agricultural economics majors, these variables were not useful predicators of class performance.

Students often rely on the "grapevine" and academic counsellors to select undergraduate courses. An error in course selection may result in failing a course, dropping a course during the semester, or not having sufficient background to perform to a student's potential. Any such errors may harm a student's self-image, increase the time required to complete a degree, and/or increase financial costs to the student, parents, or the public.

Any procedure that can minimize course selection errors should be encouraged. The approach described in this article shows promise as a technique to use information readily available in most students' counselling files plus some easily administered diagnostic tests that could reduce course selection errors and improve students' academic performance. While some of the explanatory variables selected in this article are unique to a price analysis course in agricultural economics at Purdue University, several of the variables such as major and grade point index could be applied to any course. To apply this approach to another course in another discipline or university, other appropriate explanatory variables would need to be selected. To perfect this approach to give students and counsellors more confidence in the method, it should be tested for several years, i.e., use pooled cross-sectional and time-series data. It would likely be a better predictor for courses with a larger number of students.

A word of caution. This approach should not be viewed from a strictly fatalistic nor deterministic perspective. Some students who have course and grade point problems in their first few semesters in college sometimes "find themselves" and through improved study/learning habits and increased motivation perform better as upper classmen. Occasionally other students do not perform as well as upper classmen if they lose interest in school or encounter personal problems or distractions. Thus, any quantitative technique for counselling is only a guide and should be tempered with other information that a counsellor knows about a student before giving advice on course selection.

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A REPORT

Microcomputer Use for Agricultural Mechanics

W. Forrest Bear

Introduction

Public schools have used the microcomputer for more than twelve years. Future high school graduates will be able to do limited programming, use word processing software and spreadsheets, and operate menu-driven programs. Students attending post-secondary schools, two or four-year institutions, already possess a variety of these computer skills.

Purpose

The goal of this study was to determine if instructors of agricultural mechanics classes at the collegiate level capitalize on their students' computer skills by using computers in agricultural mechanics classes.

Procedure

Two forms of data collection were used for this study. Interviews were conducted at the American Society of Agricultural Engineers meetings, the National FFA Agricultural Mechanics Contest, and on-site visits to campuses. To achieve a better geographic distribution of respondents, a limited number of questionnaires were sent to other members of the National FFA Agricultural Mechanics Contest Committee. Note, Figure 1 for the state location of respondents.

Figure 1. Respondents by State Location

Findings

Study participants totaled 114; 71 (62.3 percent), had primary appointments in agricultural engineering departments, and 43 (37.7 percent), had agriculture-education appointments. There were 50 agricultural engineers and 64 non-engineers. Computer usage was determined for instructional and non-instructional applications. Computers were used for student instructional purposes by 71.0 percent and for non-

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instructional work by 89.4 percent of the respondents. Sixty-nine respondents (60.5 percent) used the computer for both instructional and non-instructional applications. The use of computers for instructional purposes by those with agricultural engineering degrees represented 62.0 percent of their group as compared to 78.1 percent for those with non-engineering degrees.

The chi-square analysis indicated that those with engineering degrees used MS-DOS microcomputers more than they did the APPLE, whereas the non-engineers reported a greater use of APPLE microcomputers. Those with appointments in agricultural engineering departments used more MS-DOS microcomputers than APPLE, but APPLE microcomputers were the preference of respondents with agriculture-education appointments.

Commercial software was the primary software source for instructional purposes. Those with non-engineering degrees used more commercial software. Those with engineering degrees wrote more software programs than did the non-engineers.

The respondents using the APPLE microcomputer were larger users of commercial software. Custom-made software was more evident by those using MS-DOS microcomputers. The non-engineers used the commercial software packages on the APPLE microcomputer for instructional purposes. The engineers used more software written by self or peer on the MS-DOS microcomputers. When categorized by age, the APPLE microcomputers were used by the older group and the MS-DOS by those in the younger group.

Conclusions

Microcomputer use for instructional and non-instructional work was greater than the author expected. Seventy-one percent of the respondents used computers for instructional work, and 89.4 percent used computers for non-instructional work. Non-engineers (78.1 percent) used the microcomputer for instructional purpose more than the engineers (62.0 percent). The non-engineers were primarily APPLE users whereas the engineers were users of MS-DOS microcomputers. Respondents with appointments in agricultural engineering departments were the predominate users of MS-DOS microcomputers, and those with agriculture-education appointments were APPLE users.

Commercial software packages were used primarily for the class work. Non-engineers used APPLE software packages whereas the engineers predominantly used custom-made software for MS-DOS microcomputers. Non-engineers may have preferred APPLE microcomputer software due to 1) the availability of educational software programs, 2) the acceptance of the program as an instructional tool and 3) the instructor's desire to use the program as intended by the programmers.

Recommendations

The agricultural mechanics instructors who use microcomputers are to be commended for their leadership. Colleges of agriculture need to be concerned about the instructors (30 percent) not using the microcomputer as an instructional tool. Mechanized agriculture tasks suitable for the microcomputer and the advantages and disadvantages of custom-made or commercial software need to be identified. The suitability of different computers for specific applications needs to be evaluated. To encourage instructors to use the computer more often, it is proposed that colleges of agriculture.

1) Conduct seminars on computer applications for instructional purposes and invite specific groups and/or individuals.
2) Conduct seminars on how to integrate the microcomputer into instructional programs.
3) Purchase computers identified by instructors.
4) Purchase software related to planned use in specific classes.
5) Provide follow-up assistance for instructors who have been supplied with hardware and software.

Professional development for college faculty is a continuing process. For agricultural mechanics professors, it must include mastery of the microcomputer.

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Plant Locator — A Computer Program to Promote Learning Plant Identification

Dick Pohl

Abstract

A computerized plant list has been developed and implemented in landscape design and plant materials courses at Montana State University to facilitate locating plant materials. Students learning ornamental plant identification are typically shown only one or two specimens of a species in the field. The plant locator program provides students with a source for additional nearby locations of these species based on 13 different criteria: genus, specific epithet, cultivar, three common names, family, street location, house number,

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