THE RATIONALE FOR USING GAMES AND SIMULATION WITH SOME EXAMPLES.

THE NAME OF THE GAME . . . IS SIMULATION

BY SCOTT B. PARRY
(FEBRUARY, 1971)

"There they were, about a dozen of our supervisors, stacking blocks several feet into the air. What's more, everyone seemed so intensely absorbed that they hardly noticed me. Some sort of goal-setting exercise, I believe. But playing with wood blocks . . . ?"

So spoke the president of a large corporation after a recent visit to his management training center. Relax, Mr. President . . . your men haven't regressed to second childhood. Rather, they are using management games and simulations as a means of gaining insight into their own behavior, and sensitivity to the perceptions of others.

The idea is far from new. Role play, case method, and in-basket exercises are instructional techniques that have long been used to develop skill in making decisions and solving problems. These techniques are basically simulations — that is, we create situations that simulate the problems, constraints and resources of the everyday work environment. We then place the learner in the midst of the maze and ask him to find his way to the goal.

Behavior Patterns

Thanks to recent advances in learning theory and instructional technology, we can now articulate very precisely the patterns of behavior that we desire of the learner. We can then construct sequences of events (stimuli) that simulate the "real world" and that elicit the behavior (responses) we want from the learner. His learning is personal, since ego involvement is high. And his learning is rapid, since a game or simulation can compress into an hour or so the experiences and sequences of events that might take much longer in reality. There is often more opportunity to develop and apply specific management skills in a half-hour game than there might be during an average week at the office.

Many of the games we have played in childhood are simulations of real-life situations. For example, Monopoly simulates the world of high finance and the sale or purchase of real estate. Many adult games are also simulations — chess simulates the strategy of war, while contract bridge simulates competitive bidding on contracts. These are popular games that clearly imitate everyday situations in the "real world."

There are other games, such as Parchesi or baseball, that don't seem to imitate life in the business world at all. And yet, in a very real way, they do. For they are highly competitive games that require players to be aggressive and to apply strategic skills. In other words, these games may not imitate life, but they do provide an opportunity for the player to develop skills that are highly valued in the business world.

Why Use Simulations

The use of games and simulations enables the learner to develop in three major areas. Here are the objectives that apply to virtually all games and simulations:

- The participant sharpens his skills of analysis, making judgments and experiencing the im-

mediate consequences of them. For example, he learns to separate relevant from irrelevant variables, establish priorities, identify assumptions, separate fact from opinion, set realistic goals, assign values (i.e., weigh the facts according to their relative importance), distinguish between *might* do and *must* do, and so on. Let's summarize with the phrase *Analytical Thinking.*

• The participant gains insight into his own behavior as he interacts with others; and he develops sensitivity to the perceptions, needs, goals, management styles — in short, the behavior — of others. To this end, a game might be regarded as a projective device. The participants are caught up in the spirit of the game and play it without stopping to ask, "I wonder what this move will show about my personality? How does my performance in the game relate to my performance on the job?" Once the game is over and these questions come out in discussion, the participant begins to realize that the behavior he projected during the game is, more likely than not, an accurate sample of his behavior on the job. We might summarize this objective with the phrase *Insight and Sensitivity.*

• The participant practices and refines his skills in dealing effectively with others. Broadly speaking, we can divide the work of managers and supervisors into two broad areas: *people-handling* skills (e.g., communications, human relations, training and developing others, etc.) and *task-handling* skills (e.g., work simplification, planning, scheduling, controlling, etc.). Both of these elements are present in most games. A successful manager, of course, is effective on both dimensions. In contrast, the new manager tends to be either task-oriented or people-oriented. Thus, we might regard the games as a series of exercises in which each participant can successively develop and refine his mixture of people-handling and task-handling skills. We could use the phrase *Skills Practicum* to summarize this objective.

These three objectives were brought home very nicely by a participant who remarked, "These games are sneaky. I play them just like I play poker or any other game . . . I play to win, without giving much thought to what 'style' I'm using or what my alternatives are. But then, when we sit down to discuss the games, I begin to see some of the other ways that I might have played them. In fact, I now find myself giving a good deal more thought to my poker game. I guess, in a way, that all of life is a game, and that how you play it is just as important as whether or not you win. We can't all be winners . . . at least not all the time. But we can play a good game all the time."

Two-Stage Learning Process

Teaching through simulation that *involves* the learner differs markedly from the lecture, text, film or other teaching techniques. In fact, if we look at learning as a two-stage process — acquisition and application — we can see immediately that lectures, films, and other presentation modes are used primarily in the first stage of learning (*acquisition*), whereas games and simulations are usually intended for use in the second stage of learning (*application*). Like role playing, case method, the incident process, in-basket exercises and other of the more dynamic (i.e., involving and participative) teaching methods, games and simulations give the learner an opportunity to practice and apply the concepts, skills, procedures and rules that he has previously acquired.

Although we shall use the terms *game* and *simulation* interchangeably, a distinction can be made. A *simulation* creates a living case study, or real-life situation in which participants apply their new knowledge and skills, and obtain immediate feedback on the appropriateness of their behavior.

The term *game* is broader and generic, including simulations and non-simulated exercises. The term *business game* refers to a sequential decision-making exercise in which participants assume the role of managers of a simulated business operation. Business games are often computerized to speed up the data giving and/or the evaluation of the participant's performance.

Application or Discovery

At this point we should differentiate between two types of games and simulations: those that are designed *primarily* as application of prior learning, and those that are intended *primarily* to give the learner an opportunity for discovery in which he can gain insight into his own behavior or that of others. In this second type of game, the learner has what psychologists have dubbed "the aha experience." (We stress the word "primarily" because *both* of these elements are usually present to some degree in most games.)

Let's look at an example of each. We'll start with a visit to McGraw-Hill Book Company in New York City, where Jim Phipps is manager of supervisory development. Jim is in class, using the "Lumber Yard Game" to help his 15 trainees (supervisors and line managers) develop skill in giving on-the-job instruction to new employees. Each participant is cast in one of three roles: trainee, supervisor, or observer. One week before the game is to be played, those in the role of supervisor are given a poorly-organized Procedures Manual listing the major items stocked by the employer, a lumber yard. Also included are price lists, names of shippers and the area served by each, and other data required to process an order.

During class, each supervisor must instruct a newly-hired trainee to become an order processing clerk. To simulate the reality of on-the-job instruction, with its unpredictable interruptions, a tape recording gives orders for lumber that were "placed over the intercom."

As Jim Phipps explains, "The supervisor has a dual responsibility. He must train the new man *and* take down and process incoming orders. In so doing, he is constantly deciding which orders will serve as good training vehicles as he instructs the new man, and which ones he should handle without

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explanation or instruction. The third person functions as observer. His job is to record the supervisor's actions for the post-game critique.

"That's when the supervisor's performance is evaluated. Did he get the trainee to respond? In meaningful ways? Did he give adequate feedback? Did he give clear instructions? Did he allow sufficient opportunity for the trainee to practice? Did he explain *why* as well as *how* each procedure is followed? Did he test the trainee? And so on."

Two things should be evident from this description of the Lumber Yard Game. First, we are discussing a *simulation* since the exercise simulates the conditions of on-the-job training for clerical workers. Second, the exercise is designed to enable the participants to *apply* skills learned previously rather than to discover new insights into the behavior of self or others.

Wood Blocks Game

For our second example, we'll visit Zayre Corporation in Framingham, Mass. where regional managers of Zayre's discount stores are playing The Wood Blocks Game. The instructor is Dr. Edward J. Robinson, Visiting Professor of Business Administration at the Harvard Business School. He has just distributed hundreds of wooden blocks in piles around the table, and asks participants to estimate how many blocks they can stack, one on top of the other, without having the column topple over.

Each participant sets what he feels is a realistic goal, and then stacks the blocks, thereby determining whether he overestimated or underestimated. The columns are taken down and a second round of the game is played, this time with goals (i.e., estimates) being made public on the blackboard, and with a monetary award offered to the winner.

Finally, the game is played a third time, with four-man teams competing to see how realistic a goal they can set, and whether they can organize their efforts so as to win over the other teams.

In explaining the objectives of the game, Dr. Robinson noted that "the simple exercise of stacking blocks toward predetermined goals gives each man insight into his own goal-setting behavior. Our post-game discussion gets into McClelland's work on achievement motivation.

Each participant answers such questions as: What influenced you more — the reality of your first attempt at stacking the column, or group pressure and the competitive nature of the second round?

Did the pressure of competition force you to set unrealistically high goals (and thus have your columns topple)? Or did you stick with a lower estimate, feeling that it would be unsafe to attempt columns as high as the big bidders (even though this decision meant giving up a crack at the prize)?"

Through analysis and discussion, each participant discovers how realistic his goal-setting behavior is, the extent to which he is influenced by self-expectation and group pressure, his willingness to assume risks, and the nature of the achievement motive.

Two things should be evident from this description of The Wood Blocks Game. First, this game is not a simulation. That is, it does not attempt to simulate an everyday work situation. To be sure, it is an abstraction of real-life behavior (goal-setting, risk-taking), but it is not a living case study in which people perform job roles, as they did in the Lumber Yard Game. Secondly, this game is designed *primarily* to give the learner insight into his goal-setting and risk-taking behavior (although the game also gives participants an opportunity to apply what they have learned previously).

The Case for Games

The advantages of using games and simulations are numerous. We have already mentioned two: opportunity for the learner to *apply* prior learning, and opportunity for *discovery* wherein the learner gains insight and sensitivity. Here are some other often-cited advantages:

- The learner is active throughout, participating and interacting with other learners. With traditional methods of instruction, it's relatively easy for learners to remain on the fringe of discussion, letting a handful of the trainees carry the ball. But with games and simulations, everyone gets into the act, and the learning process operates at a much higher efficiency level.
- Participants can learn from experience without paying the price of wrong decisions made in real life. (This, incidentally, is precisely why war games have had such strong appeal to military leaders . . . the price of errors in judgment on the battlefield is intolerably high.)
- Time can be compressed: a sequence of real-life events that would require months can be simulated in minutes or hours, thus acceleration learning.
- Feedback is immediate. Participants are usually able to see the consequences of their actions at once, and to modify their behavior accordingly.
- Discussion is realistic. Rather than broad generalizations as to how each participant *might* or *should* apply a given concept or skill, we have direct evidence as to how each participant *did* perform. We know that learners do not always behave the way they say they should; games provide empirical evidence that lifts us out of the pitfall of, say, the case method with its "If I were president of XYZ Company, I would. . . ."
- Receptivity to new ideas and to attitude change is greatest when the learner has a high degree of personal involvement. Many of the advantages inherent in sensitivity training are present in the playing and discussing of games (usually without the disadvantages that often accompany sensitivity, or "T-group" training).
- Since the participant's success in many games is dependent on his ability to transcend the needs and values of his own department or section, participants learn to adopt a more global view and to look at the "big picture" in attacking the problem.
- Because there is a high degree of active involvement, each participant has an excellent opportunity to develop his human relations skills . . . his ability to perceive the needs and interests of others, and to reckon with these effectively. Games probably exceed role playing and case method in the amount of interaction and opportunity for conflict resolution they provide.

Discussion and Analysis: The Real Payoff

Most games and simulations are designed to provide immediate

feedback to participants. That is, the learner experiences at once the consequences of his actions. This is only one type of feedback, however. The second type, in the form of discussion, is equally as important. It is during the post-game discussion that the learner, his fellow participants and the instructor can share what they experienced during the game . . . their feelings toward each other and toward the new concepts, skills, and procedures they were attempting to apply.

There's another way of looking at the need for discussion. Participants tend to measure the success of each class in terms of their own involvement in it and the satisfaction they achieved in participating in meaningful discussion. Communication is a two-way street. One-way critiques by the instructor are never as satisfying as interactive sessions where everyone "gets into the act." Although it is nice to win games, it is in the analysis and discussion (rather than in the outcome *per se*) that most of the learning takes place. In this regard, everyone who plays the game is a winner.

Back in grade school, I recall a motto printed on the brown paper book covers that the teacher gave us at the start of each year. It read, "Learn by doing." And indeed we did. Recalling the huge repertoire of math and grammar skills that we learned by doing, I now wonder why we took so long in business and industry to discover that chalk-talks are great for imparting information but relatively ineffective in developing the skills that supervisors and managers require to do their jobs.

Recently I discovered a restatement of my grade school motto. I don't know whether it comes from Jean Piaget or B.F. Skinner or John Dewey or Jerome Bruner . . . it could have been any one of them. Here is the restatement: "We learn not by being told but by experiencing the consequences of our own actions."

Cast in this perspective, the instructor's role changes markedly. His traditional role has been that of *dispenser of information.* Now he takes on a far more demanding role, yet one with the potential for greater impact . . . he is now an *arranger of experience.* His new role is to make use of those activities and exercises that will give trainees the best opportunity to experience the consequences of their own actions. And he is just beginning to discover the potential of games and simulations.

Rather than talking about what a trainee should and shouldn't do in given situations, today's instructor is learning to simulate these situations in the classroom. And the trainee is doing the talking.

Scott B. Parry is president of Training House Inc., Princeton Junction, NJ.

THE NAME OF THE GAME IS SIMULATION: AN UPDATE

From their earliest use in teaching military strategy in ancient Egypt and Rome to today's sophisticated computerized exercises, games and simulations have proven their worth as a high-impact, personalized method of developing new behaviors. Until the past decade, most games and simulations were developed to meet the performance requirements of a specific organization and group of trainees. Like role plays and case studies, there were few that were available commercially, and those that could be bought had a limited value to users other than the population for which it was designed.

All that has changed. In the decade since I wrote "The Name of the Game . . . is Simulation,"[1] management games have come of age. The first directory appeared in 1969 and listed just over 200 games and simulations.[2] Two years later Robert Horn's *Guide* was published, listing 400 games and simulations. In 1973 a second edition appeared with more than 600 listings. And the third edition of 1977 lists and describes over 1,200 games and simulations, most of which are commercially available for use by trainers.[3]

How can we explain this six-fold proliferation that occurred from 1969 to 1977? Four explanations are worth noting:

• Until recently, trainers were wary of using games and simulations to teach adults. They feared that it was "not OK" . . . that participants or their bosses might see this as "kid stuff" and a waste of valuable class time. Some of this fear was dispelled by the appearance in 1970 of Clark Abt's book, *Serious Games*[4] (with its apt title!).

• American toy and game manufacturers have come into their own with hundreds of new offerings to supply the needs of a burgeoning home entertainment market. As adults compete in solving mysteries, waging wars, making sound investments, establishing companies and marketing products, they come to realize the value of games and simulations in improving their analytical thinking skills.

• The demand for "hands-on" experiential, process-oriented training has increased enormously. A generation ago many training departments provided refuge for former schoolmasters, retired military instructors, and some nice but ineffective managers who were "promoted" into training . . . "they can't hurt anything there." These stalwarts have since retired, and a new breed of trainer has finally come to realize that lectures and slides do not change behavior. Using words like "catalyst" and "facilitator" to describe their role, these trainers have accepted the fact that people learn, not by being told, but by experiencing the consequences of their actions.

• In training new managers, instructors face a challenge: how to bring to life and impart a sense of relevance and immediacy to dozens of concepts that are likely to elicit yawns from participants — team building, leadership, time management, marketing strategies, production planning, budget controls, and so on. On these "core topics," managers often feel they know it already. One easy way out of this dilemma is for the instructor to reverse the normal input-output sequence of instruction (inductive) and go instead to an output-input sequence (deductive) in which the program begins with a game or simulation . . . "everybody into the pool." An hour or so later the participants and the instructor can analyze and "process" what they just experienced. Now everyone has a clearer idea of personal needs and of the relevance of the topic. The group is now ready to relate new concepts and skills to a common experience they have just shared. And the instructor has a common frame of reference (behavioral repertoire) to draw on in illustrating and bringing to life the subject matter and course content. (*Continued on Page 105*)

UPDATE: (Continued)

In short, games and simulations enable us to teach new dogs old tricks. Used *at the start* of a lesson, they serve as a needs analysis by providing data and insights to participants and instructor alike. Used *during the course,* they provide a "hands-on" opportunity for learners to practice new concepts and skills they have just acquired. Used *after the course* or *independent of a course,* they become a form of assessment lab to measure proficiency.

Many games and simulations offer a triple-whammy: learning takes place in three stages. Let's examine each in turn.

Preplaying time. Prior to starting a game or simulation, participants must plan, set goals and objectives, develop strategies, determine alternatives ("what ifs . . .") and prepare for the role they must play during the exercise. These behaviors are often short-changed in real life. Managers (salespersons, etc.) do not take sufficient time to prepare for assignments in advance, relying instead on their ability to "wing it." By requiring participants to prepare before playing, you can develop the habit and skills associated with effective planning, organizing, and strategizing, and can demonstrate during their subsequent enactment the wisdom of that old adage, "forewarned is forearmed." (Alternative adage: "A mediocre game plan well executed is infinitely better than no game plan brilliantly executed.")

Enactment. With case studies, films, demonstrations, and other forms of training that are less personal (less demanding of the trainee's input), participants find it easy to be "armchair generals" and "Monday morning quarterbacks." They offer brilliant critiques of what was done wrong and how they would have handled the situation differently. (Indeed, often they are aided by the author's bias . . . correct and incorrect behaviors have been depicted in black-and-white contrast, with stereotyped people and situations.)

It's one thing to observe and evaluate. It's quite another to participate and generate a sample of behavior that is your own, then subject it to evaluation. Training is effective to the degree that participants can adapt, internalize, and apply what is being taught. When they are authors as well as learners the impact can be tremendous.

Processing. Like case method, games and simulations rely heavily on the post-enactment analysis and critique to give participants insight into what has happened and why. It's easy for players to become so wrapped up in *content* issues that they cannot see the *process* clearly. Nor were they necessarily expected to . . . their job was to play, not coach. However, once the game is over, we need the eye of the coach — someone who was observing the entire forest and not just the individual trees. This is the role of the instructor (or teams of observers that some exercises call for). When games or simulations are purchased, the publisher or author should provide instructor guidelines for processing the exercise, and, when appropriate, analysis sheets that the participants complete as a means of (a) evaluating their own performance and (b) gaining insight into the balance between process and content.

I suspect that many games and simulations are weakest in this third stage, Processing. Once the excitement of playing is over, discussion and analysis may be seen as anticlimactic. All that matters to some participants is how well they played and who won or lost. Post-mortems may come across as "beating a dead horse." (To continue my morbid analogy, a dissection is rarely very appealing . . . especially if you've just been through a vivisection! However, different lessons can be learned from each.)

For processing to be effective, we need the combined skills of the catalytic instructor coupled with a process-oriented designer who created the exercise in such a way that the post-game analysis is an integral part of the design and not an afterthought. (As a publisher of more than 20 games and simulations, I've accepted responsibility for providing detailed instructor guidelines and evaluation sheets for use by participants.)

I think we will continue to see an increase in the use of games and simulations as a serious and highly effective way of helping people to learn by experiencing the consequences of their own actions. And this, after all, is the essence of good teaching. — *Scott B. Parry*

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2. Graham, Robert and Gray, Clifford, *Business Games Handbook,* published by American Management Associations: New York, 1969.
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4. Abt, Clark, *Serious Games,* Viking Press: New York, 1970.

An excellent bibliography listing 24 books and articles can be found in the *Training and Development Handbook,* 2nd Edition (1976), at the end of Chapter 40, "Gaming Simulation and the Training Process," by Larry Coppard.

For a free eight-page folder describing 18 games and simulations available from Dr. Parry's firm, write to Training House, Inc., P.O. Box 3090, Princeton, NJ 08540.