

GAMES

SUBSTANCE VERSUS EXPERIENCE
IN A CASE ENVIRONMENT

R.J. LORD

E.F.P. NEWSON

SCHOOL OF BUSINESS ADMINISTRATION
THE UNIVERSITY OF WESTERN ONTARIO

Since 1963, educational literature has contained an ongoing debate concerning the efficacy of business games as instructional tools. For the School of Business Administration at the University of Western Ontario, this debate has serious implications because we utilize a battery of games within our first year MBA program. Because of the concern in the literature over the effectiveness of games in teaching, we have been forced to re-evaluate why and how we use games and to attempt to determine their impact upon our students.

While we are not able to report conclusive evidence as to the usefulness of games, we believe our re-examination has shed important insights into the role of games within our teaching process. The purpose of this paper is to share these insights as possible contributions to the ongoing debate concerning the importance of games as teaching tools.

The Issue: Do Students Learn From Games?

Ever since Dill and Doppelt reported their experience with the Carnegie game in 1963', the literature has contained an ongoing discussion of the usefulness of games. Dill and Doppelt reported their game appeared to improve students' ability to handle analytic tasks; to abstract, organize and use information; to coordinate information and action; and to understand organizational problems.

While Dill and Doppelt believed that games were worthwhile, measured at least by the amount of effort that goes into the design and playing of them, Moore² concluded in 1967 that games were not more effective than other approaches to teaching, if one's criterion were what the student learns. Moore concluded that his study did not support a general proposition that games are more effective than the case method from the standpoint of learning and that better learning of facts, concepts, a structure for learning and logical reasoning ability may be achieved through the use of cases rather than games.

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More recently, in 1975, Wolfe³ reported that the experiential (game and exercise) learning environment was relatively valueless in teaching knowledge and principle mastery, at least in a policy course.

Like Dill and Dopplet, the faculty at the School of Business Administration, the University of Western Ontario, believe games do have an important role in teaching business. We have played INTOP (International Operations Simulation)⁶ for the last seven years, and have recently added other games to our program. Because we use both games and cases, and believe them important, the questions raised by the Wolfe and Moore studies are important to us.

The Teaching Environment at Western

A fundamental issue to be faced at an institution which purports to train managers, as we do, is whether to teach students about management (with the stress on substantive content) or to teach them how to manage (with emphasis on the development of analytic and administrative skills). It is difficult, if not impossible, for a management school to do both well. The former encourages research to be directed to the development of new techniques and approaches to management; it encourages teaching to be content-oriented; and it calls for a functional orientation within the school. The latter approach (teaching how to manage) encourages research to be directed to the understanding of the management process; it encourages teaching to be analysis-oriented; and it calls for an organization which is less functional and more program oriented.

How do these two different orientations affect the teaching/learning process? In learning how to manage, students are required to demonstrate skills of analysis and decision making in concert with a substantive knowledge of the functional areas. This implies that the educational program devote time to developing an awareness of the managerial environment, to recognize interdependencies and to develop situational judgement on what is important (and what is not). The time required for the development of these analytical skills is significant, and they are developed at the expense of substantive content.

In contrast, courses about management expose a student to a great deal of theory and abstraction in a short period of time. These courses have a more passive and observational approach to management. They are technique-oriented and they seldom address the context in which the knowledge may apply. Knowledge of techniques rather than an ability to perceive and address problems is often the result.

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The Western School of Business Administration prepares students for general management. That is, we teach students how to manage, with extensive emphasis on analysis and upon making decisions. To meet this objective we have adopted primarily a case method approach to teaching, both to increase the students' awareness of the setting of the problems he must face, and to enhance his analytic skills necessary to recognize and cope with these problems.

The Role of Games in a Case Environment

While cases and the case discussion are the primary teaching vehicles at Western, they are not the only teaching tools we use. While the repertoire of teaching approaches differs by course and instructor, our students experience a broad set of teaching tools within each course, ranging from lectures to role playing incidents and games (Figure 1). We use a broad repertoire because of the different strengths of each approach. Lectures and readings stress the cognitive aspects of the learning process--they are efficient in communicating new ideas and knowledge, while role playing and structured experiences (games) stress the internalization of what the student has learned.

The discussion of cases holds a position in the middle of this list. Cases serve both to communicate ideas and to help internalize and apply these ideas. The potential of the case method for reinforcing concepts makes cases an excellent teaching vehicle when both the technical skills and the process of management are required learning. However, the solution of cases also implies that much of the student's learning will be inductive. The case process begins with the student experiencing a problem or situation (in stage 1 of Figure 2) and then sharing his impressions and opinions in discussions with small groups and with the entire class (stage 2). After a series of cases, small group discussions and classes, the students should have sufficient experience to progress to stage 3 (comparing and contrasting) and hopefully to stage four (generalization). While cases are very strong in stages one through three and provide a basis for students to "find" their own generalizations, the case study technique is rather weak in stage 5, applying the generalizations learned. For even though the instructor may force the student to come to a decision there is little follow-through on the concepts identified unless extensive use of reinforcing cases is undertaken at an inordinate cost in time. Even with the case method, the application of knowledge (stage 5) may be largely unexploited.

FIGURE 1
Teaching/Learning Repertoire*

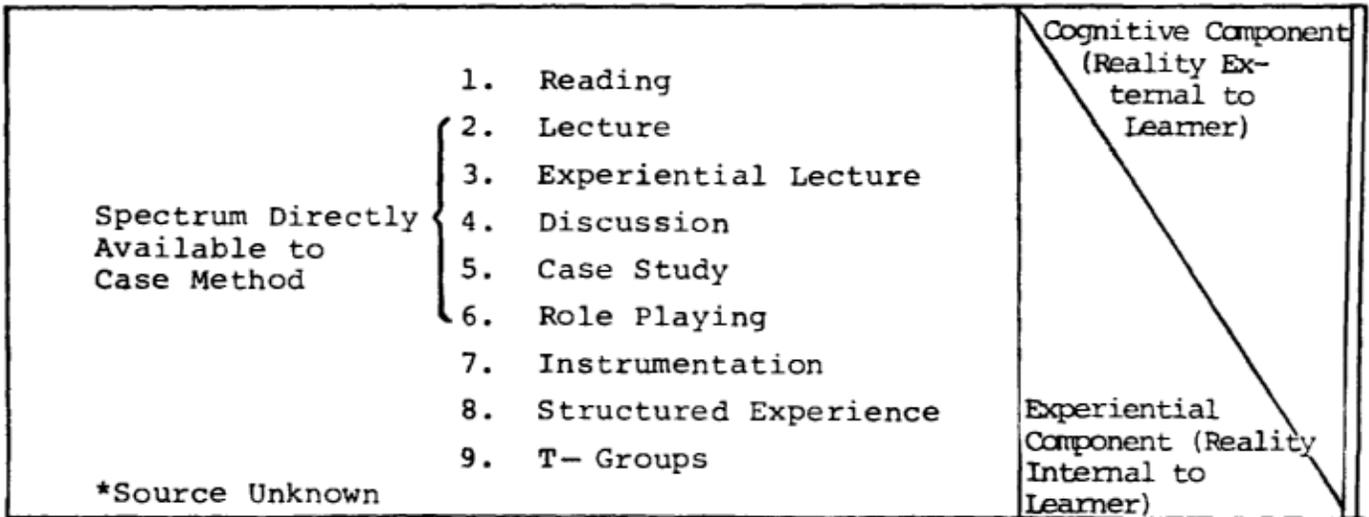
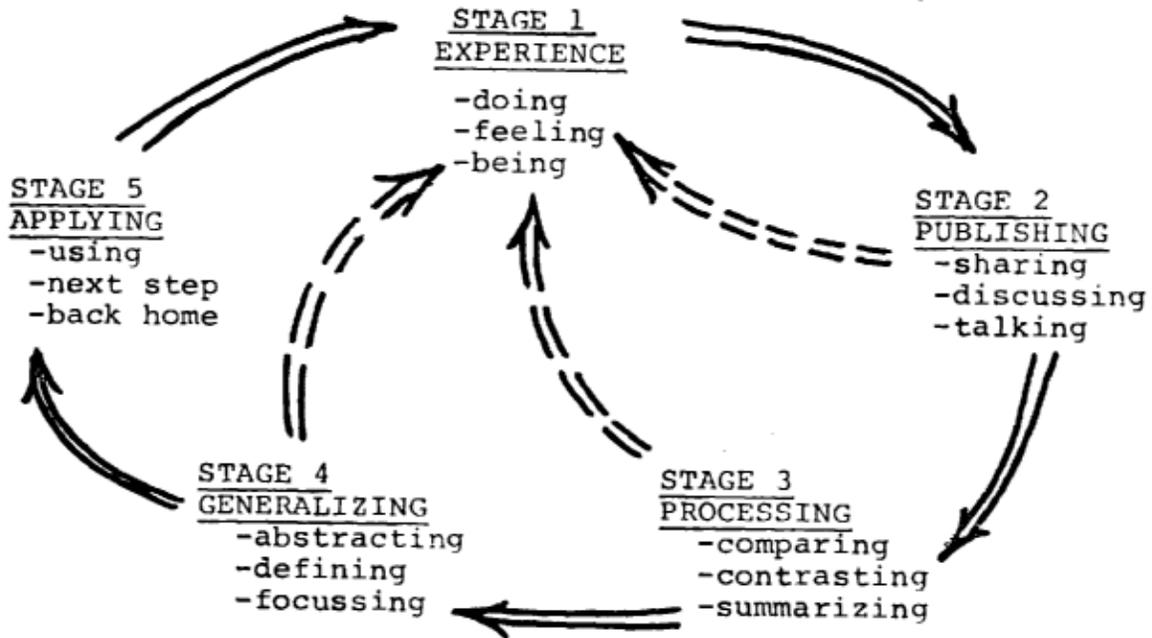


FIGURE 2
An Inductive Model for Learning*



*Source Unknown

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What then is the role of games? We look upon structured experiences (games) as vehicles for bringing application (stage 5) to a point where it can contribute to the learning process. Thus, our objective is to provide feedback to the students through the use of games. There is little “cognitive” component to this objective. Rather we use games to ensure that the student:

1. Becomes aware of the interdependence of functional areas, and their interrelationship with the overall “health” of the enterprise;
2. Experiences the group decision making process, where delegation of responsibility, division of labor, negotiation and group decision making predominate;
3. Experiences the joy (sorrow) of living with his and the group’s analyses and decisions over time;
4. Understands the extent to which financial reports, though abstract, are vital to successful operations;
5. Catches a glimpse of himself (and others) operating in a “real” environment, leading to an awareness of self and others.

Student responses to date suggest we have been successful in meeting these objectives. Students report greater awareness of the interrelatedness of functional areas and decisions, and of themselves or others. But they also report little new learning. As Figure 1 suggests, games may help students internalize material learned elsewhere, they do not appear to teach new concepts or ideas.

The Games Played At Western

Tables 1 and 2 briefly summarize the battery of games we are currently using in the first year of the MBA program at Western. In contrast to the use of games discussed during previous ABSEL conferences, our use of games appears unique in that we have deliberately selected a battery of games, and that we play these games during concentrated periods of time during which all classes and other activities are suspended. INSIM⁴ is used early in the term, both to provide some relief from our three-case--a-day routine and to reinforce a broader perspective of the firm among students. V.K. Gadget⁵ is played during January or February to specifically reinforce the concepts and processes inherent in the budgeting process.

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TABLE 1

GAMES UTILIZED WITHIN THE FIRST
YEAR OF THE WESTERN MBA PROGRAM

<u>TITLE</u>	<u>INSIM</u>	<u>V.K. GADGET</u>	<u>INTOP</u>
Date of Creation	1973	1973	1963
Variables over which students make decisions	8	25	65 - 100
Number of decisions played	6	4	8 - 12
Administration (Faculty) Participation	Low	High	Extremely High
Flexibility in Parameters of the Game	None	Economic Parameters Only	Economic and Structural Components
Required Winning Behavior	Collusion	Comprehensive Numerical Analysis	Comprehensive Numerical Analysis and Efficient Organization (teamwork, division of labor and group decisions)
Required Technical Support	Small Batch (IBM 1130) (8 k)	Small Batch (IBM 1130) (8K)	Large Batch (CDC Cyber 73) (140K)

TABLE 2

EXECUTION OF GAMES WITH THE FIRST YEAR
OF THE WESTERN MBA PROGRAM

<u>NAME</u>	<u>INSIM</u>	<u>V.K. GADGET</u>	<u>INTOP</u>
Timing	November	Jan/Feb	Mar/Apr
Elapsed Time (Total time devoted to play)	1½ days	4 days	1 week
Time between decision	2 hours	24 hours	6 hours reducing to 3 hours
Performance Evaluation Provided by:	Game	Administrator	Peers
Success Criteria	1. Unknown 2. Simple 3. Objective	1. Unknown 2. Complex 3. Objective	1. Unknown 2. Complex 3. Subjective

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Finally INTOP⁶ is played near the end of the term to reinforce the year's experience and to specifically involve students in a bargaining, negotiating environment.

We have chosen this battery of games because they do different things and because they help our students accept and apply the increasingly complex knowledge they receive through lectures, cases, and discussions. For the faculty in the first year MBA program, these games have an explicit role to play in our pedagogical repertoire. For us it is not a question of games or cases. Rather it is a question of what games and when they are used. As Figure 1 and 2 suggested, games have a special role in helping students learn to accept and apply the ideas introduced through other teaching techniques. Games do a better job of helping students internalize these ideas than any other teaching technique we have yet discovered, and it is for this reason games will continue to be a part, but only a part, of the learning experience at Western.

SUMMARY

For almost two decades, the academic literature has reported the ongoing debate concerning the usefulness and relevance of games as teaching tools. This debate and the expanding use of games at Western has led the authors to re-examine how and why games are used. This reflection has led to the realization that while games do have a role to play in the teaching process, that role is limited.

Games are only part of an effective teaching process. They can be used to help reinforce concepts, and to help students accept and apply concepts and knowledge gained elsewhere from lectures, cases and discussions. While games are effective in helping students move from "understanding" knowledge to "accepting and internalizing" that knowledge, they are limited in their ability to generate content. For this reason the faculty is not concerned with replacing cases and other teaching approaches with games, but rather is concerned with how to best integrate games with cases, discussions and lectures.

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