A COMPARISON OF STUDENT PERCEPTIONS WITH ACCEPTED EXPECTATIONS FOR BUSINESS SIMULATIONS

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ABSTRACT

A question often asked about business games is, do participants in business simulations obtain the educational benefits they perceive they are receiving? To investigate this, selective game participants wrote papers on the major benefits and limitations of their experiences, and these were compared with similar items found in both the academic and more popular business literature. The two groups tended to list the same advantages, however, there were significant differences in their rankings of relative importance. There was even less agreement on the disadvantages of gaming. The participants seem to view only one side of these issues while the literature often spoke of a second, more positive side.

INTRODUCTION

Business games are and have been popular in both academic education and industry training programs. Despite their popularity, various questions about the educational effectiveness of games have not been completely answered. One of these is, do participants in business game simulations actually obtain the educational benefits they perceive they are receiving? This was a major question asked by a group of students who were selected to participate in a business game competition. The chosen method for investigating this question was to have the students complete the game, write a critique of the process, and then compare the major benefits and limitations found in the critiques with those found in a thorough literature search.

STUDENT OPINIONS

After the completion of the simulation, each student involved provided a critique of the experience by writing a short paper on the experience. The following summaries are taken from those papers.

Benefits

An analysis of the student critiques indicated a surprising conformity in their assessments of the strengths of the learning experience. According to them, the major benefits of gaming were, in order, feedback and responsibility, integration, group decision-making, and motivation.

Feedback and responsibility. The students became keenly aware of the relationship between the quality of the decision and the score on the "feedback." Apparently, the results of the game decision made much more of an impact than the return of a graded test or case. As one student commented, "...not only were concrete decisions going to be made, but results based on those decisions would be distributed, whereby we could measure our success or failure which was a rare occurrence during my experience in a collegiate environment [16, p. 1]."

Integration. The students felt the experience integrated the knowledge gained from various types of academic course work better than cases or "policy" exercises. According to one participant, "The experience offered many chances to bring to bear ideas and techniques learned in previous course work such as accounting, finance, management science and others [2, p. 2]."

Group decision-making. One student succinctly described the predominant feeling of the group by stating "At the beginning, I was unfamiliar and uncomfortable with actual group decision-making. By the end of the experience, I began to see the group members take on varied roles in discussion and decision-making, and that the balancing effect of the varied viewpoints is more important than individual opinions. I realize that different roles will be taken on by group members in any decision-making situation [13, p. 1]."

Motivation. The participants truly enjoyed the experience, were eager to receive each decision report, and put more "extra hours" into this than they would in most learning exercises. One student commented, "I appreciated the opportunity to participate in an exercise that motivated me to want to achieve regardless of outcome [16, p. 3]."

Disadvantages

Likewise, the students tended to show strong agreement in what they considered to be the weaknesses of the experience. However, there seemed to be little realization that trainers and educators might see the same items as positive features of the simulation. The weaknesses were, first, lack of validation, and second, too little information.

Lack of validation. Almost all of the students complained that the game did not represent the "real world." One asked, "Should we make the decisions that would be prudent and effective in the real world, or decisions that would seem to be effective given the parameters of the computer program [13, p. 3]?" Another stated, "...real world results should correspond to real world decisions [16, p. 2]."

Too little information. Students noted limited documentation, no knowledge of the product, a lack of history, and no opportunity to gain knowledge through real world research. Students have been taught the value of research. They felt helpless because they could not go to the library and find information on items such as appropriate financial ratios and research and development expenditures.

COMPARISONS WITH THE LITERATURE

In order to compare student perceptions with what has been written in the literature, a total of 52 articles were reviewed and analyzed. Of these, 42 made some specific reference to the claimed advantages or disadvantages of business simulation and gaming. Articles were chosen from the Business Periodicals Index and by matching "management" and "business" with "games" in a computer search of a DIALOG database using the "ABI/Inform" and "Management Contents" files. An effort was made to include both academic, professional, and popular business journals. Articles appearing in predominantly simulation literature such as ABSEL Proceedings, JELS, and Simulations And Games were specifically omitted.

Benefits

Motivation. Of the four benefits cited by the students, motivation received by far the largest amount of support in the literature. Of the 42 relevant articles, 38 included increased (or high levels of) motivation as a major benefit of using games. Typical comments were: "...games are fun. Many instructors have found that this can be a powerful tool for motivating learners [4, p. 4]," and games are recognized as excellent motivators [12, p. 152]." Perhaps the best analysis of the role of motivation is given by Galitz (5, p. 46]. He states, "It is rare to see a management game that does not instill a high level of motivation among the participants. This motivation is brought about for a number of reasons. First, the game is dynamic, and responds to the action of the players themselves. Second, the element of competitiveness that is at present in most games, provides an additional stimulus for each player to perform well against the others. Third, management games are active. A good management game encourages a level of interest, incentive and involvement that must be seen to be believed."

Policy and integration. The students belief that the simulation allowed them to integrate and use the knowledge gained in many functional areas also received a large amount of support from the literature. Of the 42 articles containing at least 1 benefit, 32 discussed this particular aspect of business simulation. Typical comments were: ". . .each player gained experience in planning, investment, research and development, purchasing, hiring, production and sales [6, p. 49]," and "It illustrates the interdependence of policies, strategies, and decisions in the different functional areas of business [19, p. 77]." This argument is fundamental to business gaming and it is not surprising that students would deduce this benefit or that the literature would confirm it. However, there are 3 aspects of this argument that need to be noted. First, several references note that the benefits in this area can be enhanced by blending the functional backgrounds of members of a team. Second, some references point out that the "integrating aspects" of some games are not properly balanced which leads participants to over rely on an area of business such as marketing. Finally, it should be noted that all games are not "policy" games. For example, there are games that specialize in marketing, production, labor relations, banking, and agriculture.

Group decision-making. The importance of the effect of gaming on group decision-making is also prominently discussed in the literature. However, less attention is given to it than the two previously mentioned topics. Out of the 42 articles, 24

discussed this aspect of gaming. Typical comments included: "Practice is given to managers in group decision-making and the logical analysis and assessment of a situation [14, p. 18]," and "The games certainly show the importance of looking at a situation from more than one perspective [8, p. 51]."

One reason for the lack of discussion in this area may be that some authors believe they may have included this topic in discussions of the integration of functions. Such phrases as "stand in another's shoes" and "understanding the other person's problems" are often included in discussions on the value of gaming in improving a player's "integration" skills.

Feedback and responsibility. The students listed this as the most beneficial aspect of the business game experience. Of the four benefits listed, however, it received the smallest amount of discussion in the surveyed literature. Only 15 of the 42 articles mentioned it. Typical comments were: "Feedback is a critical element in every educational endeavor. The immediacy of feedback is a distinguishing feature of computer processed management games [3, p. 15]" and "People very seldom have the opportunity to run an organization, then step back and examine their performance [8, p. 50]" It is interesting to speculate on why this seems so important to the students and yet received what seems to be little attention in the published literature. Apparently, students consider game results as a much more real and important feedback than other types of classroom results such as grades on tests, papers, and cases. Furthermore, a student often will not rewrite the same paper or retake the same test, but in a game, the same decisions must be updated in the next time frame. These latter two points seem to be almost totally missing in the surveyed literature.

Disadvantages

Lack of real world representation. This problem was prominently mentioned in the literature and was noted in 27 of the 42 articles surveyed. There was not, however, full agreement that this item was a short- cowing of business games. Some consider it to be an important asset of simulation. In fact, the literature was approximately evenly split on the issue. Those favoring some lack of "real world identity" argued that the player must learn from new experiences and be set free from antiquated managerial rules of thumb. Typical comments from the "pro" side were: "This complexity reduction provides the participants with a simplified framework from which to develop heuristic devices for understanding vastly more complex real world organizations [18, p. 237]," and "The participants are able to say yes we tried it, but it didn't works so through market analysis we made the adjustments necessary to achieve our objectives [8, p. 18]." Articles which side with the students do 80 much for the same reason, the pragmatic belief that simulations ought to be real. Typical comments include: "If you second guess the designer, you can badly beat the game [7, p. 82]," and "...games have defects. First of all, information is invented [9, p. 66]."

Lack of information. The literature simply does not address this as a major issue. Only 9 of the articles noted it. Again, some references noted the item as an advantage while others, like the students, treated it as a problem area. Typical comments were: "Business game simulates certain conditions under which managers often have to make a decision, that

is, with too little firm information in too little time [14, p. 18]," and **".** ..did not allow students to interrogate the environment with actual research [Amstutz as quoted in 11, p. 17]."

Other Advantages And Disadvantages

The purpose of the literature search was to compare student responses with those found in the literature. This discussion was given in the above material. Obviously, the search yielded other pros and cons and perhaps, for the sake of completeness, some of them should be listed. Other cited advantages include (but are not limited to): **".** ..facilitating group interaction [17, p. 31];" "Business people can test new strategies and sometimes fail without harming the company [10, p. 54];" and **". .** .the transfer of facts as in accounting or economic principles courses [1, p. 988]." Other cited disadvantages centered in primarily two areas. Some authors say that games tend to develop mathematical ability rather than strategic thinking while others state that students often try to beat the game rather than benefit from it.

A NOTE OF CAUTION

This paper would not be complete without noting that there m who question the effectiveness of simulation and games as educational instruments. An early paper (1976) states that **".** **.** .yet there is surprisingly little evidence that games are in any sense efficient or effective methodological devices [15, p. 99]." A later paper (1984) states **".** ..the accumulated evidence concerning their learning effectiveness is inconclusive and divided [12, p. 152]." Most critics take a more moderate role with statements such as "Are they useful?" Even though this note of caution is important, the literature indicates there is a very large number of writers and users who believe in the effectiveness of simulation. This paper shares that latter viewpoint.

SUMMARY

This project compares student opinions about the benefits and disadvantages of managerial games to similar attitudes published in the literature. It serves several purposes. Some instructors, who are well-versed in simulation, may hold viewpoints which are closer to those expressed in the literature than those expressed by students. For some of these individuals, it may shed light on why students do not always react to games in the expected way. For instructors less experienced in gaming, it should give guidance as how students may react to this experience. It should also be useful to many game administrators in determining how to achieve student acceptance of the game and thereby achieve the goals of the administrator and the students. Certainly games can be used for motivation. Combined with the correct instruction, information, and other educational devices, simulation can also be a powerful method of achieving other educational objectives.

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