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### **ABSTRACT**

This paper describes a basis for a panel discussion and workshop focusing on aspects of participant learning in simulations. Fifteen types of independent variables are identified as possible bases for examining learning. These provide an opening framework for discussion of on-going and possible learning investigations. The objective is to foster commitment to research focusing on simulation learning. Participants in the panel portion of the workshop are Joseph Wolfe, Jerry Gosen, Precha Thavikulwat, Phil Anderson and John Washbush.

### **BACKGROUND**

In a recent issue of *Simulation & Gaming*, Gosen and Washbush (1999) identified 15 paths of possible learning-related research for users and scholars who employ simulations in their pedagogical bag of tricks. A few of these areas have received some systematic research attention, others have not. Some of these areas present important questions that need evaluation.

### **AREAS FOR LEARNING RESEARCH**

The following are the listed suggestions for identifying and examining independent variables may impact participant learning in simulation environments:

- 1) Instructor behaviors in introducing the simulation. These include whether proper explanations of the purposes and the unique features of the simulation are provided to players the extent to which the mechanics of the simulation are introduced before play begins.
- 2) The amount and form of practice experienced by players before the game.
- 3) The instructor's role and the degree to which instructor activity can influence learning and performance gains.
- 4) The degree to which (and content of) predictions that are made by the instructor about how industries are likely to behave.
- 5) The debriefing of the simulation experience, its length, content and degree of structure.
- 6) Number of office hours available for student help
- 7) The degree to which the instructor helps the students process the experience, i.e., helps them discover what they are learning.
- 8) Features of the game. These include the proximity of competitors to each other and to the game administrator(s), game duration, and game complexity (in terms of decisions per round, words in the players manual, and the size of the simulation program).
- 9) The context of the game and the degree to which it is integrated with the course or the training session of which it is a part.
- 10) The degree to which other activities are integrated into the simulation experience. These include strikes, potentially unethical purchasing opportunities, group-dynamic oriented interventions, and use of an expert system.
- 11) Percent of grade allocated to game performance.
- 12) The way players are assessed in addition to game performance scores. The hypothesis is that players will learn more faced with some assessment methods and less with

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others. The following have been identified as supplemental methods (to game performance) for player assessment: Peer assessment of player contribution; a paper analyzing the team's performance; an oral presentation on the team's performance; a written plan; a test on rules and procedures; the ability to predict the results of a decision; the formality of player reports and to whom these reports are presented, and a distinction between relative (competitive) and absolute (non-competitive) standards for assessment.

- 13) Player objectives under administrator control. These objectives might reflect a competitive standard (e.g., profit) or some measure of excellence (e.g., organizational stability or quality).
- 14) Team characteristics including size and composition.
- 15) Instructional intent, for example, choice of game and consistency with teaching objectives and students' levels of knowledge and sophistication. Aspects of games worthy of consideration include functional-area integration potential, the strategic management knowledge base, and analytic methods to be utilized.

### THE RESEARCH CHALLENGE

While some of these issues overlap, there are many ways in which instructor behavior, simulation designs, and the atmospheres surrounding the simulation can differ. It is probable that behavior, design, and atmosphere variables, both singly, and in combination, probably produce unique and substantial effects on student learning in simulation experiences. Many of these design features are difficult to specify and measure, but that should not stop us from identifying methods and environments that enhance learning. There is great potential benefit that should accrue from such investigations.

### DESIRED OUTCOMES

The workshop will provide and opportunity for both presenters and participants to explore and expand on the above topic list. The intent is to summarize related research and provide ABSEL members with the opportunity to become better acquainted with the history and potential of researching learning, in all its facets, in the simulation environment. Additionally, the workshop will identify previous and current paths of inquiry, and it will summarize the present state of relevant knowledge. The objective is to crystallize a number of important avenues of research and to provide motivators for and commitment to action. In addition to spurring ABSELers to action, it is hoped that this workshop will create a spirited, on-going dialog in the ABSEL Newsletter, future ABSEL meetings, and *Simulation & Gaming* articles.

A complete list of references and a copy of the entire paper are available from:

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