

A SIMULATION IN ORGANIZATIONAL BEHAVIOR: DEVELOPMENT AND BETA TEST

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ABSTRACT

This paper describes the development and initial use (beta test) of a simulation in the field of Organizational Behavior. The authors believe that this is the first simulation to be developed specifically for use in an undergraduate course on Organizational Behavior. The paper discusses the purpose of the simulation, how the simulation was developed, how the simulation works and the response to the simulation, thus far, by two undergraduate classes of an OB course.

INTRODUCTION

One of my colleagues approached me and said the following, “I am teaching two sections of a course in Organizational Behavior (OB) and would like to use a computerized simulation for my classes. I know you are a member of ABSEL and believe they do a lot of work with simulations. Perhaps you could recommend something.”

I said I was not aware of any simulations in the OB area *per se*.¹

The colleague responded, “why not?”

¹ Two simulations related to the field of Organizational Behavior are the *Looking Glass, Inc.*, and the *Organization Game*. For more information of these two simulations and how they are different from *OB Sim*, see Appendix A

I said, “it was probably too hard to develop one. First, there are too many variables and I cannot imagine what kind of context one would have, etc.....Besides, if it were possible, someone from ABSEL surely would have done it!”

Well, this conversation, as well as several similar ones, took place for a couple of weeks, until finally, the colleague said to me, “why don’t we develop one?” A simulation development team (the team) of four persons was formed and work began.

LEARNING GOALS

The team began with several discussions of the learning goals for the simulation as well as what the model would look like. While not exactly a proposal for a simulation in OB, in 1986, Graf and Kellogg advocated the development of computerized experiential activities (CEAs). A review of the ABSEL literature indicates that there are number of experiential exercises, with the vast majority designed for use in OB classes. So, ABSEL has been very active over its history in this general area. However, no computerized OB simulations showed up in the review. As it turns out, many of the limitations that Graf and Kellogg discuss have been greatly reduced, due to software and hardware developments, but the benefits remain and presumably have inspired the work on experiential exercises. Many benefits that accrue to the use of experiential exercises have been studied, researched, but mostly extolled by several scholars

over the past 30 years. Certainly these same benefits would accrue to a computerized OB simulation. The benefits often cited include:

- Piques student interest;
- Safe learning environment;
- Time to deliberate between decisions;
- Way to apply theoretical concepts;
- In-depth understanding of organizational dynamics and interpersonal relationships;
- Relevance to what one will actually face in future managerial situations;
- Action oriented (students must do something);
- Better (than lectures) in helping to retain information/concepts/formulas;
- Gain vicarious managerial experience.²

Some of these are goals, some are ideals--some may even be wishful thinking, but most are important considerations in the process of designing a robust simulation. Another paper by Burns and Gentry (1977) discusses some of the considerations necessary for developing and/or choosing to use a game or experiential exercise. The team used the Burns & Gentry framework (see Appendix B) as a sort of 'checklist' to guide the simulation development and to insure that all (or most all) of the important learning aspects were covered in the development process. The team also gathered teaching approaches to OB from DeYoung (2002) who offers suggestions on how to apply a 'practical-theoretical' approach to OB instruction and the use of action theory as suggested by Mazen (2000).

Finally, the team found inspiration in Gentry's assertion "that experiential teaching is likely to lead to student learning."

BACKGROUND & RATIONALE

Organizational Behavior is generally taught as a survey course at the undergraduate level. Most OB textbooks (e.g. Robbins & Judge, 2009 and George & Jones, 1999) have between 15-22 chapters with each chapter covering some OB topic (or concept) like; leadership, motivation, communications, corporate culture, etc. Instructors often remonstrate that students finish or complete the course without getting a comprehensive picture of how the various topics are integrated and interrelated (Lundberg, 2000). Some instructors have noted that the treatment of the topics is often superficial and cursory. To deal with this, many textbooks provide one or more so-called 'integrated' cases at the end of the textbook. However, as one publisher's rep put it, "the cases are not used and the instructors bemoan

that something better needs to be developed for the course." As one team of researchers investigating the effectiveness of the OB course noted, "Although OB acumen is widely regarded as crucial to career success, it is difficult to engage young students when they have yet to recognize the need for it." (Burke & Moore, 2003, p.2).

Based on these comments as well as their own experiences in teaching OB, the team believed a "hands-on" simulation was necessary in order to deal with the issues raised above. Thus the team developed the following tasks and goals regarding an OB simulation. It had to:

- Cover the OB topics (concepts)—or at least most of them;
- Address the issue of topic (concept) integration or connectivity;
- Focus on student learning through the direct application of OB topics (concepts);
- Provide a way for students (or student teams) to rationalize their decisions;
- Have a realistic setting (or settings) with empathetic characters;
- Have decision options leading to specific decisions results;
- Offer a relatively equal set of viable decision options;
- Have no more than 13 rounds so as to fit within a typical semester;
- Be non-competitive in terms of inter-team competition.

The team's goal was to complete a beta test version for the fall 2009 semester. The team decided that, unlike in many simulations, here it would be necessary to write a closed or deterministic simulation. That is, decisions made during the simulation would have a pre-determined outcome, as opposed to an outcome based on the results of competitive play or a series of interacting (black box) algorithms based on some principal or set of principals. This deterministic simulation approach seemed conceptually appropriate, although difficult to execute. There would be an ongoing series of interconnected situations where each situation provides the students with an opportunity to make a decision based on the application of one or more OB concepts. The decision set would have 5-6 viable decision options with each decision option leading to a specific and often unique result. The team's task, then, was to develop the situations, the decision options and the results for each decision option. The situations, decision options and results can be seen as roughly analogous to rounds of play in a typical computerized simulation.

SIMULATION DESCRIPTION

To help the reader understand how the simulation works, several excerpts have been taken from the student manual. They are presented below in the form in which they appear in the student manual.

² It is difficult to attribute any one of the comments to any particular author, as so many of them were used by most of the authors. Thus, we listed the principal sources of the comments in general (Keys & Wolfe, 1990; Faria, 2000; Gosen & Washburn, 1998; Kilman, 1975; Snow, Gehlen and Green, 2002; Klassen & Willoughby, 2003).

Purpose. The purpose of this simulation is to give the student a vicarious experience in organizational behavior (OB) and to help students to understand what a typical manager may face in terms of organizational behavior issues. During the simulation, students (usually student teams) will make a series of sequential OB decisions for various aspects of a small organization. These decisions are based on a series of related and interlocking OB situations. The situations are intended to follow the topics in a typical OB textbook. These decisions will have an impact on the four major dependent variables (DVs or factors) in organizational behavior:

1. Absenteeism;
2. Turnover;
3. Job satisfaction; and,
4. Productivity.

At times, the student's decisions will have long-term ramifications for the organization, which may not be visible at the time. After making each decision (called "decision options"), students will receive a short narrative (called the "decision results") representing the impact of their decisions. Students will also periodically receive the results of their decision set on four dependent variables (or factors) as well as on any costs associated with those decisions. The timeframe within the simulation for each series of decisions is about 1-3 months.

Simulation Goal. The major goal of the simulation is for student to be able to see how various decisions in one area of OB affect other areas and how decisions which one thinks will have one type of impact may at times, have a different impact. A further, and important, purpose of the simulation is to help students understand the relationship and complexity of various OB variables in a holistic and integrated way. The principal way to achieve this understanding is through the research, analysis and reflection on the part of the students. To facilitate this, students maintain a journal and make entries into it.

Student Tasks. Student (team) tasks and responsibilities:

1. Choose organizational type (1 of 4)
2. read background information
3. read first situation
4. conduct appropriate research and make *ex ante* (before) journal entries
5. make simulation decisions (decision options)
6. review decision results
7. make *post factum* (after) journal entries (if instructor requires them)
8. continue with the situation when instructor assigns it.

Organizational Settings. Students will first choose one of four types of organizations in which to carry out the simulation:

1. a branch for a regional bank
2. a production foundry
3. a non-profit
4. **a restaurant (sorry, this is the only choice at this time)**

All the organizations are branches, locations or divisions of a larger corporation. Branches have a certain degree of autonomy, which will be expressed in various ways throughout the simulation. The student's role or perspective will be that of a branch manager. From that perspective, you will make various decisions based on the situation at hand. However, be aware that there are other perspectives to be viewed as well. For example, you can choose to view the situation (*post factum*) from the perspective of some employees (employees' perspectives) or from that of the corporate administration (corporate perspectives). These additional perspectives are meant to give you a more holistic view of how others in the company see things. Unfortunately, these perspectives will not help you in your role as branch manager in deciding what to do in the present situation, but will only be visible to you after a decision regarding a particular situation has been made. This is modeled upon the "real-world" in which managers are often not aware of these other perspectives until they have made a decision about some issue. Indeed, it could be said that many managers may never know about these perspectives. Nevertheless, you may want to reflect on the additional perspectives when you face the next situation and its accompanying decision options. Teams are not required to read the perspectives, however.

Journal Entries. After reading and researching each situation, each team is required to submit a journal entry. The topic and/or journal question(s) are listed in the simulation, usually following the situation. Teams will not be able to make their choices on the decision options until they have submitted their journal entries for that situation.

Most journal entries are limited to approximately three pages of text (you will be notified if there is a change in this). Write journal entries in *Word*, for ease of editing, then cut and paste into the simulation journal. They must be in 12-point font and with paragraphing, as appropriate. Journal entries are to be submitted according to the deadlines given by the instructor. Failure to adhere to the deadline will impact your grade. Most instructors will be using a standard rubric to grade the journal entries (see scoring rubric at the end of this manual). Student teams are encouraged to review the instructor's comments on your journal entry. Unless otherwise instructed, teams will not be allowed to continue to the next situation until you receive back from the instructor the journal comments.

Dependent variables or DVs. Most OB books indicate that one of the goals of OB is to understand (and sometimes, influence) the four major dependent variables associated with OB. These variables (called 'factors' in the simulation) are;

1. Absenteeism;
2. Turnover;
3. Productivity; and,
4. Job Satisfaction.

One of the student team's goals, as a vicarious manager, is to positively affect the factors. During certain points in the simulation, your team will receive a report as to how much you have influenced the DV's, as well as after the final set of decisions have been made. Because the simulation takes place over a short time frame, you should not expect the four factors to move markedly. Therefore, manipulating these DVs **is not** a major goal of the simulation. You, as the vicarious manager, should always try to make choices so as to positively support the DVs, but often, what choice to make will not be entirely clear as many choices will seem, at first blush, to have a similar impact on the DVs. This will often be the case.

Budget. Each initial simulation scenario has a training budget, which the corporate headquarters has provided to the branch or division as a way to assist the manager with various training or facilitating activities ultimately directed toward improving performance. However, it is up to the manager to determine how that money is to be spent. As stated above, most situations the manager faces will have a number of decision options, some requiring an expenditure. It is conceivable, that a manager could spend his/her entire budget before finishing the simulation. In that case, there would be no money for decision options requiring a monetary expenditure occurring later in the simulation. If this were to occur, no irreparable harm would occur, it is just that a manager would not be able to spend money on what would seem to be a "better" option later in the simulation. It also means that choosing the most expensive decision option each time will not necessarily represent the BEST decision option for each situation. Teams should carefully monitor the budget as the simulation progresses.

Competition. Unlike many business-oriented simulations, this simulation is not based on competition *per se*. Teams do not compete with one another for market share, increasing stock price or highest net income, etc. Team's success is primarily contingent upon well-researched and well-argued and well-written journal entries. These journal entries tell the instructor how well you have understood the OB concepts as well as your understanding of their implementation effects. Teams should also be aware that their choice of a particular decision option may result in receiving a slightly different future situation from that of their fellow teammates. Obviously, what individual managers decide to do in their own divisions will result in slightly different consequences for each divisions or location. Thus, comparing your team's decision results with another team's is probably irrelevant.

On the other hand, teams must be cognizant of how their decisions affect the budget and DVs, which do comprise a portion of the overall grade.

Pop-up Information & Assistance. To assist you, there are a series of "pop-ups" placed within the simulation. The "pop-ups" are meant to provide your team with additional

information and/or insights about the dynamics of the simulation. These "pop-ups" are optional.

Grading. Journal entries comprise a *significant portion* of the grade for the entire simulation. This makes sense because the journals represent your knowledge of how a typical manager understands and is able to use the OB concepts to help run an organization in an effective and efficient manner. In most cases, the recommended grading for the simulation will be as follows:

- 60-70%---journal entries (13 journals @10 pts each)
- 15-20%--percentage increase in overall DVs (Factors)
- 15-20%--final comprehensive written/oral reports.

Appendix C provides a default rubric which instructors can use for scoring the simulation journals

CONCLUSION

Student Response. The development team felt it was important to meet with the OB students teams during the semester to track how the teams were handling the simulation both technically (viz., ease of use, clarity, off campus access, etc.) and substantively (realism of situations, decision options & results; difficulty, etc.). For this process, the development team members agreed to meet with 4-5 student teams three times during the semester (there are 14 teams between the two sections of OB). Thus far, two of these meetings have taken place. On the positive side, the development team found that:

- the simulation was a good way to apply OB concepts;
- the restaurant was not totally a realistic situation, but they felt it was still a better way to apply the concepts than just by talking about them;
- the students reported that they remembered various theories better than they would have, by simply memorizing them for tests;
- most of the decision choices were realistic
- the journals were a good way for them to meet and discuss theories and concepts which they normally would not have done;
- the simulation was generally interesting.

There were also some complaints and reported limitations. For example:

- there were too many decision periods for the semester;
- team meetings were hard to schedule for each week;
- any option which included a high budget expense was disregarded even if the team felt it might be the best choice (teams said they were nervous about spending all their total budget before the simulation ended);

- the DVs did not change as they expected or as much as they expected;
- early in the semester there were some technical issues which the development team quickly resolved.

Finally, an important aspect of any simulation is to have the students apply some theory or set of theories to a situation, and have the constrained set of decision choices based on that situation not be intuitively evident or easily determined. For this simulation, this process was mainly in the function of a cogently presented journal. That said, the decision choices for each situation were tabulated to ascertain if the students gravitated to one "best" choice among the four to eight given. Table 1 presents these results.

As can be seen, for Situations 2, 3, 4, & 7, decisions tended to cluster into one or two decision option categories. The team will review all of the journal entries and decision options at the end of the semester and adjust the options to insure that most option represent a reasonable choice of action for that situation.

Learning. At this point, it is hard to determine the "learning" that is occurring using the simulation. As Gosen & Washburn (2004) indicate learning is hard to measure because it means so many different things, as well as being hard to ascertain through traditional experimental and quasi-experimental designs. Nonetheless, if student feedback is any indicator, there are, on the whole, learning benefits to be gained from using this type of simulation in an undergraduate OB course. As developers, we see the simulation as a way to help:

- Address the long standing complaint among OB instructors about the integration problem;

- apply OB concepts in a quasi-realistic situation; and,
- provide a way for students to make team-based decisions relating to the application of OB theory.

Finally, the team tried to follow the motto of Gentry and McGinnis, who state "Thus, we argue that those instructors motivated to try new approaches to teaching may well be motivating to their students in return. Unmotivated students resist learning; motivated students are more receptive to the wisdom we try to impart. The nature of our preparation for the classroom may well impact our level of enthusiasm when we get there. If we are highly motivated, then we are more likely to motivate." (2007, 2).

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Table 1.
Option Selection by Situation

	Sit 1	Sit 2	Sit 3	Sit 4	Sit 5	Sit 6	Sit 7	Sit 8	Sit 9	Sit 10
Option 1	9	12	1	10	3	2	2	0	4	1
Option 2	3	2	0	2	2	8	1	0	0	4
Option 3	0	0	2	2	8	2	10	6	0	5
Option 4	0	0	1	0	1	0	1	7	2	0
Option 5	0		12			0		0	0	4
Option 6	2		8						0	
Option 7			5						7	
Option 8			10						0	
Total	14	14	39	14	14	12	14	13	13	14
Top Choice	64.3%	85.7%	30.8%	71.4%	57.1%	66.7%	71.4%	53.8%	53.8%	35.7%
Top Two Choices	85.7%	100.0%	56.4%	85.7%	78.6%	83.3%	85.7%	100.0%	84.6%	64.3%

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APPENDIX A

Review of the Looking Glass & Organization Game Simulations

The Looking Glass, Inc. The Looking Glass, Inc., was developed between 1976 and 1979 under support from the Office of Naval Research and the Center for Creative Leadership. It attempts to scrutinize potential leadership (or manager behavior) by providing participants with a set of real job challenges coupled with expert observation and an intensive debriefing. Often, the debriefing has a individual orientation and can be quite intimidating for the participants. During the simulation, participants are assigned or vote to play various managerial roles in a glass manufacturing company. They are given sets of memos, partial information sets and other types of relevant information with which they have to make a series of managerial decisions. The decision help the observers assess the managerial and leadership skills of the participants. The simulation usually takes 6 hours, although there is a 4 hour student version. From its first hour to its last, a dominant feature of the Looking Glass is the unrelenting pressure on managers to make some tough decisions quickly. Participants are also evaluated in terms of how they can handle unfamiliar situations, make good managerial decisions with limited information, and their ability to persuade and influence their teammates without a enforceable structure. As McCall and Lombardi note, this

"simulation was designed for use in leadership research" (1982, 533).

The Organization Game. We are unaware at the time of this writing as to whether there is a computerized version of the ORGANIZATION GAME. If not, there could be.

We obtained the book by Hickman, which suddenly places the you, the participant, into the position of director of a \$4 billion computer and consumer electronic company. Your job is to re-shape the company into a world class leader. You are given a simple set of financial statements, some information about your executive staff, and some basic information about the structure and culture of the company. Initially, your task is to make some basic choices as to how you will modify the structure of the company to meet future. Essentially you can choose among 6 basic strategies. Once you chose a major strategy, the chapters direct you to secondary and tertiary options, some of which will be constructive and some not. For our reading of the book, the author intends the participant to eventually choose a specific structural design option, suggesting the author's strong belief in Total Quality Management.

While there are some similarities between the OB Sim simulation and the Looking Glass, Inc., and the ORGANIZATION GAME, they are quite dissimilar from OB Sim in both their structures, their purposes, the roles they have participants play and their expectations for participants.

APPENDIX B

Burns/Gentry's Major Variables & Dimensions for Choosing a Simulation or Game

- Concepts taught
 - complexity
 - theoretical nature
 - function involvement
 - implication
 - stochastic nature
 - number of business-concepts
- Nature of Game or task
 - duration
 - nature & number of decisions
 - inter-group competition
 - participant grouping
 - course integration
- Game Conduct
 - accountability
 - autonomy
 - pace
 - participant involvement
 - user involvement
- User Attributes
 - motive for use
 - teaching philosophy
 - freedom of choice
 - resources
- Student Attributes
 - ability to learn
 - willingness to learn
 - ability to participate
 - team size

APPENDIX C

The Scoring Rubric

TEAM _____ Section _____

DATE _____

Criteria	.5 pt	1 pt	1.5 pt	2 pts
Well-Researched				
Well-Argued				
Coherent				
Concise				
Creativity				
Total				

Comment Space:

Instructors have the option of modifying the rubric both in terms of the criteria used, as well as the points allocated to each criterion. Your instructor will tell you what the criteria is before the simulation begins.