

# Developments in Business Simulation & Experiential Exercises, Volume 8, 1981

## STUDENTS' PERCEPTIONS OF LEARNING BY SIMULATION

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### ABSTRACT

This panel presents and summarizes comments by college seniors and MBA students who have participated in simulation the business policy courses at Wright State University over the past eight years. More than 1,500 students have completed questionnaires that asked them to comment on simulation as a learning technique. From these comments, we can understand how Students perceive simulation and what they learned from it.

Comments on the questionnaire fell into five categories

1. The individual's feelings about his/her simulation experience.
2. Criticism of the simulator (model).
3. Criticism of game administration.
4. Comparison of simulation with other learning techniques.
5. Evaluation of simulation as a learning experience.

In assessing the value of a learning technique, students' opinions should not be overlooked. This study indicates that nearly 78% of the students who experience simulation in the policy course find it enjoyable. They are motivated to work on it harder than on most exercises. They were aware of shortcomings in the models and the way the games were administered. This feedback was very helpful to the instructor in correcting the approach for succeeding classes. They felt that simulation was superior to other techniques, specifically to cases and text-lectures, for learning in the policy course. Although a few disagreed, most students (94%) believed simulation was a positive learning experience. Specifically, it taught them:

To be future-oriented; to think ahead. To understand the importance of other disciplines.  
To think before acting.  
To get an idea of how managing a complex organization feels.  
To work with others as a team.  
To organize decisions so they make sense. To look for results as a measure of success.

### INTRODUCTION

How much do students really learn from participating in a pedagogical simulation? Most students enjoy the experience and work hard to compete in the simulated business environment. But, what do they learn? We try to measure learning by tests, knowing that tests are imperfect. Some say that the only true criterion of learning is the ability to apply what is learned, something that cannot be evaluated in the classroom. This paper presents students' perceptions of what they have learned. Specifically, it quotes and summarizes comments by college seniors and MBA students who have participated in simulation exercises in the business policy courses at Wright State University over the past eight years. After experiencing the delight and trauma of steering their firms through three or four simulated years of operation, more than 1,500 students have completed evaluation

questionnaires. Some of the questions asked them to comment on simulation as a learning technique.

Although their opinions may not be accepted as valid proof of learning, they provide important insights into the value of simulation as a learning technique. From their comments, it is obvious that they believe they learned some very important lessons.

The philosophy of this paper is to let the students speak for themselves. Therefore, comments from the evaluation questionnaires are quoted almost as they were written.

### STUDENTS' COMMENTS

More than 1,500 comments about the simulation exercise were considered for this paper. With some overlapping, they fell into five categories:

1. The individual's feelings about the simulation experience.
2. Criticism of the simulator (model).
3. Criticism of game administration.
4. Comparison of simulation with other learning techniques.
5. Evaluation of simulation as a learning experience.

#### The Individual's Feelings About the Simulation Experience

The questionnaire did not specifically ask students how they felt about simulation. The following comments were included in answers to several of the questions. Almost 78% of the respondents stated that the experience was enjoyable. They used expressions, such as, simulation was fun, "very enjoyable," "made learning more interesting", and "a 'wow' experience".

Some felt that simulation was a motivator for themselves and their teammates. Examples include, "it took lots of time, but I hardly noticed"; "our team was enthusiastic and motivated the whole time"; "it made learning easy; 'we could hardly wait to get our results'".

About 15% of the students were not turned on by simulation. Sometimes they gave reasons: "Simulation was difficult to get excited about; "We never really felt we had control of our products and never could figure out the market; 'it was more work than it was worth'; "the game was too easy and boring". A few (about 2%) were downright hostile toward the technique. "A waste of time"; "just busy work"; "throw it out".

The instructor gains a great deal of satisfaction, because most of the students are obviously motivated and thoroughly enjoy the simulation experience. The impression is that the students who have negative attitudes cannot or will not spend the time necessary to become familiar with the model and do the analysis necessary to make reasonable decisions. This cannot be confirmed by the questionnaires because they were anonymous and comments could not be associated with names.

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### Criticism of the Simulator (model)

Many of the students praised or condemned the model, itself. Those who liked it well enough to say so wrote: "provided me with a real-to-life feeling about a real business situation"; "in simulation, you can see the results and that makes it more interesting"; "ties together the major functions of a business"; "brings theory to life"; and "makes you see how things really work".

Some students commented about perceived flaws in the model. "Too complicated"; "Too simplistic"; "leaves out half of the decision areas"; "things don't work like that in real life"; and "In real companies managers make decisions more often than every three months". (Note: the last remark refers to the fact that each decision period represented one quarter of company operations in the models used.)

Others questioned the use of random numbers to simulate uncertainty. "Why should a random number stop my production when I spent lots of money on maintenance?"; "I object to the strike. A random number caused it when my offer (to the union) was as good as some others". Of course, the role of random numbers to simulate uncertainty was explained, but was obviously not accepted by a few students.

About 5% of the respondents wanted a more challenging model. "Make the game harder and more challenging with more variables"; "the simulation needs a good marketing problem"; "there is no place to invest your earnings to make more money, except in a savings account"; "there are no personnel problems and these are the toughest ones in real life. These comments are valid criticisms of most simulators. Every model has its strong points, but none can simulate all the complexities of a real organization. These comments are taken from students' evaluations after participating in the following simulations:

Jensen and Cherrington, The Business Management Laboratory, Business Publications, Incorporated, 1973 and 1977.

(Used for undergraduate courses.)

Scott and Strickland, Tempomatic IV, Houghton Mifflin Company, 1974.

(Used for undergraduate courses.)

Waggener and Von der Embse, Enterprise, (Unpublished)

(Used for graduate courses.)

### Criticism of Game Administration

The simulation exercises were conducted primarily by teaching assistants (graduate students) who provided briefings, progress reports, and advice. In addition they collected decisions, prepared computer run decks, distributed reports, and recommended grades. All this was done under the guidance of the course instructor. Many remarks showed appreciation for help and understanding from the game administrators: (Chris is a great administrator. She can set your thinking straight without giving you the answer"; "the good attitudes of the leaders kept us thinking positive even when we lost money"; "Phil is tough, but pleasant and fair."; "The manual was good.")

Some students felt that briefings were inadequate: "We need more step-by-step instructions."; "After the first briefing, I was still lost; "Some things are not in the manual. You should have told us."

The game administrators were not always appreciated. This

is obvious when a student writes, "Just as we were beginning to catch on, she (the game administrator) raised the prices and we lost money again". Another complained, "I would have enjoyed the simulation if Sherri had not been such a stinker. She wouldn't listen to our reasons for getting the decisions in late".

These remarks, and dozens of others helped the administrators correct some of their faults. Unfortunately, graduate assistants change every year, so the course instructor must provide continuity to game administration and good orientation for new assistants.

### Comparison of Simulation with Other Learning Techniques

The questionnaire was designed to have students compare simulation with the case study technique, and with the text and lecture technique. All three are used in the policy courses.

The following remarks illustrate how some students felt: "The cases were well done and interesting. The simulation, however, provided more experience in making decisions"; "Cases were OK, but in the simulation, you had to live with your decisions and correct them next time."; "Cases and simulation were great. Readings were dry. There were very few lectures, which is the way I like it."; "Case presentations improve communication skills and the simulation improves decisions."; "The cases required us to apply knowledge. The simulation seemed a bit unstructured."; "Text was boring. Cases were too long, but I enjoy case work. Simulation W&B too much for a summer term.

To summarize, students judged that simulation was superior to both cases and text for integrating concepts, demonstrating organizational dynamics, creating interest, motivating, and providing practical learning. The text-lecture method was strongest in promoting the best understanding of top management concepts. Cases were quite trying, but second to simulation in integrating business concepts and in providing a good problem-solving experience.

### Evaluation of Simulation as a Learning Experience

The great majority (94%) of the respondents were very positive about simulation as a good learning experience. The few negative remarks faulted it for being too simplistic, too much work, or too frustrating. Examples are: "The simulation didn't go far enough. It probably gave us a false idea about running a business"; "Everything was too complicated. I never did understand it"; "Never have I worked so hard and learned so little"; and "I would have learned more if I could have figured out how the ----(sic) thing worked".

Fortunately, most of the students felt that they learned from simulation. Their comments indicate their perceptions. "It taught me that you must always think ahead or you are already behind."; "I think we understand the importance of other professional areas much better"; "The simulation required thinking. Good!"; "Makes you think like a manager in an integrated company should think"; "Gives you the impression that you are actually running a company"; "I nearly died when we went out on strike. I guess real managers feel the same way."; "The best experience was working with my team members. We argued a lot but learned a lot. The victory party was a bash."; "I wish all my business courses made as much sense as this one"; "I learned a lot because I could see the results of my decisions. found this very valuable and fun."; "I have been a foreman for two years and never have understood those weird

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decisions made up the line. Now I understand. Guess I made some, myself.”; “I learned that you can’t let up. You’ve got to analyze every decision.”

If, in fact, the majority of students learned the lessons expressed in these comments, simulation is worthwhile.

### CONCLUSION

In assessing the value of a learning technique, students’ opinions should not be overlooked. This study indicates that nearly 78% of the students who experience simulation in the policy course perceive it to be enjoyable. They are motivated to work on it harder than on most exercises. They were aware of short-comings in the models and the way the games are administered. This feedback is very helpful in correcting the approach in succeeding classes. They feel that simulation is superior to other techniques, specifically to cases and text-lectures, for learning in the policy course. Although a few disagree, most students (94%) believe simulation is a positive learning experience. Specifically, it teaches them:

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2. To understand the importance of other disciplines.
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4. To get an idea of how managing a complex organization feels.
5. To work with others as a team.
6. To organize decisions so they make sense.
7. To look for results as a measure of success.

How much do students learn from simulations? We may never know for certain, but we do know how students perceive simulation as a learning technique.