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Factors related to the attitude of first-year university and college students toward the secondary agriculture components in Swaziland

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The Ohio State University, 1993

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FACTORS RELATED TO THE ATTITUDE OF FIRST-YEAR UNIVERSITY AND COLLEGE STUDENTS TOWARD THE SECONDARY AGRICULTURE COMPONENTS IN SWAZILAND

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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* * * * *

The Ohio State University

1993

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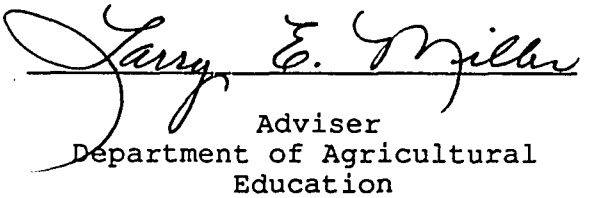

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PUBLICATIONS

Dlamini, M.P. (1993). Corporal and non-corporal disciplinary measures used by male and female teachers in Swaziland. BOLESWA Educational Research Journal. June issue 10(1).

Dlamini, M.P. (1991). Disciplinary measures frequency and effectiveness of use by Swaziland high school teachers. Paper presented at the BOLESWA Educational Research Symposium, University of Swaziland, Kwaluseni, Swaziland. July.

Dlamini. M.P. & Dlamini, B.M. (1988). Education Policy, Demand, and Needed Re-orientation in Swaziland. CEAPA (South Africa) Journal. 2(1).

Dlamini, M.P. & Miller, L.E. (1987). Image of the Agriculture Education Program: U.S.A. Paper presented at the 1987 Central States Agricultural Education Research Conference. Chicago, U.S.A.

Dlamini, M.P. & Miller, L.E. (1987). How do education and agriculture college administrators perceive the agriculture teacher education program? Paper presented at the 1987 Southern States Agricultural Education Research Conference. Virginia, U.S.A.

Dlamini, M.P. (1986). College Administrators Image of the Agriculture Teacher Education Program: A National (U.S.) Study. Master's Thesis. The Ohio State University. Columbus, Ohio, U.S.A.

PRESENTATIONS

Dlamini, M.P. (1991). Communication Strategies for Extension Trainers. Paper presented at the 1991 Training of Trainers Workshop. National Farmers' Training Center, Nhlangano, Swaziland.

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FIELDS OF STUDY

Major Field: Agricultural Education

Studies in Teacher Education	Dr. Kirby R. Barrick
Studies in Research and Statistics	Dr. Larry E. Miller
Studies in Communication and Extension	Drs. Robert Agunga and Alma Saddam
Studies in Educational and Developmental Psychology	Drs. Larry E. Miller and Alma Saddam

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CHAPTER I

INTRODUCTION

Individuals develop attitude toward elements in the world through experience. Individuals, furthermore, tend to classify these elements according to their acquired attitude. Attitude can be judged by evaluative responses made and are often observed through physical and oral expressions. A person can present an attitude toward something through behavior which is observable and can be studied subjectively.

In order to study attitude, investigators depend on behavioral indices, for example, by using questionnaires. Attitude are predispositions made when examining objects and reacting to them with some degree of evaluative consistency (Encyclopaedia Britannica, 1984). Attitude can be acquired as Seifert (1991) believed attitude learning is:

> ".....the acquisition of certain feelings about something or someone, either positive or negative, that influence one's choices of action in a consistent way. Attitude are not evidenced by isolated choices. A student who has learned a "positive attitude about school" makes many choices favoring school, schoolwork, and the people found at school, but any one choice is not enough to constitute his/her attitude; many of them are needed. A student who works hard on just one assignment does not necessarily have a "positive attitude", but a student who works hard on many assignments probably does." (p.92)

Foundations of Agricultural Education

Agricultural education, as a discipline, draws from the disciplines of agriculture and education. Many people view agricultural education as education only while some agriculture only (Williams. 1991). The discipline of agricultural education really is about education of individuals regarding agriculture (Barrick, 1988). Barrick added that agricultural education combines crop science, animal science, agricultural economics, agricultural engineering and education, not just education on its own.

Barrick (1988) also made observations about the evolution of agricultural education. He emphasized that agricultural education was rooted in agriculture and education. Agriculture grew out of the biological sciences, while education came from the applications of psychological and sociological theories. These observations supported that agricultural education is the process of education applied to the body of knowledge generally defined as agriculture.

Williams (1991) described the dimensions of agricultural education. He believed that the keystone of agricultural education was the university, where most agricultural researches were designed and directed. Other settings where agricultural education was applied included the schools, colleges, extension, industry, and other settings. He elaborated that there were two vital bases for agricultural education-- the processes (curriculum

planning, delivery methodologies, and program evaluation) of agricultural education and the discipline (teaching and learning pertaining to agriculture) of agricultural education. Williams maintained that agriculture and education form the foundation for agricultural education with footings of biological and physical sciences, psychology, and sociology.

Agricultural education has expanded its function over the years from teaching to include research, service to community, extension education and agricultural communication. The methods and principles of teaching are the same, only the application settings differ. Barrick (1989) summed it well:

> "The profession must turn to the mission as a discipline - to further the scientific study of the methods and principles of teaching and learning as they are appropriate for teaching subjects in agriculture. To do less will lead to the demise of the discipline called agricultural education". (p.28)

The Department of Agricultural Education at The Ohio State University (1991) enumerated the attributes of an educated person majoring in agricultural education. First, the ability to plan and evaluate educational programs and communicate agricultural information. Second, the ability to understand the philosophical and historical foundations of agricultural education. Third, the ability to understand humans and their development. Fourth, the

ability to use appropriate interpersonal, group, and leadership skills to effectively interact with others. Lastly, the ability to apply scientific agricultural knowledge and skills in a variety of education settings. An educated person in agricultural education should be able to deal with both the young and the adult with these attributes.

The Origins of Secondary Agriculture Teaching Profession in Swaziland

A brief overview of the Schools' Agriculture Program in Swaziland was necessitated. This served to acquaint the reader with the background of the secondary agriculture teaching profession in Swaziland.

Dlamini (1986) acknowledged, there was no policy regarding teaching of agriculture in the Swaziland National Development Plan before 1972. However, in 1971, the Imbokodvo National Movement, which was a policy-making body of the Swaziland government, clearly stated that the agriculture sector must be made attractive to the school leavers and should be more emphasized beginning at the primary level. Dlamini confirmed that the conceptualization of teaching agriculture as a subject in the schools started in 1972 when a meeting was convened by the Economic Planning Office to discuss how the policy regarding the teaching of agriculture in schools could be more clearly formulated. The, then, Principal Secretary

for Education was assigned by the Swaziland Ministry of Education to liaise with Mr. D. Gooday, who was known in the country to have had a vast knowledge of agriculture and agricultural education and had been familiar with Swaziland since 1961, in forming an agricultural education panel to make initial recommendations on the introduction of agriculture as a subject at primary and junior secondary schools.

Gooday in 1974 presented the Swaziland Ministry of Education his observations regarding the failure of agriculture in many African schools. Among those failures Gooday highlighted: no clarity of aims and objectives, few qualified teachers were few, lack of or irrelevant instructional materials, inappropriate teaching methods, practical work became a drudgery, agriculture students were not tested, and minimal administrative supervision of the agriculture programs.

Gooday in 1980 developed an agriculture model for Swaziland schools. The components of the model were: clear curriculum principles and objectives, curriculum materials, coordinating/supervising team and administrative control, preservice teacher preparation, an examination system, inservice education and, program evaluation system. The purpose of the "Schools' Agriculture Program" was to encourage pupils to regard farming as a good and profitable way of life when properly practiced, and to stimulate positive attitude toward agriculture.

Agriculture was then introduced into a school if the basic criteria were satisfied: availability of land and water, willingness of the school committee and willingness of the chief of the area, and willingness of the pupils to take agriculture in the last two years in primary school and the first three years in secondary school. Agriculture during the last two years in high school was optional for students.

Background to the Problem

In Swaziland, no specific studies have been targeted on college students regarding their attitude toward agricultural education or agriculture-related fields. Previous studies, however, have presented findings useful in conceptualizing the problem being explored.

Dlamini (1986) studied the perceptions of agricultural education professionals regarding the quality of the agricultural education program in Swaziland and recommended that high school graduates with high interest (positive attitude) in agriculture and teaching should be admitted to the agricultural education program. He also pointed out that there was a need to study the impact of studying agriculture in the secondary school and on students' interest (attitude) in furthering studies in agricultural fields. These recommendations led to two questions. First, what were the characteristics of the high school graduates that contributed toward positive

interest in agriculture and teaching? Secondly, did studying agriculture in the secondary school encourage students to enroll in a high school agriculture program and/or further their study in an agricultural field in college?

The planned use of agricultural subject matter content by graduating senior secondary pupils in Swaziland was determined by Simelane (1988). He concluded that the attitude of students toward work (practical skills in agriculture) had not been given appropriate weight in the overall calculation of the final grade. The weighting issue had elicited feelings of unfairness among pupils because long hours of work produce little academic reward. The practice had also lessened the appreciation of students for learning practical skills, one of the foundations of agricultural education. Clearly, they perceived the practical skills acquired by the junior secondary school pupils have not been given sufficient credit. The educational system was devised such that the written examination results were mostly considered in evaluating the skills and abilities of pupils in agriculture.

Sukati (1991) identified the desired careers of the Swazi Form III (Grade 10) pupils and found that agriculture, practical and service careers were not popularly liked. He asserted that this perception was not realistic as the labor market required manpower in these areas. The negative attitude was attributed to

insufficient counseling and guidance. Most of the pupils in the junior secondary level had taken agriculture, practical and service-geared subjects in school. Did the experience not have a positive influence on considering any of this course of study at the college or university level?

A similar study was conducted by Asante and Dlamini (1989) with high school students. The authors found that the students aspired for white-collar jobs. This perception was attributed to a colonial education system which positively portrayed white-collar careers. A recommendation was made to further research on the factors which influence student career choice. The effect of colonialism cannot be denied as an important factor that contributed to the poor image of practical jobs, however, the choice of an academic program might also be more influenced by perceived higher salaries in white-collar employment (Sukati, 1991).

The previous studies were conducted with professionals and secondary school pupils in agricultural education. No study has been conducted with university or college students. This population, though, would be much like the senior secondary students as they have not been through a tertiary program. The advantage of studying the first-year university/college over secondary school students is that the former have been exposed to a more nearly complete decision making pattern in pursuing a tertiary program. Furthermore, the first-year

university/college students have already been admitted to the university or a college and possess the desired academic achievement and aptitude to pursue a higher academic program.

Statement of the Problem

The foremost reason for conducting this study was that a demand existed for qualified teachers in agriculture. Teachers are in short supply for several reasons. One, the Swazi teachers are continually attracted to the neighboring Southern African nations because of higher compensation offers. The other nations undoubtedly prefer the experienced teachers, leaving Swaziland with more inexperienced teachers and supervisory personnel. Further, the teaching and learning of agriculture had always been disadvantageously compared with the teaching of other subjects. Agriculture teachers as well as students often spend more time in the school on a daily basis including the weekends. The issue of extra pay for extra work had come up many times in the past meetings of the Swaziland Agriculture Teachers Association (SATA). As a result, agriculture teachers often do not hesitate to switch to teaching another related subject like the sciences, when given the opportunity. Lastly, at present, a number of countries in Africa have indicated their interest in knowing more about the Swaziland Schools Agriculture program.

Swaziland has seemed to be setting the pace in the field of agricultural education in Africa (Dlamini, 1992). This is also evidenced by a newly-revised college agricultural education curriculum being implemented in 1992 in the Faculty (College) of Agriculture in the University of Swaziland. The current Swaziland university agricultural education curriculum, as compared to the curricula in the other African nations, has responded to the evolving nature of agricultural employment not only in Swaziland but in the whole of the Southern African region.

Another innovation which has been initiated by the Department of Agricultural Education of the Faculty of Agriculture is the offering of a graduate degree program, the Master of Science in Agricultural Education. The Master's program was developed to serve the profession by upgrading the competencies of the high school agricultural education teachers and supervisory personnel not only in Swaziland, but also other African nations.

The 5th (1991/92-1993/94) Swaziland National Development Plan has continued to strengthen and expand the agriculture program in the schools. The Ministry of Education declared a policy to continue expanding the Schools' Agriculture Program (Dlamini, 1992). The ultimate goal was to involve all schools, especially at the secondary school level.

The majority of the teachers in the schools hold a diploma certificate (associate degree). The junior

secondary schools are being upgraded to senior secondary schools. This means employment opportunities for teachers with at least a Bachelor's degree to teach the fourth and fifth year high school students.

The researcher has taught secondary school agriculture pupils since 1981, and has been involved with the teaching of the first-year agricultural education students in the University of Swaziland on a part-time basis in the academic year 1990-1991. At a personal level, the benefits and problems of teaching agriculture have been experienced.

This study will broaden the understanding of the researcher and the secondary agriculture teaching profession as to the attitude the freshman university and college students have toward the components of the program. The results can have direct implications for teaching, research, service, curricular content, recruitment, and the overall conduct of the program especially in the secondary and tertiary institutions. The practices and behaviors of the secondary schools' agricultural professionals and students will be influenced by the awareness of the attitude now possessed by first-year college students.

Need for the Study

Secondary agriculture components were the foci of this study because of the reasons already enumerated. The findings of this study could also reveal one dimension of

the extent to which the objectives of the secondary school agriculture program are being realized. A combined introspection and peer examination of the attitude will highlight the reasons why freshman students chose to take or not to take agriculture at the tertiary level. The evaluation of the components of the secondary agriculture could help prioritize the areas that need improvement. The results can guide the professionals in agricultural education to consider the areas deserving closer examination. The monitoring and evaluation practices used in agricultural education have traditionally focused on individuals practicing the profession. The individuals who might join the profession have not been considered to present their opinions indicating the desirable or undesirable aspects of the profession.

Justification for the Study

The construct "attitude" had not been studied with regards to the components of the secondary agriculture among Swaziland senior high school students or university/college students. The main reason had been that the Ordinary Level ("O" Level) Modern Agriculture program just increased in enrollment since 1985. Currently, there are 27 schools offering this program with about 2,000 students enrolled annually (Dlamini, 1992). A limited number of students from these programs have been admitted to the university and other colleges in the previous years.

The trend had been for an increasing number of first-year students being granted admission to the tertiary institutions. Among first-year university/college students, the pursuit of a specific tertiary program might indicate the kind of attitude the students possess toward the program pursued or not pursued.

Purpose and Objectives of the Study

The purpose of the study was to describe and explain the attitude of the first-year university and college students toward the secondary agriculture components in Swaziland. The specific objectives of this study were to:

1. Describe the attitude of the first-year college students toward the components of the secondary agriculture.
2. Determine whether there was a significant difference between the attitude of the students toward the secondary agriculture components by institution affiliation, by program pursued, by department/faculty affiliation, and by whether agriculture was/will be a course.
3. Describe the characteristics of the first-year college students: (1) age, (2) gender, (3) place of residence, (4) father's occupation, (5) father's education, (6) hectares of land allocated by the chief to the family, (7) family earnings from agriculture produce, (8) mother's occupation (9) mother's education, (10) number of years spent in school dormitories, (11) number of months of teaching or teaching-like experiences, (12) whether hobbies

included agriculture-related activities, (13) number of youth organizations joined before university/college, (14) number of years in agriculture courses prior to attending a university/college, (15) number of months of paid employment experience, (16) school level at which student decided to pursue present university/college program, (17) age at which student decided to pursue present university/college program, (18) number of times counseled regarding careers while in senior secondary school, (19) whether specifically recruited by someone in the present university/college, (19) overall number grade in "O" level examination, (20) institution, program pursued, academic affiliation, and whether agriculture was/will be a subject in college, (21) level of importance of reasons in pursuing the degree leading to a career, and, (22) level of influence of elements in making decision to enroll in present university/college.

4. Determine the relationship among the attitude of students toward the components of secondary agriculture teaching education and the previously identified characteristics of the first-year university/college students.

5. Describe the level of importance of each of the reasons in pursuing the present program leading to a career and the level of influence of each of the elements in making the decision to enroll in present university/college.

6. Identify the predictors of attitude toward the components of secondary agriculture from the first-year university/college students characteristics.

7. Identify the:

(1) reasons for choosing the present program which have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture and;

(2) elements influencing the decision to enroll in the present university/college which have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture.

Definition of Terms

To clarify this study, the following terms were defined:

First-year College Students - the students who have just joined the different faculties (colleges) in the University of Swaziland and Swaziland teachers' training colleges (William Pitcher Teacher Training College, Nazarene Teacher Training College, and Ngwane Teacher Training College) during the academic year 1992-93.

Ordinary ("O") Level Modern Agriculture - the academic curriculum offered in the two years (Grade 11 and 12) in senior secondary school, at the end of which, the students sit for a national subject examination and should have

completed a proportionately weighted (20%) agricultural exercise.

Faculty of Agriculture - referred to the College of Agriculture in the University of Swaziland.

Schools' Agriculture Program - the agricultural program in the primary and secondary schools in Swaziland.

Junior Certificate Level - the junior secondary high school grades 8, 9 and 10.

Attitude of the First-year College Students - the ratings of the secondary agriculture components statements on an eight-point Likert scale by the first-year university and college students.

Agricultural Education Students- first-year students who were specifically pursuing a Diploma or Bachelor's degree in Agricultural Education.

Agricultural Students - first-year students who were in the Faculty of Agriculture at the University of Swaziland and the first-year students in the specified colleges in Swaziland whose academic program included agriculture.

Non-agricultural Student - first-year students who were not in the Faculty of Agriculture at the University of Swaziland and the students in the specified colleges in Swaziland whose academic program did not include agriculture.

Age - the number of years on the respondent's last birthday.

Gender - whether the respondent was male or female.

Place of Residence - the rural or urban location where the respondent was reared.

Father's occupation - whether the father had a blue or white collar job, self-employed, or did not have a job (unemployed, deceased, or retired).

Father's highest education - the father's total number of years in school.

Size of the land the family was allocated - the number of hectares of land the respondent's family was allocated by the chief of the home area.

Amount of earnings from selling agricultural product - the monthly earnings in Emalangeni from selling agricultural produce.

Mother's occupation - whether the mother had a white or blue collar job, self-employed, or did not have a job (unemployed, deceased, or retired).

Mother's education - the mother's total number of years in school.

Number of years lived in the hostel - the total number of years the respondent had lived in the dormitories of the schools attended.

Amount of teaching or teaching-like experiences - the number of months of teaching or teaching-like experiences.

Hobbies including an agriculture-related activity - the indication of whether or not an activity which involved aspects of agriculture was regularly practiced by the respondent.

Participation in Youth Organizations - the number of organization(s) the respondent had joined before attending university/college.

Agriculture as a Subject in Senior Secondary School - the indication by the respondent of whether or not agriculture was taken as a subject in the two years of senior secondary school.

Employment Experience - the number of months the respondent was employed with pay.

School level when decided to pursue present program - the indication of whether the respondent decided to pursue the present college/university program in primary, junior, or high school level or just before college.

Age when decided to pursue present university/college program - the reported age at which the respondent decided to pursue the present university/college program.

Number of times counseled regarding careers - number of times the respondent was counseled while in senior secondary school regarding careers one can pursue after high school or university/college .

College/University Recruitment Experience - whether or not someone from the present college recruited the respondent to attend the college/university.

Overall Grade - the number grade received from the "O" level final examinations which ranged from 1 to 54, 1 being the highest and 54 being the lowest.

Institution the Respondent was Enrolled in - the university or specific college the respondent was attending.

Program Pursued- the pursued degree by the respondent.

Academic Affiliation - the department or faculty where the respondent was enrolled.

Agriculture as a subject - whether or not the respondent was taking or will be taking agriculture as a subject in the college where enrolled.

Level of Importance of Reason(s) in Pursuing the Degree - the degree of importance of each of the 12 reasons in pursuing a degree leading to a career indicated on a six-point Likert scale.

Level of Influence of Factors in Making a Decision to Enroll in the Present University/College - degree of influence of 22 factors in choosing the present institution indicated on a six-point Likert scale.

Limitations

The results will be generalizable only to the freshman 1992-1993 college students in the University of Swaziland and identified Swaziland colleges. Financial constraints necessitated that the researcher use the mail-survey method. Confidence in the authenticity of the data was secured with the help of Dr. M. Simelane who collected the data for the researcher. Dr. Simelane was the Head of the Agricultural Education Department in the Faculty of Agriculture at the University of Swaziland.

In this study, only the attitude of the individuals who have successfully entered a university/college program was determined. No attempt was made to include the non-college-attending high school graduates.

Assumptions

Other major aspects of agricultural education in Swaziland were not included in the study: the teacher educators, preservice education, teaching practice, inservice education, research and evaluation and adult education. The students were perceived not to have fully conceptualized these components at the time of study. Attitude on aspects not fully familiar to students may yield less meaningful results.

Both the agricultural and non-agricultural first-year university/college students were included in the study as most have been exposed to Schools' Agriculture Program or had taken agriculture as a subject either in primary, junior or senior secondary school or in two or all levels of school. The participants, therefore, were perceived to have possessed specific attitude toward secondary agriculture components.

Chapter Summary

A brief overview of how individuals develop attitude toward elements in the world was presented. The

questionnaire was mentioned as one of the vast behavioral indices used by investigators to study attitude.

The foundations of agricultural education were presented to highlight agricultural education as a discipline. The basis for agricultural education in Swaziland was traced to give a brief background on how the teaching of agriculture in schools became a profession in Swaziland.

Studies that have highlighted exploring the present problem were included. The research problem was stated and the need and justification for the study. The general purpose and specific objectives were enumerated guiding the reader with the specific data this study aimed to generate. Terms that were specifically operating in this study were clarified. The limitations and basic assumptions for this study were stated.

CHAPTER II

LITERATURE REVIEW

The secondary agriculture in Swaziland can be evaluated in terms of its relevant components. The students had directly or indirectly experienced the components either in primary or secondary school. The pertinent components are: the agriculture teachers, the agriculture secondary students, the agricultural education program, the agricultural education objectives, agricultural teaching methods and techniques, and agriculture instructional materials.

A brief description of the agriculture campus at the University of Swaziland was presented as this is the place where secondary agriculture teachers are traditionally educated. The academic reputation of the high school graduates and the entrance requirements for the University of Swaziland were contrasted for the reader to realize the inconsistencies that prevail.

Literature relevant to this study were included such as the agricultural college students' characteristics and the program and university/college choice factors influencing attitude toward agriculture-related careers.

The challenges facing agriculture and agricultural education were presented. Pre-enrollment assistance received by first-year college students was reviewed. Studies on the image of agriculture and agricultural education and its relationship with attitude of potential agricultural students were reported.

Agriculture Teachers in the Secondary Schools

Dlamini (1986) reported the personal demographics of agricultural education professionals (majority of whom were teachers, N=128) in Swaziland. Males (84%) dominated the population and a majority of the teachers (78%) held a Diploma certificate (associate degree). Bachelor degree and Master degree holders were 16 percent and 6 percent, respectively. Agriculture teachers have taught in schools an average of three years . The majority of the teachers (83%) have been educated in Swaziland. Agriculture teachers were mostly under 30 years of age. Sixty-five percent of the teachers worked in rural schools and 64% did not take agriculture as a subject in school.

Simelane (1988), in a study of the planned use of the agriculture content among high school students, made some recommendations pertaining to agriculture teachers. First, he emphasized that agriculture teachers should make parents aware of the knowledge and skills their children are acquiring. Secondly, he pointed out that agriculture teachers should be encouraged and rewarded by their

employer, the Ministry of Education, for helping students establish agricultural projects at home. Economic motivation and formal mechanisms whereby agriculture teachers were encouraged to extend teaching activities beyond the school setting were found lacking.

Agriculture Students

Dlamini (1992) stated that 146 primary schools offered agriculture as a subject to about 39,420 pupils annually. Further, there were 78 junior secondary schools and 27 senior secondary schools offering agriculture to some 17,000 and 2,000 pupils annually.

Simelane (1988) summarized the personal characteristics of the graduating senior secondary students (N=493). Males (64%) outnumbered the females and 72% were 17 to 19 years old. More than one-half (56%) of the students resided in the rural areas. Sixty-seven percent opted for a day-school (did not live in the dormitory) arrangement. More than 75% indicated experiencing some financial problems while attending school. More than one-half (52%) were attending a rural school at the time of the study, and the majority of the students rarely used and had no intention to use what they had learned in the senior secondary agriculture program.

The Schools' Agriculture Program

Dlamini (1992) reported that two in-depth evaluations of the junior secondary agriculture program were conducted by British Overseas Development (ODA). The first was in 1978 and the second in 1982. The two studies affirmed that the study of agriculture was popular and interesting and brought about a favorable attitude toward agriculture. The studies pointed out, however, that the positive attitude did not indicate that the pupils wanted "to go back to the land." The evaluations concluded that the Schools' Agriculture project was so well established that a recommendation was made to use the Swaziland model for the other African nations. Another study reviewed by Dlamini was the Gerald Sullivan "School Leaver Tracer" which was conducted in 1979 involving individuals who did not continue junior secondary school or dropped out before senior secondary school. A conclusion was reached that the program was successful in bringing about a more positive attitude toward agriculture.

The Schools' Agriculture program is extending its coverage in secondary schools. A pre-vocational program in high school was recently developed as a curricular alternative for those who want to pursue farming as a vocation.

The Schools' Agriculture Objectives

The Schools' Agriculture program has aimed at changing the attitude of the youth who regarded agriculture as a poverty-perpetuating activity by emphasizing commercialized agriculture. A perception existed among the public in general that the aim of agricultural education was to train students to be farmers because of the demonstrated farm skills by the completers (Dlamini, 1992). The public seemed unaware of the difference between the agricultural education program in the schools and the agricultural programs in the vocational schools. The School of Appropriate Farm Technology (SAFT) and Manzini Industrial Training Center (MITC) offer vocational agriculture to a limited number of aspiring adult farmers.

Teaching Methods in Agriculture

Teaching and learning in the senior secondary agriculture have been mostly achieved through practical activities. Teachers and students spend about 65% of class time in the vegetable and crop field or in the small livestock house settings (Simelane, 1988). The remaining class time is spent in the formal classroom. The teaching methods used by teachers have been those that involved hands-on experiences such as technical skills demonstrations on caring for vegetables, crops and small livestock and in-school supervised agricultural exercises. Dlamini (1986), however, found that the skill training was

inadequate in the agriculture teacher preparation program, especially those dealing with crops and small livestock. This dilemma, Dlamini pointed out, called for an inservice education program that should specifically address teachers' use of technology and methodology needs, individualized instruction and consultative services that can be provided to teachers, the establishment of a curriculum materials center, and an on-site visit to help new teachers.

These recommendations emphasized that the individuals who deliver inservice training should focus on teaching practical skills. Simelane's study also produced a recommendation to involve university agriculture students in an internship in at least one area of agribusiness/technical agriculture.

Teaching Materials

In 1973, Mr. D. Gooday, formulated, as requested by the Ministry of Education, a list of requirements for the implementation of the Schools' Agriculture program. The list included locally produced curriculum materials such as textbooks and handbooks. Capital improvement funding to acquire a range of facilities such as classrooms, livestock houses, garden areas with water, garden tools and equipments, and first-year free supply of inputs were also listed. A large central stores complex was suggested as a means to provide support supplies for gardening and raising

small livestock.

The capital improvement funding was initially provided for 5 years by the U.K., thereafter, the Swaziland government took over the project. The facilities which were provided helped in establishing the infrastructure for the Schools' Agriculture program.

The Agriculture Campus

The Faculty (College) of Agriculture is situated at Luyengo about 24 km west of the central campus at Kwaluseni. Luyengo is 750 m above sea level and the campus lies in the fertile Malkerns Valley. The agricultural campus is 37 km from the Swaziland's capital, Mbabane, and is 27 km from the industrial town of Manzini. Dormitory accommodation is provided to over 300 students.

The agricultural college educates high (Bachelor degree) and middle level (associate degree) manpower in the areas of education and extension, economics and management, animal production and health, crop production, home economics, and land use and mechanization (Faculty of Agriculture Handbook, 1992). The campus provides facilities for teaching, research, and student individual study. Among the facilities are the agricultural education and audio-visual centers. A microcomputer laboratory was recently established for use by the teaching staff and students.

Veterinary and animal health laboratories are also located within the campus. A faculty/college farm housed a field crops laboratory, a mist propagation unit, the Land-use and Mechanization Department workshop, hydrology laboratory, and tractors and implements. Laboratories for soil science, biology, entomology, chemistry, and biochemistry are located at the center of the campus. Laboratories, classrooms, and a home management center, specifically designed for use by the Home Economics Department, are encompassed within the campus.

The campus has a student library with a seating capacity of 130. A clinic is staffed by a full-time qualified nurse and a doctor who comes once a week. A bookshop sells student supplies and stationery on a cash basis. The majority of the students have been beneficiaries of scholarships offered by their respective governments.

Academic Reputation of the High School Graduates and the University/College Entry Requirements

In the junior secondary school, agriculture has been taken as an academic subject by pupils except in some private schools. In the senior secondary school, the tendency has been to track students with moderate or lower academic achievement, as judged through their Junior Certificate (J.C.) level national examinations result, to study agriculture. Agriculture, as a subject, has been

taken concurrently with technical and vocational subjects. Biology, integrated science, and combined science (considered "softer sciences") are the popular science subjects taken with agriculture, along with other basic (mathematics and languages) subjects. Physics, physical science or chemistry ("harder sciences") are seldom taken concurrently with agriculture.

The Faculty of Agriculture Handbook (1992) describes the minimum entrance qualification for the Bachelor of Science program as an "O" level certificate (high school diploma). Candidates must have achieved at least a "credit pass" (above average) in mathematics and in two science subjects. A credit pass in an "O" level agriculture subject was interpreted as an equivalent to a credit pass in a science subject. Science subjects recognized were: physics, chemistry, physical science, biology, integrated science, and combined science. A "good pass" (average) in English language was required. Each department had additional specific entrance requirements.

A discrepancy seemed to exist between how the secondary students were academically channelled in the "O" level and the expectations of the university when admitting students for an agricultural program. The practice placed a burden on the shoulders of the university-applying candidates and university agricultural teachers. High ability in mathematics, science subjects as well as in English language was considered the passport to an

agricultural program. However, some secondary schools did not even offer "O" level mathematics with agriculture. Science subjects offered concurrently with agriculture were those on the list of "softer sciences".

Students' Characteristics and Factors Influencing Attitude Toward Agriculture-Related Careers

Johnson (1963) reported that U.S. college enrollments in agriculture were not keeping pace with the demands for graduates. The study determined the factors related to low enrollment in agricultural programs and the reasons for dropping agriculture as a major course of study. An interview schedule was administered in agricultural classes at Clemson University involving 159 college juniors and seniors. The findings highlighted that the students with vocational agriculture and farm backgrounds (45%) were influenced to enroll in agriculture mostly by vocational agriculture teachers, parents, and membership in Future Farmers of America (FFA). Students with only a vocational agriculture experience (8%) were influenced to enroll in agriculture by FFA membership, vocational agriculture teachers, prestige of the vocation, parents and farmers. Students with only a farm background (18%) were influenced to enroll in agriculture by parents, friends in the major, and professionals in agriculture. Students without vocational agriculture (29%) were influenced to enroll in agriculture mostly by professionals

in agriculture, parents, and friends in the major. Secondary school counselors had insignificant influence on students in deciding to enroll in agriculture in any of the four groups. Most of the students made the choice to enroll in agriculture while in high school. Students changing their majors (46%) reasoned a lack of interest in their previous major and professionals in the newly pursued major influenced the change.

A study was conducted by Reynolds (1977) at the University of Illinois to find what factors influenced college students to consider enrolling in agricultural education. The findings revealed that the process of curriculum choice was somewhat different for those majoring in agricultural education than for the non-agricultural education students. Agricultural education students were influenced by vocational agriculture experience, high school agriculture teacher and the knowledge that there were job opportunities in teaching. The decision to major in agricultural education was often made later in the college years.

The entering students in the College of Agriculture at the University of California at Davis, reported their backgrounds, motivations, and goals for pursuing an agricultural course (Regan and Thompson, 1965). The study specifically attempted to take an inventory of the biographical, attitudinal and personality traits of the college students in all agricultural fields. The students'

academic performance in college was also followed. The students were grouped according to the major subdivisions of the College of Agriculture: preveterinary medicine, agricultural sciences, and home economics. The groups were compared with colleges of letters and science and engineering. The study found that the agriculture students were not like the students in other colleges. The agriculture students had more limited appreciation of science, and were primarily interested in solving immediate problems. The agriculture students were thinking pragmatically and in practical terms. Students of agriculture were conservative in politics and in general life orientation. Agricultural students made their decision to enroll earlier than the other students. Agriculture students viewed college as a preparation for a vocation. The preveterinary medicine students were more committed to their major than agricultural science students in pursuing graduate education. The home economics students were less interested in science, more altruistic, were more guidance-seeking, and more conservative than the other two agricultural groups. A conclusion was reached that the undergraduate agricultural curriculum needed to be more liberal.

Harrington (1969) studied the factors related to vocational choice of agricultural education students. The study was a survey with data collected by interview from 135 college students. The results revealed that the

greatest influence on student vocational choice was the high school vocational agriculture teacher. More than fifty percent of the students reported a strong desire to enter the vocational agriculture teaching field.

Another study of the 1862 and 1890 Southern land grant universities was conducted (Dunkelberger et al. (1982). Students in the 24 surveyed universities were mailed a questionnaire on family and personal background, high school and college experiences, work and employment experiences, personal aspirations, and attitude toward selected issues related to agriculture and agricultural careers. The findings for combined 1862 and 1890 universities were summarized. Twenty-seven percent were females, 5% were black, 14% were married, 58% were in the final years (junior and senior), and 44% were an only-child. Sixty-three percent were reared on a farm or in a rural area with less than 10,000 people and 14% came from a city (500,000 or more people). Almost all had been employed part-time or full-time in an agriculture-related business. Sixty-five percent were influenced by family members in the choice of agriculture as a major. The most popular reason in choosing agriculture was to prepare for a career.

Dunkelberger (1981) studied the characteristics of 245 undergraduate pre-veterinary students in the Southern land grant universities. The study found that there was an increasing number of women aspiring and being socially

accepted in the veterinary profession. A majority of the students lacked agricultural or farm experience. A negligible proportion represented the minority groups (blacks, hispanics, etc.). A majority of the students possessed positive attitude toward agriculture and the agricultural industry. Most were influenced by their parents and the local veterinarian in their choice of a course of study.

A prestige scale for 50 agricultural and agriculturally-related occupations was developed by Cosby and Frank (1978). The scale was constructed based on a mailed questionnaire survey conducted in the spring semester of 1977. Fourteen universities in the southern U.S. were included in the study. The sample size was 3,398 of which 2,392 (74%) responded. The findings revealed veterinarian as the most prestigious occupation while migrant laborer was the least. The professional, managerial, and scientific occupations were placed at the top of the prestige scale.

Data from East Germany (Sube, 1981) indicated that parents and friends were influential for over 50% of the youth in choosing a career. Social institutions (agricultural businesses and vocational guidance centers) influenced over 40 percent of the young people in the area in choosing a career. Children of farmers were more inclined to select agriculture as a career. Advertising played a major role in favoring agricultural occupations

among rural youth. The authors proclaimed that "selling" agriculture to the youth must start early and should be intensive, and that agricultural occupations can be made attractive only if youth were given relevant and comprehensive information. The majority of the youth perceived positively the agricultural working conditions. Agricultural careers were also seen as a key to a management position, further training, and career development.

Bannaga (1969) examined the characteristics, attitude, and opinions of the graduates in the College of Agriculture, University of Khartoum, Sudan. A questionnaire was administered to students in four undergraduate classes. Data indicated the students' strong belief on agricultural extension as vital for the improvement of Sudanese agriculture. Using a list of qualities and characteristics recommended for an effective extension worker and using a cumulative scale, 33 percent of the students fell into the category of highly suitable. An option for agricultural specialization in the senior year was perceived as a competing alternative program to agricultural extension. Suitability to extension work was related to father's occupation and the length of time the students lived in the dormitories.

The perceptions on agriculture in the Nigerian Agricultural College of Ahmadu Bello University was determined by Ejembi (1988). The study elicited the

characteristics of the students, their motivations in pursuing agriculture, and their perception of agriculture and agricultural workers. A sample of 234 students responded in the study using a questionnaire. Students ranged from 18 to 43 years of age, of which 47% were pursuing an associate degree, and over 65% were males. An occupational prestige ranking revealed medical doctor as the most prestigious, and storekeeper, the lowest ranked. Farming was slightly above average in prestige. The most influential factor that encouraged the students to study agriculture was to help develop Nigerian agriculture. Family factors influenced students the least. First year ordinary diploma students were more influenced by economic, family, and personal factors than were first-year higher diploma students. The students agreed that agriculture was the basis for national development. Agriculture was not seen as a profession for illiterates. First-year ordinary diploma students had more negative economic perception of agriculture, but had more positive economic perception of agricultural workers than did first-year higher diploma students.

Dlamini (1983) studied the career choice of student teachers in the departments of home economics and agricultural education in the University of Swaziland. This study disclosed that more than fifty percent of the student teachers chose careers upon receiving advice from members of the immediate family such as a brother, sister,

father, mother, and grandparent. Other individuals who influenced decision making on career choice were agriculture and home economics teachers, class teachers, friends, principals, extension agents, and industrial art teachers.

The influence of parents' occupation on the career choice of vocationally undecided youth was investigated by Mills (1980). Ninety-three college students were administered a questionnaire to determine the factors influencing their career choices, and verified the decidedness of the students with regards to immediate and long-term goals. The findings indicated that the parents most influenced the career selection of their children, while the teacher ranked second. Both vocationally undecided and decided students were influenced by their parents in choosing their careers. The nature of the students' present job did not influence their choice of career.

Venerable (1974) studied the influence parents had on their children's' college and vocational decisions. A survey was administered to 300 freshman college students on the extent of parental influence in college and vocational choice. The students reported making their own decisions when choosing a college and a career, however, most consulted their parents in these processes.

The educational maturity, race, and the selection of a college was investigated by Naylor and Sanford (1979).

The incoming freshmen at the University of North Carolina, Chapel Hill, were surveyed. A student was defined as educationally mature when he or she was certain about a college major and a career choice. Results showed that the strength of the target department was the most frequent reason for choosing the college for educationally mature students, and was true for both the black and white students. The academic reputation of the university was also an important factor to the educationally mature for choosing the university.

Koch (1972) investigated the relationship between students' choice of undergraduate major and "private internal rates of return." Results from the study supported the hypothesis that students valued the perceived monetary returns that could be gained from the chosen major. Milley (1982) also investigated the role of income in the choice of a college major. The study classified students as either "education or job-output oriented." The major findings of the study revealed women and students who financed their own education, and high school high-achievers chose job-output majors.

Who studies what major in college was explored by Richards (1970). Questionnaires were given to students while they were in high school, one-year later, and five-years later. The different times of questionnaire administration revealed the anticipated and actual college major. The results found that the best way to predict

success in a chosen major was to establish the academic aptitude of the student. The choice of major was seen as the least predictive criterion when measuring success in the chosen field.

Bentley (1966) investigated the factors which led college seniors to choose college teaching as a career. Data were gathered from 94 Danforth Graduate Fellowship awardees. A questionnaire and a vocational interest form were mailed to the participants. The results revealed that the students decided on teaching rather early in life. The previous teaching and teaching-like experiences contributed to the decision of becoming a teacher. The prospect of making a potential contribution to society was a motivating factor in their choice of teaching as a career. The expectations and satisfactions from teaching were known to the students.

The factors influencing students' college choice were studied by Martin (1991). Variables found related to college choice were locus of control (whether field dependent or independent), socioeconomic status, and desired major.

Senn's (1984) study investigated the influence of personal values and self concept on the selection of an academic major. A questionnaire surveyed 298 college students with concurrent use of the Tennessée Self Concept Scale and the Allport-Vernon-Lindzey Study of Values. The findings showed a significantly higher score on total self

concept among those whose current major was similar to their desired major. Students who were willing to take high risks scored high on social and personal self concept while low risk students scored high in theoretical values. Females scored high on the moral-ethical, family and social self, while males scored higher on the physical and personal self. Females scored higher on aesthetic, religious, and social values and males scored higher on economic, political, and theoretical values. The males changed their major more frequently that did females and males showed more consistent personal values and choice of an academic major than did females.

Gilmour (1981) studied the college selection process used by high school students. A paradigm that described the process was developed based on marketing theory. College freshmen in Pennsylvania State University and students in a senior high school were interviewed and a number of high school juniors and upper-level college students were surveyed to find the differences in opinion about the process. Six sets of parents and seven guidance counselors in several high schools were also interviewed. Six phases were found to comprise the college selection process: the decision to attend college, the development of list of colleges, the decision to apply, the process of applying, receiving acceptance, and choosing a final college, in respective order. The high school students indicated the factors important to them as: the academic

program, cost, location, views of parents, guidance counselors and alumni. The study highlighted that the college selection process was closely associated with the selection of a high school curriculum and the choice of a vocation. Students reported setting their career goals, getting the education required to achieve the goals, entering into a relevant high school curriculum, and deciding whether to go to college or not, in respective order. The students believed that the college selection process was not an easy task and that they have not been well informed about how to make decisions during the process. The study also revealed that students with higher scholastic aptitude test scores and college-educated parents entered earlier into each phase of the process and did not consider pragmatic factors like cost and location of the college, but were more interested in an institution's academic programs.

The occupational aspirations and intended field of study in college held by seniors was presented by National Center for Education Statistics in 1984. Some of the major findings illustrated relationships that existed between the background characteristics of students and their choice of a college and a career. More females were reported aspiring to pursue higher status careers. The influence of the school teacher, especially for those intending to study education, was significant. The successful pursuit of a career depended on the co-existence of gender and;

dominance on the field of study, the number of early work experiences, family commitments, a more profound academic background. Gender, aptitude, science coursework, work values and educational aspirations were reported to be the most important influences in selecting a career. Findings relevant to the pursuit of teaching as a career were obtained. The successful pursuit of teaching was best predicted by low aptitude, a high college GPA, a number of early work experiences, and greater mathematics preparation. The best predictors for choosing teaching were being a female and high educational aspiration of the mother.

Salters (1987) investigated the relationship between attitude toward science, science self concept, and other variables related to occupational choice and the science career choice of the black college students. Science and non-science majors (N=410) at Morgan State University participated in the study. Six variables were identified as significant and accounted for 42 percent of the variance. The significant variables included science self concept, presence of role model, image of the field, course counseling, attitude toward science, and high school science background.

The relationship of farm background to the attitude of agricultural students at Clemson University was determined by Boyd (1977). He examined the attitude of students with nonfarm backgrounds but who were majoring in

agriculture. A questionnaire containing information on career orientation was distributed to 90 first-year and 106 senior students. The result indicated that more seniors lived on a farm. A higher percentage of city than farm students would like to pursue graduate education. Both city and farm students were influenced by personal interest in selecting their major. City students listed job opportunities, while farm students reported personal job experience as the second most influential deciding factor. More than 80 percent of all the students viewed agriculture as a growing industry. City students regarded agriculture as a money-making enterprise and having opportunities for advancement.

Reasons For Attending College

Other factors important and are influencing students to attend college were reviewed in the literature. Different reasons were found regarding why students attend college. Church and Gillingham (1988) surveyed the full-time undergraduate students at Laurentian University in Ontario, Canada, which revealed students' perceptions of the benefits of a university education. The reasons provided by the students on why they attend university were grouped into six categories: self-improvement; social pressure; learning; self-development, career, and continued study of a favorite subject. One reason found in Church and Gillingham's (1988) study was in agreement with Murray

and others' (1990) finding that the reasons for attending university were career-related. Astin et al. (1988), however, found that students' concerns for attending college were jobs and money. Johnson and Troy (1981) also found that the reasons for attending college were to obtain a better job, prepare for graduate or professional school, and to meet new people.

College Recruitment Assistance

Techniques and methods used to recruit or influence choice of study by college students were reviewed. Welton (1980) formulated guidelines for a teacher recruitment program in agricultural education at Kansas State University based on a study he conducted. A survey involved teacher educators, state supervisors, and coordinators of agricultural programs in Kansas community colleges. Students in agricultural education at Kansas State University were also included in the study. The author reported that 47% of the agricultural education students switched from another major. Ninety-two percent of the state supervisors reported having observed an inadequate supply of vocational agriculture teachers. Recruitment techniques most often practiced by teacher educators included use of brochures, a personal letter, and group presentations. The individuals most influential in the student's decision to major in agricultural education included the vocational agriculture teacher, college

professor, parents, friends and teachers in the fields other than vocational agriculture. The high school counselor was ranked the least in influencing student choice of the major.

Graham (1990) described the effectiveness of selected recruitment techniques on undergraduate agricultural students. A questionnaire was completed by 120 students during the "Welcome Week" in the fall of 1984 in Michigan State University. The study found that a significant difference existed in the preference for type of college information, sources of information, the individuals influential in the students' college choice, and in the preference for recruitment activities. This conclusion was true between freshmen and transfer students, between males and females, and between students who resided in rural, small town, small city, and large city. The elements indicated influential on deciding to enroll in a program were the quality of the academic program, academic reputation, atmosphere and appearance of the campus, and the quality of the faculty. The recruitment activities indicated as helpful in choosing a course of study were: visiting a family member or friend on campus, talking with university students, graduates, high school counselors, and teachers. Participating in a university open house or athletic event and seeing television advertisements or stories about career-related activities were also found as useful information when choosing a field of study.

Image of Agriculture and Its Relationship With The Attitude of Potential Agricultural Students

The Social Learning and Career Decision Making handbook (1979) indicated that students will likely distance themselves from an activity with associated negative perceptions. This implied that the students aspiring to be a professional in a field constantly refer to the images associated with that field during their decision- making processes.

Dube (1987) reported that the junior secondary students positively rated the vocational agriculture programs in the Tompkins Senega Tioga area in New York. The students, however, believed that their friends held a negative perception of the agricultural program they have participated in.

Challenges to Agriculture and Agricultural Education

The future of vocational agricultural education in the United States of America has been explored by Mickelson (1988) and he recognized that the reputation of agricultural education reflected the reputation of agriculture. He believed that agricultural education in the secondary schools established a solid foundation from which to build a better future for the U.S. The author, however, noted that there were more challenges still confronting the profession. He believed that the image of farming needed improving. The agricultural education

professionals have a shared responsibility for elevating the public image of the farmer and the farmer image of self. He envisioned that all students needed to be introduced to at least a course on food production and food economy at the secondary school or the early college level. He added that the changing clientele of the profession demanded that the urban students needed to be encouraged to enroll in the agricultural education programs.

Dlamini (1992) presented the rationale and implications for strengthening agricultural programs at the University of Swaziland. Dlamini reiterated that at first the agricultural programs in the University of Swaziland prepared graduates for government administrative jobs. The demand for such graduates was eventually met and the educational programs shifted its focus to a more technical training for extension workers. Suddenly, the industries were making informal comments that University of Swaziland agricultural graduates were not adequately prepared for their needs. In 1987, the University of Swaziland conducted a study whose main purpose was to determine the potential demand and employment opportunities for its graduates. This study was funded by the United States Agency for International Development (U.S.A.I.D.). A team of three consisting of an American agricultural professor and two Swazi lecturers obtained data through personal interviews of the management of thirty-two (32) private agricultural firms. Findings of the study disclosed that

the opportunities for agricultural graduates were on the rise in the private companies. The study also revealed that the graduates were indeed deficient in skills in the specified areas: farm machinery, irrigation, marketing, communication, management, leadership, business, and laboratory. The point made was that agriculture education should be more practically than theoretically oriented and that business management and entrepreneurial skills should be strengthened. The respondents emphasized that newly-employed graduates were slow to adapt to the industry work environment. The study produced recommendations on the revision on the method of instruction, restructuring the curricula, developing new educational programs, conducting research addressing industry needs, and providing short courses on practical subject areas. The overall conclusion pointed at students needing to develop an appreciation for productivity and marketing, wholesome work habits, and a positive outlook toward improving rural life.

Strengthening agricultural programs at the University of Swaziland has had implications on financial capability and commitment of the University of Swaziland. More specifically, the implications were in the areas of practically teaching the students; physical facilities for more practical demonstrations; human resources in the areas of outreach programs, animal production and health, crop production, agricultural business, and home economics; additional one-year student scholarship assistance; and

professional assistance allowing the teaching staff to use the University farm as a laboratory for teaching the students practical and managerial skills.

The future developments of the College of Agriculture in the University of Swaziland have now been geared toward: improvement of practicals in order to enhance practical skills; strengthening field attachment programs; single majors in food service management in the home economics department; a Master of Science degree in Agricultural Education; strengthening linkage programs with other universities for the exchange of staff and students; a pre-vocational infusion in the undergraduate agricultural education degree; and single majors in horticulture and a department of horticulture.

Chapter Summary

The characteristics of the secondary agriculture teachers have been reported by Dlamini (1986). Simelane (1988) recommended how agriculture teachers should involve parents of agricultural students in relating what are being learned in school to home setting, and a need to review reward systems for doing this task.

Dlamini (1992) compiled statistics on the enrollment of pupils in primary and secondary agriculture. The characteristics of the graduating senior secondary students were reported by Simelane (1988).

Evaluation studies of the Schools' Agriculture Program since its existence were summarized (Dlamini, 1992). Agricultural education objectives were listed (Dlamini, 1992). The teaching methods and techniques commonly used by senior secondary agriculture teachers were revealed (Simelane, 1988). Dlamini (1986) pointed out the inadequacy of the teacher education program in preparing teachers to use teaching methodology and educational technology. The capital improvement funding and curriculum materials needed by teachers to teach agriculture in schools were recommended to the Ministry of Education by a pioneer in agricultural education in Swaziland, Mr. D. Gooday, during the initial implementation of the Schools' Agriculture Program.

The agriculture campus in the University of Swaziland was introduced in terms of its location and enrollment. The facilities that can be found in the campus for teaching, learning and research were also listed (Faculty of Agriculture Handbook, 1992).

The academic tracking of the high school graduates had been viewed inconsistent with the entry requirements of Swaziland colleges and university. The characteristics of the high school graduates and early college students predictive of enrollment in agricultural education and agriculture in the tertiary institutions were reviewed (Regan and Thompson, 1965; Dunkelberger et. al., 1982;

Dunkelberger, 1981; Sube, 1981; Bannaga, 1969; Ejembi, 1988; Mills, 1980; Venerable, 1974; Naylor and Sanford, 1979; Koch, 1972; Milley, 1982; Martin, 1991; Senn, 1984; National Center for Education Statistics, 1974; Salters, 1987; Boyd, 1977). American students' reasons for attending university/college was also reviewed and summarized (Church and Gillingham, 1988; Murray, 1990; Astin et al., 1988; and Johnson and Troy, 1981). Factors such as students' choice of career and tertiary institution were found related to enrollment in agricultural education (Reynolds, 1977; Harrington, 1969; Dlamini, 1983; Bentley, 1966;) or agriculture .(Johnson, 1963; Cosby and Frank, 1978; Richards, 1970; Gilmour, 1981).

The recruitment practices in agricultural education (Welton, 1980) agriculture, (Graham, 1984) were reviewed and presented. The image of agriculture and its relationship with the attitude of potential agricultural students were reviewed (Social Learning and Career Decision Making Handbook, 1979; Dube, 1987). The challenges that confront agriculture and agricultural education in the U.S. (Mickelson, 1988) and agriculture teaching and learning in the University of Swaziland (Dlamini, 1992) have been presented.

CHAPTER III

RESEARCH METHODOLOGY

The methods employed in the conduct of this study were described in this chapter. Relevant information included: the research design, population description, instrument development, and collection and analysis of data.

The Design of the Study

The study was of the descriptive-correlational type. A questionnaire was used to generate the data for this study. The purpose of the study was to describe and explain the attitude of the first-year university and college students toward the secondary agriculture components in Swaziland. The specific objectives of this study were to:

1. Describe the attitude of the first-year college students toward the components of the secondary agriculture.
2. Determine whether there was a significant difference between the attitude of the students toward the secondary agriculture components by institution affiliation, by program pursued, by department/faculty affiliation, and by

whether agriculture was/will be a course.

3. Describe the characteristics of the first-year college students: (1) age, (2) gender, (3) place of residence, (4) fathers' occupation, (5) fathers' education, (6) hectares of land allocated by the chief to the students' family, (7) students' family earnings from agriculture produce, (8) mothers' occupation (9) mothers' education, (10) number of years spent in school dormitories, (11) number of months of teaching or teaching-like experiences, (12) whether students' hobbies included agriculture-related activities, (13) number of youth organizations joined before university/college, (14) number of years studied agriculture before university/college, (15) number of months of paid employment experiences, (16) school level at which students decided to pursue present university/college program, (17) age at which students decided to pursue present university/college program, (18) number of times counseled regarding careers while in senior secondary school, (19) whether specifically recruited by someone in the present university/college, and (20) overall number grade in "O" level examination.

4. Determine the relationship between the attitude toward the components of secondary agriculture and each of the previously identified characteristics of the first-year university/college students.

5. Describe the level of importance of each of the reasons in pursuing the present program leading to a career, and

the level of influence of each of the elements in making the decision to enroll in present university/college.

6. Identify the predictors of attitude toward the components of secondary agriculture from the first-year university/college students characteristics.

7. Identify the:

(1) reasons for choosing the present program which have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture, and;

(2) elements influencing the decision to enroll in the present university/college which have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture.

Miller (1985) and Miller and Smith (1983) cautioned researchers about the potential errors in survey research. The errors included measurement, sampling, frame selection, and non-response. The errors needed to be controlled for a survey to be properly executed and valid. Error in sampling was controlled by identifying the exact total number (N) of each subpopulation as provided by the registrars of the University of Swaziland and the three colleges. Corresponding proportions (%) and number of students required (n) for the subsamples were calculated. An intact class of students was used to represent the subsamples (see Appendix A). The control of the frame, selection, and non-response errors were addressed and

described in the next heading. The control of measurement error was discussed in the outcome measures section.

Population

The target population of the study was first-year college students in the university and specified colleges in Swaziland. The breakdown of the sample can be found in Appendix A.

The total number of students was 696 and Krejcie and Morgan (1970) recommended a representative sample of 248 drawn from a population of 700 (the nearest whole number to 696). This sample size was determined by the authors using the formula:

s = Chi square NP(1-P) - d square (N-1) + Chi square P(1-P).

where; s = required sample size

Chi Square = the table value of chi square for 1 degree of freedom at the desired confidence level (3.841)

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (.05)

This formula is meant to be used for drawing samples from which categorical data are generated (Warmbrod, 1992). In this study, this sampling procedure was used to identify the appropriate sample and subsamples for the study. Further cautions on appropriateness of the number of sample have been taken with the different data analysis procedures.

The "rule of thumb" according to Warmbrod (1992) when analyzing data using multiple regression is 10 cases for every independent variable investigated. This has implication on sampling and adjusted R^2 and R^2 values results for a regression model. Warmbrod added, the larger the sample size, the more stable is R^2 and the higher the R^2, the less the estimated shrinkage (R^2 change). In this study, the sample was 235 which satisfied the minimum number of cases (235/10=23.5) that can be used for multiple regression analysis for any of the three groups of independent variables (characteristics = 20, reasons for choosing the present program = 12, reduced to two factors, and elements that influence the decision to enroll in the present university/college = 21, reduced to three factors).

The study included 235 first-year college students in Swaziland's university and colleges. The study, therefore, involved a sample, and data would constitute statistics. One intact class represented each of the subsamples. The use of intact classes made the subsample proportions (n) slightly more than or less than

subpopulation proportion. The actual number of students for each subsample can also be found in Appendix A.

The lists of intact classes and the names of students in each class provided by the registrars for the study were checked to determine if there were classes or names of students represented more than once to control for selection error. The registrars in the university and colleges in Swaziland provided the most recent and updated list of the first-year classes and students in the different faculties/colleges or departments. This controlled frame error.

The institutions referred to in this study were: the (1) University of Swaziland, (2) William Pitcher Teacher Training College, (3) Manzini Teacher Training College, and; (4) Ngwane Teacher Training College. The departments referred to in this study were Faculties/departments of: (1) Agriculture, (2) Science, (3) Humanities/Education (included the Faculty of Humanities in the University of Swaziland and three teacher training colleges in Swaziland), (4) Commerce, (5) Law, and; Social Science.

The administration of the questionnaire was officially arranged and conducted by the in-country data collector, Dr. M. J. Simelane. Each dean of the faculties/colleges or heads of departments in the university and the principals in each of the involved Swaziland colleges were informed of the questionnaire administration.

A quantity of questionnaires corresponding to the number of students in the intact classes were prepared and labeled prior to administration. This procedure systematized the identification of nonrespondents (absentees). Students not present were requested to complete and submit the questionnaire to the instructor involved with the data collection before or after the next lesson time. A coded questionnaire for each absentee was handed to the instructor involved in the administration. Coding of the late questionnaires permitted anonymity of the students and ensured that the code corresponded to a name of a student who belonged to an intact class.

The instructors in the colleges involved with absentees' questionnaire administration were personally requested to mail to Dr. Simelane the remaining questionnaires in a self-addressed and stamped envelope. The instructors in the university were personally asked to send the remaining questionnaires through the inter-campus mail. Non-response bias was controlled by ensuring absentees in each intact class responded to the study and each subsample represented in the study.

Outcome Measures

The research questionnaire was used so that the researcher would have responses to a number and variety of statements and students' personal characteristics and program and university/college choice information

questions. The attitude rating scale employed was developed according to a procedure that ensured that the responses could be summed to produce a single score which represented the attitude of the first-year university and college students on overall, and each of the components of the secondary agriculture.

The research instrument was specifically developed for this study. The questionnaire was subdivided into two parts. Part I consisted of subscales A to F with a total of 41 items included representing the construct "attitude toward the secondary agriculture components." Part II was composed of three sections eliciting personal characteristics and career and university/college choice information items from the students.

The attitude rating scale was of a Likert-type with points one to eight. Each point of the rating scale was assigned a meaning:

1 = Very Strongly Disagree
2 = Strongly Disagree
3 = Disagree
4 = Slightly Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree
8 = Very Strongly Agree

A selected group of experts in agricultural education (Appendix B) checked the face and content

validity of the questionnaire. The group consisted of the three doctoral advisory committee of the researcher and who were also teacher educators in agriculture at The Ohio State University and 5 agricultural education teacher educators in the University of Swaziland.

The reliability of the research questionnaire was established through a pilot test conducted among a similar group of participants in Swaziland. Second year students in the Faculty/College of Agriculture were administered the questionnaire. Using a similar group, not in the research population, permitted no contamination of the target population. Internal consistency reliability coefficients were calculated using Cronbach's alpha. The coefficients for the subscales were found to be at the range of .50 to .75 and for the total scale was .90.

Data Collection

The research instrument was designed in a booklet fashion. A copy of the validated questionnaire was expressmailed by air to the Swaziland in-country data collector for reliability testing on November 28,1992. Pilot testing was administered on November 30, 1992. The academic adviser of the researcher brought back the completed questionnaires on December 23, 1992. A copy of the reliable questionnaire was expressmailed by air to Swaziland for actual data collection on January 4, 1993. The completed questionnaires from the colleges were brought

back by an agricultural education professor at the Virginia Polytechnic Institute and State University who was returning from the University of Swaziland to the United States after an official visit. The researcher received the questionnaires on March 1, 1993. Two other batches of questionnaires collected from the University of Swaziland students were express-airmailed through DHL courier carrier and received by the researcher on March 7 and 20.

One intact class in the Faculty of Humanities at the University of Swaziland which was included in the sample was not represented in this study. The University of Swaziland indefinitely closed at the time of collecting data from this group because of some unresolved problems between the entire student population and the University of Swaziland.

Data Analysis

Data generated by this study were analyzed using the Academic Computing Services of The Ohio State University. The SPSS PC+ statistical package in the Department of Agricultural Education was specifically utilized to input the data. When data input was completed, data were subsequently uploaded and analyzed using the Instructional and Research Computer Center at The Ohio State University.

The following were the objectives of the study, the level of measurements and the descriptive and inferential statistics used to analyze the data:

Objective	Level of Measurement	Statistics
1. Describe the *attitude* of the first-year college students toward the secondary agriculture components	Interval	Mean, S
2. Determine whether there was a significant difference between the *attitude* of the students;	Interval	
-by institution affiliation		one-way ANOVA
-by program pursued		t-test
-by department/faculty affiliation		one-way ANOVA
-by whether agriculture is/will be a course in university/college		t-test
3. Describe the characteristics of the first-year university/college students:		
(1) age,	Interval	f, %
(2) gender,	Nominal	f, %
(3) residential area,	Nominal	f, %
(4) fathers' occupation,	Ordinal	f, %
(5) fathers' education,	Interval	f, %
(6) number of hectares of land allocated by the chief of students' residential area,	Interval	f, %
(7) family earnings from selling agriculture produce,	Interval	f, %
(8) mothers' occupation,	Ordinal	f, %
(9) mothers' education,	Interval	f, %

Objective	Level of Measurement	Statistics
(10) number of years spent in dormitories,.....	Interval	f, %
(11) number of months of teaching/teaching-like experiences,.....	Interval	f, %
(12) whether students' hobbies included agriculture-related activity,.....	Nominal	f, %
(13) number of youth organizations joined before university/college,.....	Interval	f, %
(14) number of years studied agriculture prior to attending a university/college,.....	Interval	f, %
(15) number of months paid for employment,.....	Interval	f, %
(16) school level at which student decided to pursue present university/college,.....	Ordinal	f, %
(17) age at which student decided to pursue present university/college,.....	Interval	f, %
(18) number of times counseled regarding careers while in senior secondary school,.....	Interval	f, %
(19) whether recruited by someone in present university/ college, and;.....	Nominal	f, %

Objective	Level of Measurement	Statistics
(20) overall number grade.....	Interval	f, %
4. Determine the relationship between the *attitude* of..... students toward the components of secondary agriculture and each of the characteristics of first-year university/college students.	Interval	
(1) age,.....	Interval	r
(2) gender,.....	Nominal	r_{pb}
(3) residential area,.....	Nominal	r_{pb}
(4) fathers' occupation,.....	Ordinal	r^s
(5) fathers' education,.....	Interval	r
(6) number of hectares of land allocated by the chief of the residential area,.....	Interval	r
(7) family earnings from selling agriculture produce,....	Interval	r
(8) mothers' occupation,.....	Ordinal	r^s
(9) mothers' education,.....	Interval	r
(10) number of years spent in dormitories,.....	Interval	r
(11) number of months of teaching/teaching-like experience,.....	Interval	r
(12) whether students' hobbies included agriculture-related activity,.....	Nominal	r_{pb}

Objective	Level of Measurement	Statistics
(13) number of youth organizations joined before university/college,.....	Interval	r
(14) number of years studied agriculture prior to attending a university/college,.....	Interval	r
(15) number of months spent on a paid employment,.....	Interval	r
(16) grade level decided to pursue present university/college,.....	Ordinal	r^s
(17) age decided to pursue present university/ college,.....	Interval	r
(18) number of times counseled regarding careers while in senior secondary school,.....	Interval	r
(19) whether recruited by someone in the present university/college, and;.....	Nominal	r_{pb}
(20) overall number grade.....	Interval	r
5. Describe the:		
(1) level of importance of each of the reasons in pursuing the present program leading to a career, and;.....	Interval	Mean, S

Objective	Level of Measurement	Statistics
(2) the level of influence of each of the elements in making the decision to enroll in the present university/college.....	Interval	Mean, S
6. Identify the predictors from the characteristics of the first-year university/college students of *attitude* toward the components of.... secondary agriculture.	Interval	
Students' characteristics.....Specified previously		Multiple Regression
7. Identify those that have impact on *attitude* of the first-year..... university/college students toward the components of the secondary agriculture, from:	Interval	
(1) reasons for choosing the present program, and;.....	Interval	
(2) elements influencing the decision to enroll in the present university/ college.....	Interval	Factor Analysis to Multiple Regression

Chapter Summary

The study was of a descriptive-correlational type. A questionnaire was used to generate data for the study. The potential errors and their control in this study have been discussed under specific headings. The population discussion contained specific information on the population being studied and the sampling procedures employed in this study. The frame, selection, and non-response errors and their control were also addressed in the population section. Measurement error and its control in this study was discussed under outcome measures. The collection of data, and how the data generated were analyzed, were presented under collection of data and data analysis sections, respectively.

CHAPTER IV

FINDINGS

The first-year university and college students were expected to demonstrate a positive attitude toward the secondary agriculture components. If the students disclosed a negative attitude, efforts could be directed to improve the particular aspects with which the students were not favoring. Any improvement made in the secondary agriculture components could also help in attracting the future professionals from different backgrounds.

The purpose of this study was to describe and explain the attitude of the first-year university and college students in Swaziland. More specifically, this study sought to investigate the factors that contributed to students' attitude toward the secondary agriculture components in Swaziland. The objectives of the study were to:

1. Describe the attitude of the first-year college students toward the components of the secondary agriculture.
2. Determine whether there was a significant difference between the attitude of the students toward the secondary agriculture components by institution affiliation, by

program pursued, by department/faculty affiliation, and by whether agriculture was/will be a course.

3. Describe the characteristics of the first-year college students: (1) age, (2) gender, (3) place of residence, (4) fathers' occupation, (5) fathers' education, (6) hectares of land allocated by the chief to the students' family, (7) students' family earnings from agriculture produce, (8) mothers' occupation (9) mothers' education, (10) number of years spent in school dormitories, (11) number of months of teaching or teaching-like experiences, (12) whether students' hobbies included agriculture-related activities, (13) number of youth organizations joined before university/college, (14) number of years studied agriculture before university/college, (15) number of months of paid employment experiences, (16) school level at which students decided to pursue present university/college program, (17) age at which students decided to pursue present university/college program, (18) number of times counseled regarding careers while in senior secondary school, (19) whether specifically recruited by someone in the present university/college, and (20) overall number grade in "O" level examination.

4. Determine the relationship between the attitude toward the components of secondary agriculture and each of the previously identified characteristics of the first-year university/college students.

5. Describe the level of importance of each of the reasons in pursuing the present program leading to a career, and the level of influence of each of the elements in making the decision to enroll in present university/college.
6. Identify the predictors of attitude toward the components of secondary agriculture from the first-year university/college students characteristics.
7. Identify the:
(1) reasons for choosing the present program which have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture, and;
(2) elements influencing the decision to enroll in the present university/college, which have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture.

Descriptive-correlational research using a questionnaire was conducted. The sample frame for the study included 248 first-year university and college students in intact classes. The intact classes and students were identified through the registrars of each institution involved in the study. This method was employed to control frame error. The lists of intact classes and students were double-checked to make sure that no two classes and no two names were included in the sample. This controlled selection error. Four institutions were involved in the study: the University of

Swaziland; William Pitcher Teacher Training College; Manzini Nazarene Teacher Training College; and Ngwane Teacher Training College. The number of participating students were calculated through a stratified random sampling method, but using an intact class for each stratum. This sampling process was conducted to control sampling error. The sample size would produced 95% confidence with 5% margin of error. The breakdown of the sample can be found in Appendix A.

The questionnaire used in this study was developed by the researcher. The content and face validity of the questionnaire was checked by a group of teacher educators in the Department of Agricultural Education in the University of Swaziland. The doctoral dissertation committee for the researcher also checked the questionnaire's validity. The questionnaire was pilot tested using a class in the College of Agriculture in the University of Swaziland. Cronbach's alpha was used to measure the internal consistency reliability of the total scale (.90) and subscales (range from .50 to .75). The questionnaire used an eight-point rating scale to measure the attitude of the students toward the secondary agriculture components.

Personal information and factors that influenced students to decide on the program and institution to pursue were also compiled. To control for non-response error, every effort was made to ensure all students in the intact

classes completed the questionnaire. However, because of an internal conflict that arose during the data collection in the University of Swaziland, one intact class in one college (Faculty of Humanities) was not represented in the study. The data, therefore, were generalizable only to the 235 students who responded to the study.

The data were analyzed using measures of central tendency, variability, correlations, clustering and "goodness of fit." An a priori alpha level of .05 was used to test for significant differences among groups and for the level of significance of the independent variables in explaining the variance in the dependent variable.

The following values in the measurement scale have been assigned adjectives in order to interpret the results of the data analysis more meaningfully:

Values	Scale Meaning	Attitude Meaning
1.00 - 1.4	Very strongly disagree	Very highly negative
1.5 - 2.4	Strongly disagree	Highly negative
2.5 - 3.4	Disagree	Negative
3.5 - 4.4	Slightly disagree	Slightly negative
4.5 - 5.4	Slightly agree	Slightly positive
5.5 - 6.4	Agree	Positive
6.5 - 7.4	Strongly agree	Highly positive
7.5 - 8.00	Very strongly agree	Very highly positive

Attitude of First-Year University and College Students Toward the Secondary Agriculture Components

Observing the total means in Table 1, students strongly agreed with one statement that "(#5) teachers participate as well as other teachers in extra curricular activities." They also agreed with the remainder of the statements, except for two statements that "(#9) teachers are having difficulty in relating their teaching to students' home situations", in which students slightly disagreed, and "(#7) teachers are less creative in teaching", in which students disagreed. The overall total mean score demonstrates a positive attitude toward the secondary agriculture teachers by students in the four institutions.

Table 2 illustrates that the students agreed with two statements, that "(#10) students aspire more for a university/college education" and "(#11)...are aware of the opportunities in agriculture." Students slightly agreed with the statement that "(#12) students are good in science", but slightly disagreed with the statement that "(#13) students are generally intelligent." In total, students indicated a slightly positive overall mean attitude toward the secondary agriculture students.

The total scores in Table 3 indicated students agreed with all the statements except for "taking agriculture is too costly", with which the students slightly disagreed. In summary, the data illustrated a

Table 1. Attitude of the First-Year University/College Students Toward Agriculture Teachers in Secondary Schools By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NTT n=17	Total n=235
	Mean (n)/S				
1. The agriculture teachers believe in the economic importance of agriculture.	6.1(95) 1.8	6.5(69) 1.4	6.3(46) 1.6	6.1(16) 2.0	6.3(226) 1.6
2. Teachers of agriculture effectively communicate their subject matter.	5.8(94) 1.5	5.9(70) 1.4	6.0(47) 1.3	6.0(14) 1.8	5.9(225) 1.4
3. Teachers of agriculture dress as professionally as other teachers.	5.1(95) 2.1	5.9(69) 1.9	5.1(49) 2.4	5.6(16) 2.2	5.4(229) 2.1
4. Agriculture teachers are generally as respected as the other teachers in schools.	5.7(97) 1.8	6.6(70) 1.5	6.9(50) 1.6	6.6(16) 1.6	6.3(223) 1.7
5. The agriculture teachers participate as well as other teachers in extra curricular activities.	6.5(95) 1.5	6.9(69) 1.3	6.6(50) 1.5	6.8(16) 1.1	6.7(230) 1.4
6. Agriculture teachers are organize with their teaching.	6.0(96) 1.6	6.4(67) 1.2	6.6(50) 1.4	6.2(15) 1.7	6.3(228) 1.5
7. Agriculture teachers are less creative in teaching.	3.3(97) 2.0	3.1(70) 2.0	2.3(49) 1.8	2.4(15) 1.8	3.0(231) 2.0
8. Agriculture teachers are confident with their practical skills when teaching.	6.1(94) 1.6	6.5(68) 1.4	7.0(49) 1.4	6.5(16) 1.5	6.4(227) 1.5
9. Agriculture teachers are having difficulty in relating their teaching to students' home situations.	3.7(97) 2.0	3.6(70) 2.1	3.6(50) 2.1	4.1(16) 2.2	3.6(233) 2.1
OVERALL	5.3(97) .7	5.7(70) .7	5.6(50) .6	5.6(16) .5	5.5(233) .7

Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.

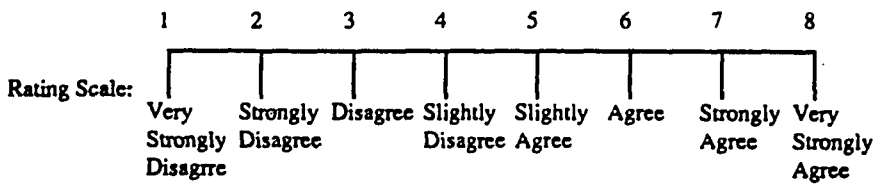


Table 2. Attitude of the First-Year University/College Students Toward Agriculture Students in Secondary Schools By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NAZ n=17	Total n=235
	Mean (n)/S				
10. Students taking agriculture in high school aspire more for a university/college education.	5.1(96) 2.0	5.8(69) 1.9	5.8(49) 2.1	5.8(16) 2.2	5.5(230) 2.0
11. Students taking agriculture as a subject are aware of the opportunities in agriculture.	5.8(97) 1.9	6.2(70) 1.6	6.6(50) 1.1	6.6(16) 1.5	6.1(227) 1.7
12. High school students taking agriculture are good in science.	4.7(96) 1.9	5.0(70) 2.0	4.6(48) 1.9	5.0(17) 1.9	4.8(231) 1.9
13. Students taking agriculture in high school are generally intelligent.	4.1(96) 1.7	4.6(68) 1.8	4.1(50) 2.0	4.3(16) 2.1	4.3(230) 1.8
OVERALL	4.9(97) 1.2	5.4(70) 1.3	5.3(50) 1.2	5.4(17) 1.3	5.2(234) 1.2

Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ= Nazarene Teacher Training College.

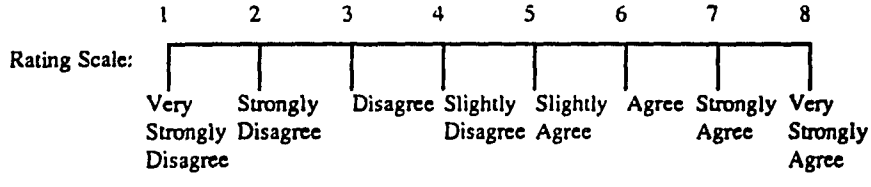
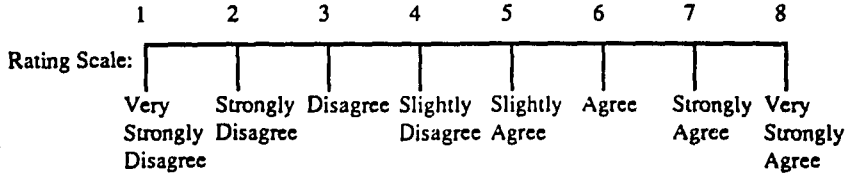


Table 3. Attitude of the First-Year University/College Students Toward Agriculture Program in Secondary Schools By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NAZ n=17	Total n=235
	Mean (n)/S				
14. The high school agriculture program provides a good foundation for a more advanced agricultural education.	6.3(97) 1.4	6.4(69) 1.2	6.8(50) 1.4	5.8(15) 2.2	6.4(231) 1.4
15. Agriculture demands more work than other subjects.	5.5(96) 1.9	5.3(70) 2.0	5.7(50) 2.2	6.4(15) 1.4	5.5(231) 2.0
16. Taking agriculture as a subject is too costly in terms of money in comparison with other subjects.	4.3(96) 2.1	4.7(68) 2.1	3.6(48) 2.3	4.2(17) 2.0	4.3(231) 2.1
17. The agriculture program in high school benefits the local community.	5.3(95) 1.8	5.7(70) 1.7	5.7(50) 1.7	5.5(17) 1.6	5.5(232) 1.8
18. A student in high school can do well in an agricultural-related occupation after having studied agriculture as a subject in the school.	5.7(96) 1.7	6.6(70) 1.2	5.8(49) 1.9	6.2(17) 1.4	6.0(232) 1.6
19. The changing technology in agriculture can be met by today's preparation of high school students in agriculture.	5.8(94) 1.8	5.7(68) 1.5	5.2(49) 2.0	4.6(16) 1.9	5.5(227) 1.8
20. Agriculture must be taught in all high schools.	6.4(96) 2.0	6.9(69) 1.2	7.1(50) 1.1	7.2(17) 1.3	6.4(232) 1.6
21. High school agriculture programs are fairly effectively preparing students for agribusiness occupations.	5.5(96) 1.7	5.8(70) 1.7	6.2(49) 1.5	5.7(17) 1.7	5.7(232) 1.7
22. "O" level agriculture exposes the students to careers in agriculture.	6.1(97) 1.5	6.6(70) 1.2	6.3(50) 1.7	6.2(17) 1.5	6.3(234) 1.5
OVERALL	5.6(97) .9	6.0(70) .8	5.8(50) .8	5.7(17) .8	5.8(233) .8

Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.



positive attitude toward the secondary agriculture program by students in the four institutions.

The first-year university and college students agreed with three statements in Table 4, that agriculture "(#24) develops students' competence in agricultural production", "(#25)...make the students aware of career opportunities" and "(#29)...helps students learn agribusiness skills." Students slightly agreed with the statement that "(#26) agriculture students conduct investigatory activities to develop better thinking skills". However, students slightly disagreed with two statements, that "(#23) agriculture develops the students' leadership abilities" and "(#27) agriculture ill-prepares the students for entry into vocational occupations." In total, a positive attitude toward the attainment of the secondary school agriculture objectives was indicated.

The total mean scores in Table 5 show that students agreed with two statements, that "(#31) students learn agricultural skills" and "(#32) agriculture introduces students to new technologies." Students, furthermore, slightly agreed with the statement that "(#33) a problem-solving approach is used in learning." Students slightly disagreed with the statement that "(#30) agriculture teachers use one method most of the time." The total picture depicted, is that, students in the four institutions held slightly positive attitude toward teaching methods used by secondary agriculture teachers.

Table 4. Attitude of the First-Year University/College Students Toward Agriculture Objectives in Secondary Schools By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NAZ n=17	Total n=235
	Mean (n)/S				
23. Agriculture in school s develop the students' leadership abilities needed for success in any job.	4.2(96) 1.9	4.3(71) 1.9	4.5(50) 2.0	4.1(17) 1.9	4.3(234) 1.9
24. Agriculture in schools develop a student's competence in agricultural production.	5.8(94) 1.4	6.0(70) 1.7	6.2(50) 1.5	5.8(16) 1.5	6.0(230) 1.5
25. Agriculture in schools make the students aware of career opportunities in agriculture.	6.1(95) 1.6	6.4(71) 1.5	6.8(50) 1.1	6.4(17) .9	6.3(233) 1.4
26. Agriculture students in high school conduct investigatory activities to enable them to develop better thinking skills.	5.1(93) 1.8	5.6(71) 1.8	5.3(47) 1.8	5.6(17) 1.6	5.3(228) 1.8
27. Agriculture in high school ill-prepares the student for entry into vocational occupations.	3.7(91) 2.1	3.6(70) 2.2	3.5(50) 2.2	3.9(17) 1.9	3.6(228) 2.1
28. Agricultural education provides skills for students who have difficulty pursuing college or university education.	5.3(93) 2.2	6.1(70) 2.0	5.5(50) 2.0	5.4(17) 2.1	5.6(230) 2.1
29. Agriculture helps students learn agribusiness skills.	6.1(95) 1.7	6.3(71) 1.5	6.4(50) 1.7	6.0(17) 1.7	6.3(233) 1.6
OVERALL	5.2(96) .8	5.5(71) 1.0	5.4(50) .9	5.3(17) .9	5.5(234) .9

Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.

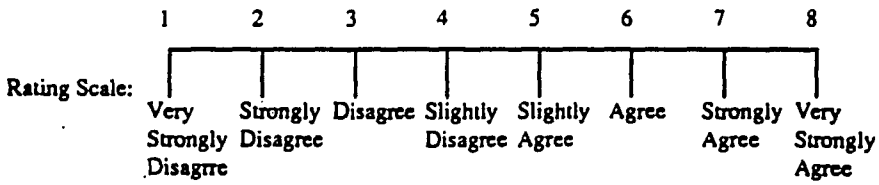
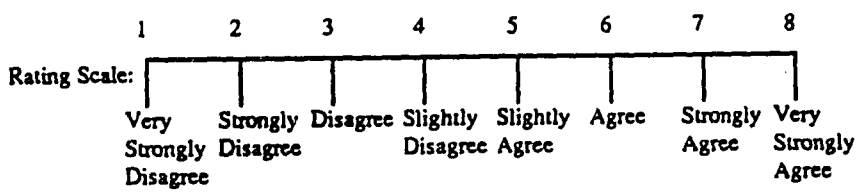


Table 5. Attitude of the First-Year University/College Students Toward Agriculture Teaching Methods in Secondary Schools By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NAZ n=17	Total n=235
	Mean (n)/S				
30. The agriculture teachers use one method most of the time when teaching.	4.0(95) .2.1	3.7(70) 2.1	2.7(49) 1.7	3.1(16) 1.7	3.6(230) 2.1
31. Students taking agriculture learn agricultural skills from teachers' practical ways of teaching.	5.3(93) 1.9	6.0(70) 1.5	6.1(50) 1.6	5.3(16) 1.5	5.7(229) 1.7
32. Agriculture introduces the students to new technologies used in commercial agricultural production.	5.8(95) 1.7	6.3(71) 1.1	6.6(50) 1.1	6.9(17) 1.1	6.1(233) 1.4
33. A problem-solving approach is used in learning to apply agriculture in the local setting.	5.0(92) 1.7	5.1(68) 1.5	4.7(48) 1.7	3.8(16) 1.5	4.9(224) 1.7
OVERALL	5.0(95) 1.1	5.3(71) 1.0	5.0(50) 1.0	4.6(17) .7	5.1(233) 1.0

Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.



Students agreed with all the statements in Table 6, except for the statement that "(#37) teaching materials are available in local community shops", with which the students slightly agreed. The overall total mean scores disclosed a positive attitude by students in the four institutions toward teaching materials used by secondary agriculture teachers .

Data in Table 7 gave a picture that students strongly agreed with the statement that "(#40) radio informs the public about the benefits of agriculture." Students also agreed that "(#38) people are pleased when they hear one studies agriculture" and slightly agreed with the statement that "(#41) TV positively portrays individuals who are in agricultural fields." The students, however, disagreed with the statement that "those not taking agriculture look down upon agricultural students." The overall total mean score indicates that students in the four institutions had slightly positive attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

Analysis of Variance of Students' Attitude Toward the Secondary Agriculture Components

The attitude of the first-year university and college students in the different institutions toward the

Table 6. Attitude of the First-Year University/College Students Toward Agriculture Teaching Materials in Secondary Schools By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NAZ n=17	Total n=235
	Mean (n)/S				
34. Agriculture department surroundings are kept clean.	5.2(94) 1.7	5.5(71) 1.6	6.2(50) 1.7	6.2(17) 1.1	6.3(232) 1.7
35. The tools/materials used in teaching agriculture are mostly effective in bringing about learning.	6.0(93) 1.7	6.2(71) 1.2	6.0(50) 1.6	5.5(16) 1.8	6.0(230) 1.5
36. The agriculture teachers encourage students to make use of things they can find in their environment in solving agricultural problems.	5.3(93) 1.7	5.8(70) 1.8	5.4(48) 2.0	4.7(17) 1.9	5.4(228) 1.8
37. The materials used in teaching agriculture are available in the local community shops.	4.9(94) 2.1	4.9(71) 1.8	5.0(50) 2.1	3.4(17) 1.9	4.8(232) 2.0
OVERALL	5.4(95) 1.1	5.6(71) 1.0	5.6(50) 1.2	4.9(17) 1.2	5.5(233) 1.1

Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.

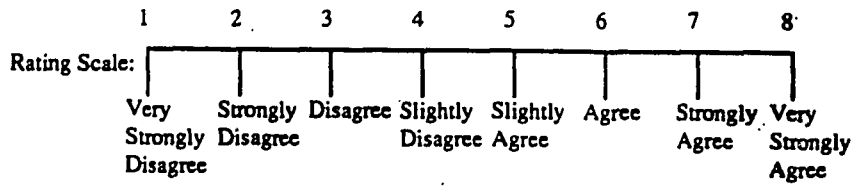
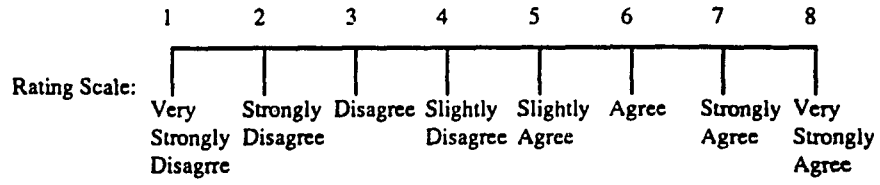


Table 7. Attitude of the First-Year University/College Students Toward People and Media Influencing the Perceptions About Agriculture-Related Activities By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NAZ n=17	Total n=235
	Mean (n)/S				
38. People are generally pleased when they hear one studies agriculture in school.	4.7(96) 1.9	5.5(71) 1.5	5.2(49) 1.9	5.1(17) 1.7	6.3(233) 1.8
39. Students not taking agriculture in the schools look down upon agricultural students.*	2.3(94) 1.0	2.7(70) 1.0	2.7(49) 1.1	2.7(17) 1.1	2.6(230) 1.0
40. The Swaziland radio informs the public about the benefits of today's agriculture.	6.2(94) 1.7	6.5(71) 1.5	7.1(50) 1.0	6.4(17) 1.0	6.5(232) 1.5
41. Swaziland TV positively portrays individuals who are in agricultural-related fields.	4.4(94) 2.0	5.0(71) 1.9	4.7(48) 2.1	4.4(17) 1.8	4.7(230) 2.0
OVERALL	4.4(96) 1.0	4.9(71) .9	5.0(50) .9	4.7(17) .6	4.7(234) .9

*Scale values were reversed for negatively stated item.

Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.



different components of the secondary agriculture program were examined. As can be observed in Table 8, students had significantly different attitude toward two components: (1) the teachers, and, (2) how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. Students did not have significantly different attitude toward the other components.

Post-hoc comparisons using the Tukey method were conducted after detecting significant differences with the attitude toward teachers, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. Table 9 shows there were two groups of students who had significantly different attitude toward the secondary agriculture teachers. William Pitcher college students had significantly more positive attitude toward the secondary agriculture teachers than did students at the University of Swaziland.

Table 10 showed that there were two pairs of students who held significantly different attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. William Pitcher College and Ngwane College students had significantly more positive attitude than did University of Swaziland students.

Table 8. Analysis of Variance of Attitude of First-Year University/College Students Toward the Secondary Agriculture Components By Institution Affiliation

Statement Rated	Institution U n=97	WP n=71	NGW n=50	NAZ n=17	Total n=235	F value
	Mean (n)/S					
1. Teachers	5.3(97) .7	5.7(70) .7	5.6(50) .6	5.6(16) .5	5.5(233) .7	3.2*
2. Students	4.9(97) 1.2	5.4(70) 1.3	5.3(50) 1.2	5.4(17) 1.3	5.2(234) 1.2	2.1
3. Program	5.6(97) .9	6.0(70) .8	5.8(50) .8	5.7(17) .8	5.8(233) .8	1.8
4. Objectives	5.2(96) .8	5.5(71) 1.0	5.4(50) .9	5.3(17) .9	5.5(234) .9	1.2
5. Teaching Methods	5.0(95) 1.1	5.3(71) 1.0	5.0(50) 1.0	4.6(17) .7	5.1(233) 1.0	2.1
6. Teaching Materials	5.4(95) 1.1	5.6(71) 1.0	5.6(50) 1.2	4.9(17) 1.2	5.5(233) 1.1	2.2
7. People and Media	4.4(96) 1.0	4.9(71) .9	5.0(50) .9	4.7(17) .6	4.7(234) .9	5.3*

*p<.05
Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.

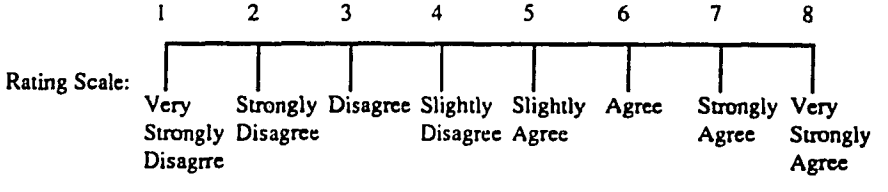


Table 9. Post-hoc Comparisons of Attitude of First-Year University/College Students Toward Agriculture Teachers in Secondary Schools By Institution Affiliation

	Institution			
	U	WP	NGW	NAZ
n	97	71	50	17
Mean	5.3	5.7a	5.6	5.6
S	.7	.7	.6	.5

Source	df	Sum of Squares	Mean Squares	F
Between	3	5.11	1.70	3.2*
Within	229	199.00	.51	
Total	232	204.11		

*p<.05
a = Group means underlined were found statistically different using Tukey method
Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.

Table 10. Post- Hoc Comparisons of Attitude of First-Year University/College Students Toward People and Media Influencing the Perceptions About Agriculture-Related Activities By Institution Affiliation

	Institution			
	U	WP	NGW	NAZ
n	97	71	50	17
Mean	4.4	4.9a	5.0 b	4.7
S	1.0	.9	.9	.6

Source	df	Sum of Squares	Mean Squares	F
Between	3	15.13	5.0	5.3*
Within	230	215.95	.93	
Total	233	231.08		

*p<.05
a and b = Groups that were found statistically different using Tukey method
Institution:
U = University of Swaziland, WP = William Pitcher Teacher Training College,
NGW = Ngwane Teacher Training College, NAZ = Nazarene Teacher Training College.

First-year diploma and the bachelors degree university and college students' attitude toward the different components of the secondary agriculture were further examined. Analysis of variance presented in Table 11 revealed no significant differences between the attitude of diploma and bachelors degree students toward the different components of the secondary agriculture profession. No further post-hoc comparisons were conducted, consequently.

Further analysis of attitude of the first-year students in the different departments of the university and colleges toward the components of the secondary agriculture were conducted. University students were grouped into six categories shown in Table 12. Students in the teacher training colleges were grouped with those in the education department in the university as they were also in the field of education. The data suggest students in the different departments held significantly different attitude toward two domains: (1) secondary agriculture teachers, and, (2) how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. There were no significant differences detected between the six groups of students with regards to their attitude toward the other five components: students, program, objectives, teaching methods and teaching materials.

Table 11. Analysis of Variance of Attitude of First-Year University/College Students Toward the Secondary Agriculture Components By Program Pursued

	Program			
	Diploma	Bachelor	Total	F value
	n=200	n=33	n=233	
Statement Rated		Mean (n)/S		
1. Teachers	5.6(198) .7	5.3(33) .7	5.5(231) .7	3.4
2. Students	5.6(198) .7	5.3(33) .7	5.5(231) .7	3.2
3. Program	5.8(199) .8	5.6(33) 1.0	5.8(232) .8	1.9
4. Objectives	5.2(78) .8	5.4(154) .9	5.3(232) .9	.10
5. Teaching Methods	5.1(199) 1.1	5.0(50) 1.0	5.1(231) 1.0	.30
6. Teaching Materials	5.4(199) 1.1	5.6(32) 1.1	5.5(231) 1.1	.69
7. People and Media	4.7(199) 1.8	4.5(33) .9	4.7(232) 1.1	.90

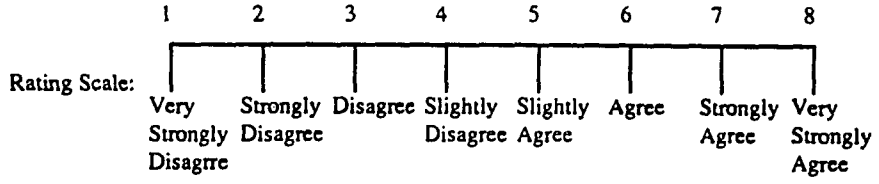
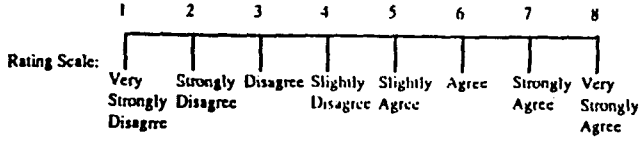


Table 12. Analysis of Variance of Attitude of First-Year University/College Students Toward Secondary Agriculture Components By Department Affiliation

Statement Rated	Department/Faculty Com n=37	Ag Ed n=29	Law n=5	Soc Sci n=7	Sci n=19	Edu n=138	Total n=23	F value
	Mean (n)/S							
1. Teachers	5.6(37) .6	5.1(29) .8	5.4(5) .8	5.2(7) .4	5.3(19) .8	5.6(136) .6	5.5(233) .7	3.6*
2. Students	5.0(36) 1.1	5.0(29) 1.1	4.9(5) 1.7	5.5(7) 1.6	4.5(19) 1.3	5.4(134 1.3	5.2(230) 1.3	2.0
3. Program	5.8(36) .7	5.4(29) .9	5.8(5) 1.3	5.6(7) .8	5.6(19) 1.1	5.9(134 .8	5.8(230) .8	1.6
4. Objectives	5.0(36) .7	5.3(29) 1.0	5.6(5) 1.3	5.5(7) .8	5.3(19) .8	5.4(134 .9	5.3(230) .9	1.4
5. Teaching Methods	5.3(37) 1.1	4.8(28) 1.3	4.9(5) .7	4.6(7) 1.4	5.1(18) 1.0	5.1(138) 1.0	5.1(233) 1.0	.87
6. Teaching Materials	5.3(37) 1.1	5.1(28) 1.2	5.5(5) 1.5	5.7(7) 1.2	5.6(18) 1.0	5.5(138) 1.1	5.5(233) 1.1	.94
7. People and Media	4.4(37) .9	4.4(28) 1.1	3.8(5) 1.3	4.9(7) 1.3	4.5(19) .9	4.9(138) .8	4.7(234) .9	3.7*

*p<.05

Department/Faculty:
Com = Commerce, Ag Ed = Agricultural Education, Law = Law,
Soc Sci = Social Science, Sci = Science, Edu = Education



Tukey Post-hoc analysis in Table 13 revealed that education students held significantly more positive attitude toward secondary agriculture teachers than did students in the agricultural education department. Table 14 shows that education students had significantly more positive attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

Table 15 presents the attitude of students not studying and those studying agriculture as a course in the university or college toward the different components of the secondary agriculture. Analysis of variance reveals there were significantly different attitude toward two domains: (1) secondary agriculture students, and, (2) how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. There were no significant differences detected with the attitude of the students in the two groups toward the other five components. Post-hoc analysis in Table 16 suggest those who were or will be studying agriculture as a course in the university or college held significantly more positive attitude toward secondary agriculture students than did those not or will not be studying agriculture. Table 17 contains information on post-hoc analysis of data on the attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

Table 13. Post-hoc Comparisons of Attitude of First-Year University/College Students Toward Agriculture Teachers in Secondary Schools By Department Affiliation

	Department/Faculty					
	Com	Ag Ed	Law	Soc Sci	Sci	Edu
n	37	29	5	7	19	138
Mean	5.6	5.1	5.4	5.2	5.3	5.6a
S	.6	.8	.8	.4	.8	.6

Source	df	Sum of Squares	Mean Squares	F
Between	5	9.27	1.85	3.6*
Within	227	114.85	.50	
Total	232	124.12		

*p<.05
a = Groups that were found statistically significant using Tukey method
Department/Faculty:
Com = Commerce, Ag Ed = Agricultural Education, Law = Law,
Soc Sci = Social Science, Sci = Science, Edu = Education

Table 14. Post -hoc Comparisons of Attitude of First-Year University/College Students Toward How People Viewed Students in Agriculture and How Media Portrayed Agriculture and Individuals in Agriculture-related Fields By Department/Faculty Affiliation

	Department/Faculty					
	Com	Ag Ed	Law	Soc Sci	Sci	Edu
n	37	29	5	7	19	138
Mean	4.4	4.4	3.8	4.9	4.5	4.9a
S	.9	1.1	1.3	1.3	.9	.8

Source	df	Sum of Squares	Mean Squares	F
Between	5	17.65	3.51	3.7*
Within	228	213.52	.93	
Total	233	231.17		

*p<.05
a = Groups that were found statistically significant using Tukey method
Department/Faculty:
Com = Commerce, Ag Ed = Agricultural Education, Law = Law,
Soc Sci = Social Science, Sci = Science, Edu = Education

Table 15. Analysis of Variance of Attitude of First-Year University/College Students Toward the Secondary Agriculture Components By Whether Agriculture Was/Will Be a Subject or a Course of Study

	Agriculture Is/Will Be a Course?			
	No n=78	Yes n=155	Total n=233	F value
Statement Rated		Mean (n)/S		
1. Teachers	5.5(78) .7	5.5(153) .7	5.5(231) .7	.44
2. Students	4.9(78) 1.2	5.3(154) 1.2	5.2(232) 1.2	3.82*
3. Program	5.7(97) .8	5.8(50) .8	5.8(233) .8	.14
4. Objectives	5.2(78) .8	5.4(154) .9	5.3(232) .9	1.90
5. Teaching Methods	5.1(77) 1.0	5.1(154) 1.0	5.1(231) 1.0	.27
6. Teaching Materials	5.5(77) 1.1	5.4(154) 1.1	5.5(231) 1.1	.04
7. People and Media	4.5(78) .9	4.8(154) .9	4.7(232) .9	7.40*

*p<.05

Table 16. Post-hoc Comparisons of Attitude of First-Year University/College Students Toward Agriculture Students in Secondary Schools By Whether Agriculture Was/Will Be a Subject or a Course of Study

	Whether Agriculture Was/Will Be A Course?	
	No	Yes
n	78	155
Mean	4.9	5.3
S	1.2	1.2

Source	df	Sum of Squares	Mean Squares	F
Between	1	6.28	6.28	3.82*
Within	230	377.80	1.64	
Total	231	384.08		

*p<.05

Table 17. Post-hoc Comparisons of Attitude of First-Year University/College Students Toward How People Viewed Students in Agriculture and How Media Portrayed Agriculture and Individuals in Agriculture-related Fields By Whether Agriculture Was/Will Be a Subject or a Course of Study

	Whether Agriculture Is Will Be A Course?	
	No	Yes
n	78	155
Mean	4.5	4.8
S	.9	.9

Source	df	Sum of Squares	Mean Squares	F
Between	1	7.13	7.13	7.4*
Within	230	221.45	.96	
Total	231	228.58		

*p<.05

Results showed those who were or will be studying agriculture as a course in the university or college had significantly more positive attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, than did those who were not or will not be studying agriculture.

Characteristics of First-Year University and College Students

Table 18 contains the summary of characteristics in frequencies and percentages of the students for this study. Almost one-half of the students (49%) fell into the age range of 17 to 20 years. Thirty-five percent fell into the range of 21 to 24 years of age, while 10% fell into the range of 25 but less than 35 years. Six percent did not indicate their age. There was almost an equal split of the students in terms of gender (52% females and 48% males). Nearly three-fourth of the students (69%) resided in a rural area , while more than one-fourth (27%) resided in an urban area.

Thirty-six percent of students' fathers were either retired, unemployed or deceased. Twenty-four percent of the students' fathers are self-employed or were "white-collar" workers while 16% of the fathers had a "blue-collar" job. More than one-fifth (22%) of the students' fathers had no education at all. Nineteen percent of the

Table 18. Characteristics of First-Year University/College Students (n=235)

	f	%
1. Age in years		
17-20	116	49
21-24	82	35
25-28	16	7
29-32	4	2
Over 33 but less than 35	2	1
Missing data	15	6
2. Gender		
Female	121	52
Male	114	48
3. Home area		
Rural	161	69
Urban	63	27
Missing data	11	4
4. Fathers' occupation		
Unemployed, retired, deceased, etc.	84	36
Self-employed	57	24
Paid "blue collar"	37	16
Paid "white collar"	57	24
5. Fathers' education in years		
0	51	22
1-7 (Primary)	44	19
8-10 (Junior Secondary)	44	19
11-12 (Senior Secondary)	32	14
13-14 (Associate Degree)	10	4
15-17 (First Degree)	14	6
18 and above (Graduate Degree)	4	1
Missing data	36	15
6. Hectares of land allocated by the chief to the family		
1	24	10
2	34	15
3	25	11
4	18	8
5	14	6
Missing data	120	50

Table 18 (cont'd)

	f	%
7. Family earnings from agriculture produce in Emalangeni (E2.8=$1)		
0-199	156	67
200-399	14	6
400-599	9	4
600-799	3	1
800-999	3	1
1000-1199	12	5
1200-1399	0	0
1400-1599	2	1
1600-1799	0	0
1800-1999	0	0
more than 2000 but less than 2500	2	1
Missing data	33	14
8. Mothers' occupation		
Unemployed, retired, deceased, etc.	96	41
Self-employed	50	21
Paid "blue collar"	22	9
Paid "white collar"	56	24
Missing data	11	5
9. Mothers' education in years		
0	48	20
1-7 (Primary)	56	24
8-10 (Junior Secondary)	49	20
11-12 (Senior Secondary)	33	14
13-14 (Associate Degree)	7	3
15-17 (First Degree)	15	6
18 and above (Graduate Degree)	2	1
Missing data	25	11
10. Number of years spent in dormitories from primary to high school		
0	148	63
1-2	35	15
3-4	10	4
5-6	27	12
7-8	1	0
9-10	1	0
11-12	7	3
Missing data	5	2

Table 18 (cont'd)

	f	%
11. Number of months of teaching or teaching-like experiences		
0	155	66
1-5	14	6
6-10	8	3
11-15	23	10
16-20	5	2
21-25	8	3
26-30	0	0
31-35	0	0
36-40	4	2
41-45	0	0
46-50	0	0
51-55	0	0
56-60	3	1
Above 60 but less than 145	6	3
Missing data	9	4
12. Whether students' hobbies included agriculture-related activities		
No	103	44
Yes	127	54
Missing data	5	2
13. Number of youth organizations joined before university/college		
0	121	52
1	68	29
2	23	10
3	8	3
4	5	2
Missing data	10	4
14. Number of years studied agriculture prior to university/college		
0	0	18
1-2	25	11
3-4	80	34
5-6	54	23
7	22	9
Missing data	10	4

Table 18 (cont'd)

	f	%
15. Number of months students were paid for employment		
0	80	34
1-5	41	17
6-10	36	15
11-15	34	14
16-20	5	2
21-25	15	7
26-30	0	0
31-35	1	0
36-40	8	3
41-45	0	0
46-50	0	0
51-55	0	0
56-60	1	0
Above 60 but less than 108	5	2
Missing data	9	4
16. Level in school at which students decided to attend present university/college		
Primary	15	6
Junior Secondary	42	18
Senior Secondary	98	42
Just before college	66	28
Missing data	14	6
17. Age in years at which students decided to attend present university/college		
10-15	40	17
16-20	139	59
21-25	29	12
Above 25 but less than 38	7	3
Missing data	20	9
18. Number of times students were counseled regarding careers while in senior high school		
0	77	33
1-2	101	43
3-4	17	7
5-6	5	2
Missing data	35	15

Table 18 (cont'd)

	f	%
19. Whether students were specifically recruited by someone in the present institution attended		
No	197	84
Yes	30	13
Missing data	8	3
20. Students' overall number grade in "O" Level Examination		
1 - 9 (A)	0	0
10 - 18 (B)	22	9
19 - 27 (C)	77	33
28 - 36 (D)	75	32
37 - 45 (E)	15	6
Missing Data	46	20

fathers had a primary education, while this percentage is also true for fathers who had junior secondary education. Fourteen percent of the fathers had a senior secondary schooling. Only 11% had a post secondary schooling. Fifteen percent of the students did not indicate the level of schooling their fathers have attained.

Students had 1 (10%), 2 (15%) or 3 (11%) hectares of land allocated by the chief to their families. Fourteen percent indicated their families had been allocated 4 or 5 hectares of land by the chief of their area. An amazing 50% could not provide how many hectares of land their families were allocated.

Almost two-thirds (67%) of the students indicated their families earn 0 to 199 emalangeni (E2.8 = $1) from selling agriculture produce in a month. Eighteen percent of the students indicated their families earn more than E200 but less than E1,599 emalangeni. A minority of students (1%) indicated their families earn more than E2,000 but less than E2,500 emalangeni from selling agriculture produce in a month. Fourteen percent could not provide how much their families earn from selling agriculture produce.

Forty-one percent of the students' mothers were either retired, unemployed or deceased. More than one-fifth (21%) indicated their mothers were self-employed. Nine percent had mothers who did "blue collar" jobs and 24% had mothers who had "white-collar" jobs, while 5% of the

students did not indicate their mothers' occupation. One-fifth (20%) of the students indicated their mothers did not have any formal education, while almost one-fourth (24%) indicated their mothers had primary education. Twenty percent indicated their mothers had junior schooling and 14% indicated their mothers had senior secondary schooling. Only 10% reported their mothers had post secondary schooling. More than one-tenth (11%) of the respondents could not provide the level of school their mothers had.

The majority of the students (63%) indicated not having lived in school dormitories from primary to high school. Fifteen percent have experienced 1 to 2 years of living in school dormitories. Four percent have experienced for 3 to 4 years, while 12% spent 5 to 6 years living in dormitories.

The majority of the students (63%) had no teaching or teaching-like experiences. Nine percent indicated having had 1 to 10 months of teaching or teaching-like experiences. Ten percent indicated having had 11 to 15 months of teaching or teaching-like experiences, while 11% indicated they had 16 but less than 145 months of teaching or teaching-like experiences. Four percent did not indicate their number of teaching or teaching-like experiences.

More than one-half of the students (54%) reported their hobbies included some agriculture-related activities. Less than one-half (44%) stated they did not have

agriculture as one of their hobbies. Two percent did not indicate whether agriculture-related activity was one of their hobbies.

The number of youth organizations joined before attending college were also provided by the students. More than one-half (52%) did not join any organization before attending college. Twenty-nine percent reported having joined 1 organization and 10% joined 2 organizations. Five percent have joined 3 organizations before college. Four percent did not provide data on how many organizations they have joined before college.

The number of years agriculture was studied by the students have also been requested. Eighteen percent indicated not having studied agriculture as a subject at all, while 11% indicated having 1 to 2 years of agriculture before college. Thirty-four percent have taken agriculture for 3 to 4 years, while 23% indicated having studied agriculture for 5 to 6 years before college. Almost one-tenth (9%) had studied agriculture the entire pre-college school life. Four percent did not provide data on how many years they have studied agriculture as a subject before college.

The number of months the students have been employed with pay were asked. Thirty-four percent indicated not having had any paid employment. Seventeen percent have indicated 1 to 5 months of paid employment. Fifteen percent indicated 6 to 10 months of paid employment.

Fourteen percent indicated 11 to 15 months of paid employment. Nine percent have provided 16 to 25 months of paid employment. Six percent indicated having had more than 31 but less than 108 months of having been paid employed.

Students were asked the level in school at which they decided to attend their present institution. Most of them (42%), decided when they were at senior secondary level, followed by those who decided just before college (28%), and lastly, by students who decided at junior secondary (18%). Six percent indicated they decided while they were in primary school, while another 6% did not provide data.

The age at which the students decided to attend their present institution was also asked. The majority of the students (59%) decided at the age range of 16 to 20 years old. Seventeen percent decided while they were 10 to 15 years old, and 12% decided when they were 21-25 years of age. Three percent decided at the age range of 25 but less than 38 years old. Nine percent did not provide the age at which they have decided to attend their present institution.

Students were asked the number of times they received counseling regarding careers while in senior high school. More than one-third (33%) had no counseling experience regarding careers while in senior high school. The majority (43%) had been counseled 1 to 2 times

regarding careers while in senior high school. Seven percent indicated they had been counseled 3 to 4 times regarding careers while in senior secondary school. Two percent of the students reported having been counseled 5 to 6 times regarding careers while in senior secondary school. Fifteen percent did not indicate the number of times they had been counseled.

The indication of whether students were specifically recruited by someone in their present institution had also been tabulated. Most (84%) reported not having been recruited by anyone in the institution they are currently attending. Thirteen percent stated having been recruited by someone in the institution which they are attending now. Three percent did not indicate whether they have or have not been recruited by someone in their present institution.

The majority (65%) of the students' overall grades fell in the range of 19 to 36 (C to D). Only 9% of the students obtained a grade in the range of 10 to 18 (B), while only 6% were in the range of 37 to 45 (E). Twenty percent did not provide the overall grade they have obtained in "O" level examinations.

Correlations Among the Characteristics of the First-Year University/College Students and Components of the Secondary Agriculture

In describing the associations among the characteristics and the components of the secondary

agriculture, the magnitude of the coefficient and their descriptive conventions by Davis (1971) were used:

Coefficient Ranges	Description
.70 or higher	Very strong association
.50 to .69	Substantial association
.30 to .49	Moderate association
.10 to .29	Low association
.01 to .09	Negligible association

Table 19 presents the correlation coefficients among the characteristics of the students and the components of the secondary agriculture. With regards to the relationships that exist among the characteristics and the first component, teacher, only the grade level at which students decided to pursue their present college had positive, low association (.10) with attitude toward secondary agriculture teachers. With the relationships that exist between the second component, student, and each of the characteristics, three characteristics were found to have had positive, low associations. These were number of youth organizations joined before college (.11), number of years students took agriculture before college (.10), and grade level at which students decided to pursue present college (.11).

With regards to relationships that exist among the characteristics and the third component, secondary

Table 19. Correlations Among Characteristics of First-Year University/College Students and Attitude Toward Secondary Agriculture Components

Characteristics	Attitude Toward T	S	P	O	TMe	TMa	PM
1. Age*	-.02	-.09	-.10	-.09	.01	-.14	-.01
2. Gender+	-.05	-.08	-.13	-.16	-.02	-.13	-.21
3. Residence+	-.02	-.07	-.02	-.03	.18	.13	-.10
4. Father's occupation++	.04	.06	.01	.01	.06	.05	.05
5. Father's education*	.08	-.02	.03	.04	.04	.09	-.09
6. Hectares of land allocated by the chief of home area*	.01	-.01	.12	.02	.04	-.02	.11
7. Family earnings from selling agriculture produce*	-.05	-.02	.14	.14	-.12	.09	.04
8. Mother's occupation++	.03	.02	.10	.21	.09	.20	-.01
9. Mother's education*	-.04	-.03	.05	.14	.05	.14	-.09
10. Number of years lived in dormitories*	.02	-.02	.01	.01	.05	-.04	.05
11.Number of months of teaching/teaching-like experience*	-.05	.04	-.04	.06	.08	.11	-.01
12. Hobbies including agriculture-related activities+	.01	.08	.02	.13	-.01	.14	-.02
13. Number of youth organizations joined before college*	.08	.11	-.06	.05	.15	.09	.11
14. Number of years took agriculture before college*	.01	.10	.03	.11	-.06	.03	.02
15. Number of months paid for employment*	-.09.	.01	-.13	-.02	.06	.05	.04
16. Grade level at which students decided to pursue present college++	.10	.11	.01	.05	.03	.05	.06

Table 19 (cont'd)

Characteristics	Attitude Toward T	S	P	O	TMe	TMa	PM
17. Age at which students decided to pursue present college*	.02	.03	-.05	-.03	.03	.01	.03
18. No. of times counseled regarding careers in high school*	.03	.06	.08	.11	.08	.12	.05
19. Whether recruited by someone in the present college+	.06	.09	-.05	-.10	.14	.02	.01
20. Overall number grade*	-.06	.01	-.01	-.01	.10	.01	.12

T = Teachers, S = Students, P=Program, O = Objectives, TMe = Teaching Methods, TMa = Teaching Materials, PM = People and Media
* = Pearson Correlation
+ = Point Biserial Correlation
++ = Spearman rank

agriculture program, two characteristics had positive, low and three characteristics had negative, low associations with the component. The characteristics found related with attitude toward program were age (-.10), gender (-.13), families earnings from selling agriculture produce (.14), mothers' occupation (.10) and number of months paid for employment (.13). With the relationships that existed among the characteristics and the attitude toward the secondary agriculture objectives, there were six characteristics that had positive, low associations with the attitude toward objectives, while there were two characteristics that had negative, low associations with attitude toward objectives. The six characteristics that had positively, low associations with the attitude toward objectives were families earnings from selling agriculture produce (.14), mothers' occupation (.21), mother's education (.14), hobbies including agriculture-related activities (.13), number of years students took agriculture before college (.11), and, number of times counseled regarding careers while in senior secondary school (.08). The two characteristics that had negative, low associations with the attitude toward objectives were gender (-.16) and whether recruited by someone in the present college (-.10).

The correlations among the attitude toward the fifth component, teaching methods and the characteristics were also identified. Four characteristics had positive, low associations with attitude toward teaching methods. The

four characteristics and their coefficients were: residence (.18), number of youth organizations joined before college (.15), whether recruited by someone in the present college (.14) and overall number grade (.10). One characteristic had low, negative association (-.12) with attitude toward teaching methods (family earnings from selling agriculture produce).

The attitude toward the teaching materials used by secondary agriculture teachers and its relationship with the characteristics of the students were investigated. There were six characteristics found to have a positive, low associations with the attitude toward the teaching materials used by secondary agriculture teachers. The six characteristics and their respective coefficients were: residence (.13), mothers' occupation (.20), mothers' education (.14), number of months of teaching or teaching-like experiences (.11), hobbies including agriculture related activities (.14), and number of times counseled regarding careers while in senior secondary school (.12). Two characteristics had negative, low associations with attitude toward the teaching materials used by secondary agriculture teachers. The two characteristics and their corresponding coefficients were: age (-.14) and gender (-.13).

The attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, were

investigated in terms of its relationship with the characteristics of the students. Three characteristics were found to have had positive, low associations with the attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. The three characteristics and their respective coefficients were: hectares of land allocated by the chief of the area (.11), number of youth organizations joined before college (.11), and overall number grade (.12). Two characteristics were found to have negative, low associations with attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields: gender (-.21), and residence (-.10).

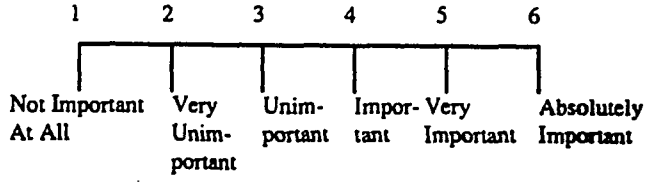
Level of Importance of Reasons in Deciding to Pursue a Program of Study and Level of Influence of Elements in Deciding to Attend the Present Institution

Table 20 illustrates the level of importance of each of the reasons in deciding to pursue the present program. Students rated three reasons (prospect for promotion, other benefits involved and prestige associated with a job) out of twelve items important ,and the remainder of the items very important. The five most important reasons students indicated for pursuing their program were: opportunities for further training, prospect for employment, high income

Table 20. Level of Importance of Each of the Reasons in Pursuing Students' Present Program

Reasons	Mean	S	n
Very Important			
1. Opportunities for further training	5.19	1.03	220
2. Prospect for employment	4.97	1.05	222
3. High income	4.88	1.17	221
4. Working conditions	4.88	1.10	224
5. Service to humanity	4.87	1.05	224
6. Creativity involved in the job	4.86	.98	221
7. Respect for someone in the same career	4.80	1.41	216
8. Right personality for the job	4.75	1.22	220
9. Challenge with the job	4.66	1.11	221
Important			
10. Other benefits involved	4.48	1.31	218
11. Prospect for promotion	4.22	1.55	218
12. Prestige associated with the job	4.07	1.39	219

Rating Scale:



and good pleasant conditions (rated the same), service to humanity, and creativity involved in the job.

In Table 21, the level of influence of each of the elements in deciding to enroll in the present college was indicated. Students rated one-half (11 items) of the items uninfluential while another half influential. The most influential elements students provided for attending their present college were: subjects taken in high school, grades in high school, advice by a professional in the desired field, advice by a career guidance counselor, and the reputation of the target department.

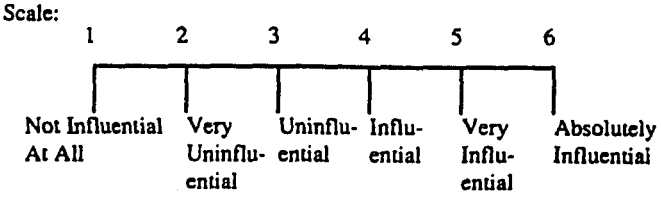
Regression Analysis of Attitude Toward the Secondary Agriculture Components with Characteristics of Students

Intercorrelational analysis among the independent variables characteristics were also conducted. The outcomes might have usefulness in explaining the results of the proceeding multiple regression analysis of the attitude toward the different components of the secondary agriculture with the characteristics of students. Warmbrod (1992) warns that correlations of .80 and above might be an indication of a high degree of multicollinearity. High degrees of multicollinearity demand grouping to narrow down the number of related independent variables or even dropping the unimportant variables before multiple regression analysis could be conducted.

Table 21. Level of Influence of Each of the Elements in Pursuing Students' Present College/University

Elements	Mean	S	n
Very Influential			
1. Subjects taken in high school	4.53	1.37	222
Influential			
2. Grades in high school	4.43	1.53	220
3. Advice by a professional in the desired field	4.12	1.64	219
4. Advice by a career guidance counselor	4.11	1.57	223
5. Reputation of the target department	3.90	1.45	215
6. Reading information about the college	3.76	1.51	222
7. Parent(s) wish or advice	3.71	1.77	221
8. Reputation of the faculty/college	3.70	1.50	210
9. Advice by students in the program	3.70	1.50	223
10. Hearing announcement about the college	3.66	1.62	219
11. Advice by college teacher	3.51	1.66	220
Uninfluential			
12. Library facilities	3.49	1.80	217
13. Advice by an agriculture teacher	3.47	1.75	219
14. Advice by college administrator	3.46	1.65	217
15. Advice by relative(s) other than parent	3.39	1.56	224
16. Advice by close friends	3.39	1.47	219
17. Access to religious activities	3.24	1.63	222
18. Advice by non-agriculture teacher	3.18	1.58	219
19. Appearance of the campus	2.82	1.69	225
20. Sports facilities	2.81	1.61	225
21. Campus is next to town	2.60	1.54	219
Very Uninfluential			
22. Campus is next to home	2.44	1.52	222

Rating Scale:



As can be observed in Table 22, no two characteristics reached collinearity of .80 and above. There was one intercorrelation that was high (.73) but did not reach .80. This was the correlation between students' mothers' education and fathers' education of (X9 and X5; X5 and X9). Therefore, all independent variables were entered into the proceeding multiple regression analysis.

The attitude that were explained by specific characteristics were only toward the secondary agriculture components: students, objectives, teaching methods, teaching materials, and how people viewed students in agriculture, and how media portrayed agriculture and individuals in agriculture-related fields. The attitude that could not be explained by the characteristics of students were toward the components: teachers, and program.

Table 23 shows the multiple regression analysis results of attitude toward secondary agriculture students with characteristics using the step-wise method. Two characteristics were found to be significantly explaining variance in the attitude toward secondary agriculture students. These were grade level at which students decided to pursue present college and fathers' occupation. The cumulative magnitude of the regression of attitude toward secondary agriculture students on the two characteristics was found to be 21%. The unique correlation for grade level at which students decided to pursue present college

Table 22. Intercorrelations Among Characteristics of First-Year University/College Students

Characteristics	Characteristics 1	2	3	4	5	6	7
1. Age		.03	-.25	-.21	-.20	.27	-.07
2. Gender	.03		.04	-.01	-.05	.12	-.03
3. Residence	-.25	.04		.30	.40	-.12	-.04
4. Father's Occupation	-.21	-.01	.30		.34	.01	-.01
5. Father's Education	-.20	-.05	.40	.34		-.08	.13
6. Hectares of Land allocated by the chief of home area	.27	.12	-.12	.01	-.08		.25
7. Family earnings from selling agriculture produce	-.07	-.03	-.04	-.01	.13	.25	
8. Mother's occupation	-.23	-.01	.30	.28	.43	-.27	.13
9. Mother's education	-.29	-.04	.46	.28	.73	-.12	.18
10. Number of years lived in dormitories	.01	-.05	.02	.01	.11	.01	.12
11.Number of months of teaching/teaching-like experience	.32	-.08	-.04	-.07	.02	.11	-.02
12. Hobbies including agriculture-related activities	.06	.05	-.18	-.06	-.13	.03	.01
13. Number of youth organizations joined before college	-.06	-.15	.06	.03	.24	-.01	.01
14. Number of years took agriculture before college	-.16	.09	.06	.01	.05	.01	.10
15. Number of months paid for employment	.36	-.07	-.11	-.08	-.05	.05	-.07
16. Grade level at which students decided to pursue present college	-.01	-.09	.09	-.05	.01	.14	-.09

Table 22 (cont'd)

Characteristics	Characteristics 1	2	3	4	5	6	7
17. Age at which students decided to pursue present college	.40	.01	-.09	-.12	-.30	.32	-.08
18. No. of times counseled regarding careers in high school	-.19	-.01	.25	.19	.25	-.01	-.02
19. Whether recruited by someone in the present college	-.01	.01	.17	.02	.17	-.02	-.11
20. Overall number grade	.18	-.10	-.09	.01	-.14	.03	-.16

Table 22 (cont'd)

Characteristics	Characteristics 8	9	10	11	12	13	14
1. Age	-.23	-.29	.01	.32	.06	-.06	-.16
2. Gender	-.01	-.04	-.05	-.08	.05	-.15	.09
3. Residence+	.30	.46	.02	-.04	-.18	.08	.06
4. Father's Occupation	.28	.28	.01	-.07	-.06	.03	.01
5. Father's Education	.43	.73	.11	.02	-.13	.24	.05
6. Hectares of Land allocated by the chief of home area	-.27	-.12	.01	.11	.03	-.01	.01
7. Family earnings from selling agriculture produce	.13	.18	.12	-.02	.01	.01	.10
8. Mother's occupation		.58	.11	-.09	-.09	.11	.02
9. Mother's education	.58		.14	-.06	-.12	.23	.14
10. Number of years lived in dormitories	.11	.14		.07	-.02	.08	-.07
11.Number of months of teaching/teaching-like experience	-.09	-.06	.07		.13	-.01	-.13
12. Hobbies including agriculture-related activities	-.09	-.12	-.02	.13		.01	.10
13. Number of youth organizations joined before college	.11	.23	.08	-.01	.01		.17
14. Number of years took agriculture before college	.02	.14	-.07	-.13	.10	.17	
15. Number of months paid for employment	-.17	-.07	-.02	.60	.09	.01	-.10
16. Grade level at which students decided to pursue present college	-.01	.03	.01	.02	-.16	-.01	.02

Table 22 (cont'd)

Characteristics	Characteristics 8	9	10	11	12	13	14
17. Age at which students decided to pursue present college	-.15	-.15	-.04	.07	.09	-.11	-.06
18. No. of times counseled regarding careers in high school	.14	.23	-.07	-.09	-.08	.14	-.01
19. Whether recruited by someone in the present college+	.08	.06	.02	-.01	.01	.19	.06
20. Overall number grade	-.05	-.14	-.05	-.01	.02	-.15	-.03

Table 22 (cont'd)

Characteristics	Characteristics 15	16	17	18	19	20
1. Age	.36	-.01	.40	-.19	-.01	.18
2. Gender	-.07	-.09	.01	-.01	.01	-.10
3. Residence	-.11	.09	-.09	.25	.17	-.09
4. Father's Occupation	-.08	-.05	-.12	.19	.02	.01
5. Father's Education	-.05	.01	-.30	.25	.17	-.14
6. Hectares of Land allocated by the chief of home area	.05	.14	.32	-.01	-.02	.03
7. Family earnings from selling agriculture produce	-.07	-.09	-.08	-.02	-.11	-.16
8. Mother's occupation	-.17	-.01	-.15	.14	.08	-.05
9. Mother's education	-.07	.03	-.25	.23	.06	-.14
10. Number of years lived in dormitories	-.02	.01	-.04	-.07	.02	-.05
11.Number of months of teaching/teaching-like experience	.60	.02	.07	-.09	-.01	-.01
12. Hobbies including agriculture-related activities	.09	-.16	.09	-.08	.01	.02
13. Number of youth organizations joined before college	.01	-.01	-.11	.14	.19	-.15
14. Number of years took agriculture before college	-.10	.02	-.06	.01	.06	-.03
15. Number of months paid for employment		-.04	.07	-.11	.05	.10
16. Grade level at which students decided to pursue present college	-.04		.58	-.06	.04	.12

Table 22 (cont'd)

Characteristics	Characteristics 15	16	17	18	19	20
17. Age at which students decided to pursue present college	.07	.58		-.23	.13	.19
18. No. of times counseled regarding careers in high school	-.11	-.06	-.23		.01	-.14
19. Whether recruited by someone in the present college	.05	.04	.13	.01		-.16
20 Overall number grade	.10	.12	.19	-.14	-.16	

Table 23. Regression Analysis of Attitude Toward Secondary Agriculture Students in Secondary Schools with Characteristics of Students (n=235) (Step-wise)

Dependent Variable: Attitude Toward Secondary Agriculture Students					
Independent Variables: Characteristics	R^2	R^2 change	b	Beta	t
Grade level at which students decided to pursue present college[a]	.111	.111	.607	.394	2.91*
Father's occupation[b]	.206	.095	.324	.313	2.31*
Constant			2.76		

*p<.05
Adjusted R^2=.170
For model: F=5.84; p<.05

Coding: a: 1=Primary, 2=Form 1-3, 3=Form 4-5, 4=Just before college
b: 1=unemployed, retired, deceased, etc., 2=self-employed, 3=paid "blue-collar", 4=paid "white-collar"

was found to be 11%, while 10% for fathers' occupation. The partial regression coefficient for grade level at which students decided to pursue present college was .60 while .32 for fathers' occupation. The standardized beta indicated that the grade level at which students decided to pursue present college was more important (.39) than fathers' occupation (.31) in explaining the attitude toward secondary agriculture students. The significant t-values for grade level at which students decided to pursue present college was 2.9 while 2.3 for fathers' occupation at probability level of .05. The intercept was 2.76. The shrinkage was found to be significant (.170) at f-value for the regression model of 5.84 and at 95% confidence level.

In Table 24, two characteristics were found to be significantly explaining variance in the attitude toward secondary agriculture objectives. These were mothers' occupation and grade level at which students decided to pursue present college. The size of the regression of attitude toward secondary agriculture objectives with the two characteristics was 18%. The unique correlation explained by the independent variable mothers' occupation was found to be 11%, while 7% for grade level at which students decided to pursue present college. The partial regression coefficient for mothers' occupation was .27, while .31 for grade level at which students decided to pursue present college. The relative importance of

Table 24. Regression Analysis of Attitude Toward Secondary Agriculture Objectives i Secondary Schools with Characteristics of Students (n=235) (Step-wise)

Dependent Variable: Attitude Toward Secondary Agriculture Objectives					
Independent Variables: Characteristics	R^2	R^2 change	b	Beta	t
Mother's occupation[c]	.110	.110	.265	.354	2.65*
Grade level at which students decided to pursue present college[a]	.184	.074	.307	.273	2.02*
Constant			3.89		

*p<.05
Adjusted R^2=.148
For model: F=5.09; p<.05

Coding: a: 1=Primary, 2=Form 1-3, 3=Form 4-5, 4=Just before college
c: 1=unemployed, retired, deceased, etc., 2=self-employed, 3=paid "blue-collar", 4=paid "white-collar"

mother's occupation was .35 (significant at t-value of 2.7). The independent variable, grade level at which students decided to pursue present college, was relatively ranked second in importance (.30) in explaining the attitude of students toward the secondary agriculture objectives, at t-value of 2.0 and at probability level of .05. The constant had a value of 3.89. R^2 adjusted for the regression model was found to be 14%, significant at f-value of 5.09, with a probability level of making a Type 1 error of less than 5%.

Table 25 presents the regression of attitude toward teaching methods used by secondary agriculture teachers with characteristics of students. Two characteristics were found to be significantly explaining the attitude toward secondary agriculture methods. These were the indication of whether a student was specifically recruited by someone in their present college, and mothers' occupation. The cumulative variance explained in the attitude toward teaching methods by the two characteristics was 24%. The partial correlation coefficient for the indication of whether the students were specifically recruited by someone in their present college was found to be 11%, while 9% for mothers' occupation. The partial regression coefficient for the indication of whether the students were specifically recruited by someone in the present college was .87, and .26 for mothers' occupation. The relative importance with attitude toward secondary agriculture

Table 25. Regression Analysis of Attitude Toward Secondary Agriculture Teaching Methods in Secondary Schools with Characteristics of Students (n=235) (Step-wise)

Dependent Variable: Attitude Toward Secondary Agriculture Teaching Methods					
Independent Variables: Characteristics	R^2	R^2 change	b	Beta	t
Specifically recruited by someone in the present college[d]	.149	.149	.873	.357	2.75*
Mother's occupation[c]	.247	.098	.259	.313	2.41*
Constant			4.52		

*p<.05
Adjusted R^2=.213
For model: F=7.39; p<.05

Coding: c: 1=unemployed, retired, deceased, etc., 2=self-employed, 3=paid "blue-collar", 4=paid "white-collar"
d: 0=No, 1=Yes

students, of the variable indication of whether students were specifically recruited by someone in the present college, was almost equal (.36) with the relative importance (.31) for the variable, mothers' occupation. The intercept for the model was 4.52. The significant t-values for the indication of whether students were specifically recruited by someone in the present college was 2.8, while 2.4 for mothers' occupation at probability level of .05. Adjusted R^2 was found to be 21%, significant at f-value of 7.39 and at an alpha level of .05.

The regression data on attitude toward teaching materials used by secondary agriculture materials with characteristics using step-wise method can be observed in Table 26. Two characteristics were found to be significantly explaining the attitude toward the component, secondary agriculture teaching materials. These were mothers' education and the indication of whether hobbies of students included agriculture-related activities. The amount of variance explained by the two characteristics in the attitude toward the secondary agriculture teaching materials was 29%. The unique correlation with attitude toward the secondary agriculture teaching materials for mothers' education was 14 percent, while 15 percent for the indication of whether students' hobbies included agriculture-related activities. The regression coefficient for mothers' education was .10, while .84 for the

Table 26. Regression Analysis of Attitude Toward Secondary Agriculture Teaching Materials in Secondary Schools with Characteristics of Students (n=235) (Step-wise)

Dependent Variable: Attitude Toward Secondary Agriculture Teaching Materials					
Independent Variables: Characteristics	R^2	R^2 change	b	Beta	t
Mother's education	.136	.136	.099	.441	3.45*
Hobbies including agriculture-related activities[e]	.288	.152	.836	.397	3.10*
Constant			4.60		

*p<.05
Adjusted R^2=.257
For model: F=9.13; p<.05

Coding: e: 0=No, 1=Yes

indication of whether hobbies included agriculture-related activities. The relative importance of the indication of whether students were specifically recruited by someone in the present college (.44) was almost the same for the indication of whether hobbies included agriculture-related activities (.40). The significant t-values for mothers' education was 3.5, while 3.1 for the indication of whether students' hobbies included agriculture-related activities at alpha .05. The intercept value for the model was 4.60. The shrinkage value was found to be .26, significant at f-value of 9.13, at a probability level of .05.

The regression analysis of attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields with characteristics using step-wise method can be observed in Table 27. Three characteristics were found to be significantly explaining variance in the attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. These were: number of hectares of land allocated by the chief of the residential area of the students, number of youth organizations joined before college, and residence of the students. The cumulative extent of the regression of attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields was found to be 39%. Partial correlations with the

Table 27. Regression Analysis of Attitude Toward How People Viewed Students in Agriculture and How Media Portrayed Agriculture and Individuals in Agriculture-related Fields with Characteristics of Students (n=235) (Step-wise)

Dependent Variable:
Attitude Toward How People Viewed Students in Agriculture and How Media Portrayed Agriculture and Individuals in Agriculture-related Fields

Independent Variables: Characteristics	R^2	R^2 change	b	Beta	t
Hectares of land allocated by the chief of residential area	.158	.158	.229	.362	3.03*
Number of youth organizations joined	.320	.162	.418	.435	3.67*
Residence[f]	.391	.229	-.562	-.272	-2.26*
Constant			3.99		

*p<.05
Adjusted R^2=.350
For model: F=9.43; p<.05

Coding: f: 0=Rural, 1=Urban

attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, were equal, for hectares of land allocated by the chief of the residential area of the students (16%), and for number of youth organizations joined before college (16%). Partial correlation with the attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields for residence of the students was 23%. Regression coefficients for number of hectares of land allocated by the chief of the residential area of the students was .23, and for the number of youth organizations joined before college was .42. The regression coefficient for the variable residence of the students, was at an opposite direction (-.56). The relative importance with attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, of characteristic, number of youth organizations joined before college, was equal (.4) with the characteristic, hectares of land allocated by the chief of the residential area of the students (.4). The relative importance of the residence of the students was lowest and negative (-.27). Significant t-values were: 3.7 for number of youth organizations joined before college, 3.0 for hectares of land allocated by the chief of the residential area of the students, and, -2.3 for residence of the students, at alpha .05. The intercept was 3.99.

Adjusted R^2 was found to be .350, significant at f-value of 9.43. Probability level of making a Type 1 error was less than .05.

Factor Analysis and Regression of Attitude Toward the Secondary Agriculture Components with Reasons Important in Deciding to Pursue a Program of Study

Factor analysis in Tables 28 and 32 was conducted to identify appropriate independent variables from a much larger set of independent variables for subsequent multiple regression analysis. Table 28 shows the two set of independent variables identified through factor analysis of the twelve independent variables. The two set of independent variables were labeled as extrinsic and intrinsic reasons by the researcher. The first set of variables was comprised of five highly correlating independent variables. The second set consisted of four highly correlating variables. Three variables were deleted due to low item-factor correlations with the two factors identified.

The attitude that were explained by specific reasons were only toward secondary agriculture components: program, objectives, and teaching materials. The attitude that could not be explained by the reasons were toward the components: teachers, students, teaching methods, and how people viewed students in agriculture, and how media

Table 28. Factor Analysis of Reasons for Choosing the Present Program

	Extrinsic Reasons	Intrinsic Reasons
Prospect for promotion	.76	-.04
Prospect for employment	.65	.22
High income	.73	.07
Working conditions	.45	.30
Respect for someone in the same career	.51	.20
Service to humanity	.07	.75
Opportunities for further training	.53	.59
Creativity involved in the job	.03	.67
Challenge with the job	.17	.71
Prestige associated with the job*	.26	.00
Right personality for the job*	.14	.23
Other benefits involved*	.37	.35

Cumulative variance explained by two factors = 46%

*Items deleted due to low item-factor correlations (Eigen value <1.00)

portrayed agriculture and individuals in agriculture-related fields.

Table 29 presents only one independent variable, extrinsic reasons, found to explain the attitude of students toward the secondary agriculture program. The relative importance was found to be .27 significant at t-value of 3.7 and at alpha level of .05. F-value for the analysis was 13.8 with adjusted R^2 value of .07.

Both independent variables in Table 30 were shown to be relatively important when explaining the attitude toward the secondary agriculture objectives. The relative value of the first variable, extrinsic reasons was found to be 28% with t-value of 3.9, significant at alpha level of .05. This is higher than the relative importance of the second variable, intrinsic reasons (16%), which was found to be significant at t-value of 2.28 and at alpha level of .05. The calculated F was 10.2 with adjusted R^2 value of .09.

Only one independent variable, extrinsic reasons, was found to be significantly explaining the attitude toward the teaching materials used by secondary agriculture teachers, as can be observed in Table 31. The relative importance of the variable was .29 at t-value of 4.0. The overall calculated F value was 16.6 with adjusted R^2 value of .08. The probability level of making a Type 1 error was less than .05.

Table 29. Regression Analysis of Attitude Toward Agriculture Program in Secondary Schools with Reasons for Choosing the Present Program (n=235) (Step-wise)

Dependent Variable: Attitude Toward the Secondary Agriculture Program			
Independent Variable:	Beta	t	Significance
Extrinsic Reasons	.267	3.7	<.05
Overall F = 13.75	Adjusted R^2 = .066		

Table 30. Regression Analysis of Attitude Toward Agriculture Objectives in Secondary Schools with Reasons for Choosing the Present Program (n=235) (Step-wise)

Dependent Variable: Attitude Toward the Secondary Agriculture Objectives			
Independent Variables:	Beta	t	Significance
Extrinsic Reasons	.276	3.85	<.05
Intrinsic Reasons	.162	2.28	<.05
Overall F = 10.20; p<.05	Adjusted R^2 = .092		

Table 31. Regression Analysis of Attitude Toward Agriculture Teaching Materials in Secondary Schools with Reasons for Choosing the Present Program (n=235) (Step-wise)

Dependent Variable: Attitude Toward the Secondary Agriculture Teaching Materials

Independent Variable:	Beta	t	Significance
Extrinsic Reasons	.291	4.0	<.05

Overall F = 16.59 Adjusted R^2 = .079

Factor Analysis and Regression of Attitude Toward the Secondary Agriculture Components with Elements Influential in Deciding to Attend an Institution

The attitude that were explained by specific reasons were only toward secondary agriculture components: students, objectives, and how people viewed students in agriculture, and how media portrayed agriculture and individuals in agriculture-related fields. The attitude that could not be explained by the reasons were toward the components: teachers, program, teaching materials, and teaching methods.

In Table 32, the factor analysis of the twenty-two independent variables yielded three set of factors. The first set of independent variables consisted of five highly correlating variables, the second set, of five highly correlating variables, and the third set, of four highly correlating variables. Eight variables were deleted due to low item-factor correlations with the three factors identified.

Table 33 presents only one independent variable, impression of institution, found to be significantly explaining the attitude toward the secondary agriculture students. The relative importance was found to be 16% with a t-value of 2.0, significant at alpha .05. Overall calculated F was 4.08 with adjusted R^2 value of .02.

Table 32. Factor Analysis of Elements Influencing the Decision to Enroll in the Present University/College

	Advice by Professionals	Provision & Advice by Students Enrolled & Non-Agr. Teachers	Impression of Institution
Advice by an agriculture teacher	.66	.06	.19
Advice by a career guidance counselor	.67	.40	-.04
Advice by a univ./college teacher or	.79	.18	.23
administrator	.84	.04	.29
Advice by a professional in the desired field	.55	.11	.03
Univ./college. sports facilities	.10	.72	.26
Univ./college library facilities	.37	.48	.21
Advice by students in the program	.53	.55	.15
Access to religious activities	.29	.64	.28
Advice by non-agriculture teacher(s)	.05	.63	-.10
Reputation of the faculty/college	.17	.27	.70
Reputation of the target department	.22	-.06	.72
Appearance of the campus	.26	.19	.46
Hearing announcement about the college/university	.06	.26	.56
Grades in high school*	.07	.22	.25
Subjects taken in high school*	.20	.04	.12
Parent(s) wish or advice*	.25	.20	.26
Campus is next to home*	.21	.05	.04
Campus is next to town*	.06	.28	.05
Advice by relative(s) other than parent*	.31	.31	.22
Advice by close friend(s)*	.15	.07	-.02
Reading information about the college/university*	.11	.25	.51
Cumulative variance explained by three factors = 56%			

*Items deleted due to low item-factor correlations. (Eigen value <1.00)

Table 33. Regression Analysis of Attitude Toward Agriculture Students in Secondary Schools with Elements Influencing the Decision to Enroll in Present University/College (n=235) (Step-wise)

Dependent Variable: Attitude Toward the Secondary Agriculture Students			
Independent Variable:	Beta	t	Significance
Impression of Institution	.162	2.02	<.05
Overall F = 4.08	Adjusted R^2 = .020		

Two independent variables found to explain the attitude toward the secondary agriculture objectives were presented in Table 34. The level of importance of the first variable, advice by professionals, was found higher (.24) at t-value of 3.1 and at significance level of .05. The impact of the second variable, impression of institution, was found to be less important (.16) than the former independent variable, at t-value of 2.4 and at an alpha level of .05. The overall calculated F was 7.69, with Type 1 error probability of less than .05 and an adjusted R^2 value of .081.

Table 35 contains one independent variable, provision and advice by enrolled students and non-agriculture teachers, found to explain the attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. The relative importance of the independent variable in explaining variance in the dependent variable was found to be 17% with a t-value of 2.1, significant at alpha .05. F-value for the data was 4.6 with shrinkage value of .02.

Table 34. Regression Analysis of Attitude Toward Agriculture Objectives in Secondary Schools with Elements Influencing the Decision to Enroll in Present University/College (n=235) (Step-wise)

Dependent Variable: Attitude Toward the Secondary Agriculture Objectives			
Independent Variables:	Beta	t	Significance
Advice by Professionals	.239	3.07	<.05
Impression of Institution	.162	2.02	<.05
Overall F = 7.69; p<.05	Adjusted R^2 = .081		

Table 35. Regression Analysis of Attitude Toward How People Viewed Students in Agriculture and How Media Portrayed Agriculture and Individuals in Agriculture-related Fields with Elements Influencing the Decision to Enroll in Present University/College (n=235) (Step-wise)

Dependent Variable: Attitude Toward How People Viewed Students in Agriculture and How Media Portrayed Agriculture and Individuals in Agriculture-related Fields			
Independent Variables:	Beta	t	Significance
Provision & Advice by Students & Non-Agriculture Teachers	.172	2.14	<.05
Overall F = 4.60	Adjusted R^2 = .023		

CHAPTER V

DISCUSSION

The purpose of this study was to describe and explain the factors related to the attitude of the first-year university and college students toward the secondary agriculture components in Swaziland. The objectives addressed by the study were to:

1. Describe the attitude of the first-year college students toward the components of the secondary agriculture.
2. Determine whether there was a significant difference between the attitude of the students toward the secondary agriculture components by institution affiliation, by program pursued, by department/faculty affiliation, and by whether agriculture was/will be a course.
3. Describe the characteristics of the first-year college students: (1) age, (2) gender, (3) place of residence, (4) fathers' occupation, (5) fathers' education, (6) hectares of land allocated by the chief to the students' family, (7) students' family earnings from agriculture produce, (8) mothers' occupation (9) mothers' education, (10) number of years spent in school dormitories, (11) number of months of teaching or teaching-

like experiences, (12) whether students' hobbies included agriculture-related activities, (13) number of youth organizations joined before university/college, (14) number of years studied agriculture before university/college, (15) number of months of paid employment experiences, (16) school level at which students decided to pursue present university/college program, (17) age at which students decided to pursue present university/college program, (18) number of times counseled regarding careers while in senior secondary school, (19) whether specifically recruited by someone in the present university/college, and (20) overall number grade in "O" level examination.

4. Determine the relationship between the attitude toward the components of secondary agriculture and each of the previously identified characteristics of the first-year university/college students.

5. Describe the level of importance of each of the reasons in pursuing the present program leading to a career, and the level of influence of each of the elements in making the decision to enroll in present university/college.

6. Identify the predictors of attitude toward the components of secondary agriculture from the first-year university/college students characteristics.

7. Identify the:

(1) reasons for choosing the present program which have significant impact on attitude of the first year-

university/college students toward the components of secondary agriculture, and;

(2) elements influencing the decision to enroll in the present university/college, which have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture.

The study was descriptive-correlational and used a questionnaire . The sample frame included 248 first-year university and college students (of which only 235 were involved) in intact classes. The registrars of each institution involved in the study provided the lists of the intact classes and students. This controlled frame error. The lists of intact classes and students were purged to make sure that no class or name was listed more than once. This controlled for selection error. Four institutions in Swaziland were involved in the study: the University of Swaziland; William Pitcher Teacher Training College; Manzini Nazarene Teacher Training College; and Ngwane Teacher Training College. The number of students involved in the study was obtained through a stratified random sampling method that used intact classes for each stratum. This process was used to control sampling error. The sample size would produced 95% confidence with 5% margin error. Appendix A presents the breakdown of the sample.

The questionnaire used in this study was developed by the researcher. The content validity of the questionnaire was established by a group of teacher

educators in the Department of Agricultural Education at the University of Swaziland and the doctoral dissertation committee of the researcher at The Ohio State University. The questionnaire was pilot tested using a class in the College of Agriculture in the University of Swaziland. A Cronbach's alpha was used to assess the internal consistency reliability of the instrument (see Appendix C) for the subscales and the total scale. The questionnaire used a rating scale with eight points, to measure the attitude of the students toward the secondary agriculture components. Personal demographics and factors that made students to decide on the program and institution to pursue were also compiled.

Non-response error was controlled by ensuring all students in the intact classes completed the questionnaire. Unfortunately, however, a students strike occurred during the data collection at the University of Swaziland, which resulted in one college (Faculty of Humanities) not being represented in the study.

The data collected were analyzed using measures of central tendency, variability, correlation, clustering and "goodness of fit." An a priori level of .05 was used to test for significant differences among groups and for examining the level of significance of the independent variables' relationship to the dependent variable investigated.

Attitude of Students Toward the Secondary Agriculture Components

The first-year students in the University of Swaziland and the three colleges surveyed revealed positive attitude toward the secondary agriculture teachers. This can be observed with their agreement with the seven positively stated items and disagreement with the two negatively stated items regarding the agriculture teachers. The overall mean rating also geared their attitude to have been positive.

Mixed attitude was found about the students studying agriculture in the secondary school. The first-year university and college students positively looked at the secondary agriculture students' aspiration for a college education and the awareness they have of career opportunities. However, the first-year students in all institutions did not agree that agriculture students were good in science or were generally intelligent. In sum, only a slightly positive attitude toward the agriculture students was found.

The Schools' Agriculture Program was evaluated in terms of nine items. Students in all institutions agreed with seven positively stated items, overall positively portraying their attitude toward the secondary agriculture program. Two statements showed that students agreed there was more work involved in studying agriculture and that

studying agriculture in the secondary school was not too costly.

The attitude toward the secondary agriculture objectives was positive across the institutions. Students did not agree, however, that secondary agriculture develops students' leadership abilities.

All students in the institutions favored the teaching methods used by the secondary agriculture teachers. However, there was an indication that the problem-solving method was not fully utilized by teachers when teaching.

The students positively disclosed their attitude toward the teaching materials used by secondary agriculture teachers. Though, students in the institutions were not convinced that the materials used in learning can be purchased in a local community shop.

Students in all institutions agreed that people generally favor students enrolling in agriculture and that the Swaziland radio was doing a good job in informing people about agriculture. Students, however, indicated that Swaziland TV is not doing enough to portray positively the people involved in agriculture.

Variability of Students' Attitude Toward the Secondary Agriculture Components

Students in the different institutions held significantly different attitude toward the secondary agriculture teachers, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. William Pitcher students held a more positive attitude toward the teachers, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, than did university students. Ngwane students also held a more positive attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, than did university students.

Diploma and bachelor students did not differ significantly in their attitude toward the different components of the secondary agriculture. The analysis of variance results for all the groups did not reach the significance level.

The analysis of variance for the different departments revealed that students significantly differed in their attitude toward the secondary agriculture teachers, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. Education students more positively favored the secondary agriculture teachers than

did agricultural education students. This was a surprising finding. One would expect that agricultural education students would have a more positive attitude toward the teachers as they were aspiring to be agriculture teachers, too. They were probably students of agriculture while in secondary school, and, therefore, could have interacted more with agriculture teachers. Additionally, education students had more positive attitude toward agriculture students than did commerce students.

Analysis of variance by whether students were enrolled or to enroll in agriculture, demonstrated that students held significantly different attitude toward secondary agriculture students, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. The students who were enrolled or will be enrolling in agriculture as a course or subject in the university or college had significantly more positive attitude toward secondary agriculture students, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

Relationships Among Characteristics of Students and Attitude Toward the Secondary Agriculture Components

The correlational analysis disclosed that primarily negligible to low, positive associations existed among the characteristics and the attitude toward the different

components of the secondary agriculture. This finding led to the conclusion that the personal characteristics of the students explain positively but little about the attitude they held toward the secondary agriculture components.

Importance of Reasons in Deciding to Pursue a Program of Study and Influence of Elements in Deciding to Attend an Institution

Students rated most of the reasons listed in choosing their program very important. One-half of the list of elements were rated influential while the other half were rated uninfluential in the students' decision to go to a college. The five most important reasons students indicated for pursuing their program of study were: opportunities for further training, prospect for employment, high income and pleasant working conditions, service to humanity, and creativity involved in the job. The five most influential reasons students provided for attending college in this study were: subjects taken in high school, grades in high school, advice by a professional in the desired field, advice by a career guidance counselor and the reputation of the target department.

Factors Explaining Attitude of Students Toward the Secondary Agriculture Components

Characteristics that significantly explain the attitude toward the secondary agriculture students were found to be: students' grade levels, and the students' fathers' occupation. The two characteristics explained twenty-one percent of the variance in the attitude toward the secondary agriculture students.

When the dependent variable was attitude toward the secondary agriculture objectives, two characteristics were found significantly explaining variance. These were the students' mothers' occupation and the grade level at which students decided to pursue their present college. These two variables explained almost one-fifth (18%) of the total variance in the attitude toward the secondary agriculture objectives.

Two factors explained a total variance of 25% in the attitude toward the secondary agriculture teaching methods. These were: the indication of whether students were specifically recruited by someone in the present college, and the students' mothers' occupation.

Regression analysis with the attitude toward the secondary agriculture teaching materials revealed that two characteristics (mothers' education and the indication of whether students' hobbies included agriculture-related activity) were explaining variance. These two characteristics explained 29% of the variance in the

attitude toward the secondary agriculture teaching materials.

When the attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, was regressed with characteristics of the students, three characteristics (hectares of land allocated by the chief to the students' family, number of youth organizations joined before college and students' residence) were found to significantly explain variance. The three independent variables explained 39% of the variance in the attitude toward the dependent variable-- how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

The attitude toward the different components of the secondary agriculture were regressed with the reasons for choosing the students' present program of study and the elements influencing the decision to enroll in the students' present institution. This was conducted to determine the relative importance of the independent variables in explaining the dependent variable. Extrinsic reasons were found to be significantly explaining the attitude of students toward the secondary agriculture program. Both extrinsic and intrinsic reasons were significantly explaining, in respective order, the attitude toward the secondary agriculture objectives. Only the

extrinsic reasons significantly explained the attitude toward the secondary agriculture teaching materials.

The impression of the institution attended significantly explained the attitude toward the secondary agriculture students. The advice by professionals and impression of institution both significantly explained variance in the attitude toward the secondary agriculture objectives. The provision and advice by enrolled students and non-agriculture teachers significantly explained the attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

Conclusions

The following conclusions have been reached in this study:

1. The attitude of the first-year university and college students across the institutions and across programs toward the secondary agriculture teachers, program, objectives, teaching methods, teaching materials, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, were positive.
2. The attitude of the first-year university and college students across institutions and across programs toward the secondary agriculture students were slightly positive.
3. The first-year students in William Pitcher and Ngwane colleges held more positive attitude toward how people

viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, while William Pitcher students held more positive attitude toward the secondary agriculture teachers, than did university students.

4. There was no significant difference between the attitude of the first-year university and college students enrolled in the diploma and bachelor programs toward all the components of the secondary agriculture.

5. Education students held significantly more positive attitude toward the secondary agriculture teachers, and, how people viewed students in agriculture and how the media portrayed agriculture and individuals in agriculture-related fields, than did agricultural education students. Education students, also, held significantly more positive attitude toward the secondary agriculture students, than did commerce students.

6. Students who were in agricultural programs or in programs which included agriculture as a course held significantly more positive attitude toward the secondary agriculture students, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

7. Overall, there were negligible to low, positive relationships (.01 to .29) among the characteristics of the students and the attitude they held toward the secondary

agriculture components. This means that, most of the characteristics of students have little to do with their considerably low favorability of the secondary agriculture components.

8. Attitude toward the secondary agriculture students were positively and increasingly explained by the following characteristics: (1) grade level at which students decided to pursue their present college and (2) students' fathers' occupation. This means that, as the grade level at which students decided to pursue their present college gets higher and as the students' fathers' occupation gets better (e.g. students' self-employed fathers were ranked higher (coded #2) than students' unemployed fathers (coded #1), their attitude toward the secondary agriculture students improved.

9. Attitude toward the secondary agriculture objectives were positively and increasingly explained by: (1) mothers' occupation, and, (2) grade level at which students decided to pursue their present college. This is to say, that, as the students' mothers' occupation gets better (e.g. students' mothers who had paid "white collar" jobs were ranked higher (coded #4) than students' paid "blue-collar" mothers (coded#3)), and as the grade level at which students decided to pursue present college gets higher, the more favorable their attitude became toward the secondary agriculture objectives.

10. Attitude toward the secondary agriculture teaching methods were positively and increasingly explained by: (1) the indication of whether students were specifically recruited by someone in the present college, and, (2) students' mothers' occupation. The students who were recruited by someone in their present college had highly favorable attitude toward the secondary agriculture teaching methods. The better the students' mothers' occupation was, the more favorable the students' attitude became, toward the secondary agriculture teaching methods.

11. Attitude toward the secondary agriculture teaching materials were explained by: (1) mothers' education, and, (2) the indication of whether students' hobbies included agriculture-related activity. This means that, as the students' mothers' education became better, the more favorable their attitude became, toward the secondary agriculture teaching materials. Those students who had agriculture-related activity as one of their hobbies tended to have a highly favorable attitude toward the secondary agriculture teaching materials.

12. Attitude toward how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, were explained by: (1) number of hectares of land allocated by the chief to the students' family, (2) number of youth organizations joined by students prior to college, and, (3) students' residence. The higher the number of hectares of land

allocated to students' families was, the more favorable their attitude became about how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. The higher the number of youth organizations joined by the students, the better their attitude toward the component became. However, those students whose residence was urban had decreasing favorability of the component.

13. The significant independent variable explaining the attitude toward the secondary agriculture program was the factor labeled extrinsic reasons. Extrinsic reasons (prospect for promotion, prospect for employment, high income, working conditions, respect for someone in the career) were important when considering the attitude of students toward the secondary agriculture program.

14. The significant independent variables explaining the attitude toward the secondary agriculture objectives were both factors labeled extrinsic reasons, and, intrinsic reasons (service to humanity, opportunities for further training, creativity involved in the job and challenge with the job). Both factors were important, but, extrinsic reasons were more important than intrinsic reasons when considering the attitude of students toward the secondary agriculture objectives.

15. The significant independent variable explaining the attitude toward the secondary agriculture teaching materials was the factor labeled extrinsic reasons.

Extrinsic reasons were important when considering the attitude of students toward the secondary agriculture teaching materials.

16. The element found to be significantly explaining the attitude toward the secondary agriculture students was the students' impression of the institution. Impression of institution by students was important in considering their attitude toward the secondary agriculture students.

17. The elements found to be significantly explaining the attitude toward the secondary agriculture objectives were: the advice by professionals, and the students' impression of institution. Both elements were important , but, the advice by professionals was more important than the impression of institution by students when considering their attitude toward the secondary agriculture objectives.

18. The element found to be significantly explaining the attitude toward the component-- how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields, was, the provision and advice by students enrolled in the program, and non-agriculture teachers. The element, provision of facilities and advice by students enrolled in the program and non-agriculture teachers was important when considering the attitude of students toward the component-- how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields.

Implications to Knowledge

The finding by Simelane (1988) that secondary agriculture teachers in Swaziland seemed to not making parents be aware of the agricultural knowledge and skills their children were acquiring in school was not consistent with the findings of this study. Students disagreed that teachers were having difficulty in relating their teaching to students' home situations, and that, overall, they held positive attitude toward the secondary agriculture teachers.

Regan and Thompson (1965) found that agriculture students had limited appreciation of science. This was supported by this study, in that, students disagreed that the secondary agriculture students were good in science.

Regarding the characteristics of the secondary agriculture students, Simelane's (1988) finding that males outnumbered the females while in senior secondary high school was not true for first-year students in the university and colleges. Seemingly, the females were able to enter the academic institutions in Swaziland at the same rate with males. The ages of the majority of the first-year students in the present study were in the range (17 to 19 years old) that Simelane (1988) found, and that, also, the majority of the students resided in a rural area. The indication by senior secondary agricultural students (Simelane, 1988) that most of them did not live in the school dormitory (67%) was similar with the finding of this

study (63%) with the first-year university and college students.

Bentley (1966) illustrated that: (1) students decided early in life in choosing a career, (2) the previous teaching and teaching-like experience contributed to the decision of choosing a teaching career, and; (3) prospect of making a potential contribution to the society, were factors which led college seniors to choose teaching as a career. This study did not support Bentley's finding as students reported deciding while in senior secondary high school (ages 16 to 20 years), however, service to humanity was rated very important by students in choosing a career.

The results of the studies reported by Dlamini (1992) was concomitant with the findings of this study. The two British Overseas Development evaluations were again supported, in that, the study of agriculture was "popular and interesting and brought about a favorable attitude toward agriculture." Pre-veterinary students in the Southern land grant universities (Dunkelberger, 1981), the youth in Germany (Sube, 1981) and agricultural students in Clemson University (Boyd, 1977), possessed positive attitude toward agriculture, the agriculture industry and agricultural working conditions, and, agriculture as having opportunities for advancement. Dube (1987) reported that the junior secondary agricultural students positively rated the agriculture programs in the Tompkins Senega area in New

York. However, they also believed that their friends held negative perception of their programs. The students in this study disagreed that non-agricultural students look down upon agricultural students. The students also disclosed that people viewed students in agriculture positively, and the media portrayed agriculture and individuals in agriculture-related fields, favorably.

The Schools' Agriculture program in Swaziland has aimed at changing the attitudes of the youth who regarded agriculture as a poverty-perpetuating activity by emphasizing commercialized agriculture. The first-year university and college students agreed that the secondary agriculture program indeed made the learners competent in agricultural production and equipped them with agribusiness skills. These skills were geared to helping students to practice agriculture as a commercial enterprise. Additionally, Simelane (1988) highlighted that the teaching and learning in the senior secondary agriculture had been mostly achieved through practical activities. The findings of this study revealed that students agreed that the secondary agriculture students learned from the teachers' practical ways of teaching.

Teaching and learning facilities have been provided by the Ministry of Education in establishing every agriculture department in the schools. These have included locally produced curriculum materials, classrooms, livestock houses, garden areas, tools and equipment, and

the first-year supply of inputs such as small livestock, seeds and fertilizers. The students agreed that the teaching materials were effective in bringing about learning, however, the materials they use in schools were perceived scarce in local shops.

Salter (1987), The National Center for Education Statistics (1984), Dlamini (1983), Welton (1980), Harrington (1978), Reynolds (1977) and Johnson (1963) reported that college students with agriculture and farm (rural) backgrounds were influenced to enroll in their present program by agriculture teachers. Salter (1987), Johnson (1963), Sube (1981) and Welton (1980) noted that counselors had insignificant influence on students' decision. The agriculture teacher, in this study, was not influential but the career guidance counselor was influential, similar with Gilmour's (1981) finding on the students' decision to enroll in their present college. Furthermore, professionals (Dlamini, 1983; Dunkelberger, 1981; Mills, 1980; and Johnson, 1963) and enrolled students in the newly pursued major (Gilmour, 1981) influenced the students' decision to switch program, and that, most of the students made the choice to enroll in their program while in high school, were supported by this study.

The advice by non-agricultural teachers was found most influential in the decision to major in agricultural education by Welton (1980). However, in this study, the

non-agricultural teachers were viewed as not influential by students in their decision to attend an institution.

Dlamini (1983), Dunkelberger et. al. (1982), Dunkelberger (1981), Gilmour (1981), Sube (1981) Welton (1980) and Mills (1980) found that the majority of the students were influenced by family members in the choice of their program of study. This was supported by this research. This was, though, in contrast with Ejembi's (1988) finding, that, family relations influenced students the least in choosing their career. Also, Boyd (1977) and Venerable (1974) reported that students made their own decisions when choosing a college and a career, though consulted their parents in the process. Dlamini's (1983), Sube's (1981) and Welton's (1980) conclusion that friends were influential in choosing a career was not supported by this study.

Gilmour's (1981) contention that the high school curriculum or the subjects taken by students was an important factor in selecting a college was rated very important by students in this study. Reynold's (1977) finding that the perceived job opportunities influenced students to pursue a career was supported by the students in this study. Fathers' occupation and the length of time students lived in dormitories were found by Bannaga (1969) to be related to students' suitability to extension work, while this study found these two characteristics having a

positive but negligible association with the attitude toward the secondary agriculture components.

The location of the institution was rated unimportant by students in this study in choosing a college to attend. This was in line with Gilmour's (1981) finding that students with high scholastic aptitude did not consider location an influential factor when deciding to attend an institution.

Cosby and Frank (1978) found that the prestige associated with a job was important to students when considering an occupation. This study found students rated prestige associated with a job to have been important in deciding to pursue their program. Further training prospect and career development were found important by Sube (1981) among German youth who were deciding on what career to pursue. Students in this study rated these elements to be very influential in their decision to enter a program leading to a career.

The strength of the target department and the academic reputation of the institution (Graham, 1984; Gilmour, 1980; and Naylor and Sanford, 1978) and the atmosphere and appearance of the campus, the quality of the faculty, and seeing television advertisements about the institution (Graham, 1984) were viewed as influential elements in choosing a college. This study supported the former, but not the latter study.

High income was perceived important by students who were choosing an undergraduate major (Koch, 1972). Students in this study rated this reason to be very important.

The academic aptitude of the students was found by Richards (1980) and The National Center for Education Statistics (1984) to be a predictor of success in a chosen major. In this study, grades in high school was rated influential by students in deciding to enter a college.

In the United States of America, the reasons of students for attending college such as those found by Church and Gillingham (1988): self-improvement; social pressure; learning; self-development, career, and continued study of a favorite subject were not the reasons that the students provided in this study. Furthermore, Murray et al. (1990) showed that the reasons for attending a higher institution were career-related, while Astin et al. (1988) found jobs and money were reasons for students in attending university. Johnson and Troy (1981) revealed students' reasons were to obtain a better job and prepare for graduate or professional school and to meet new people. These three latter studies did not present findings similar to this study. The most influential reasons students provided for attending college in this study were: subjects taken in high school, grades in high school, advice by a professional in the desired field, advice by a career guidance counselor, and the reputation of the

target department.

The reasons perceived most important by students in this study in pursuing their present program were supported by the findings found among American students: Church and Gillingham's (1988) self-improvement and career reasons, Astin and others' (1988) jobs and money reasons, and Troy's (1981) obtaining a better job and preparing for graduate or professional school.

Recommendations

Based on the findings of the study, the following recommendations were formulated:

1. The findings of this study confirmed that the students tracked to study agriculture in secondary schools were those who were viewed not generally intelligent or good in science, yet, agriculture is weighted as a science subject when students are considered by the tertiary institutions. If only students considered "not good" in science are continually being channeled to enroll in agriculture in secondary schools, the future agricultural professionals might not be able to tackle the scientific and technological advancement of which Swaziland is in need. Though already practiced in some schools, a need to reconsider agriculture to be taken with other science subjects by secondary agriculture students is recommended. If agriculture is taken concurrently with science subjects, enhanced learning should take place in both subject areas.

2. Agriculture was viewed as a subject that demands more work from students. This is certainly true. However, students in agriculture also enjoy the benefit of their hard work such as harvesting vegetables and crops from their garden plots and taking home the reared small livestock. Rewarding students for their hard work must continue, such that the nature of agriculture does not burden the students and the motivations that go with it do not decrease.

3. Students highlighted that agriculture in schools has not aimed at developing the leadership qualities of students. Students, teachers, teacher educators and people concerned with students' affairs need to be consulted on activities students in agriculture can do to enhance their leadership potential. A view of what other countries do to enhance the leadership potential of their secondary agriculture students might help in formulating a model for Swaziland.

4. Though this study did not provide the students with a comprehensive definition of a problem-solving approach to learning, they have indicated that this method has not been fully used. Secondary agriculture teachers need to be made aware of the potential of use of this teaching method to be able to respond to the varied learning needs of students.

5. The students indicated that the tools and equipment they become familiar with when learning agriculture in schools were scarce in the local community shops. More

information needs to be secured from secondary students by teachers during teaching/learning to determine the agricultural tools they would like to see available in the local community shops for the students to be more able to use learning in their home situations, and for the teachers to be able to make recommendations on what to make available by the local community shop owners.

6. The Swaziland radio was viewed positively in delivering agricultural news. However, there was much to be desired from Swaziland TV as indicated by the students. Finding the quantity and quality of agricultural news Swaziland TV broadcasts can be an exercise that students can do and can be incorporated in the syllabus content of the secondary agriculture program and in teacher education program.

7. Students who were furthering their studies in agriculture in both the university and colleges have more positive attitude toward the secondary agriculture components than those who were not. Offering agriculture as a course in the teacher training colleges, especially, should continue, to help maintain a positive image of agriculture teaching among college students and the students these teachers-to-be will be teaching.

8. The majority of the students indicated not having been recruited in their present college. These raised questions that need to be answered by professionals involve in the recruitment of students at the college level. Do tertiary institutions exercise fully their recruitment practices?

If not, why not? Are the college-entering students guided by the subjects they have taken, and the grades they have obtained at "O" level examinations as they have indicated in this study? If so, do tertiary institutions guard the priorities and interest of their prospective students?

9. No component of the secondary agriculture program was rated very highly positive by the first-year university and college students. This prompts the people involved in the program to realize that there is still more to do to reach the maximum potential of the program.

Need for Further Study

Further studies and activities were envisioned as a result of this study:

1. Non-university students held more positive attitude than university students toward secondary agriculture teachers, and how people viewed students in agriculture, and how the media portrayed agriculture and individuals in agriculture-related fields. Why the university students did not regard highly the secondary agriculture components, and indeed the profession which is pursued by their fellow students can be answered by a more in-depth case study of this group.

2. Agricultural education students had only slightly positive attitude toward the components of the profession they were pursuing. Why did this group not highly favored their future profession and what might be their reasons for

being in this program? Feedback from this group in form of a case study would guide the profession about its future. The low but positive attitude toward the components of the secondary agriculture profession might be also be due to other factors such as having been "burned out" while in the secondary agriculture program, as the students have reported agriculture as a subject that required hard work. Other possibility is that, students might have not been "kindled" at the first place even if they are in the program. Students might have been in the agricultural education program only because they qualified to enter for that program, and their highly prioritize program could not accommodate them. These are only some of the problems that agricultural education researchers can use as guides to investigating more into these issues.

3. The specific characteristics of the students that encouraged them to pursue certain careers were not investigated in this study. If the relationship between the characteristics of students and the factors helpful in choosing their career could be determined, students could be advised when confronted with choosing a career.

4. A need exists to do a longitudinal study to follow-up on the population used in this study to ascertain whether the attitude remain unchanged throughout an interval of years. The profession aims at improving its image and it would be helpful to know from a population if that is being

achieved as time advances and as they go through tertiary education.

5. Students indicated that the subjects they have taken in high school were influential in choosing their college. The curriculum background of the students in high school and the kinds of programs students pursue in college could be investigated. This would generate useful information that could be used for guidance and counseling in secondary schools.

6. Students indicated that the advice they received from guidance counselors was important in their decision to attend a college. However, the frequency with which they get advice was only 1 to 2 times during their senior year. School administrators need to be surveyed on whether there is a lack of guidance and counseling in the senior secondary schools, which the students also indicated was the time they make their crucial decisions to attend a particular college for a certain program.

7. A large number of students could not provide information on the number of hectares of land their families were allocated by the chief of their areas. A study to find the knowledge students have on traditional and vital agricultural information could be done to guide the teachers from primary to university level what to incorporate feasibly in their agriculture syllabus.

8. Swaziland students' reasons for attending college needs to be surveyed. Swazi students' reasons were found to be

different with the reasons found among American students. Other reasons not identified in this study need to be elicited among college students population. This is to guide educators and policy makers on educating secondary and college students on the expectations versus reality after college.

9. Other reasons must be existing and need to be studied on why more males drop between completing secondary education and entering college.

APPENDIX A

PROPORTIONATE SAMPLING AND USE OF INTACT CLASSES

College	N*	%	n *	# IC*	# S*
a. University of Swaziland, Faculty of Agriculture	79	12	30	1	29
b. University of Swaziland, Faculty of Science	76	11	27	1	19
c. University of Swaziland, Faculty of Humanities	75	11	27	1	NR
d. University of Swaziland, Faculty of Commerce	100	14	35	1	37
e. University of Swaziland, Department of Law	31	4	10	1	5
f. University of Swaziland, Faculty of Social Science	58	8	20	1	7
g. William Pitcher Teacher Training College (WPTTC)	118	17	42	1	71
h. Manzini Nazarene Teacher Training College (MNTTC)	29	4	10	1	17
i. Ngwane Teacher Training College (NTTC)	130	19	47	1	50
TOTAL	696	100	248	9	235

*N = population, % = proportion of population/sample, n = sample,
#IC = no. of intact class,
#S = no. of students in intact class
NR = not represented in the study because of reason stated under data collection

APPENDIX B

PANEL OF EXPERTS FOR QUESTIONNAIRE VALIDITY TESTING

Kenneth K. Asante	Lecturer in Agricultural Education, Faculty of Agriculture, University of Swaziland
Jamie Cano	Committee Member - Doctoral Dissertation and Assistant Professor in Agricultural Education, The Ohio State University
Barnabas M. Dlamini	Senior Lecturer in Agricultural Education and Dean of the Faculty of Agriculture, University of Swaziland
Ruth M. Dlamini	Lecturer in Agricultural Education, Faculty of Agriculture, University of Swaziland
Larry E. Miller	Adviser - Doctoral Dissertation and Professor in Agricultural Education, The Ohio State University
Comfort Mndebele	Lecturer in Agricultural Education, Faculty of Agriculture, University of Swaziland
Rosemarie Rossetti	Committee Member - Doctoral Dissertation and Assistant Professor in Agricultural Education, The Ohio State University
Jethro M. Simelane	Lecturer in Agricultural Education, Faculty of Agriculture, University of Swaziland

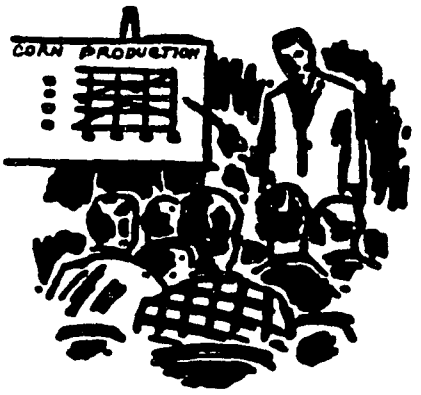
APPENDIX C

INTERNAL CONSISTENCY COEFFICIENTS FOR THE QUESTIONNAIRE

Subscale	Cronbach Alpha
The Agriculture Teachers in High School	.70
Students Taking Agriculture in High School	.60
The High School Agriculture Program	.71
The High School Agriculture Objectives	.70
Teaching Methods and Techniques in High School Agriculture	.75
Teaching Materials in High School Agriculture	.60
How People Viewed Students in Agriculture, and How the Media Portrayed Agriculture and Individuals in Agriculture-related Fields	.50
Total Scale	.90

APPENDIX D

RESEARCH QUESTIONNAIRE



Attitude of University/College Students

Toward Secondary Agriculture Components

in Swaziland

Agricultural Education as a Profession

Dear First-Year University/College Student,

SAWUBONA!

We want to find out what you think about the secondary agriculture teaching profession and whether it is attractive to students like you. Agriculture in secondary level is concerned with the teaching and learning of agriculture in the schools and communities. We want you to think of the **high school agriculture** class(es) you have **attended or observed** when responding to the items in this questionnaire. There are no right or wrong answers.

The information you give us will be kept confidential. There will only be group reporting of those who are taking and not taking agriculture in the university/college.

Circle the number in the scale that best corresponds with your level of agreement on each of the statements.

The numbers in the scale and meaning of each:

1 = **Very Strongly Disagree**
2 = **Strongly Disagree**
3 = **Disagree**
4 = **Slightly Disagree**
5 = **Slightly Agree**
6 = **Agree**
7 = **Strongly Agree**
8 = **Very Strongly Agree**

Example:
1. Students taking agriculture as a subject in school learn that agriculture is a profitable enterprise. 1 2 3 4 5 6 7 (8)

Meaning: The respondent Very Strongly Agreed with the statement.

	Very Strongly Disagree	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Very Strongly Agree
I. Agricultural Education Components:								
A. The Agriculture Teachers in High School								
1. The agriculture teachers believe in the economic importance of agriculture.	1	2	3	4	5	6	7	8
2. Teachers of agriculture effectively communicate their subject matter.	1	2	3	4	5	6	7	8
3. Teachers of agriculture dress as professionally as other teachers.	1	2	3	4	5	6	7	8
4. Agriculture teachers are generally as respected as the other teachers in schools.	1	2	3	4	5	6	7	8
5. The agriculture teachers participate as well as other teachers in extra curricular activities.	1	2	3	4	5	6	7	8
6. Agriculture teachers are organized with their teaching.	1	2	3	4	5	6	7	8
7. Agriculture teachers are less creative in teaching.	1	2	3	4	5	6	7	8
8. Agriculture teachers are confident with their practical skills when teaching.	1	2	3	4	5	6	7	8
9. Agriculture teachers are having difficulty in relating their teaching to students' home situations.	1	2	3	4	5	6	7	8
B. Students Taking Agriculture in High School								
10. Students taking agriculture in high school aspire more for a college/ university education.	1	2	3	4	5	6	7	8
11. Students taking agriculture as a subject are aware of the opportunities in agriculture.	1	2	3	4	5	6	7	8

	Very Strongly Disagree	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Very Strongly Agree
12. High school students taking agriculture are good in science.	1	2	3	4	5	6	7	8
13. Students taking agriculture in high school are generally intelligent.	1	2	3	4	5	6	7	8
C. The High School Agriculture Program								
14. The high school agriculture program provides a good foundation for a more advanced agricultural education.	1	2	3	4	5	6	7	8
15. Agriculture demands more work than other subjects.	1	2	3	4	5	6	7	8
16. Taking agriculture as a subject is too costly in terms of money in comparison with other subjects.	1	2	3	4	5	6	7	8
17. The agriculture program in high school benefits the local community.	1	2	3	4	5	6	7	8
18. A student in high school can do well in an agricultural-related occupation after having studied agriculture as a subject in the school.	1	2	3	4	5	6	7	8
19. The changing technology in agriculture can be met by today's preparation of high school students in agriculture.	1	2	3	4	5	6	7	8
20. Agriculture must be taught in all high schools.	1	2	3	4	5	6	7	8
21. High school agriculture programs are fairly effectively preparing students for agribusiness occupations.	1	2	3	4	5	6	7	8
22. "O" level agriculture exposes the students to careers in agriculture.	1	2	3	4	5	6	7	8

	Very Strongly Disagree	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Very Strongly Agree
D. The High School Agriculture Objectives								
23. Agriculture in schools develop the students' leadership abilities needed for success in any job.	1	2	3	4	5	6	7	8
24. Agriculture in schools develop a student's competence in agricultural production.	1	2	3	4	5	6	7	8
25. Agriculture in schools make the students aware of career opportunities in agriculture.	1	2	3	4	5	6	7	8
26. Agriculture students in high school conduct investigatory activities to enable them to develop better thinking skills.	1	2	3	4	5	6	7	8
27. Agriculture in high school ill-skills for prepares the student for entry into vocational occupations.	1	2	3	4	5	6	7	8
28. Agricultural education provides students who have difficulty pursuing college or university education.	1	2	3	4	5	6	7	8
29. Agriculture helps students learn agribusiness skills.	1	2	3	4	5	6	7	8
E. Teaching Methods and Techniques in High School Agriculture								
30. The agriculture teachers use one method most of the time when teaching.	1	2	3	4	5	6	7	8
31. Students taking agriculture learn agricultural skills from teachers' practical ways of teaching.	1	2	3	4	5	6	7	8
32. Agriculture introduces the students to new technologies used in commercial agricultural production.	1	2	3	4	5	6	7	8

	Very Strongly Disagree	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Very Strongly Agree
33. A problem-solving approach is used in learning to apply agriculture in the local setting.	1	2	3	4	5	6	7	8
F. Teaching Materials in High School Agriculture								
34. Agriculture department surroundings are kept clean.	1	2	3	4	5	6	7	8
35. The tools/materials used in teaching agriculture are mostly effective in bringing about learning.	1	2	3	4	5	6	7	8
36. The agriculture teachers encourage students to make use of things they can find in their environment in solving agricultural problems.	1	2	3	4	5	6	7	8
37. The materials used in teaching agriculture are available in the local community shops.	1	2	3	4	5	6	7	8
G. People and Media Influencing the Perceptions About Agriculture and Agriculture-Related Activities								
38. People are generally pleased when they hear one studies agriculture in school.	1	2	3	4	5	6	7	8
39. Students not taking agriculture in the schools look down upon agricultural students.	1	2	3	4	5	6	7	8
40. The Swaziland radio informs the public about the benefits of today's agriculture.	1	2	3	4	5	6	7	8
41. Swaziland TV positively portrays individuals who are in agricultural-related fields.	1	2	3	4	5	6	7	8

PLEASE CONTINUE.....

II. Background Information: Please provide us with some information about yourself to help us make meaningful conclusion about this study. Please fill-in or tick ( ) whichever is appropriate.

A. STUDENTS' CHARACTERISTICS:

42. How old were you on your last birthday? __Years

43. Your gender. __Female __Male

44. Your residential area. __Rural (emakhaya)

__Urban(idolobheni)

45. Your father's occupation.

__NOT APPLICABLE (unemployed, retired, deceased, etc.)

__self-employed

__paid "blue-collar" (e.g. laborer)

__paid "white-collar" (e.g. office worker)

46. How many years did your father spend in school? Count up to the last year he attended.

__None __Years

47. About how many hectares of land is your family allocated with by the chief of your home area?

__Hectares

48. About how much does your parents/guardians earn from selling agricultural product(s) in a month. Please indicate in 10's, e.g. E50, E100, etc.

__None _____Emalangeni (in a month)

49. Mother's occupation

__NOT APPLICABLE (unemployed, retired, deceased)

__self-employed

__paid "blue-collar" (e.g. laborer)

__paid "white-collar" (e.g. office worker)

50. How many years did your mother spend in school? Count up to the last year she attended.

__None __Years

51. **How many years have you spent in hostels in primary to senior high school.**

__None __Years

52. **How many months/years of teaching or teaching-like experience(s) have you had before you entered college?**

__None __Month(s) or __Year(s)

53. **Do your hobbies include agriculture-related activities (like gardening, etc.)?**

__No __Yes

54. **How many youth organization(s) e.g. Girl/Boy Scouts etc. have you joined before college?**

__None __Number of organization(s)

55. **How many years did you take agriculture as a subject before college/university?**

__None __Year(s)

56. **How much time have you been paid for employment before you entered college/university? Indicate in months or years.**

__None __Month(s) or __Year(s)

57.

(a). **At what grade level did you decide to pursue your present college/university programme?**

__Primary __Form 1-3

__Form 4 - 5 __Just before college

(b). **How old were you then?** **__Years**

58. **How many times were you counseled in senior high school regarding careers from which one could possibly choose from?**

__None __Number of times

59. **Have you been specifically recruited by someone from your present college/university?**

__No __Yes

60. **What was your overall grade in "O" level?**

____ (Any number between 1 and 54.)

B. CAREER INFORMATION:

61. (a). Your institution:

__UNISWA
__William Pitcher T.T.C.
__Ngwane T.T.C.
__Nazarene T.T.C.

(b). The programme you are pursuing.

__Diploma __Bachelor

in;

(FOR STUDENTS IN WILLIAM PITCHER, NGWANE AND NAZARENE ONLY)

__Education

(FOR STUDENTS IN UNISWA ONLY)

__Commerce
__Agricultural Education
__Law
__Social Science
__Science
__Humanities

(c).(FOR STUDENTS IN WILLIAM PITCHER, NGWANE AND NAZARENE ONLY)

Indicate whether agriculture is/will be a subject.

__NO __YES

PLEASE CONTINUE.....

62. Indicate the level of importance for each of the reasons stated below in pursuing your programme leading to a career.

Circle only one number in the scale for each item.

Scale:
1 = Not Important At All
2 = Very Unimportant
3 = Unimportant
4 = Important
5 = Very Important
6 = Absolutely Important

	Absolutely Important					Not Important At All
	1	2	3	4	5	6
Prospect for promotion.....	1	2	3	4	5	6
Prospect for employment.....	1	2	3	4	5	6
High income.....	1	2	3	4	5	6
Working conditions.....	1	2	3	4	5	6
Right personality for the job.....	1	2	3	4	5	6
Other benefits involved.....	1	2	3	4	5	6
Service to humanity.....	1	2	3	4	5	6
Opportunities for further training.....	1	2	3	4	5	6
Creativity involved in the job....	1	2	3	4	5	6
Prestige associated with the job..	1	2	3	4	5	6
Challenge with the job.....	1	2	3	4	5	6
Respect for someone in the same career.....	1	2	3	4	5	6

PLEASE CONTINUE.....

C. COLLEGE/UNIVERSITY PROGRAMME CHOICE INFORMATION:

63. Indicate the level of the influence for each of the following factors in making your decision to enroll in your present college/university.

Circle only one number in the scale for each item.

Scale:

1 = Not Influential At all
2 = Very Uninfluential
3 = Uninfluential
4 = Influential
5 = Very Influential
6 = Absolutely Influential

	Not Influential At All					Absolutely Influential
Grades in high school	1	2	3	4	5	6
Subjects taken in high school	1	2	3	4	5	6
Reputation of the faculty/college	1	2	3	4	5	6
Reputation of the target department	1	2	3	4	5	6
Parent(s) wish or advice	1	2	3	4	5	6
Appearance of the campus	1	2	3	4	5	6
Campus is next to home	1	2	3	4	5	6
Campus is next to town	1	2	3	4	5	6
Advice by relative(s) other than parent	1	2	3	4	5	6
Advice by an agriculture teacher	1	2	3	4	5	6
College/univ. sports facilities	1	2	3	4	5	6
College/univ. library facilities	1	2	3	4	5	6
Advice by students in the programme	1	2	3	4	5	6
Advice by a career guidance counselor	1	2	3	4	5	6
Access to religious activities	1	2	3	4	5	6
Advice by a college/univ. teacher or	1	2	3	4	5	6
administrator	1	2	3	4	5	6
Advice by a professional in the desired field	1	2	3	4	5	6
Advice by close friend(s)	1	2	3	4	5	6
Advice by non-agriculture teacher(s)	1	2	3	4	5	6
Reading information about the college/university	1	2	3	4	5	6
Hearing announcement about the college/university	1	2	3	4	5	6

SIYABONGA BEKUNENE!

LIST OF REFERENCES

Asante, K.K. & Dlamini, B.M. (1989). Occupational aspirations of high school students in Swaziland. Research and Publications. University of Swaziland, Luyengo, Swaziland.

Astin, A. et al. (1988). The American freshman: National norms for Fall 1988. American Council on Education. Washington, D.C.

Bannaga, A.M. (1969). Study of characteristics, attitude, and opinions of the students in the College of Agriculture in Sudan. Unpublished Ph.D. Dissertation. University of Wisconsin.

Barrick, R.K. (1989). Agricultural education: Building upon our roots. Journal of Agricultural Education. 30(4), 24-29.

Barrick, R.K. (1988). The Discipline called agricultural education. Department of Agricultural Education. The Ohio State University, Columbus, OH.

Bentley, J.C. & Rossman, J.E. (1966). Factors which led to choose college teaching as a career. Macalester College, St. Paul, MN.

Beukes, J.H. (1986). Motivation for postschool training and job entry: Factors that influence the choice of standards 10 pupils. Research Finding MN-115. Human Sciences Research Council. Pretoria. South Africa.

Boyd, V.A. (1977). Effect of farm background on attitude of agricultural students at Clemson University. Paper presented at the Rural Sociology Section, Annual Meeting of the Southern Association of Agricultural Scientists. Atlanta, GA, Feb. 6-9.

Church, J.H. & Gillingham D.W. (1988). Benefit segments for full-time undergraduate students. Canadian Journal of Higher Education. 18(2); 55-73.

Cosby, A.G. & Frank, L.M. (1978). A prestige scale for 50 agricultural and agriculturally-related occupations. Paper presented at the Annual Meeting of the Rural Sociology Section. Southern Association of Agricultural Scientists. Houston, TX. Feb. 5-8.

Davis, J.A. (1971). Elementary Survey Analysis. Prentice Hall, New Jersey. 49.

Department of Agricultural Education (1992). A major in agricultural education - A proposed modified version of the existing major. Class lecture handout, Agricultural Education 812 - Teacher Education. The Ohio State University. Winter Quarter.

Dlamini, B.M. (1983). Factors influencing high school graduates in Swaziland to become agriculture and home economics teachers. University of Swaziland, Luyengo, Swaziland.

Dlamini, B.M. (1986). Perceptions of professionals in agricultural education regarding the agriculture teacher education program in Swaziland. Unpublished Ph.D. dissertation. The Ohio State University, Columbus, OH.

Dlamini, B.M. (1992). Importance of strengthening primary through university agricultural education linkages. Lesson from the Swaziland experience. Paper presented at the symposium on agricultural education and extension. University of Zimbabwe, Harare, Zimbabwe. Jan. 28-31.

Dube, D.N. (1987). Parental attitude toward vocational education in the Tompkins Seneca Tioga Area - New York. Unpublished Master's Thesis. Rochester University, New York.

Dunkelberger, J.E. (1981). Pre-veterinary students in agriculture at southern land-grant universities. Journal Series 1-810012. Alabama Agricultural Experiment Station. Research conducted as Hatch Project 440.

Dunkelberger, J.E. et al. (1982). Higher education in agriculture: Students at southern land-grant universities. Southern Cooperative Series Bulletin 270.

Ejembi, E.P. (1988). Perceptions of agriculture in Nigeria by students of the Division of Agricultural Colleges, Ahmadu Bello University. Dissertation Abstracts International. March, 1989. 49(9), 2503-A.

Encyclopaedia Britannica (1992). Attitude. 687-88.

Faculty of Agriculture Handbook (1992). University of Swaziland, Luyengo, Swaziland.

Gilmour, J.E. et al. (1981). How high school students elect a college. Research Report 143. PA.

Gooday, D. (1980). Curriculum innovation in secondary school agriculture in Swaziland: A possible model for developing countries. Unpublished Master's Thesis. University of London, London, England.

Gooday, D. (1974). The schools' agriculture pilot project in Swaziland. Educational Development International, 2(2), 94-98.

Graham, G.F.(1990). The effectiveness of selected recruitment techniques on undergraduate students enrolling in the College of Agriculture and Natural Resources at Michigan State University. Unpublished Master's Thesis, Michigan State University, East Lansing, MI.

Harrington, J.T. (1969). Factors related to vocational choices of agricultural education students. Unpublished Ph.D. Dissertation. Louisiana State University, Baton Rouge, LO.

Johnson, C.H. (1963). Why students select agriculture as a major course of study. Department of Agricultural Education. South Carolina State University.

Johnson, D.H. & Troy, W.G. (1981). Activities and needs of UMBC students. Research Report 1/81. Maryland University, Catonsville, Baltimore County. Office of Vice Chancellor for Student Affairs.

Koch, J.V. (1972). Student choice of undergraduate major field of study and private internal rates of return. Industrial and Labor Relations Review. 26(1), 680-85.

Martin, N.K. (1991). Factors influencing college choice. Journal of College Student Development. 32(3), 253-57.

Mickelson, D.B. (1988). The future of vocational agricultural education. Speech given at the annual meeting of the national association of supervisors of agricultural education. St. Louis, MO. Dec. 3.

Miller L.E. & Smith, K.L. (1983). Handling non-response issues. Journal of Extension. XXII, 45-9.

Miller, L.E. (1985). Class lecture handout. Agricultural Education 885 - Research Methods. The Ohio State University, Columbus, OH. Winter Quarter.

Milley, D.J. & Bee, R.H. (1982). The role of profit in the choice of a collegiate major. College Student Journal. 16(3), 258-68.

Mills, M. (1980). The influence of parents' occupation on the career choice of vocationally undecided youth. Research Report 143. Quebec, Canada.

Murray, J.A. et al. (1990). Reality versus expectations: Do the expectations of new students correspond with their actual experience? Paper presented at the Annual Forum of the Association for Institutional Research. Louisville, KY. May 13-16, 1990.

Naylor, P.D. & Sanford, T.R. (1980). Educational maturity, race, and the selection of a college. AIR Forum 1980 Paper, University of North Carolina, Chapel Hill, NC.

Regan, M.C. & Thompson, O.E. (1965). The entering student, college of agriculture. A study of the backgrounds, motivations and goals of entering students in the College of Agriculture at Davis in 1963 and 1964. California University, Davis, CA.

Regional Center for Education Statistics (1984). Occupational aspirations and intended field of study in college. Contractor Report. Miami University. Oxford, OH.

Reynolds, C.L. (1977). Factors influencing college curriculum choice. Agricultural Education Magazine, 49(11), 256-257.

Richards, J.M. Jr. (1970). Who studies what major in college. Paper presented at a symposium of the American Psychological Association. Sept. 3.

Salters, C.R.et al. (1987). The relationships between attitude toward science, science self-concept, and other variables of occupational choice to the science career choice of black college students. Research Report 143. MD.

Seifert, K.L. (1991). Educational Psychology. 2nd ed. Houghton Mifflin Co., Boston, MA.

Simelane, J.M. (1988). Planned use of subject matter content by final-year Swaziland secondary agriculture students. Unpublished Ph.D. dissertation, The Ohio State University, Columbus, OH.

Social Learning and Career Decision Making (1979) Handbook. Cranston, RI. Carol Press.

Sube, H. (1981). Choice of profession, vocational training, occupation and work. Paper presented at the "Youth Sociology". Research Committee of the International Sociological Association. Federal Republic of Germany. March 23-7.

Sukati, C.W.S. (1991). Perceptions of junior secondary students on the Swazi labour market: Implications for career guidance. Boleswa Educational Research Journal. 8, 28-31.

Venerable, W.R. (1974). Parental influence on college and vocational decisions. Journal of the National Association of College Admissions Counselors. 19(1), 9-12.

Wagenaar, T.C. (1984). Occupational aspirations and intended field of study in college. Miami University. Oxford, OH.

Warmbrod, R. (1992). Course Notes - Agricultural Education 995 - Multivariate Data Analysis. The Ohio State University. Autumn 1992.

Welton, R.F. (1980). The development of guidelines for a recruitment program for use in agricultural education at Kansas State University. Research Report 143, Department of Adult and Occupational Education, College of Education, Kansas State University, Manhattan, KS.

Williams, D. (1991). Focusing agricultural education research: Strategies for the discipline. Journal of Agricultural Education. 32(1), 7-12.