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COMPARING THE SIMULATION WITH THE CASE APPROACH: AGAIN! BUT THIS TIME USING CRITERIA APPROPRIATE FOR THE SIMULATION

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ABSTRACT

The purposes of this study were to identify academic learning tasks best accomplished with a simulation and compare class sections using a simulation with those not using one as to the accomplishment of those learning tasks. The learning task chosen was financial data analysis, including diagnosis and manipulation. Students exposed to class sections of Business Policy with a simulation learned these tasks better than students exposed to sections without a simulation.

INTRODUCTION

At one time, users of simulations were a bit insecure about the value of simulations, so some did research comparing their pedagogy with others as to learning enhancement. Simulations were a new pedagogy, thus a challenge to orthodoxy. Since the technique needed to defend itself, comparisons were usually in terms of a traditional criteria, that of delivering cognitive course material, and comparisons made were usually in terms of cognitive learning. Those days are essentially over. The value of simulations is not in question. But one question has not yet been answered by comparison studies: Does the simulation do a better job of helping students learn what the simulation is supposed to teach best?

The present study's purposes are to identify learning tasks best accomplished with a simulation and to test whether sections taught with a simulation do a better job of helping students learn those tasks than sections taught without a simulation. Part of the value of this study is to provide greater evidence of the validity of the simulation as a learning technique.

The Task

The learning task chosen as well suited for accomplishing in a simulation was an analytical one involving quantitative data manipulation, primarily financial. In simulations, players need to analyze and synthesize financial and other objective, functional information in order to make effective decisions (Scott & Strickland, 1985). Players also need to understand the relative consequences of the alternative decisions open to them (Jensen, 1992).

METHOD

Subjects and Classes

The subjects were 103 college seniors from four sections of a Business Policy course at a midwestern university, each meeting twice a week for 75 minutes. Two were taught by the senior author of this paper using lectures on strategy, case discussions, and a simulation. Grades were based on the game, class participation, and two written case analyses. The other sections were taught by another tenured faculty member with four weeks of lecture including 75 minutes on financial analysis and case discussions presented by students. Grades were based on a theory-based test, class participation, and the presentation.

The Learning Measure

Learning was measured by two forms of a multiple-choice and short-essay examination constructed of material routinely confronted by students competing in a simulation, for example, determining costs of goods sold.

RESULTS

Students exposed to the simulation made greater test score gains on the learning measure than students only exposed to cases and strategic theory ($t=3.37$, $p<.Ol$). These results suggest that students do better in learning firm and business-related data analysis and decision making consequences when exposed to a simulation than when only exposed to cases and theory.

While the authors believe that these results are valid, two methodological flaws temper the above conclusions. First, the class sections may not be perfectly comparable. In the two simulation sections, 94% of the enrolled students took both test forms compared to 46% in the control sections.

Second, the test used to measure learning may not be valid. Learning was measured by parallel forms of a test reflecting what the authors believed students learn in the simulation. Whether the test reflects real learning is arguable. On the other hand, there is little reason to believe that skills learned in a simulation aren't also taught with cases, which contain financial and other quantitative data. So while the sections may have been different in some respects, the learning goals for both included financial analysis and application. In addition the items in the test were logically chosen by the authors and an argument for content validity exists. Additionally, Spearman-Brown reliability coefficients were calculated for each form and were .65 and .7 respectively.

CONCLUSIONS

Considering the results of this and other studies, comparisons of the simulation with other pedagogies suggest that the simulation is equally effective in facilitating the acquisition of cognitive material and perhaps superior in helping students analyze, synthesize, and apply financial data.

REFERENCES

Tables and a list of the twelve references researched for this study may be obtained from the senior author.