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SOME THOUGHTS ON A 'THEORY" OF THE USE OF GAMES AND EXPERIENTIAL EXERCISES

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INTRODUCTION

In our brief experience as participants, designers, administrators, and observers of business games and experiential exercises, we have encountered a mind-boggling variety of innovative approaches. This is somewhat disconcerting since we harbor strong predilections for categorizing new information into well-defined and mutually exclusive cognitive slots. We hope that this trait is universal, otherwise this paper is of doubtful value. Thus, the purpose of this paper is to present some of our views and reflections on the use and misuse of games and experiential exercises.

Much of the credit for this paper belongs to Wilbur Stanton, whose presentation [1] at last year's ABSEL Conference aroused the beast. In the midst of a session where everyone was proudly articulating the nuts and bolts of their thing, Wilbur had the brass to give a paper which charged that we were forcing students into negative learning environments. At least that is the impression we carried away. This paper is our contribution to that new-horn ABSEL tradition conceived in Knoxville. We will make our points with personal references. The intent, however, is an indictment of all of us because we believe that we ignore most of these factors in our choice decisions. We are not (recognized) theorists; consequently, the title is presumptuous. What we have done here is to isolate what we consider to be the major variables in the use of games and to suggest some of their salient dimensions. The theorizing is on a normative level, and the result is pretheory rather than theory in that the relationships between these variables are not made explicit.

MAJOR VARIABLES AND THEIR DIMENSIONS

Whenever an individual considers the use of a business game or an experiential learning device, no less than five classes of variables should be considered. These are: (1) the business concepts being taught, (2) the nature of the game/ task, (3) game conduct, (4) student or participant attributes and (5) the instructor. The concepts being taught may be envisioned independent variables because of their constancy and universality. The nature of the game and game conduct may be viewed as dependent on the concepts being taught given the wide variety of game alternatives available to us. Finally, student attributes and Instructor considerations moderate tie choice decision. Thus, the model that we are proposing appears as follows:

GAME USED (NATURE, CONDUCT) =

f (CONCEPTS TAUGHT) modified by (STUDENT ATTRIBUTES, INSTRUCTOR CONSIDERATIONS

the remainder of the paper is a delineation of the salient aspects of these variables.

Business Concepts Being Taught

Probably any business concept imaginable can be incorporated into a game of experiential exercise, but these concepts vary considerably along several dimensions and it is advantageous to identify the nature of the variability in each case.

Complexity. Business concepts range from the very simple to the very complicated. Simple concepts tend to be found in prerequisite courses and/or in the introductory materials for higher level courses. Taken singularly, simple concepts probably do not require elaborate learning experiences; whereas, more complicated concepts are better demonstrated through "learning by doing" teaching strategies. The game user must consider the complexity of the concepts being illustrated or taught.

Theoretical Nature. Business concepts range from those which are readily applied to those which are highly theoretical. Theoretical concepts tend to require an inductive approach while applied concepts are often learned by deduction. Induction implies many experiences and generalization, while deduction suggests the application of learning. The user must consider the theoretical nature of the concepts.

Function Involvement. Some concepts such as materials handling equipment choice often are restricted to a single business decision while others such as marketing strategy cut across several divisions and affect several business functions. The former usually concentrates on partial solutions with many variables held constant while the latter is less restrictive. Static analysis is certainly a defensible method of isolating attention on a particular concept; however, the user is obliged to reveal the true character of influences on the concept to the learners at some point in time. Experience with a game may artificially constrain learners frames of reference. The user must consider the number of business functions and environmental variables operating within and on the concept.

Implication. Certain concepts are implicitly related to a business decision. Cost economies are implicit to bulk shipping; specialization is implicit to a slate of corporate vice presidents. These are intuitive. However, nonintuitive connections must be illustrated in teaching sample size and system optimization. In general, nonintuitive implicit relationships

require greater effort to teach. The user must consider implicit intuitive and nonintuitive relationships in the concepts being taught.

Stochasticism. Business concepts may be stochastic or deterministic. Sometimes games are designed with deterministic models that appear to be stochastic, as for example the decision inputs of several firms in a simulated industry which yield seemingly random outcomes. Such experiences can confuse the game participants enticing them to consider random that which is not. Practically any game which does not allow the participant to pursue cause and effect analysis will have the same result. The user must consider the degree of stochasticism in the concept.

Number. How many business concepts does the user wish to illustrate within a single game or experiential exercise? When one examines even the simplest example, there emerge a great many concepts which act as foundations for understanding the concept being learned. The user must consider the number of underlying and attendant concepts involved with the concept or concepts being taught or learned.

The Nature of the Game/Task

The above listing is undoubtedly incomplete but it summarized reasonably well our point that business concepts are diverse and we as users of games and experiential exercises must analyze their various dimensions. Once we have accomplished this sufficiently, we can begin to scrutinize and classify the almost infinite number of alternative games and experiential exercises available to us. Every user probably does informal analysis of some sort, yet we doubt that any of us do enough.

Duration. There are games that require a complete semester of participation and those that can be executed in a matter of minutes. Generally long duration exercises are considerably more involved than short ones, although this condition does not always hold true. The user can control duration in many instances, contingent upon certain variables which will be discussed later. In general, however, there is a temporal dimension to each game or task. The user should be aware of the duration of the exercise and understand his control over its time commitment.

. Exercises may be categorized by the nature and number of decision variables necessary for meaningful participation. Tactical decisions exist in virtually all exercises, although strategic decisions are not always present. An exercise with few and tactical decisions inputs may illustrate strategic considerations over long duration but a comparison of results will be necessary. A game in which the student competes against a simulated oligopoly, however, can effect strategy results in short duration. The user should enumerate the number and nature of the decision variables in the alternative exercises.

Intergroup Competition and Results Sharing. Group versus individual learning is a salien dimension of the game/task. In situations where students participate against one another, the results of any one participant's decisions are confidential. Hence learning varies by participant. Those with poor competitive records are often "briefed" of their errors when the exercise is completed. Learning for them is extraneous to participating in the exercise: it results from a case study of the winners. Other types of exercises utilize group shared learning wherein participants compete against the game and report the results of their efforts during class discussion. Learning is theoretically less variable. The user should realize the degree of results sharing and its implications for the nature of learning.

Participant Grouping. Class size and the complexity of exercise decisions dictate the type of participant grouping. The larger, computer based games typically necessitate team groupings and specialization. This condition places an extra burden on the user if he wishes to insure that all members participate, for he must institute a policing system to enforce participation and cull out slackers. Inasmuch as teams are usually formed randomly, there is always the risk that a team's members may unfairly represent one end of the "curve", and team performance eventuate from the combination of native abilities (or lack thereof). The user should envision the participant grouping and subsequent learning evaluation problems of each game.

Course Integration. Each course represents a specific body of knowledge and the user must appreciate the degree of overlap between the exercise and concepts being taught: course-exercise content overlap. Separate from this acknowledgment is the user's decision to integrate the exercise into class presentation. Some exercises are specifically designed to teach concepts and require very little interference; but others assume that participants have been schooled on the concepts and are ready to apply them. The user should appreciate the degree of course integration assumed by the exercise and the amount of course class time he is willing to devote to the exercise.

Game Conduct

Apart from the structural variables just discussed, games and exercises may be characterized by a number of attributes specific to their conduct. While most games have directions or advice on administration, many users see fit to break away as they become more familiar with the game and their students' capabilities. Hence, this area of concern is dynamic and should be re-evaluated on a regular basis.

Accountability. The accountability of each participant or group of participants may be determined in several ways and the user must decide on the appropriate one or best mix.

Certainly as many accountability measures exist as there are users, but the game used may preclude the use of certain measures. The user should specify the measure(s) of accountability feasible for each alternative under consideration.

Autonomy. Separate from accountability is the degree of autonomy afforded to each participant. Large teams tend to reduce autonomy and encourage mediocre performance; small teams or individual participation tend to heighten autonomy and pinpoint responsibility. Except for special cases, games should be conducted with maximum participant autonomy and commensurate accountability measures. The user should visualize the amount of participant autonomy permitted each alternative.

Pace. At one extreme are games with lock-step procedures, wherein all participants are constrained to the same decision set at prespecified points in time. Pace is set by the user. On the other end of the continuum, however, are situations in which the participant sets his own pace, manipulates decision variables in experimental fashion and decides for himself when learning has taken place. Both are valuable, but one type undoubtedly fits the user's circumstances better than the other. The user should acknowledge the pace of learning inherent with each alternative.

Participant Involvement. The degree of participation the user expects of students is also a variable. Using the same game a user at one institution may anticipate extensive competitive analysis, sophisticated statistical procedures, and experimentation, while a user elsewhere may wish to do nothing more than to introduce students to various types of business decisions. The user should specify his expectations as to the depth of participant involvement with each alternative.

User Involvement. Important differences exist with regard to the potential for user involvement across games and experientials. Furthermore, the user's familiarity with the game will influence his involvement. Most of us tend to spend more time on our own exercises than we do on those designed by others. Apart from allowing involvement, some games require a fair amount of user involvement during operation; others may appear to require very little beyond orientation. The user should be aware of the degree of involvement he intends to devote and compare this to the user involvement required and/or allowed by each alternative.

User Attributes

User involvement seems a convenient lead-in to a class of variables that we term "User Attributes". The message here is "know thyself", for it seems to us that many misapplications and bad experiences with games and experiential techniques stem from users' unawareness or misperceptions of their own capabilities, circumstances, and/or motives.

Motive for Use. Why do we use games to teach these concepts? Surely anyone can concoct the response we all want to hear: they provide an exciting and stimulating learning experience which is more effective than unidirectional lectures. In all honesty, however, many users have more self-satisfying motives. Games reduce preparation time, burn up class contact hours, and divert students' attention away from instructor delivery shortcomings. They provide users the aura of progressiveness, help us to snow our older colleagues, supply grist for papers, and even pay for our trips to Oklahoma City, Bloomington, Knoxville, and Wichita. And what game designer does not get an ego boost when he presents his game to an audience. In short, our motives for using games are diverse and sometimes suspect. The user should be aware of his true motives for using games and experiential exercises.

Teaching Philosophy. Philosophies of student learning and the assessment of that learning vary from game user to game user. As cases in point, consider our own behavior. Our teaching philosophies frequently embody substantial workloads and our reward systems are biased toward overachievers. This philosophy is contrary to the more hedonic attitudes of other users with whom we are acquainted. Certainly the designers of games have philosophies which underpin the content and form of their products. The user should be aware of his teaching philosophy and its compatibility with that represented by the designers of games he uses.

Freedom of Choice. While we have implicitly assumed throughout this discussion that the user has many alternatives from which to choose, sober reflection reveals that some of us have a more restricted choice set than others. Native ability, creativity, energy level, and experience interact to constrain choice. Inertia and/or flocking instincts ("Everyone uses this game!") are certainly contributors as well. Compounding the problem is the fact that only a small number of games are widely published or referenced; hence, the potential user is hampered by unawareness unless he is willing to dig into relatively obscure sources. The user should realize that both internal and external constraints restrict the size of his alternative choice set.

Resources. We are differentially endowed with resources. Apart from the personal attributes mentioned above, physical resources such as computer size and availability, student assistance, budget restrictions, and secretarial support influence our choice of game. Time resources are often limited by teaching loads, administrative and committee duties or research activities. The user should itemize the amount and quality of the resources he will have available over the duration of his use of the game.

Student/Participant Attributes

The final class of moderator variables involves the objects of our efforts, the individuals who will participate in the

learning experience. Our experiences across several universities support the intuitively obvious statement that students vary.

Ability to Learn. Participants exhibit differences in their capacity to learn which will affect the impact of the learning experience. No less than two aspects of this capacity come to mind. The first aspect involves the participants' cognitive level - his intellectual ability as shaped by his biology and early environment. The second aspect concerns the participant's store of concepts - foundational skills and knowledge. Generally prerequisites and curriculum assure us that: a minimal preparedness exists, yet each class is special, or so we have come to realize. The user must take into account the participants' abilities to learn.

Willingness to Learn. Separate from ability is the desire to learn. Anyone who has been involved with continuing education or extension courses has confronted the student who has great desire to learn but who is hamstrung with a rusty cognitive process. Similarly, many of us have been frustrated by the bright but uninterested student. The challenge in both cases is to find a presentation mode with power to resolve the problem. The user must take into account participants' willingness to learn.

Ability to Participate. While at first glance ability to participate may appear redundant to ability to learn, deeper reflection shows that they are conceptually distinct. Many games require special time and place commitments in the forms of team meetings, teletype terminals, keypunching, props, and the like. Commuter students' and evening students' ability to participate is severely restricted, although at universities with large on-campus populations the ability variable is insignificant even for graduate classes. The user must take into account participants' ability to participate.

Willingness to Participate. It is common knowledge that the college junior is a widely researched animal due to his convenience to budget-constrained academicians. One could argue that he is also forced into an inordinate number of games and experiential techniques. We have heard a sufficient number of negative comments from students regarding their experience with games to believe that an unwillingness factor should be of real concern. Even those students who have not participated elsewhere appear to be tuned in to the attitudes of their experienced counterparts. The user must take into account participants' willingness to participate.

Number. Contrasting the four qualitative dimensions is a single quantitative factor, the number of participants. Some games accommodate large groups easily; others have (unspecified) break points wherein the objectives of the game become lost in the details of game administration. Other games actually require large numbers of participants to man a complete Industry or to reduce

the number of decisions per participant. The user must take into account the number of participants.

There are other descriptions which come to mind such as naturally, dependability, initiative and many more, but we will leave them for the reader to either subsume into the above discussion or build new categories.

CONCLUSION

Some intuitive connections between the dependent, independent, and moderator variables are in attendance, but a complete statement of the relationships is difficult given the present state of the art. Hopefully this discussion has accomplished two ends. First, the specification of variables and their dimensions provides a framework for positioning past and future empirical research on games and game administration. Second, and more important, the discussion should have developed an awareness that the choice of a game or experiential learning exercise requires a good deal more deliberation than most of us have been inclined to devote.

REFERENCE

[1] . Stanton, Wilbur. "University Games: Back to the Autotelic Domain," presented at the Third Annual Meeting of the Association for Business Simulation and Experiential Learning.