

SUGGESTIONS FOR STUDENT INPUT OF DECISIONS
IN GENERAL MANAGEMENT SIMULATIONS

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The purpose of this paper is to describe an approach to having student teams submit and input their decisions in a general management simulation used in a business policy course. In this course the general management simulation - TEMPOMATIC IV (Scott and Strickland, 1974) is used. This simulation requires teams to make decisions in approximately 70 areas each decision period. The decisions must be punched on six separate cards or represent six separate lines in a data file.

Our specific problems in using the simulation were that we did not have key punchers readily available to punch the decision cards for the teams nor did we have ready access to a card punch for student teams to punch their own decisions. In addition, as a small institution we did not have student assistants available to handle the mechanical aspects of decision input.

Since we have a time-sharing system with a fairly large number of teletype terminals at various locations around the campus we decided to have student teams input their own decisions directly to the computer.

Recognizing that student input of decisions could create problems we planned around some of the more critical problems that might arise. First, we rewrote the program to accept the decision input in a format which does not require field specification by column so that students would be able to type in their decision without worrying about field specifications. Second, we wrote a detailed description of how student teams should input their decisions. Third, we required student teams to run their decisions through a "checker" program provided for the Tempomatic IV simulation. This program prints out the decision variable name and the value submitted for that variable for all decisions. If certain critical errors which could cause the simulation not to run are detected, or if certain highly unlikely decisions (e.g., zero production) are found, error messages are printed out by the computer. The checker program was operable at the terminals so the student teams could create their decision files, run them through the checker program, and obtain immediate feedback on the decision values contained in the decision files. Fourth, we assigned each student team a file name and a password so that each team's decisions would remain confidential. And fifth, we wrote a program which would merge all the student team files into a master file for submission to the TEMPOMATIC IV program. This program was run by the game administrators.

The major point to be made in this paper is that having the students input their own decisions worked extremely well. We had

ten teams playing the simulation and each team made decisions for thirteen decision periods. Yet, we had no errors in decision input. This result appears to contradict the contention of Faria and Nulsen (1975) that “students should not be allowed to input their own decisions, either through punched cards or direct terminal access to the computer.” The lack of errors facilitated one of the more widely cited benefits of computer business simulations--the rapid feedback of results. Even if errors had occurred, it would be possible to argue that it was the students’ responsibility to see that decision input was correct. Thus, the student could not blame a key punch operator for an input error and request to resubmit the decision. Since we did not have to resubmit decisions we had more rapid feedback of results.

We experienced only one situation where a team failed to submit a decision on time. Our procedure for handling such cases was to run the team’s decision from the prior decision period. Since the decision files created by the student teams were not eliminated when merged into the master file it was a relatively easy matter to use the prior decision. We believe that having student teams responsible to input their own decisions contributed to error free decision inputs, timely decisions and thereby timely return of results, and the placing of responsibility for accuracy where it belongs.

While our experience was successful we believe that a number of conditions are necessary for students to accept the procedure and insure success. First, the students must realize that they will be responsible for their decision inputs; second, a detailed description of how to input decisions must be provided; third, a checker program must be provided and use of it required; and fourth, a detailed time table for decision submission must be provided to students.

The capability of having students input their own decisions has other interesting benefits. It is possible to have students play business games right at the computer terminal much as they currently play computerized parlor games and other computerized games such as golf. A number of relatively simple business games which are designed for terminal play are provided by Frazer (1975, 1977). These games permit the students to make decisions some of which require the use of quantitative tools such as linear programming.

One general management simulation which can be adapted for play right at a terminal is Integrated Simulation (Smith, Estey and Vines, 1974). The output from this simulation is concise enough that it can be printed out rapidly at the terminal. One student can sit down and make decisions for a number of teams or a group of students can get together to compete. The results would be printed back right at the terminal and students could get immediate feedback concerning their decisions. There is some

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evidence that student input of decisions coupled with output being received by the student at the terminal has some advantages over batch output returned by the game administrator (Edge, 1975). In addition, the students could experiment with different decision making approaches and compare the results. This type of experimentation, feedback, comparison and evaluation can facilitate learning.

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