

TEACHING MANAGERIAL STATISTICS USING A HYBRID COURSE STRUCTURE

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ABSTRACT

This research studied the effectiveness of a hybrid approach to teaching managerial statistics, using data from a course taught at California State Polytechnic University, Pomona. Studies on the effectiveness of web-based approaches to teaching have reported mixed results, indicating that it may be context and course dependent. The goal was to identify predictors of success in the course by understanding the relationships between different criteria and student performance. It was found that there was a significant but weak correlation between student performance and use of online resources. A step-wise regression to identify factors with significant impact on performance indicated Grade Point Average as the only significant variable.

INTRODUCTION AND METHODOLOGY

This research used data from a core course in Managerial Statistics to study the effectiveness of the hybrid approach. The data was from the Winter and Spring 2005 quarters, comprising three sections and including 92 students. The main research objectives were:

- To understand the relationships between various factors (e.g., # of hits and grade on the course)
- To identify the predictors of success in the course (student performance, as measured by course grade)

WebCT was used for the online component of the course. Students could download class notes and were expected to study the material independently. There was a quiz associated with each online class, which was administered online, and students had the flexibility to take the quiz within a specified time window. The overall course grade was based on the online quizzes, and in-class midterm and final exams. The data was analyzed using simple linear regression and correlation for the relationships between factors. In addition, a stepwise multiple regression was run to identify the significant predictors of the course grade.

SUMMARY OF RESULTS

An analysis of the relationships between various factors showed a weak but significant correlation between course grade vs. number of hits (p-value = 0.0015), and between student GPA vs. number of hits (p-value = 0.0026). A step-wise regression to identify factors with significant impact on the course grade (using 0.05 level of significance) indicated that student GPA was the only significant predictor variable ($R^2 = 0.5759$).

NOTE: A literature review, list of references, and additional details can be obtained from the authors.