mean ratings of only 2.58 and 2.63 respectively.

4. Evaluation of Environmental Factors Leading to Professional Development

This section deals with data pertaining to objective 2, stated in the questionnaire as follows: "To provide an environment for students within the College of Agriculture which encourages learning experiences that promote the development of professional identity and responsibility."

The following data enable one to examine the adequacy of facilities and services provided by the College of Agriculture, as perceived by the graduates surveyed, in meeting the objective stated above.

Data presented in Table 21 is organized to show the extent to which graduates surveyed were professionally responsible within the parameters investigated. This table utilized a scale of 1 (never) to 4 (frequently) with resultant means shown for each category investigated.

Data in Table 21 reveal that relatively few respondents outside of Agricultural Education graduates frequently

TABLE 21
INDICATORS OF PROFESSIONALISM IN AG GRADUATES
Shown as a Mean by Degree Area and Selected Years of Graduation

Indicator Activities	Degree Area					Year of Graduation (Includes All Degree Areas)							
	All Areas		Ag Bus		Ag Educ	Ag Prod		Ag Sci					
									1969	1971	1973	1975	1977
Take a leadership role in the community	2.46	2.59	2.84	2.43	2.00	2.73	2.64	2.29	2.57	2.09			
Participate in community service organizations	2.42	2.50	2.95	2.33	2.21	2.41	2.60	2.46	2.39	2.26			
Promote professionalism within your occupation	3.02	3.29	2.89	2.91	3.17	2.68	3.38	3.21	5.09	2.90			
Belong to professional ag organizations	2.40	2.42	2.84	2.39	2.26	2.41	2.72	2.42	2.05	2.09			
Subscribe to professional ag journals & magazines	3.01	3.26	3.11	2.95	3.05	2.91	3.16	3.25	3.09	2.67			
Attend special schools to improve yourself	2.86	2.91	3.11	2.87	2.63	2.95	2.80	2.96	2.77	2.87			

TABLE 22
INFLUENCE OF COLLEGE OF AGRICULTURE ON PARTICIPATION IN ACTIVITIES LISTED IN TABLE 21
Shown as % by Degree Area and Selected Years of Graduation

Degree of Influence	Degree Area					Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag	Ag	Ag	Ag	1969	1971	1973	1975	1977
		Bus	Educ	Prod	Sci					
Very much	18.2	17.6	36.8	15.8	10.5	18.2	8.0	33.3	26.1	10.0
Somewhat	53.2	58.8	47.4	51.3	57.9	59.1	60.0	41.7	60.9	50.0
Very little	21.4	14.7	15.8	25.0	26.3	18.2	24.0	12.5	8.7	30.0
None	6.5	8.8	0.0	6.5	5.3	4.5	8.0	12.5	4.3	10.0

took a leadership role in their communities. This was particularly true of Agricultural Science graduates surveyed with a mean rating of only 2.00. Frequency of assuming a leadership role in the community increased with years since graduation but was still lower than what might be preferred of professionally-educated agricultural personnel in, for the most part, rural communities.

Overall participation in community service organizations, shown in Table 21, was lower still. Agricultural Education graduates tended to participate in these organizations more often than others (mean rating of 2.95) with Agricultural Science graduates reporting the least involvement (mean rating of 2.21). There was no definite trend toward more involvement with years since graduation.

A larger proportion of respondents tended to actively promote professionalism within their occupation as indicated by an overall mean rating of 3.02. Agricultural Business graduates tended to be the most active in this area (mean rating of 3.29). With the exception of 1969 graduates, there was a recognizable trend toward more promotion of professionalism with years since graduation.

Data in Table 21 indicate that graduates surveyed did not often hold membership in professional agriculture

organizations (mean rating for all areas of 2.40). Agricultural Education graduates were the most frequent joiners of these organizations (mean rating of 2.84). However, this circumstance may be an informal requirement of their profession. Again, frequency of membership in professional agriculture organizations increased slightly with more years since graduation.

Data in Table 21 indicate that respondents did have a high propensity to subscribe to agriculture-related journals and magazines (overall mean rating of 3.01), particularly graduates in Agricultural Business (mean rating of 3.26) and Agricultural Education (mean rating of 3.11). Data indicate that subscription to journals and magazines increased rapidly the first few years after graduation.

Frequency of attendance at special schools for self-improvement shown in Table 21 was moderate to high. Agricultural Education graduates participated in such schools most often (mean rating of 3.11) and participation of Agricultural Science graduates was lowest (mean rating of 2.63). This may have occurred as a result of increased availability of special schools pertaining particularly to the Agricultural Education field. Graduates in all years surveyed had about the same propensity to participate in

these programs.

Data presented in Table 22 indicate that the College of Agriculture had a significant impact on the choice and degree of participation in the activities discussed relative to Table 21. A total of 53.2% of respondents in all areas reported some influence by their college experience and another 18.2% of respondents reported "very much" influence by the college. This was particularly true for Agricultural Production and Agricultural Science graduates (see Table 22 for figures). This trend appeared to be consistent throughout the years surveyed. In all categories, at least 60% of respondents indicated that the College of Agriculture influenced their subsequent involvement in activities of a professional nature either "somewhat" or "very much." Data did indicate however that in several activities listed in Table 21 participation could be improved. These were in areas of community participation and leadership, membership in professional organizations, and in attendance at special self-improvement schools.

Data presented in Table 23 enable one to evaluate the adequacy of facilities and equipment provided by the College of Agriculture or, more broadly, Montana State University (where this applies). Data indicate that

TABLE 23
EVALUATION OF COLLEGE OF AGRICULTURE FACILITIES AND EQUIPMENT
Shown as a Mean by Degree Area and Selected Years of Graduation

Indicators	Degree Area				Year of Graduation (Includes All Degree Areas)					
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975	1977	
	Library Facilities									
Used current text material	3.18	3.25	3.00	3.13	3.32	3.18	3.13	3.21	3.27	3.03
Kept current periodicals and journals	3.51	3.52	3.32	3.57	3.47	3.32	3.43	3.54	3.77	3.59
Library resources readily available	3.46	3.48	3.26	3.47	3.58	3.27	3.52	3.46	3.41	3.55
Assistance given in library use	2.95	2.75	2.79	3.00	3.16	2.50	2.88	3.29	3.18	2.97
Laboratory Facilities										
Adequately equipped	3.10	3.16	2.89	3.07	3.33	3.14	2.88	3.33	3.27	3.00
Equipment comparable to that used in industry	2.91	2.93	2.84	2.88	3.06	2.86	2.74	3.22	3.05	2.92
Adequate space provided	2.91	3.03	2.79	2.81	3.28	2.81	2.71	3.21	3.14	2.68
Comfortable environment maintained	3.05	3.23	2.67	3.01	3.33	2.90	2.88	3.17	3.27	3.04
Adequate supervision and assistance given	3.20	3.19	3.26	3.16	3.33	3.00	3.00	3.38	3.36	3.11
Labs accessible outside regular hours	2.59	2.35	2.42	2.66	2.94	2.36	2.63	2.71	2.68	2.57
Classroom facilities										
Adequate space provided	3.06	3.03	3.12	3.09	3.05	3.09	3.21	3.25	3.09	2.77
Comfortable environment maintained	3.01	2.94	3.00	3.10	2.84	3.05	3.00	3.21	3.05	2.77
Could see & hear adequately	3.14	3.22	3.00	3.16	3.16	3.09	3.21	3.13	3.18	3.10
Adequate teaching equipment	3.18	3.22	3.00	3.19	3.32	2.91	3.04	3.38	3.27	3.13
Suitable furnishing	3.07	3.00	2.84	3.16	3.21	3.00	3.04	3.13	3.18	3.07
Student Service Areas										
Adequate lounge space	2.61	2.72	2.79	2.58	2.39	2.48	2.74	2.67	2.77	2.38
Adequate food vending areas	2.74	2.72	2.53	2.81	2.72	2.52	2.55	2.83	2.95	2.72
Adequate student meeting rooms	2.95	3.13	2.84	2.96	2.84	2.90	2.91	3.04	2.90	2.90
Adequate student bulletin board space	3.02	2.94	2.95	3.06	3.11	2.95	3.04	3.04	3.05	2.83
Adequate student study areas	2.59	2.75	2.53	2.58	2.47	2.59	2.38	2.67	2.90	2.38

library facilities were perceived to be relatively good receiving a mean rating of 3.0 or more for currency of text material, journals and periodicals, and availability of library resources. However, figures implied that in Agricultural Business and Agricultural Education areas, more assistance in library use was desired (mean ratings of 2.75 and 2.79 respectively). The evaluation of laboratory facilities identified some problem areas, particularly among Agricultural Education graduates. Noticeable dissatisfaction with equipment adequacy (mean rating of 2.89) and the quality of the laboratory environment (mean rating of 2.84) appeared to be unique to Agricultural Education graduates. Agricultural Education and Agricultural Production graduates experienced notable space problems (mean ratings of 2.79 and 2.81 respectively) and respondents in all degree areas except Agricultural Science felt that laboratory equipment could have been more comparable to that used in industry (overall mean rating of 2.91). Data in Table 23 indicate the major deficiency in laboratory facilities was their accessibility outside of regular hours (overall mean rating of 2.59). Respondents in all areas reported this to have been a significant problem with particular severity in Agricultural Business

(mean rating of 2.35) and Agricultural Education (mean rating of 2.42) areas. Data implied that respondents did not encounter any notable problems in receiving adequate supervision and assistance in laboratory areas with mean ratings ranging from 3.16 to 3.33.

Few problems were noted in evaluation of classroom facilities, shown in Table 23, with mean ratings of 3.0 or more in most categories investigated. Classroom environment received a slightly lower than average rating among Agricultural Business and Agricultural Science graduates (mean ratings of 2.94 and 2.84 respectively, compared to 3.0 or more in other areas), possibly implying that facilities in Linfield Hall were not as adequate as elsewhere. Agricultural Education graduates were noticeably less satisfied with classroom furnishings than were graduates in other degree areas surveyed. Space, teaching equipment and ability to see and hear adequately appeared to be areas of little concern.

Evaluation of student service areas, shown in Table 23, revealed some inadequacies. Data indicate a shortage of student lounge and study areas reported by all respondents (mean ratings overall of 2.61 and 2.59 respectively) and particularly by Agricultural Science graduates (mean

ratings of 2.39 and 2.47) respectively. Ratings also indicated a shortage of food vending areas; however, this may not be perceived as a direct responsibility of the College of Agriculture. Adequacy of student meeting room and bulletin board space were not perceived to have been a major problem although moderate need for increased meeting room space was indicated (mean rating overall of 2.95).

The researcher noted a definite and consistent trend of concern in all categories of facility evaluation. Data in Table 23 reveal that facility ratings appeared to have improved from 1969 to 1973 or 1975 followed in all cases by a notable decline in mean ratings among the more recent graduates. Data in Table 23 imply that the impact of this situation had definitely been felt by the students involved.

Data presented in Tables 24 and 25 dealt with student advisors. As shown in Table 24, the majority of respondents (40.9%) reported meeting with advisors about once a month. Agricultural Education graduates indicated the most involvement with their advisors, 15.8% meeting more than

TABLE 24
FREQUENCY OF MEETINGS WITH ADVISOR
Shown as % by Degree Area and Selected Years of Graduation

Frequency of Meetings	Degree Area				Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag	Bus	Educ	Ag	Prod	Sci	1969	1971
								1973	1975
More than once a week	9.7	0.0	0.0	15.8	10.5	10.5	10.5	13.6	16.0
About once a week	15.6	8.8	31.6	13.2	26.3	4.5	8.0	25.0	21.7
About once a month	40.9	47.1	42.1	42.1	31.6	36.4	28.0	45.8	39.1
About once a quarter	24.7	29.4	5.3	28.9	15.8	40.9	32.0	20.8	17.4
Never	5.8	8.8	0.0	3.9	15.8	4.5	12.0	4.2	4.3
								6.7	6.7

TABLE 25
EVALUATION OF ADVISOR PERFORMANCE
Shown as a Mean by Degree Area and Selected Years of Graduation

Indicators of Advisor Performance	Degree Area				Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag	Bus	Educ	Ag	Prod	Sci	1969	1971
								1973	1975
Readily available	3.17	3.09	3.11	3.12	3.47	3.27	3.33	3.38	2.95
Compatible	3.41	3.34	3.05	3.43	3.79	3.22	3.46	3.50	3.36
Helpful	3.28	2.97	3.26	3.52	3.58	3.18	3.29	3.21	3.45
Understood degree program	3.39	3.16	3.53	3.47	3.37	3.27	3.43	3.42	3.36
Interested in your program	3.26	3.00	3.37	3.24	3.63	2.86	3.38	3.42	3.27
Sympathetic to individual needs	3.15	2.88	2.74	3.28	3.42	2.86	3.29	3.17	3.00
Gave impartial counsel	3.15	3.16	2.84	3.24	3.11	3.22	3.21	3.21	2.95
Informed you of program changes	2.98	2.69	3.05	2.97	3.44	2.73	2.96	3.16	3.19
Informed you of activities of interest	2.64	2.13	2.79	2.69	3.05	2.41	2.67	2.79	2.72
Informed you of job opportunities in the field	2.51	2.09	3.00	2.45	2.89	2.36	2.75	2.50	2.59
								2.30	2.30

once a week and another 31.6% reporting advisor contact about once a week. Agricultural Business graduates surveyed appeared to have had on the average the least frequent meetings with advisors. Among Agricultural Science respondents, a disturbing 15.8% reported never having met with their advisor; however, as is indicated in Table 25, this does not appear to have had an impact on ratings of advisor performance. Data in Table 24 indicate a decreasing average frequency of advisor contact, 13.6% reporting meetings more than once a week among 1969 graduates surveyed and only 6.7% reporting this among 1977 graduates. The proportion of respondents reporting meeting with advisors only once a month reached 50% for 1977 graduates.

Graduates in Agricultural Business indicate the most dissatisfaction with advisor performance as judged by the criteria listed in Table 25. Data from respondents in this degree area indicated that for the most part advisors did not adequately inform them of program changes, activities of interest or job opportunities in their fields (mean ratings of 2.69, 2.13 and 2.09 respectively). This deficiency may be related to the noted infrequency of student-advisor meetings in this degree area (see Table 24). Advisor capacity for impartial counsel and sympathy

to individual needs appeared to have been problems for Agricultural Education graduates. In all degree areas, data in Table 25 imply that advisors could have put more effort into keeping students better informed of activities of interest and relevant job opportunities (mean ratings of 2.64 and 2.51 respectively) although Agricultural Education and Agricultural Science graduates expressed slightly better service in these areas.

Again, data reveal a conspicuous trend toward more satisfactory service from advisors from 1969 to 1973 or 1975, followed by a noticeable decline in ratings by the more recent graduates surveyed. Average frequency of meetings and mean ratings for all categories dropped in more recent years implying a direct relationship between number of meetings and respondents' perceptions of advisor adequacy, as well as a relationship between overall student numbers and the advisor's capacity for effectiveness.

5. Evaluation of Student-Oriented Administrative Policy.

Data discussed in this section pertains to objective 3 stated in the questionnaire as follows: "To maintain an administrative policy which promotes cooperative participation of students in the administrative process."

The following data can be used to evaluate the adequacy of student-administration interaction, as perceived by the graduates surveyed, in meeting the above-stated objective.

The data presented in Table 26 pertain to direct student involvement with Dean's Office personnel. Mean ratings indicate that respondents were not totally satisfied (mean ratings of 2.75 to 2.77 for all areas) with assistance obtained through the Dean's Office. Agricultural Education graduates were notably less satisfied in this area than others with mean ratings considerably lower than the average for all degree areas in the categories investigated (for figures, see Table 26). This may have been due to the departmental location being more removed from the Dean's Office than were other departments within the college. Services extended by the Dean's Office appear to have maintained or slightly increased in ratings

TABLE 26

EVALUATION OF ASSISTANCE GIVEN BY DEAN'S OFFICE PERSONNEL
Shown as a Mean by Degree Area and Selected Years of Graduation

Indicators	Degree Area					Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975 1977
Set up adequate procedures for appointments	2.76	2.83	2.67	2.79	2.81	2.85	3.00	2.59	2.76 2.83
Could openly discuss problems with dean's office personnel	2.75	2.97	2.56	2.80	2.57	2.79	3.00	2.68	2.86 2.83
Dean's office personnel reacted promptly to my requests	2.77	2.83	2.56	2.82	2.80	2.84	2.82	2.68	2.90 2.90

TABLE 27

EVALUATION OF STUDENT INFLUENCE IN ADMINISTRATIVE DECISIONS
Shown as a Mean by Degree Area and Selected Years of Graduation

Indicators	Degree Area					Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975 1977
Student body opinion was sought	2.61	2.50	2.56	2.68	2.63	2.59	2.35	2.43	2.77 2.83
Student body opinion was given due consideration	2.70	2.60	2.53	2.82	2.60	2.63	2.55	2.59	2.77 2.76
Students were informed about decisions	2.71	2.73	2.50	2.79	2.56	2.82	2.43	2.86	2.68 2.69
Students were made aware of administrative changes	2.72	2.63	2.61	2.78	2.61	2.68	2.81	2.68	2.68 2.76
Adequate student representation on planning committees	2.67	2.50	2.50	2.75	2.88	2.63	2.43	2.59	2.95 2.75
Students were encouraged to support Ag Council activities	2.96	2.72	3.00	3.04	3.06	2.91	2.74	2.83	3.14 3.04

over the years surveyed.

Table 27 presents ratings by respondents of indicators of student influence in administrative decision making. Data indicate that most respondents thought student body opinion was seldom sought or given due consideration by the administration in decision making (mean ratings ranging from 2.50 to 2.68), but that their opinions had gained moderate importance in more recent years with a mean rating of 2.83 among 1977 graduates. Respondents felt generally uninformed about administrative decisions and changes in administrative policies, particularly graduates in Agricultural Education (mean rating of 2.50 and 2.61 respectively) and Agricultural Science (mean ratings of 2.56 and 2.61 respectively). Graduates surveyed indicate a feeling that they had been poorly represented on planning committees in all areas (overall mean rating of 2.67) except Agricultural Science where moderate representation was reported. With the exception of Agricultural Business respondents, graduates in all areas indicated a significant effort by administrative units to encourage students to support Agriculture Council activities (mean ratings ranged from 2.72 for Agricultural Business to 3.06 for Agricultural Science graduates). In general there appeared to be

a need for increased student involvement in administrative decision making. Data indicate that graduates surveyed did not feel they had made a significant impact in this area as indicated by moderate to low mean ratings throughout Table 27.

Evaluation of administrative efforts to encourage quality teaching revealed a curious phenomena. Data in Table 28 show that while most respondents reported moderate to ample opportunities to evaluate instructors and courses (with mean ratings ranging from 2.58 for Agricultural Education to 3.16 for Agricultural Science graduates), very few felt that any significant changes had been made as a result of these evaluations (mean rating overall of 2.16). Data indicate that in more recent years the administration had recognized an increased need for course and instructor evaluation and had accordingly provided more opportunities for students to do so. However, follow-up of these evaluative efforts in the form of recognizable changes perceived by those doing the evaluation, i.e. the students, was not apparent as indicated by very low mean ratings in this category. The grading system was generally acceptable to those responding in all areas but Agricultural Education where a significantly lower mean rating (2.73 compared to

TABLE 28
EVALUATION OF EFFORTS TO ENCOURAGE QUALITY TEACHING
Shown as a Mean by Degree Area and Selected Years of Graduation

Indicators	Degree Area				Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975 1977
Students given an opportunity to evaluate instructors	2.94	2.74	2.79	3.03	3.00	2.05	2.55	2.83 3.22 3.57
Students given an opportunity to evaluate course content	2.86	2.71	2.58	2.92	3.16	2.09	2.61	2.78 3.09 3.33
Changes were made based on student evaluations	2.16	2.21	1.84	2.18	2.21	1.86	2.11	2.24 2.14 2.23
A fair grading system was used	3.09	3.00	2.73	3.20	3.21	3.09	3.17	3.13 2.91 3.07
Instructors were competent	3.10	2.97	2.89	3.21	3.11	2.95	3.22	3.13 3.05 3.07

TABLE 29
EVALUATION OF ADMINISTRATIVE EFFORTS TO PROMOTE EXTRACURRICULAR ACTIVITIES
Shown as a Mean by Degree Area and Selected Years of Graduation

Indicators	Degree Area				Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod Sci	1969	1971	1973	1975 1977
Made you aware of appropriate club activities	2.86	2.71	2.67	2.93	2.95	2.91	2.78	2.95 2.93
Supported extracurricular activities of students	3.03	2.97	2.78	3.12	3.00	2.95	2.91	3.17 2.95 3.17
Recognized importance of club activities	3.03	2.97	3.06	3.07	2.94	3.09	2.82	3.13 3.14 3.00
Kept abreast of student club activities	2.81	2.58	2.78	2.94	2.67	2.68	2.73	2.96 3.00 2.86
Provided adequate time and facilities to conduct club activities	3.01	2.97	2.89	3.04	3.06	3.05	2.95	3.04 2.95 3.10

3 or more for other areas) was reported. Instructor competency received only a moderate rating among Agricultural Business (2.97) and Agricultural Education graduates (2.89) but was judged relatively good by respondents in Agricultural Production (mean rating of 3.21) and Agricultural Science areas (mean rating of 3.11). Ratings of grading systems and instructor competency exhibited no identifiable trends over the years investigated. Data indicate that efforts to encourage quality teaching were perceived as the least satisfactory among Agricultural Education graduates, indicated by considerably lower mean ratings in all categories shown in Table 28 than those of graduates in other areas.

Table 29 presents data referring to administrative efforts to promote extracurricular activities. Mean ratings in this area indicated that administrative units generally provided good support for extracurricular activities (mean for all areas of 3.03), recognized their importance (mean for all areas of 3.03), and provided adequate time and facilities to conduct club activities (mean for all areas of 3.01). Graduates in Agricultural Education indicated somewhat less support from their administration and less time and facilities available for club activities (see

Table 29 for comparative figures).

Data in Table 29 further indicate that the administration did not, in the opinion of respondents, take a particularly active role in directing students to appropriate club activities (mean rating for all areas of 2.86), nor were they concerned to any great extent with the current proceedings of student clubs (mean rating for all areas of 2.81). This suggests that more direct involvement of the administration in extracurricular activities, through recruitment and participation, thus leading to increased informal interaction of faculty and students, may be desirable.

Evaluation of administrative assistance extended in student service areas is presented in Table 30. Graduates surveyed found the administration to be of valuable assistance in orientation and registration, and in meeting graduation requirements (mean ratings for all areas ranged from 2.89 to 3.37 in these categories). All respondents except Agricultural Business graduates indicated receiving ample aid in selecting appropriate classes. In this category, ratings by Agricultural Business respondents were considerably lower than those for respondents in other degree areas (mean ratings of 2.68 for Agricultural Business

TABLE 30
EVALUATION OF ADMINISTRATIVE ASSISTANCE EXTENDED IN STUDENT SERVICE AREAS
Shown as a Mean by Degree Area and Selected Years of Graduation

Areas of Assistance	Degree Area					Year of Graduation (Includes All Degree Areas)			
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975 1977
Orientation & registration	3.08	3.13	2.89	3.11	3.06	3.00	3.14	3.19	3.09 3.03
Testing & counseling	2.76	2.83	2.50	2.75	2.94	2.76	2.82	2.81	2.82 2.66
Choosing a vocation	2.53	2.58	2.68	2.39	2.76	2.64	2.52	2.50	2.64 2.34
Choosing a major	2.72	2.67	2.53	2.73	3.00	2.62	2.73	2.68	2.82 2.52
Selecting a class	3.01	2.68	3.21	3.08	3.17	2.82	2.95	3.13	3.14 3.00
Meeting graduation requirements	3.34	3.19	3.21	3.37	3.61	3.41	3.23	3.30	3.45 3.30
Solving personal problems	2.26	1.97	2.26	2.34	2.44	2.50	2.15	2.67	2.23 1.90
Employment upon graduation	2.43	2.45	2.78	2.27	2.67	2.59	2.14	2.68	2.14 2.34

graduates compared to 3.08 or better for graduates in other areas). Data in Table 30 indicate that assistance extended in testing and counseling was only moderate with even less guidance in choosing a vocation or a major. Mean ratings overall in these categories ranged from 2.53 to 2.76. This was reflected in conspicuously low mean ratings in the area of solving personal problems as well (mean rating overall of 2.26). Agricultural Science respondents indicated slightly more assistance in these areas than did others, but data implied a definite need for increased administrative effort in all degree areas to provide more adequate career guidance and counseling services. In all categories of student service investigated, data reveal a decline in the amount of administrative aid received by graduates in the more recent years.

6. Evaluation of Promotional Efforts of the College of Agriculture.

Data examined in this section pertain to objective 4 stated in the questionnaire as follows: "To promote the MSU College of Agriculture among its potential clientele."

The following data review the status of promotional endeavors of the College of Agriculture and its graduates.

Data in Table 31 identify several areas in need of improvement. Perusal of the table indicated a need for increased access to, and interest in, College of Agriculture publications and research bulletins, indicated by overall means of 2.20 and 1.89 respectively. It appeared that few graduates surveyed had been able to acquire material available. Respondents reported having observed a moderate number of media articles regarding the College of Agriculture but that these articles were not of a particularly useful nature in their occupations (mean ratings of 2.54 and 2.45 respectively). This implied that more media coverage in technical information areas may be beneficial in helping to keep graduates informed of current applicable research and development. Data in Table 31 indicate a pronounced lack of accessible continuing education courses for graduates in all areas (mean rating overall of 2.18) except

Agricultural Education (mean rating of 2.84). There appeared to be considerable potential for increased activity in continuing education as a means of updating graduates and increasing the visible presence of the College of Agriculture in other areas of the state.

Personal contact of respondents with College of Agriculture staff was moderate in all degree areas investigated (mean rating overall of 2.21), but data indicate that those who had experienced personal contact since graduation were satisfied with the assistance they received (mean rating overall of 3.01).

Subsequent involvement of graduates with the College of Agriculture and awareness of its post-graduate services and activities appeared to have increased slightly with years since graduation.

Data regarding sources of information about MSU College of Agriculture for potential students is presented in Table 32. Figures presented in this table are percentages of respondents in each category (degree area or year of graduation) indicating that sources of information about the College of Agriculture (listed on the left hand side of the table) were utilized by them in selecting MSU.

TABLE 32
SOURCES OF INFORMATION ABOUT MSU COLLEGE OF AGRICULTURE
Shown as % by Degree Area and Selected Years of Graduation

Sources of Information	Degree Area					Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975	1977
From a friend	25.3	29.4	21.1	26.3	21.1	22.7	36.0	16.7	13.0	26.7
High school counselor	20.1	26.5	15.8	19.7	21.1	31.8	16.0	12.5	21.7	20.0
Career Day program	5.2	5.9	15.8	2.6	0.0	4.5	8.0	4.2	8.7	0.0
MSU High School Week	10.4	11.8	10.5	10.5	10.5	13.6	4.0	12.5	8.7	13.3
Newsletter or brochure	9.7	17.6	15.8	5.3	5.3	4.5	12.0	0.0	26.1	10.0
Personal staff contact	10.4	2.9	15.8	11.8	5.3	4.5	0.0	12.5	21.7	3.3
Parent or relative	35.1	32.4	42.1	34.2	42.1	40.9	36.0	41.7	21.7	40.0
High school ag instructor	19.5	17.6	52.6	13.2	21.1	22.7	32.0	29.2	8.7	15.3
County extension agent	11.7	11.8	31.6	10.5	0.0	18.2	4.0	8.3	8.7	16.7
News media	10.4	11.8	5.3	11.8	10.5	13.6	4.0	8.3	8.7	16.7
Other MSU students	29.2	29.4	15.8	31.6	31.6	13.6	36.0	20.8	39.1	30.0
Other	14.3	14.7	15.8	15.8	10.5	9.1	8.0	16.7	13.0	16.7

The discussion of data presented in Table 32 notes trends observed by the researcher. Please refer to the table for applicable figures.

Perusal of Table 32 indicates that promotion of the College to incoming students appeared most often to have been through informal personal contact with friends, relatives or other MSU students. Formal presentations made through the media, newsletters or brochures and Career Day and High School Week activities seemed to have been relatively ineffective or reached only a small portion of the clientele as indicated by the small percentages shown in Table 32. A moderate number of respondents reported having been influenced by prominent individuals including high school counselors, ag instructors and county agents. Data in Table 32 indicated that these people were a primary influence for Agricultural Education respondents. Personal contact of staff members within the college was limited but was an important source of information for some Agricultural Education and Agricultural Production respondents. There were no definite shifts in prominent sources of information about the college to potential students over the years surveyed. Data in Table 32 imply a potential for increased promotional effort through formal

TABLE 33
PROMOTIONAL ACTIVITIES OF GRADUATES OF COLLEGE OF AGRICULTURE
Shown as % by Degree Area and Selected Years of Graduation

Activities	Degree Area					Year of Graduation (Includes All Degree Areas)				
	All Areas	Ag Bus	Ag Educ	Ag Prod	Ag Sci	1969	1971	1973	1975	1977
Most often promote College of Agriculture	92.4	90.6	94.7	92.9	88.2	78.9	96.0	91.3	95.5	92.0
Most often discuss its weaknesses & problems	7.6	9.4	5.3	7.1	11.8	21.1	4.0	8.7	4.5	8.0
I would recommend MSU College of Agriculture	98.0	100.0	89.5	98.7	100.0	95.2	100.0	95.8	100.0	96.7
I would not recommend MSU College of Agriculture	2.0	0.0	10.5	1.3	0.0	4.8	0.0	4.2	0.0	3.3

presentations, with the College itself playing a more active role in recruitment of its students.

Data presented in Table 33 indicate that in conversation with others, graduates surveyed most often promoted the College of Agriculture, 92.4% overall indicating this response. Graduates in Agricultural Science appeared slightly less satisfied than others, 11.8% saying they were most likely to discuss the problems and weaknesses of the College. However, 100% of Agricultural Science graduates responded that they would recommend MSU College of Agriculture to others. Agricultural Education graduates were the only respondents indicating a slight inclination not to recommend the college, 10.5% giving this response.

7. Selected Additional Comments of Interest

This section contains an unedited selection of additional comments and suggestions by respondents. The researcher made no attempt to categorize or analyze the information presented here. These comments are intended solely as items of possible interest to readers.

--I didn't find much interest in the freshman common core classes. If I had been new to agriculture, those

courses could easily have "turned me off" to pursuing further classes in agriculture. I knew I would be going back to our family ranch, so these courses and some prerequisites were endured. I really started to enjoy classes during the 3rd and 4th years when classes were more specialized, class rooms were smaller, and there was more personal contact with the faculty. Perhaps those students that are sure of their future could bypass some of the beginning classes.

--Another problem I ran into was the application of knowledge I learned in College to practical use.

--I have often felt that I would have liked to have been able to take more courses that dealt with the practical end of my business rather than the ideological end of it. I feel that there would be a large favorable response to more vocational type courses added to the Ag curriculum.

--I would recommend that all Ag Production majors receive more Business Courses related to Agriculture and also to handling personal financial problems.

--I think that more emphasis should be placed on communication skills. Particularly as pertains to public speaking and report writing.

--I wish that there would have been a greater degree of communication skills required for graduation. I also think that a future employment program for upper classman should be available. I'm afraid that a lot of graduates don't realize their employment potential.

--I seldom found any basis for prerequisites. Many sequential courses I took in reverse order and I had little or no trouble. I believe in the case of serious students a lot of the prerequisites could be dispensed with.

--Extra curricular activities in College of Ag were just not a big thing while I attended. These activities are as important as classroom hours. They develop social skills, heighten interest, and broaden experience. I wish someone had pushed me into them.

--Some of my best learning experiences came from the field trips in a few of my classes. I only wish that the College of Agriculture would set aside more money for these trips so the student may become more acquainted with the different areas of agricultural industry.

--I believe much more emphasis is needed in the area of placement. I really did not know a thing about

getting or pursuing a job. I would go so far as to suggest courses in seeking employment. Graduating seniors need and deserve more assistance in obtaining employment.

--Graduates need more assistance in preparing to enter the job market--resumes; recommendations; letters of application; sources to look for jobs; to build graduates' confidence in one's self to ease the job hunting trauma.

--I feel that more emphasis could be put on class selection for employment benefit, upon graduation.

--Some instructors are not qualified to teach the things they do. More qualified personnel could be found.

--Research personnel and specialized personnel are not always teachers!! They more often than not just hand out information with little practical application. A good teacher can apply this information to the situation. I feel MSU Ag College should hire some experienced agriculture teachers to teach beginning classes such as Ag 100, 101, 102, 103 and others to upgrade student interest at freshman and sophomore levels.

More specialized personnel should be used only at

upper class levels.

--I feel someone involved in research should not be an advisor unless they can arrange their time to do justice to the students they are assigned. Without an active advisor to guide you and provide motivation you simply "get by" and don't get the full benefit of your education.

--I think more publications should be sent to graduates on new developments in agriculture--if possible.

--I do not receive agriculture publications but would at least like to be made aware of those that are published so that I would have a chance to obtain those of interest.

--There is a need for graduates to be placed on the MSU Ag Publications (research, newsletters) mailing list.--I would like to be placed on it.

--MSU prepared me in the different aspects of farming. Knowledge of Agriculture and methods makes it the most important thing a farmer can do to improve himself and his potential output.

--My education at MSU provided me with the tools and skills to qualify for my present position. Without a degree I could not be working in the position I am.

--I am pleased with my degree. It has given me the opportunities to expand my abilities, and I now feel that I am an asset to my employer. MSU has a good reputation in Alberta. This due in part to the competence of the previous graduates and the attitude they have to achieve and succeed. Credit is due to MSU for your teaching and counseling advise (sic). Achievement is more attitude than abilities and I think you have both in their proper prospective. (sic)

8. General Summary of Data

In summary, the researcher has noted several trends of interest. Overall, respondent satisfaction to items in this survey was moderate to good with indications of room for improvement in several areas.

Information of a general nature, discussed in Section 2, revealed that 26% of respondents had been college transfers and that 7.8% had held a previous degree before entering the College of Agriculture. About one-fifth of the graduates surveyed earned additional degrees after graduation. A total of 23.4% of graduates surveyed reported present employment as out-of-state. Those remaining in

Montana most often found employment in Agriculture Production, Agricultural Supplies and Service and Agricultural Resources. However, ratings of job availability were good for all areas. Lack of experience was a major problem in finding a first job while salary and work preference were important in selecting present employment. The average yearly salary for all graduates reporting was \$12,138, and salaries increased with years since graduation. Agricultural Production and Agricultural Business degree names appeared to be unsatisfactory.

As indicated in Section 3, graduates were generally satisfied with technical training for employment in their respective fields. They reported professional preparation in communication, education and personal skill areas to be much less adequate.

The large number of curriculum changes and ratings and comments for the common core courses, as well as data pertaining to number of courses taken in various areas suggested insufficient flexibility in specific curriculums. Schedules of classes were not of primary concern to respondents.

Data in Section 4 indicated an overall decline in the learning environment provided by the College of Agriculture

in recent years, possibly due to facility improvements not keeping up with increased student populations. Declines were noted in the ratings of all physical facilities and in most student services as well as in advisor effectiveness. Also there appeared to be some lack of professional responsibility among those surveyed.

Throughout Section 5, data indicated only moderate student-administration rapport. In general, graduates surveyed did not feel particularly involved in the administrative process, nor were services extended through the administrative structure completely satisfactory.

Data in Section 6 indicated a need for increased interaction of the College of Agriculture with its graduates aimed at keeping them updated and informed.

Promotion of the College of Agriculture appeared to be more a result of satisfaction of its clientele and their propensity to acclaim its attributes than the active formal efforts of the College itself to develop and implement promotional programs.

The following comment, by one respondent, perhaps best sums up this evaluation.

"I thought College of Ag as a whole pretty good."

CHAPTER IV

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY

CONCLUSIONS

The following is a summary of the major findings of this study. An overview of general informative data is followed by findings as they pertain to the four basic objectives addressed in the questionnaires.

General Information

1. Twenty-six percent of respondents were college transfers.
2. Seven and eight-tenths percent of respondents held a previous degree before entering MSU College of Agriculture.
3. The most common reason for choosing MSU College of Agriculture was a feeling that MSU offered the best agriculture program available. Availability appeared to be tempered by proximity and financial considerations.
4. In regard to employment and mobility of graduates, 23.4% of MSU College of Agriculture graduates surveyed were presently employed out-of-state. Just under one-half of in-state graduates responding returned to their home county to work. Agricultural Production employed the

largest percentage of graduates with Agricultural Supplies and Service as the second most popular area of employment. About one-sixth of the graduates surveyed were employed in non-agricultural occupations.

The most common reasons reported for employment in areas other than the degree area the respondent graduated in were better pay or work preference. In general, respondents ratings of job availability in their fields of present employment were reasonably good.

5. Average income for those surveyed ranged from \$11,758 for Agricultural Business graduates to \$13,778 for Agricultural Education graduates.

6. Lack of experience was the biggest factor in difficulty in obtaining a first job after graduation.

7. Agricultural Production appeared to be least satisfactory degree name and Agricultural Business encountered significant difficulty in interpretation by employers.

Findings Related to Objective 1 of the Questionnaire

Objective 1: To offer degree programs which provide a variety of courses and experiences which will enable students to develop technical and professional competencies required of graduates employed in agricultural occupations.

1. Education received in the technical training areas was adequate. No graduates reported being underqualified for work in their degree area.

2. Education received in the general education areas was inadequate with expressed concern for better training in oral and written communication and in education techniques.

3. Class schedules, prerequisites and credits awarded were generally adequate. Scheduling was becoming a greater problem for the more recent graduates.

4. The usefulness of the freshman common core courses was questionable particularly among respondents with farm or ranch backgrounds.

5. Almost one-half of all respondents changed their curriculum while at MSU and an increasing number were doing so in the more recent years. Program changes reflected a concern for job opportunities in specific degree program areas.

6. Most respondents felt that resource material utilized by the College of Agriculture in its instructional program was current but data indicate that this had suffered in more recent years. Graduates also felt there was not enough involvement with the agricultural industry during

their college training.

7. Responses indicated that preparation in personal skill areas, i.e. social and communication skills, had not been adequate.

Conclusion:

These findings indicate that development of technical skills is adequate but development of professional competencies is suffering and that it is becoming increasingly more difficult to provide adequate educational programs.

Findings Related to Objective 2 of the Questionnaire

Objective 2: To provide an environment for students within the College of Agriculture which encourages learning experiences that promote the development of professional identity and responsibility.

1. Professional development leading to leadership and participation in local communities appeared to be insufficient, but the College had a moderate to high degree of influence on those professional activities that were pursued. This implies that increased attention in this area by the College could have a favorable impact on future graduates.

2. Ratings of almost all facilities (libraries,

laboratories, classrooms and student service areas) showed a decline in more recent years. Assistance in library use and laboratory accessibility outside of regular class hours were the biggest problem areas reported.

3. Frequency of advisor contact declined among more recent graduates, rendering advisors less effective. The most common advisor deficiency reported was keeping students informed of relevant job opportunities.

Conclusion:

There has been an overall decline in the learning environment provided by the College of Agriculture, as evidenced in poorer ratings for facilities and services in all areas in more recent years.

Findings Related to Objective 3 of the Questionnaire

Objective 3: To maintain an administrative policy which promotes cooperative participation of students in the administrative process.

1. Assistance obtained through the Dean's office personnel was moderately satisfactory and was becoming slightly more responsive over the years surveyed.

2. There was a need for more student involvement in administrative decision making and from the student's

perspective, course and instructor evaluations were ineffective.

3. Administrative support for extracurricular activities was good but there was a need for administrators to become more directly involved in these activities.

4. Guidance and counseling services extended by the administration were inadequate particularly in aiding students to secure employment upon graduation.

Conclusion:

Administrative policy should be more responsive to the needs of the students with more opportunity for students to participate in the administrative process.

Findings Related to Objective 4 of the Questionnaire

Objective 4: To promote MSU College of Agriculture among its potential clientele.

1. The majority of graduates reported difficulty in obtaining College of Agriculture publications and research bulletins and expressed a desire for more continuing education courses in all degree areas.

2. Informal promotion of the College of Agriculture through friends and relatives has been the primary source of information for prospective students.

3. Formal promotional programs of the College of Agriculture which involve direct contact have been ineffective in reaching its potential clientele.

4. Satisfied graduates are the College of Agriculture's biggest asset in promotion programs offered.

Conclusion:

Promotion of the College of Agriculture has primarily been a by-product of a satisfied clientele. When perceived as a formal goal of the College, there are several avenues of promotion that have been much neglected and have thus been ineffective in promoting the College of Agriculture.

Implications of the Study

1. A larger number of graduates may find employment in agricultural occupations within Montana if more effort were put into student counseling and career placement programs within the College of Agriculture.

2. A program of studies resulting in a general non-specialized degree in Agriculture could better accommodate those students who do not have specific career goals.

3. An internship program giving students an

opportunity to gain professional working experience and providing more contact with the agricultural industry may be desirable.

4. It may be beneficial to expand or modify degree programs in the College of Agriculture to include courses in professional development and to accommodate internship programs.

5. Increased expenditures for improved facilities and services that keep pace with current student enrollments and changes in the Agricultural Industry are a necessity if the quality of education and the learning environment within the College of Agriculture are to be maintained and improved.

6. A more active student role in administration of the College of Agriculture may be beneficial in promoting professional identity and responsibility.

7. It may be desirable for the College of Agriculture to put more effort into the continuing education of its graduates through the use of mailing lists for relevant publications and research bulletins and more continuing education courses and seminars in a variety of areas.

RECOMMENDATIONS AND SUGGESTIONS
FOR FURTHER STUDY

1. A thorough study should be made of present and future professional job opportunities in Montana for graduates in all areas of professional agriculture.

2. A follow-up study of graduates should be designed which could be utilized longitudinally and that would therefore provide consistent comparative data from which to determine if progress had been made in correcting problematic areas that prior follow-up studies had identified.

3. A follow-up study of employer satisfaction with graduates of the College of Agriculture should be made prior to determining evaluative goals used in graduate follow-up studies.

4. All three types of studies suggested should be part of a total, continuing evaluative program and should be made at standard intervals of time. They should be repeated at least every five years. Evaluations by graduates who receive their degrees more than five years prior to a study tend to be less accurate due to vagueness of memory and the indistinguishability of intervening experiences.

APPENDIX

Follow-up of College of Agriculture Graduates

General Information

1. Name: _____
2. Address: _____
3. Year of Graduation: _____
4. Present Age: _____
5. Please check the degree you obtained at MSU and indicate your option.
☐ Ag Business ☐ Ag Production ☐ Industrial Arts
☐ Ag Education ☐ Ag Science Option: _____
6. What is the name and location of the high school you attended? _____
7. Were you a college transfer student? ☐ Yes ☐ No If Yes, where were you previously enrolled? _____ Did you hold a degree when you entered MSU? ☐ Yes ☐ No If yes, what was the degree? _____
8. Please check the highest degree you now hold. ☐ BS/BA; ☐ Masters; ☐ PhD/DEd; ☐ DVM
☐ Other (Specify) _____
9. Please select your reason (s) for choosing MSU College of Agriculture and number in descending order i.e. 1,2,3, etc. (If more than one applies).

☐ I felt MSU had the best ag program.	☐ It was the only agriculture school I considered.
☐ Was most economical for me.	☐ MSU offered a specific agriculture program that I wanted.
☐ MSU was close to my home.	☐ MSU offered me financial aid.
☐ Friends or relatives were at MSU.	☐ MSU offered elective courses that I wanted.
☐ Relatives were alumni of MSU.	☐ Other (Specify) _____
☐ I wanted to see another part of the country.	
10. What was the title of your first job after graduation? _____
Location of the first job. _____
11. What is the title of your present job if different from above? _____
Location of your present job. _____
12. If your present job is not in the specific area of your college degree training, please check the reason (s).

☐ Could not find a job related to my college degree training.	☐ I qualified for a different job by continuing my education.
☐ Was not qualified for a job in my college degree area.	☐ There were no jobs in my area where I wanted to live.
☐ I preferred to work in another area. Salary not adequate in my area.	☐ Entered military service. Health reasons.
☐ I found a better paying job in another area.	☐ Others (Specify) _____
13. How would you rate the availability of jobs or business opportunities in your present occupational field? (check one)
☐ Very Good ☐ Good ☐ Poor ☐ Very Poor ☐ Don't know

☐ Under 8,000 ☐ 12,000 to 16,000 ☐ 20,000 to 24,000 ☐ 28,000 to 32,000
☐ 8,000 to 12,000 ☐ 16,000 to 20,000 ☐ 24,000 to 28,000 ☐ Over 32,000

☐ Was over qualified for the job. ☐ Did not know where and how to look for a job.
☐ Was under educated for the job. ☐ No previous interview training.
☐ Employer wanted someone with ☐ Couldn't find a job located in an area where
 experience in the field. I wanted to live.
☐ Salaries in my field were too low. ☐ Other (specify) _____

	<u>Yes</u>	<u>Partially</u>	<u>No</u>
Adequately described training received.	☐	☐	☐
Employers understood the degree designation.	☐	☐	☐
Degree name comparable to those given at similar institutions.	☐	☐	☐

17. How many courses did you take in each of the following areas?

18. How well did the curriculum prepare you in each of the following areas?

The following areas:						The following areas:				
A. Technical Knowledge & Understanding in Agriculture						Very Poorly				
No. of courses						NA	Very Well			
0	1	2	3	4+	Range Science	0	1	2	3	4
0	1	2	3	4+	Animal Science	0	1	2	3	4
0	1	2	3	4+	Plant Pathology	0	1	2	3	4
0	1	2	3	4+	Crop Production & Management	0	1	2	3	4
0	1	2	3	4+	Horticulture	0	1	2	3	4
0	1	2	3	4+	Recreation Area Management	0	1	2	3	4
0	1	2	3	4+	Soil, Soil Technology & Mgmt	0	1	2	3	4
0	1	2	3	4+	Vet. Science	0	1	2	3	4
0	1	2	3	4+	Ag. Business	0	1	2	3	4
0	1	2	3	4+	Ag. Economics	0	1	2	3	4
0	1	2	3	4+	Ag. Education	0	1	2	3	4
0	1	2	3	4+	Industrial Arts	0	1	2	3	4
0	1	2	3	4+	Ag. Mechanics	0	1	2	3	4
B. General Education										
0	1	2	3	4+	Mathematics	0	1	2	3	4
0	1	2	3	4+	Physical & Biological Sciences	0	1	2	3	4
0	1	2	3	4+	Written Communication	0	1	2	3	4
0	1	2	3	4+	Spoken Communication	0	1	2	3	4
0	1	2	3	4+	Social Science & Humanities	0	1	2	3	4
0	1	2	3	4+	Education	0	1	2	3	4
0	1	2	3	4+	Economics	0	1	2	3	4

19. How well did the schedule of classes in the College of Agriculture fit your needs? (circle response)

There were serious scheduling conflicts.
Required courses repeated often enough.
Enough course sections were offered.
Required prerequisites were appropriate.
Course credit matched course requirements.

Never			Always
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4

20. How well did the Freshman common core courses introduce you to the Ag. Curriculum? (circle response)

Agricultural Orientation (Agr. 100)
Animal Science in Agriculture (Agr. 101)
Plant Science in Agriculture (Agr. 102)
Economics of American Agriculture (Agr. 103)
(previously called Social Science in Ag.)

NA	Very Poorly		Very Well
0	1	2	3 4
0	1	2	3 4
0	1	2	3 4
0	1	2	3 4

21. Did you change your curriculum while attending MSU? ☐ Yes ☐ No If Yes, check reason(s)

- ☐ Dissatisfied with curriculum.
☐ Dissatisfied with instruction.
☐ Loss of Interest.
☐ Personal Problems.
☐ Limited job opportunities.
☐ Lacked practical background experience.
- ☐ Parental objections.
☐ Advisors recommendations.
☐ Changed my career goals.
☐ Others (specify) _____

What curriculum were you in before changing? _____

22. While attending MSU, how well did you feel the College of Agriculture faculty kept abreast of changing job requirements? (circle response)

Used current resource material.
Exposed you to new techniques and ideas.
Made effective use of industry resource people.
Were involved with agriculture industry.
Used current textbook material.

Never			Always
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4

23. How much did the College of Agriculture help you in the following areas? (circle response)

Improving learning skills
Improving social skills
Improving communication skills
Increasing self-understanding

Very Little			A Great Deal
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4

OBJECTIVE 2: To provide an environment for students within the College of Agriculture which encourages learning experiences that promote the development of professional identity and responsibility.

24. Do you presently: (circle response)
take a leadership role in the community?
participate in community service organizations
promote professionalism within your occupation
belong to professional ag. organizations
subscribe to professional ag. journals & magazines
attend special schools to improve yourself?

Never			Frequently
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4

How much did the College of Agriculture influence your participation in the above activities? (check one)

- ☐ Very much ☐ Somewhat ☐ Very Little ☐ None

25. How well did the College of Agriculture provide up-to-date facilities and equipment?
(circle response)

	Never		Always	
A. <u>Library Facilities</u>				
Used current text material	1	2	3	4
Kept current periodicals & journals on hand	1	2	3	4
Library resources were readily available	1	2	3	4
Gave assistance in using library facilities	1	2	3	4
B. <u>Laboratory Facilities</u>				
Were adequately equipped	1	2	3	4
Equipment was comparable to that used in industry	1	2	3	4
Adequate space was provided	1	2	3	4
Comfortable environment was maintained (light, etc.)	1	2	3	4
Adequate supervision and assistance was given	1	2	3	4
Labs were readily accessible outside regular hours	1	2	3	4
C. <u>Classroom Facilities</u>				
Adequate space was provided	1	2	3	4
Comfortable environment maintained (light, heat, etc.)	1	2	3	4
Could see and hear adequately	1	2	3	4
Adequate teaching equipment	1	2	3	4
Suitable furnishings	1	2	3	4
D. <u>Student Service Areas In Ag Facilities</u>				
Adequate lounge space provided	1	2	3	4
Adequate food vending areas	1	2	3	4
Adequate student meeting rooms	1	2	3	4
Adequate student bulletin board space	1	2	3	4
Adequate student study areas	1	2	3	4

26. How often did you meet with your advisor (except for registration purposes)?

☐ More than once a week ☐ About once a month ☐ Never
☐ About once a week ☐ About once a quarter

27. How well did your assigned advisor help you in planning your college career?
(circle response)

	Never		Always	
Advisor was readily available	1	2	3	4
Advisor was compatible	1	2	3	4
Advisor was helpful	1	2	3	4
Advisor thoroughly understood the degree program	1	2	3	4
Advisor was interested in your program	1	2	3	4
Advisor was sympathetic to your individual needs	1	2	3	4
Advisor gave impartial counsel	1	2	3	4
Advisor kept you informed regarding program changes	1	2	3	4
Advisor kept you informed of activities of interest	1	2	3	4
Advisor kept you informed of job opportunities in the field.	1	2	3	4

OBJECTIVE 3: *To maintain an administrative policy which promotes cooperative participation of students in the administrative process.*

28. How well did the Dean's office personnel assist you during your college career? (circle response)

	Never		Always	
The dean's office personnel set up adequate procedures for appointments	1	2	3	4
I was able to openly discuss problems with the dean's office personnel	1	2	3	4
The dean's office personnel reacted promptly to my requests	1	2	3	4

29. Did you feel students influenced administrative decisions? (Circle response)

	Never		Always	
Student body opinion was sought	1	2	3	4
Student body opinion was given due consideration	1	2	3	4
Students were informed about decisions	1	2	3	4
Students were made aware of administrative changes	1	2	3	4
Adequate student representation on planning committees.	1	2	3	4
Students were encouraged to support Ag Council activities	1	2	3	4

30. In your overall program, was quality teaching encouraged? (circle response)

	Never		Always	
Students were given an opportunity to evaluate instructors.	1	2	3	4
Students were given an opportunity to evaluate course content.	1	2	3	4
Changes were made based on student evaluations.	1	2	3	4
A fair grading system was used.	1	2	3	4
Instructors were competent.	1	2	3	4

31. To what extent did the College of Agriculture administrative structure promote extra curricular activities? (Circle response)

	Never		Always	
Made you aware of appropriate club activities	1	2	3	4
Supported extra curricular activities of students	1	2	3	4
Recognized the importance of club activities	1	2	3	4
Kept abreast of student club activities	1	2	3	4
Provided adequate time and facilities to conduct club activities	1	2	3	4

32. To what extent did the College of Agriculture provide assistance with or help in obtaining the following student services? (circle response)

	Never		Always	
Orientation and registration	1	2	3	4
Testing and counselling	1	2	3	4
Choosing a vocation	1	2	3	4
Choosing a major	1	2	3	4
Selecting classes	1	2	3	4
Meeting graduation requirements	1	2	3	4
Solving personal problems	1	2	3	4
Employment upon graduation	1	2	3	4

OBJECTIVE 4: *To promote the MSU College of Agriculture among its potential clientele.*

33. How well has the MSU College of Agriculture kept you informed of developments within the college since your graduation? (Circle response)

	Never		Always	
I receive college of agriculture publications.	1	2	3	4
I have access to research bulletin.	1	2	3	4
I have observed MSU College of Agriculture information presented in the media.	1	2	3	4
I found this information useful and helpful in my occupation.	1	2	3	4
Continuing education courses are offered in my area of specialty.	1	2	3	4
I have personally contacted College of Ag staff since graduation.	1	2	3	4
If so, did they provide information which was helpful.	1	2	3	4

34. Please indicate how you learned about the MSU College of Agriculture. (check response(s))

- | | |
|--|--|
| ☐ From a friend | ☐ Parent or relative |
| ☐ From high school counselor | ☐ High school ag instructor |
| ☐ Career day program | ☐ County extension agent |
| ☐ MSU high school week activities | ☐ News Media |
| ☐ Newsletter or brochure | ☐ Other MSU students |
| ☐ Personal staff contact | ☐ Other (specify) _____ |

35. In conversations with others, do you most often find yourself:

- ☐ Promoting MSU College of Agriculture
- ☐ Discussing its problems and weaknesses

36. Would you recommend the MSU College of Agriculture to prospective students?

Yes ☐ No ☐

37. Please give any additional comments. If you have suggestions relating to any points, refer to them by number and give your recommendations.

—Montana State University—

Bozeman, Montana 59715

Tel. 406-994-3681

College of Agriculture—Office of the Dean

The College of Agriculture at Montana State University is making a study of graduates from 1969 through 1977. You have been randomly selected as a participant in this study. By completing this questionnaire, you will help us to evaluate the degree of success the College of Agriculture has achieved in its attempt to reach the goals it has set for the preparation of its graduates in the various fields. These goals are listed, followed by a few questions pertaining to each goal. Please answer the questions as they relate to your experiences while attending MSU.

We feel that those of you who have been through our program can give us valuable information needed to improve our curriculum and better serve students in the College of Agriculture. All information will be treated confidentially. The reason for including your name and address is to help in determining the mobility of our graduates.

Completion of the enclosed questionnaire should take no more than 20 minutes of your time. Please fill it out and return it to us as soon as possible in the stamped pre-addressed envelope enclosed for your convenience.

Your cooperation is greatly appreciated.

Sincerely,

L. P. Carter
Associate Dean of Agriculture

—Montana State University—

Bozeman, Montana 59715

Tel. 406-994-3681

College of Agriculture—Office of the Dean

Dear

On March 10, 1978, you were mailed a questionnaire which asked for information regarding your experiences while attending the College of Agriculture at Montana State University. To date, we have not received your response. If you have already placed your questionnaire in the mail, please disregard this request.

We would really appreciate your cooperation in completing and returning this questionnaire as soon as possible. The more complete our survey is, the better we in the College of Agriculture can determine the needs of our public and better serve the people of the State of Montana in the future. Your response is most valuable to us and we invite you to include any additional information, comments, ideas and/or advice you may wish to offer.

Thank you for your cooperation.

Sincerely,

L.P. Carter
Associate Dean of Agriculture

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