

Using discipline and faculty salary survey data from the Office of Institutional Research at Oklahoma State University (1982), the effects on total university faculty salaries from the employment practice of hiring only assistant professors to fill vacant faculty positions was estimated. Total university faculty salaries declined from \$9,718,900 in the current year to \$9,405,660 in the five year projection using the projections in Table 2. Different total university faculty salary estimates would be obtained if different faculty hiring practices are assumed.

For the above example, it was assumed that only assistant professors were hired to fill vacated faculty positions. This faculty hiring policy has both its advantages and disadvantages. One major disadvantage in hiring only new Ph.D's as assistant professors to fill vacated positions is that they are unproven. It can be assumed that new assistant professors have been exposed to the new procedures, methodologies and theoretical developments in their discipline, but their abilities as a teacher and/or researcher are unknown.

If, however, the university attempts to hire associate professors and/or full professors to fill most of the vacated faculty positions in the college the university will employ persons having proven records as teachers and/or researchers. If the newly hired associate or full professor is recognized by their discipline, the new faculty member immediately adds prestige to the college and university. If the new faculty member is a noted researcher, the university can become a recipient of additional grant monies. However, the major disadvantage in hiring an associate and/or full professor to fill vacant faculty positions is that the salary necessary to attract faculty of this rank may be quite high and could strain the university budget.

As can be seen from Tables 1 and 2, the Markov Chain procedure can be used to forecast the effects on faculty composition and salaries from various employment strategies. If a new department is created or curricula emphasis of the university administration is changed, such as, promotion of "hi-tech" engineering courses, the potential effects to the faculty of the College of Agriculture can be estimated.

A major objective of this paper is to provide a vehicle by which faculty of different colleges at a university can recognize the interrelationships between their college and other colleges on campus. Using the Markov Chain Faculty Flow Model and estimated university budget, changes in faculty composition and number for each college in the university can be forecast for a specific employment policy and university curriculum direction. From such an analysis, administration and faculty in the College of Agriculture are able to estimate the possible effects to themselves and their program if a given university administration policy is enacted.

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## Optimal Readiness Testing: Giving Students a Choice

Frank W. Woods

### Abstract

*Are students better prepared than their teachers to determine whether they are personally ready to take an examination at any given time? In two courses, for four years, students were given the option of determining whether they wished to take the first two of three tests which were administered each term. The evidence indicates that they preferred to be given a choice rather than be required to take all three tests.*

### Introduction and Objectives

During and following a unit of work, students are tested to find out how much information they have assimilated and are able to use. How frequently should tests be administered to make these determinations, and who should determine their rate of frequency? Options for the instructor seem to be without limit, varying from short, daily quizzes to a single examination given at the end of the term. However, the ability of even excellent students, who may be taking as many as four to six courses, to bring all loose ends

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together, to know and understand the material, to have a positive attitude, and to exhibit their best performance in every course at a single point in time, may be limited by the time which is available for study. This paper examines student acceptance of a testing system which enables students to determine personally, but within limits, their states of readiness to be tested and which gives them the option of missing some tests, without penalty, if they do not feel prepared to exhibit maximal, or at least, optimal, performance.

### Methods

On the first day of each term, each student is given a handout containing the following information:

- (1) There will be a total of three written tests during this course. There will be no other tests, quizzes, or examinations of any type.
- (2) Students will not be required to take either of the first two tests, which are optional.
- (3) Everyone will be required to take the final test.
- (4) The dates of all tests are on the course schedule, which you have been given.
- (5) Grades will be pro-rated on the basis of the number of tests that a student takes.
 

percent of tests taken	grade per test
final test only (1)	100
two (2)	50
three (3)	33
- (6) There will be no makeup tests. Exceptions may be made, in the event of illness on the part of the student or a death in the family.
- (7) Students must make the decision to take a test before it is seen. When the time for a test is at hand, the class will be notified and students who do not feel prepared are at liberty to leave the classroom. If a test is accepted, it must be taken.
- (8) Each test will be given on a Thursday. I prefer not to give tests on Mondays and Fridays because of higher absenteeism on these days. A Tuesday or Wednesday would serve equally well.
- (9) The subject matter of each test will be cumulative from the first day of lecture. The subject matter of all tests will be taken in equal amounts from all lectures and reading assignments.
- (10) The type of each test, whether essay, short answer, long answer, etc., will be announced during the lecture period before each test. Tests will usually be of the essay type.
- (11) It will be in the best interest of most students to take as many tests as possible. However, there will be no bias if the student wishes to take only the final hour test.

The testing system is discussed in detail, and students are given an opportunity to ask questions. Every attempt is made to make students aware of all of its aspects, including pitfalls. They are asked, once again, at the beginning of the second period if they fully understand it, and discussions frequently ensue.

Students were asked, at the end of each term, whether they preferred this system of testing or the "regular" system in which they would be required to take all three tests. A paired "T" test was used to determine whether differences in answers are real.

Classes were too small to permit splitting for statistical purposes of grade comparisons.

### Results

Table 1 displays the results of class surveys given at the end of each term.

**Table 1. Student responses to the question, "Would you prefer to use the test option system or one in which you are required to take all tests?"**

School year	Class	Student Response	
		optional tests	required tests
1980	A	47	1
1981	B	5	0
1981	A	42	1
1982	B	7	0
1982	A	17	2
1983	B	8	0
1983	A	23	1
1984	B	9	0

Of the 170 students who have used this system over the past 4 years, about 3 percent have said that they would prefer to have been required to take all of the tests ( $P > .05$ ) (Table 1). In the smaller of the classes (5 to 9 students), which was a senior level course, all students preferred it. For the larger, junior-level class 134 students preferred it while 5 (3.7%) would rather have had tests required ( $P > .05$ ). This seems to indicate that one of the greatest benefits is that it is liked by students, and on this basis, the system is a success.

Certainly there is evidence which is not in complete accord with these findings. One study (Wilkins, 1981) found that students did not like to be tested weekly, but were glad, at the end of the semester, that they had been tested so frequently. Palmer (1974) found that a non-tested group of students did not perform as well as those who were tested. Moderate variations in testing frequency may not significantly affect learning (Monk, 1969). Such findings as these do not indicate that if students are permitted the option of taking fewer tests, their performance will be improved. However, there is the possibility that an overall improvement in all courses could be gained by having less pressure for immediate performance in at least one course.

The question necessarily arises as to how this procedure enhances the learning process. It is certainly indirect, because it contributes only to the arrangement of the student's study habits, and not necessarily to the total number of hours which he spends on a particular course. While it has the potential to help avoid final-hour cram sessions, it does not reduce the total amount of material which must be learned.

Of greater importance than any of these considerations is the role that the system plays in helping

students to make choices about matters that can effect their futures. It imparts a responsibility for making well-thought-out decisions with regard to the management of personal time. This is a learning experience which is not necessarily possible to grade, but which should be an integral part of the learning process.

The fact that it helps to remove the professor from his sometimes role as a surrogate parent and establish him as an advocate and mentor is a strong advantage. When the system is presented at the beginning of each term, the reasons why a student should take as many tests as possible are presented, discussed, and advocated. But the final section is given to the student, which should contribute to his maturation and self-dependency.

The system can probably be applied best when students are sufficiently mature to make decisions concerning their futures. College sophomores, and

higher, should be able to handle the responsibilities. Freshmen are frequently under too many stresses of adjustment and may not be able to make rational choices.

The fact that students like to have freedom to make a choice about their readiness to take tests is evident. Statistics were hardly necessary for affirmation.

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## Community Involvement in Technical Education

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How can a two-year college for agriculture effectively involve itself with and relate to the community? How does the college work with the community?

The University of Minnesota Technical College, Waseca, located in southern Minnesota started in the fall of 1971 with specific objectives and principles in mind. One principle to be stressed was that it accept all adults and integrate students of all ages into the same courses. This practice has been successfully carried out to date.

### Goals, Objectives and Priorities

The college empathizes with the community and area residents by having specific goals, objectives, and priorities. One goal is to continue close liaison with the agricultural industry and provide life long learning opportunities.

Based on background studies and resultant philosophy, the single mission college for agriculture has stressed a close working relationship with the community. UMW faculty members worked with the Chamber of Commerce in planning the college.

A list of civic organizations was developed in Waseca, (a city of approximately 8,000 population) and the surrounding area. Each year faculty and staff members are asked to volunteer to be liaison members between the college and the organizations to which they belong. One hundred fifty one organizations were identified and all but a handful had active UMW contact persons. A sample of these groups include 14 churches, 13 agricultural organizations and activities,

14 educational groups, 12 governmental bodies, and 10 recreational groups.

### The Philosophy of Community Involvement

The college courses are open to adults, including agricultural industry personnel, farmers, veterans and anyone who can profit from them. Special courses for adults have not been developed since it is felt that the regular courses offered at the Technical College should have value for all people working in the agricultural industry. A Cooperative Farm Management Program for Veterans was started in the fall of 1973 and enrolled more than 30 veterans in the following five years.

The University of Minnesota, Waseca, the Waseca Park and Recreation Department, the Waseca County Extension Service, the LeSueur-Waseca Regional Library, and the Waseca Public Schools cooperatively sponsor a community and area education and recreation program. A wide variety of courses are offered in this area-wide program.

The Technical College, Waseca, operates on the philosophy of making its facilities available for the good of the people of the area. College open houses, FFA judging contests, 4-H and Extension groups, and a wide selection of organizations and activities are furnished rooms, teaching aids, and other meeting resources. Accommodations for meals and banquets are made upon request.

### College Courses Available to the Community

Off-campus courses have been taught in a number of communities in southern Minnesota. As one part of this, regular UMW courses are taught during fall, winter and spring quarters in an Agricultural Transfer

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