Video-taped Food Science Courses for the Food Industry

S.J. Goetsch and F.E. Cunningham

Abstract

Improving food industry employee education has been a difficult process in the past. However, with current low cost access to video cassette recorders, students can take video-taped college courses at home or at work. For example, Kansas State University offers 43 semester hours of video-taped food science courses. Although some of these courses require short periods of on-campus laboratory experiences, 35 hours may be taken through independent study without the student coming to campus. Prompted by USDA-FSIS introduction of food technologists (series 1382), KSU developed a Continuing Education Food Science Program to meet both the educational needs of the USDA food inspectors and the academic quality standards of the university. Using video cassettes, audio cassettes, and guided independent studies, an educational program was made available to students unable to follow traditional formal education. Since the program was initiated in 1986, over 1000 students from all 50 states have been enrolled in Kansas State University's Continuing Education Food Science Program.

Introduction

Since 1986, Kansas State University has offered a unique program in food science for food industry personnel. The program evolved in December, 1984, when the Administrator of the Food Safety and Inspection Service (FSIS) announced that the USDA would begin introducing food technologists, series 1382, into the workforce of meat and poultry inspectors.

To fill these new positions, USDA required food technologist certification and developed a list of courses in food science, quantitative skills, and other science fields needed for adequate training and certification. The goal was to provide food technologists with a more in-depth understanding of production processes, food chemistry, nutritional content, and additives of meat and poultry. To meet this educational goal, a program was needed that considered unique constraints of inspectors, who travel often, may be located in remote areas far from university facilities, and are often unable to take time off for traditional classroom courses.

When Kansas State University was approached with this situation in 1985, its Division of Continuing Education agreed to become involved and proposed a Food Science Program for the Food Industry. The objective of this program was to take advantage of the consumer-popular video cassette recorder (VCR) and offer video-taped college courses to food industry personnel, especially USDA meat and poultry inspectors. By the spring of 1986, the program was introduced and offered "Introduction to Food Science" on video tape as the beginning course.

Prior to this program, no university educational package was available to help processing inspectors meet their new requirements. KSU is the only accredited university offering a full range of courses approved for USDA certification.

Goetsch is an assistant instructor and Cunningham is a professor in the Department of Animal Sciences and Industry, Kansas State University, Manhattan, Kansas 66506-1600.

(PGSAS continued.)

Additionally, even as three of four students exhibited an interest in pursuing an agricultural career, their perceptions about agricultural occupational conditions did not vary based upon their participation in PGSAS. Students consistently felt that agricultural occupations entailed hard work, would provide moderate pay and be slightly lower in prestige. Again these results are consistent with the findings of the authors listed above.

Implications

It appears that participation in PGSAS reinforces students aspirations to pursue agricultural careers and slightly increases their knowledge base about agricultural careers. However, while this program offers students an intense "hands on" orientation to agriculture it is not the most efficient nor the most economic method to inform all students about agricultural careers.

Additionally, students maintained a "neutral" image of agricultural career attributes even after participation in PGSAS. It is unrealistic to expect attitudes to change following participation in a five-week program for several reasons; predominantly those dealing with the decision making process of choosing a career. Crites (1973) noted that the choice of a vocation is a process, not simply a one-time event, which extends from childhood through adolescence and even into adulthood.

Additionally, image is another critical occupational choice factor. Holland (1985) noted "just as we judge people by their friends, dress and actions, so we judge them by their vocations. Our everyday experience has generated a sometimes inaccurate but apparently useful knowledge of what people in various occupations are like" (p. 9).

A critical question to ask is if students with an interest in an agricultural career maintained "neutral" expectations of agricultural careers throughout participation in an intense program such as the PGSAS, how can we reach students who lack the most elementary understanding about opportunities in agriculture and help them make objective career decisions? Agricultural educators and those involved in agriculture, at all levels, must make a concerted effort to increase the agricultural literacy base of all students before they make critical career decisions. (PGSAS continued on next page.)

Procedures

To implement this program, KSU used video-tape technology to provide a flexible, yet transportable, educational tool so that inspectors would be able to view lectures at their own convenience. The video-tape medium allows taping of on-campus course lectures to provide the same instruction and information that traditional students receive. Of the courses now available, many were made by taping actual on-campus classes and laboratory demonstrations using video cameras and microphones. If this set-up was not available, lectures were taped in a classroom studio on the KSU campus. A series of tapes was produced capturing 14 weeks of lectures for each course.

In addition to the video tapes for course materials, several instructors have compiled classroom notes and handouts into a syllabus, which supplements the lectures. These spiral bound syllabi provide additional reading materials, explanatory notes, tables, diagrams, and space for students to keep course notes. These syllabi also allow instructors a convenient way to provide updated information, while keeping student costs minimal.

To enroll in a course, a student contacts the Division of Continuing Education at Kansas State University, selects a course, and follows proper enrollment procedures and payment of tuition fees. Then, the beginning videotape and course materials are sent to the student. Each tape usually contains two, 30-40 min lectures for students to view in their own homes or at an available VCR. After use of the tape within a 10-day period, the student returns it to KSU or sends it to another student on a shipping route. The next tape in the lecture sequence then is sent to the student. Each course must be completed within one year from the student's enrollment date.

Regular course examinations also are included in the tape sequence schedule. Monitors, usually public school officials, public librarians, or inspectors-in-charge and supervisors, are used to monitor examinations and return the exams to KSU. This procedure helps to maintain the high credibility of the KSU program.

Besides video-taped courses, independent research studies also are offered. These involve the use of local resources, such as public libraries or university facilities. First, a research topic is agreed upon between the instructor and the student. Then, a written report is submitted by the student for grading and course credit. Using this format, students may choose research on a topic of their choice.

Following completion of a course, the student receives a notice of the final grade. After completing 20 credit hours of KSU Food Science Courses, a Certificate of Accomplishment is issued. This certifies that a student has completed the requirements necessary for USDA Food Technologist certification.

To increase incentive, motivation, and participation of employees in educational programs, some agencies and companies have agreed to partially or fully reimburse tuition fees to those students successfully completing courses. These agencies and companies have included both federal and state inspection services and privately owned entities.

Results

The first course to be videotaped was "Introduction to Food Science", a 3 credit hour undergraduate course. An opening enrollment of 104 students indicated both the demand for food science courses and the market potential using the video-tape medium. Since then, the food science program has expanded to 40 credit hours at undergraduate and graduate levels, where credit hours may be accumulated towards bachelor's and graduate degrees. Courses may be taken in poultry, red meats, quality assurance, food chemistry, statistics, and microbiology, to name a few. A prerequisite course in chemistry also is available. All Kansas State University Food Science courses available on video tape have been approved by USDA-FSIS in Minneapolis, MN.

Since the inception of this program, over 1000 students from all 50 states and Puerto Rico have enrolled in at least one video-taped course. For the beginning course, "Introduction to Food Science", the following results have been recorded as of July 15, 1990.

A total of 880 students has completed the course out of 1054 students enrolled, for an 83.5% completion rate. Many of the incompletions are students still within the one-year time limit and will complete the course within the year. Of the students completing the course, 99.3% received a passing grade. Less than 0.7% failed the course, and some students retook the course.

The overall Grade Point Average (GPA) was 3.20 for this course with the following grade distributions for 880 stu-

PGSAS (continued from page 17)

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dents: A = 41.13%, B = 42.73%, C = 11.82%, D = 3.64%, and F = 0.68%. Data from other courses show similar results for completion rates, failure rates, GPA's, and grade distributions.

Since 1986, 90 students have completed the 20 semester hours from the Food Science course list necessary for USDA Food Technologist certification. Many students are still working to complete the requirements for certification.

In general, adult students, especially USDA employees, are motivated and mature individuals who participate in this program because it gives them the opportunity for professional advancement. The GPA'S are high, indicating the students' motivation and ability to learn from the video-taped course, and their interest in the field and the future of food quality control.

Recognizing Kansas State University's efforts, the National University Continuing Education Association presented the KSU Division of Cont. Ed. with the Region V New Credit Program Award. The KSU "USDA Food Technologist Certificate Program" received this award in 1987 and 1988.

In conclusion, food industry employees need more training and education to meet increasing pressure on the food industry to provide a safe and wholesome food supply. The video-taped and guided independent study program at KSU is helping food companies and employees meet this need without sacrificing work hours or company time. Past success of using video-taped courses shows a willingness by individual students and Kansas State University to invest in the education of food industry personnel. Besides meeting USDA-FSIS requirements for meat and poultry inspectors, other food science personnel such as quality control people, dieticians, institutional food handling employees, and public health employees are benefitting from the courses.

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Dissection of An Academic Merit Pay System

Tony Seykora and Janet Donlin

Abstract

Thirty faculty and administrators at the University of Minnesota, Waseca were surveyed in regard to the merit pay system. Of the twenty-one criteria presented for a merit system, all were rated as being important. Criteria that were deemed most important were that the system be non-discriminatory, judged by competent, unbiased evaluators, that the process not demoralize faculty and encourage cooperation among faculty. The merit system currently being used was not rated well on many of the criteria. Faculty and administrators were optimistic that a merit system could be developed that would be beneficial to both the faculty and the University.

Introduction

Merit pay is a method for recognizing and rewarding excellence (Burrill, 1989). Idealistically, the outcome of a merit system would be to eliminate the mediocre and increase the incidence of excellent teaching. Unfortunately, merit pay systems often have not delivered the promised outcome but instead caused fragmentation of faculty, adversarial relationships between faculty and administration, and demoralization of many (Burnside, 1989).

A structured merit system has been used at the University of Minnesota, Waseca (UMW) for eight years. It was originated by a committee of faculty and administrators. A merit evaluation form was developed that is completed by the faculty member for annual review. The completed forms are objectively evaluated and assigned points by a three member committee of administrators based on the following criteria: Teaching, 60 pts.; Scholarly Activity, 20 pts.; Service, 15 pts.; and Professional Growth, 5 pts. and merit pay is awarded from the pool of merit money based upon points assigned. Faculty members are basically ranked from top to bottom. If one faculty member gets a high merit raise, there is less money available for the rest of the faculty. Merit pay accounts for about one-half of the total salary increases given each year. The system has undergone several revisions and refinements throughout the years but has not gained popular support from the faculty. In fact, the level of acceptance by faculty has decreased dramatically over the years.

The objectives of this study were to:

1. Have UMW faculty prioritize possible criteria of merit/salary adjustment systems.
2. Have UMW faculty judge the present merit system

Seykora is an associate professor and Donlin is an assistant professor at the University of Minnesota, Waseca, 1000 University Drive SW, Waseca, MN 56093.