

budgetary constraints. In this case the best alternative is to make telephone visitations. Although they are not as effective as personal visits, they usually accomplish the same ends.

The final consideration is that of employer recognition. Although it is primarily a public relations exercise, it does allow the advisor to express appreciation on behalf of the school to employers for their support of internship programs. Appropriate expressions may include framed certificates, books, or tickets to movies or plays. As a minimum, employers should receive a letter of appreciation from the department chairman or internship co-ordinator. A framed certificate has two advantages: it is rather inexpensive and if displayed by the employer, it serves as an effective advertisement for your internship program.

Texas Tech University Program

The Department of Plant and Soil Science at Texas Tech University has patterned its internship program almost entirely after that developed by The Agricultural Technical Institute in Wooster, Ohio and Clark Technical College in Springfield, Ohio. The procedures and forms developed by these schools have been used for several years and represent a very effective system for internship administration. At Texas Tech we have adopted the Ohio forms for our use with minor changes to comply with our specific needs. Copies of the complete set of administrative forms are available from the author.

Although the internship has been a viable, ongoing program at Texas Tech for many years, the incorporation of the formalized procedures described previously has been well-received by faculty, students, and employers. The system provides an orderly method for internship administration which is particularly useful to new faculty members.

CONCLUSION

The overall effectiveness of an agricultural internship program depends on many factors, including faculty, student, and employer enthusiasm, the support of college administrators, and the orderly administration of program requirements. This paper has dealt exclusively with the last factor. Although the system described here may not exactly fit all the requirements that a school may have, it should serve as a practical guide.

Internship is one of the most effective hands-on programs that exists. Proper administration of the program enhances its values and assures uniform evaluation and grading practices.

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SURVEY REPORT

Achievement Tests: Need and Use

Warren L. Anderson and
N. Omri Rawlins

Abstract

In response to current pressures to improve quality in education, a survey was conducted to determine how many agricultural institutions are currently administering achievement tests to agricultural students and how many planned to administer tests in the near future.

Of the 103 institutions responding, three required tests in their major field and ten indicated a plan to administer achievement tests during the next five years. A majority of the institutions responding did not think achievement tests were needed.

quiring more math and science at the secondary level, and academic tests for high school graduates are all examples of efforts to improve educational quality.

When the number of college and university students is increasing there is very little concern by legislators about quality in educational programs. However, when enrollments stabilize or decrease and educational costs continue to increase, legislators no longer assume that universities are providing high quality programs. They require proof. This pressure is increased when the economy slows down, unemployment increases, and tax collections decline as they have during the 1980's.

In response to this national trend the Higher Education Commission in Tennessee has included a quality variable in the formula for funding educational institutions throughout the state. Those institutions who participate in the quality process may receive funds above those justified by the number of students enrolled. Each institution must prove that it has high

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quality programs or initiate specific efforts to improve in order to qualify for these additional funds.

In an effort to participate in the program, the Agriculture Department at Middle Tennessee State University considered the possibility of testing our seniors the last semester before graduation. However, before developing a test for our majors we wanted to find out if any academic tests were given at other agricultural institutions. A questionnaire (Table 1) was mailed in the Spring of 1981 to post-secondary institutions with four-year programs in agriculture. The sources came from the following lists:

1. 1980-81 Directory of Professional Workers in State Agricultural Experiment Stations and other Cooperating State Institutions (USDA Agricultural Handbook 305)
2. Post-Secondary U.S. Institutions with Programs in Agriculture compiled in 1977 by the National Association of Colleges and Teachers of Agriculture.

Table 1. Agricultural Achievement Test Questionnaire

Name of institution _____
 Name of department or school _____
 Name of Respondent _____
 Address of Respondent _____

1. Did your department administer any achievement test(s) to graduating seniors during the 1980-81 academic year that relate specifically to their major area of study? Yes _____
 No _____

If yes, please answer questions 2-7.

If no, please answer question 8.

Please respond to questions 9 & 10 regardless of answer to No. 1.

2. What was the major area(s) of emphasis? _____
3. Was the test(s) required for graduation? Yes _____
 No _____
 If no, why was the test(s) given? _____
 If yes, what score was required? _____
4. What was the major objective(s) of the test? _____
5. Was the objective accomplished? Yes _____ No _____
6. Do you plan to give tests during 1981-82? Yes _____
 No _____
 If no, why not? _____
7. Please send a copy of the test or indicate how I may obtain a copy.

8. Do you plan to administer any agricultural achievement test(s) during the next five years? Yes _____ No _____
 If yes, what discipline(s)? _____
9. Are you aware of any national achievement tests for undergraduates that relate to specific agricultural disciplines? Yes _____ No _____
 If yes, please indicate the name and address of those that administer such tests.
 If no, would you like to see such tests developed? Yes _____ No _____
10. Please add any comment you would like to make in relation to achievement tests for undergraduates in agricultural disciplines.

Return to:

N. Omri Rawlins

Box 555, MTSU

Murfreesboro, TN 37132

Sixty-five questionnaires were mailed to institutions from list one and 72 from list two. Questionnaires were mailed to Deans of the Colleges of Agriculture or Agriculture Department Chairman. Of the 137 questionnaires mailed, 103 were returned: 50 from list one and 53 from list two. In four instances more than one response was received from the same institution.

The survey showed that 100 institutions did not administer any achievement test to graduating seniors during 1980-81 and three did. Two institutions required tests in their major area and one in general Agriculture. In all three cases, the tests were required for graduation but no minimum score was required. All three institutions planned to continue the tests during the next year.

In reference to plans for the next five years, 78 indicated no plans for requiring achievement tests whereas 10 indicated plans for requiring tests. The areas for testing included agricultural education, general agriculture, agronomy, animal science, agricultural economics, and horticulture.

Four respondents indicated an awareness of an undergraduate achievement test that relates to specific agricultural discipline and 87 indicated no awareness of such a test. The only test mentioned was the National Teachers Exam given for certification in agricultural education. Of those who were not aware of national tests, 38 indicated an interest in the development of such tests and 26 indicated no interest.

In response to requested comments, 34 individuals made specific comments which were very broad in nature. Sixteen respondents stated or implied that no national test was needed. Only six indicated an interest in developing a national test. Problems of developing a national test were discussed by seven respondents and nine individuals provided suggestions as to what should be included in such tests and who should develop and administer the tests.

The major concerns expressed were as follows:

1. Due to the diversity of Agriculture, the technology in one region may not be transferable in another.
2. Would be meaningless without pretest.
3. Ratio of academic to nonacademic skills.
4. Teaching to pass the test as the major objective.
5. Who should develop the tests.

Summary and Conclusion

A survey of 137 land-grant and non-land-grant universities was conducted to determine the extent of achievement tests required for students majoring in some field of Agriculture. Of the 103 responses, only three required tests in their major field. However, ten respondents indicated a plan to administer achievement tests during the next five years. A majority of the institutions providing comments did not think achievement tests were needed. Several problems were mentioned relative to a national test in Agriculture,

including how to accommodate for regional differences, how much emphasis should be placed on academic versus nonacademic skills, who should administer the test.

Obviously legislators and administrators have been willing to allow program quality in agricultural programs to be determined at the local level. However, with declining enrollment trends it is questionable whether or not this will continue. Numerous professions, such as nursing, dentistry, general medicine, veterinary medicine, engineering, K-12 public schools, and the legal profession do not allow individuals to practice their profession without passing a state, regional, or national test. In other words, quality is determined by selected representatives of the profession, not by local institutions. Is agriculture so different? Maybe we should give serious consideration to developing local,

regional, and/or national tests so that individual institutions might have a standard test by which to compare their students' performance with some regional or national norm. The National Association of Colleges and Teachers of Agriculture may be the ideal organization to provide the leadership in this task.

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CASE STUDY

Are Introductory Courses Effective?

Virginia I. Lohr and
Donald J. Cotter

Introduction

There is often a wide range of interests and backgrounds among students enrolled in any introductory course (7). This diversity led us to ask: Can a single introductory course satisfy the differing needs of these students? This paper describes the study of an introductory horticulture course in which both horticulture majors and non-majors are enrolled. The study evaluated the effects of the course on students' appreciation of plants, their thought patterns, and their knowledge of plants before and after taking the course.

The Course and Its Objectives

Horticulture 100 is a one semester introductory horticulture course with no formal laboratory. It is offered twice a year at New Mexico State University. Lectures, demonstrations, and class materials have been developed to emphasize concepts of plant growth, development, and productivity. Factors which limit growth (light, temperature, water, and nutrients) are stressed, and relationships between these concepts and specific horticultural practices are examined. Many facts are presented during lectures, but students are not directly responsible for learning them.

Because there is no laboratory, living plants are frequently used for demonstrations. Students are encouraged to examine these plants closely, and to think about what they observe. Projects which are distributed

regularly allow students to grow plants at home and encourage them to carefully and repeatedly study the plants. Thus, the students become acquainted with the dynamic aspects of plant growth and are encouraged to become actively involved with plants and with the learning process.

Evaluation Methods

The effects of the course on students' knowledge and attitudes were evaluated with two unannounced questionnaires administered at the beginning and at the end of one fall-semester and one spring-semester class. Each sample consisted of those who voluntarily completed these questionnaires on both testing dates.

The first questionnaire, which was prepared by the authors, measured plant appreciation, knowledge, and contact. The plant appreciation scale measured students' attitudes towards plants by asking them to rate such statements as "I like plants because they spark a wonder about the future." The horticultural knowledge scales tested the students' familiarity with concepts and facts which were presented in class. The final part of this questionnaire measured the extent of students' previous experiences with plants. Students with only occasional contact with plants were placed in the low plant-contact subgroup, while those with more extensive contact (such as those who were raised on farms or who took vocational horticulture in high school) were placed in the high plant-contact subgroup.

The second questionnaire used was the nationally standardized personality inventory: Cattell's 16 Personality Factor Questionnaire (the 16 PF test), Form A, from the Institute for Personality and Ability Testing in Champaign, Illinois. This multiple choice question-

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