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INSTRUCTIONAL SUPPORT SOFTWARE: ITS EVOLUTION AND CURRENT STATE OF THE ART IN THE BUSINESS CURRICULUM

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ABSTRACT

Software support in the business curriculum has changed substantially during the past decade. These changes are especially noticeable in the business policies course where experientially-based learning has often been used. Today, the computer has entered the classroom with the advent of instructional support software. This software allows dynamic demonstration of lecture topics using computer-based projection technology. Furthermore, this software can be beneficial in almost any area of the business curriculum. With this in mind, the authors have developed a state-of-the-art instructional support module for demonstrating the dynamics of PERT/CPM relationships - - a management science topic.

INTRODUCTION

Properly designed software can enrich the classroom experience and provide the instructor with considerable flexibility in the presentation of subject matter. This paper describes the evolution of software support in the Pace business policies course and the role that instructional support software now plays in this course. It then goes on to demonstrate an instructional support module developed by the authors for use in a management science course.

CURRENT COMPUTER SUPPORT IN BUSINESS POLICIES

Since business policies courses often make full use of computer-based instruction, they provide a good indication of the computer's potential in the educational process. At Pace, three modes of computer-based instruction are now in use: dynamic decision making simulations (e.g., business games), software-based case studies solved by students using quantitative tools (e.g. , Lotus 1-2-3) and qualitative tools (e.g., key actor analysis), and dynamic demonstration of lecture topics using computer-based projection technology. The software used to accomplish this last mode is termed instructional support software.

INSTRUCTIONAL SUPPORT SOFTWARE

Based on our experience in business policies, it appears that instructional support software will be the new frontier in computer support for business courses over the next decade. It is likely that this software will become a part of future textbook packages just as test banks and transparencies are today. This software can be defined as those programs that faculty members would use to demonstrate specific key points in a lecture. For example, if one were lecturing on sampling, it would be interesting to have a real time demonstration showing how a sampling distribution approaches the true normal distribution as the value of "N", the sample size, increases.

AN INSTRUCTIONAL SUPPORT SOFTWARE EXAMPLE

Instructional support software is most useful when a concept is hard to teach because of the static nature of overheads or other visual aids that might be used. The concepts of project management, namely PERT and CPM, fall into this category. It is difficult to lecture about such topics as predecessor and successor activity relationships while graphing a sample network on the blackboard. Overheads help to some extent but are limited in that they do not show the progressive, step-by-step completion of the network.

To solve this problem, the authors have developed instructional software to display PERT/CPM relationships in a real time mode. The software is menu driven and allows the instructor to focus on the theory while the program graphs and develops the activity relationships in the network. Data in the software is geared to a case study, which involves a classic PERT/CPM problem and several levels of analysis (e.g., latest finish time, CPM crashing).

The software module operates in two modes: manual and automatic. The manual mode allows the instructor to graph one activity at a time. The automatic mode graphs the entire project diagram. The instructor can plot the network on an activity-by-activity basis explaining each activity's interaction along the way or switch to the automatic mode and have the network graph completed by the program. Figure 1 shows the first four activities plotted using the manual mode.

FIGURE 1
PLOT OF PERT NETWORK USING MANUAL MODE
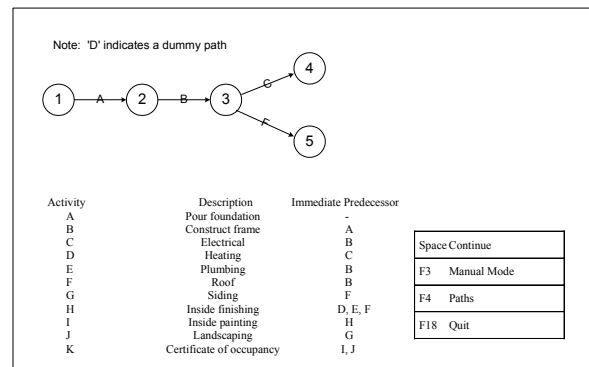
CONCLUSIONS

The integration of the computer into the business school curriculum is as important an advance in business instruction as introduction of the case study. The computer moves the case study from a static picture of a critical incident to a realistic dynamic simulation of that situation. In the future, the authors believe that the trend will be toward the use of real time models, expert systems and computer projection technologies to support class activities.