

Developments in Business Simulation & Experiential Exercises, Volume 10, 1983

IS THE COMPUTERIZED BUSINESS SIMULATION RELEVANT? BUSINESS PROFESSIONALS PLAY A STUDENT GAME

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ABSTRACT

The following paper explores the issue of whether business games (specifically, one such game) used in undergraduate instruction are considered to be useful and realistic by business practitioners. The paper also compares businessmen and students using the same game on a variety of measures, such as frustration, confidence and involvement. The study is based on a simulation workshop held for business professionals where a business game typical for undergraduate education was used. Survey results indicated that business professionals perceived the game as highly realistic and useful and that they and students had similar self-perceptions on confidence, involvement and frustration during the exercise. Some suggestions for improving simulation exercises for business professionals are also offered.

INTRODUCTION

In recent years, computer assisted business games¹ have been touted as pedagogical breakthrough for undergraduate and graduate instruction in Business Schools. Along with these games, several studies have also appeared in the literature expounding on the probable benefits of the games, for example, stimulating learning, [1] helping students develop a better 'real world' sense of economic and business behavior, [2] assisting students at understanding their own behavior and attitudes toward business decision-making, [3] as well as other positive learning advantages for both student and instructor.

Of the above assertions, the 'real world' relevance and usefulness of the business game requires further investigation and validation. A simple but logical way to do this is to determine how do bona fide business professionals in fact perceive the computer assisted business game used by academia in terms of its 'real world' orientation and usefulness. Given this research issue, this study attempts to examine the following: (a) how do business professionals perceive the real life similarity and usefulness of one such computer assisted business simulation, Business Exercises through Computer/Instructor Designed Environment (DECIDE), [4] (b) how do they rate their own confidence in making management decisions, their degree of involvement and frustration throughout the game? and finally, (d) how do the business practitioner's perception and participation in the simulation compare with assessments obtained from students reported by Strang, et. al. [5].

METHODOLOGY

Participants

A total of 54 business professionals from local business establishments participated in a one day workshop on Business Simulation held at SUN? Geneseo. The participants, while not a randomly drawn sample of businessmen, represented a healthy cross section of business practitioners in terms of age, sex, educational background and type of business. Table 1 provides a summary of the demographic characteristics of the participants. It should be added that no prior knowledge of computer operation was required of the participants.

Business Simulation

The Decision Exercises through Computer/Instructor Designed Environment (DECIDE) developed by Pray and Strang [4] was used in this workshop. The DECIDE simulation is primarily used at both the introductory and upper level economic courses at the School of Business, SUN? Geneseo.

In order to conduct the simulation, the 54 workshop participants were divided into teams consisting of five or six players. A faculty advisor was assigned to each team ostensibly to facilitate the decision-making process. Each team was suppose to represent a shoe-making company in competition with one another. Each team began with a similar amount of assets and production capabilities. Thereafter, each team was to make a series of decisions regarding product price, research and development, promotion policies, preventive maintenance, labor, raw materials purchased, production, downtime, dividends paid, securities bought and/or sold, and whether to purchase economic and/or market forecasts. The effectiveness of the team's decisions and company's well being were indicated by its stock market value following each period of play. Each team was then ranked relative to the other shoe companies in the industry according to the value of its stock following each decision-making period. Following feedback as to the team's particular group rank, team members were to attempt to maximize their company's stock market value for the next round; the ultimate objective being to obtain the highest group rank in the final period of play. In total, there were five iteration or decision-making periods throughout the day. A more detailed description of the DECIDE simulation is available in the manual prepared by Pray and Strang. [4]

Questionnaire Follow-Up

A questionnaire was used to assess business professionals opinions and attitudes toward the DECIDE simulation. This questionnaire was similar to the one used previously by Strang, et al. [5] to assess student feedback regarding the use of the DECIDE game in undergraduate courses. Slight modifications, however, were made to the questionnaire in order to account for the differences in the participant's background (e. g., age, work experience, level and major field of education).

¹ The words game and simulation are used inter- changeably.

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TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF BUSINESS PRACTITIONERS

SEX	N				N			
	MALES = 45				FEMALES = 9			
AGE	18-25 N = 03	26-30 12	31-35 11	36-40 08	41-45 15	46-50 18	51-55 03	55+ 04
EDUCATIONAL LEVEL	HIGH SCHOOL N = 07		2 YEAR COLLEG 04		4 YEAR COLLEGE 37		MASTERS 06	
EDUCATIONAL BACKGROUND	BUSINESS N = 30		ECONOMICS 07		ACCOUNTING 06		OTHER 11	
COMPANY SIZE BY EMPLOYEES	UNDER 5 N = 03	6-15 04	16-25 02	26-50 12	51-100 17	100+ 11	UNKNOWN 05	

Basically, the questionnaire asked for the following: (a) demographic data, (b) participants' ratings of the simulation's usefulness and 'real world' orientation, (c) ratings of their own confidence in making management decisions, degree of involvement and frustration and finally, (d) open ended questions to determine factors which may have contributed to or influenced their ratings of self confidence and frustration during the five periods of play.

The questionnaire was mailed to all, the workshop participants within a week following the exercise. This lag period was to allow the participants some time to reflect on their experiences with DECIDE as they returned to the business milieu.

RESULTS

Seventy percent of the 514 who participated in the DECIDE workshop returned the completed questionnaire. Their responses are summarized and presented in Figures 1 to 3 and Tables 2 to 5.

As shown on Figure 1, the majority or 69 of the respondents rated the DECIDE Simulation to be highly similar to 'real-world' business decision-making, whereas only 23% considered the game low to moderate in its real-world orientation.

Figure 2 illustrates how the businessmen perceived the game's overall usefulness. This assessment is then compared to the student's ratings of the simulation's desirability as obtained and reported by Strang, et. al. [5].

FIGURE 1
BUSINESS PRACTITIONER'S PERCEPTION OF GAME'S
REAL WORL ORIENTATION

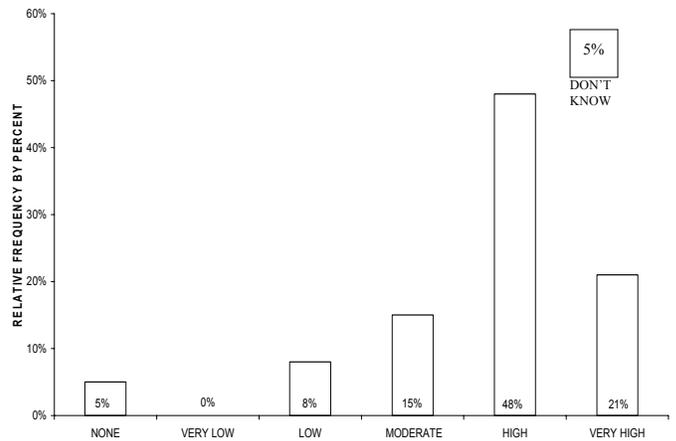
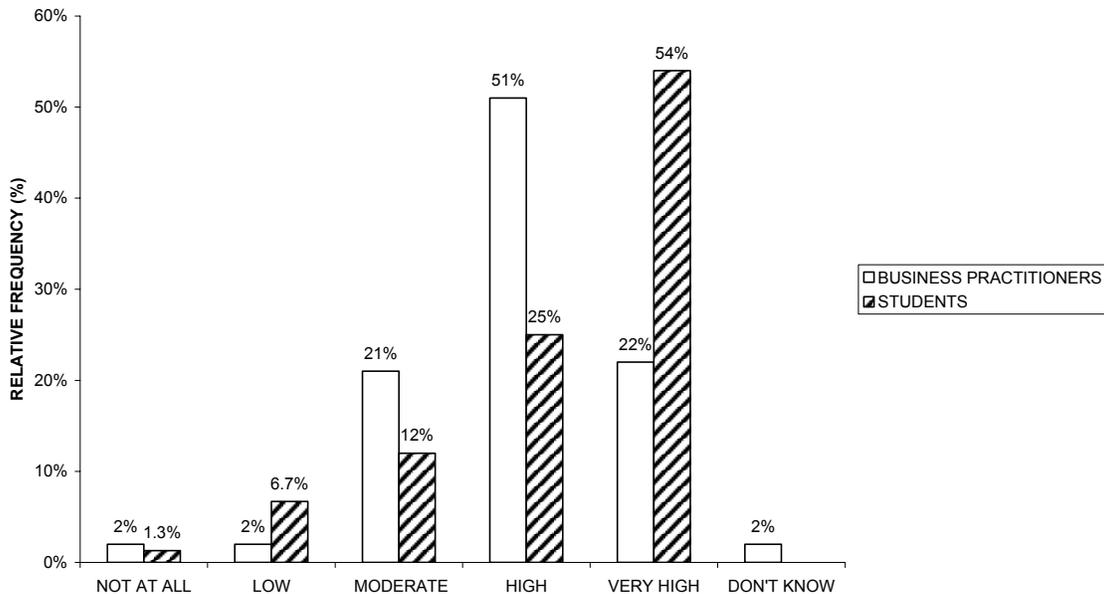


FIGURE 2

BUSINESS PRACTITIONER'S STUDENTS PERCEPTIONS OF DECIDE'S USEFULNESS & DESIRABLENESS



As shown, the majority in both groups found the DECIDE simulation to be highly useful; 73% of the business- people and 80% of the students, respectively.

This viewpoint of the simulation's real world' similarity and usefulness was also evident from the open- ended questions. Several respondents stated, "(We) enjoyed the game and would return next year.' There were no negative comments on these two issues.

To further assess the DECIDE simulation as a learning tool in business decision-making, business participants were asked to rate their perceived self-confidence, degree of involvement and level of frustration throughout the five periods of decision-making. Figures 3A and 3B show the data obtained from the business professionals on these three assessments, as compared to those obtained from students.

While the responses of the business practitioners and student groups were obtained under different settings and time frames, nonetheless certain qualitative comparisons are meaningful. For example, the business professionals tended to be more involved and especially more self-confident during the trial period than the students, presumably because they have more knowledge and experience than students. However, it is surprising to see that the business people's ratings of their degree of involvement and self-confidence dropped considerably during the first period of play. It could be that the trial period was not long enough to familiarize them with the simulation and their team partners and thus their self-confidence and degree of involvement decreased. Nonetheless, from that period on, their self-confidence and involvement continued to increase. Also illustrated on Figures 3A and 3B are the frustration levels for both groups which were rated high at the beginning of the game but

gradually diminished as the simulation progressed. Overall, when all factors were compared, it was found that the degree of confidence and involvement consistently increased for both the business and student groups while the frustration level decreased as a function of time.

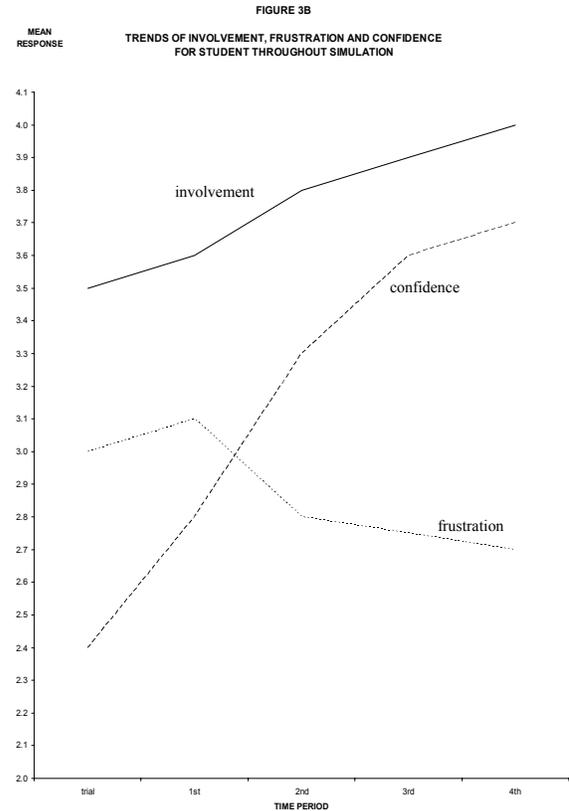
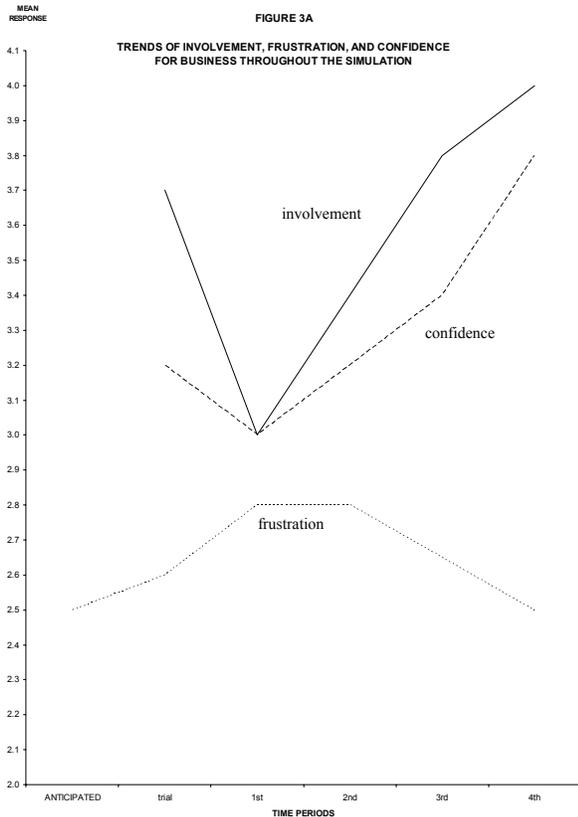
Business men were then asked to rate factors which may have contributed to their degree of confidence and level of frustration, and their responses are presented on Tables 2 and 3. For purposes of comparison, Tables 2 and 3 also contain the responses of students to these same questions.

The list of factors contributing to self-confidence are presented in a rank order from most to least according to group means. At a glance, they appear almost identical for both the business professionals and students.

With the exception of 'employment experience' a factor, which although most contributive to the businessmen's degree of self-confidence, is not pertinent to the student group. Group mean ratings also suggest that factors related to 'ability to work with other team members', team discussions and 'team performance were considered most important for business practitioners than factor pertaining to the faculty advisor', the 'DECIDE manual', and the 'introductory remarks'. Given the short period of time in which the simulation took place, one would have expected these latter factors to play a more crucial role than ascribed.

Turning to Table 3, businessmen and Students differed in their perceptions as to what factors Influenced their levels of frustration. Business professionals reported that they were highly frustrated because they did not have enough time in which to make decisions.

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Looking at the mean ratings for both groups as a whole, it seems as if business people were more frustrated by the interpersonal-type factors (i.e., 'understanding reasons for team performance', 'understanding decisional relationships' and 'team performance').

In a further analysis, it was revealed that 9% of the business people with non-academic business backgrounds tended to be less confident, less involved, more frustrated and generally commented that the teams were often "taken over by one person." Although this in itself was not an unexpected finding, it is significant to note that while this group felt themselves to be passive during the game, they also felt they benefited from it by observing the interaction of other team members.

SUMMARY

The primary purpose of this study was to determine if business professionals considered the DECIDE simulation to be reality-oriented and useful. It was found that the majority of the business people who participated in the Workshop did, indeed, believe that the DECIDE game was reality-oriented and useful.

Another facet of the study was to determine how business professionals rated their levels of self-confidence, involvement and frustration throughout the simulation exercise, factors which affected these levels and finally, how these compared with responses similarly obtained from students. Businessmen indicated that after the first period of play, their confidence and involvement in the simulation

rose steadily, while their frustration levels decreased. These findings when compared to those of the students were highly similar. The factors relating to 'employment experience', 'ability to work with others' and 'team discussions' were rated as highly contributive to their confidence levels, while the factors of 'insufficient time', 'team discussion' and 'team disorganized' highly contributive to their levels of frustration.

COMMENTS

The foregoing study provides several insights for future simulation workshop sponsors and participants:

• Design the workshop to allow more time for participants to become familiar with the simulation and team partners.

• Further define the role and function of faculty advisors.

• Screen the participants in terms of background and group them accordingly. A decision should be made as to whether participants from the same company should play as a single team. Sponsors should serve as surrogate instructors for non-experienced players.

• Simulation might have to be conducted at various levels, such as a beginner's simulation and an advanced simulation.

• Pre-registration materials might include shortened versions of the simulation's theory and mechanics.

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TABLE 2			
FACTORS AFFECTING CONFIDENCE LEVEL FOR BUSINESS PROFESSIONALS & STUDENT GROUPS			
STUDENTS	MEAN	BUSINESS PROFESSIONALS	MEAN
ability to work with team members	3.81	employment experience	3.87
team discussions	3.71	ability to work with other team members	3.60
team performance (ranking)	3.59	team discussions team performance (ranking) trail periods academic background faculty advisor	3.51
worksheets	3.56	DECIDE mantel	3.44
trial periods	3.20	introductory comments by faculty	3.44
course content other than simulation	2.93		3.03
relationship with other courses	2.81		2.99
workbook	2.51		2.98
			2.98
			3.74
			2.51

*1 no confidence; 5 extremely confident

TABLE 3			
FACTORS AFFECTING FRUSTRATION LEVEL FOR BUSINESS PROFESSIONALS & STUDENT GROUPS			
STUDENTS	MEAN	BUSINESS PROFESSIONALS	MEAN
understanding reasons for team performance	3.24	not enough time	3.26
understanding decisional relationships	3.22	team discussions	2.98
tees performance (ranking)	3.05	team disorganised faculty advisor ability	2.63
worksheets	2.54	to understand	2.46
team discussions	2.72	reasons for team performance	2.39
workbooks	2.56	understanding decisional relationships	2.31
economic skills required accounting	2.45	team taken over one person	2.27
skills required	2.19	economic skills required	2.23

= in frustration; 5 = very frustrated

Future studies of business simulations used for professional business people should include more rigorous measures, by using pre-post test designs and should direct more attention to investigating the 'factors' that influence the business practitioner's learning and behavior. Another valuable research task would be to compare the many simulations presently used for student pedagogy in terms of their potential value for business practitioners. It could well be that a valuable resource is being underutilized by many businessmen and universities.

While this topic is open and in need of further investigation, it seems clear that the DECIDE simulation has, in essence, real world relevance and usefulness and as such is of positive instructional value be it for students or business practitioners. As one businessman stated: "The game left nothing out. If our company would only think about or simply recognize all these decisions with half the intensity and fervor as my fellow participants, we'd be on top of our industry-- I'll be back."

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