

Business Games and Experiential Learning in Action, Volume 2, 1975

GUIDELINES FOR THE FUTURE DEVELOPMENT OF BUSINESS GAMES

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The purpose of this paper is to present a set of guidelines for the future development of business games. These guidelines are based on an analysis and evaluation of past research and articles describing business game usage. A review of business game literature reveals (1) that the use of business games is solidly entrenched in the business curriculum, (2) that the nature of the educational value of business games is not well defined, and (3) that those who use games believe they represent a significant pedagogical tool.

In order to justify the continued use of games it must be demonstrated that they are capable of making a significant contribution to the education of business students. Concerning the fundamental issue of what learning takes place when games are used, Keys has said [1, p. 1]:

...we do not know exactly how persons learn from games; some of us are confusing performance in games with learning in games; it is difficult for us to designate the major learning stimuli in any specific game. We are, to be specific, floundering on the brink of what could become a terminal disease—"the lack of purpose and direction"—especially in the area of learning research.

While basically agreeing with Keys' conclusion, I believe that, even though past research on the business gaming learning experience has been inadequate, some insight into the educational value of business games can be obtained from an analysis and evaluation of existing business game literature.

A study of recent business gaming literature will reveal that:

1. Games vary in purpose, design, and scope.
2. Games are represented as capable of attaining multiple objectives.
3. The administration of games may take place in a framework that may be classified as highly structured or relatively unstructured.
4. Games as part of the course structure configuration may be used as one of several pedagogical devices or may be placed in the course structure as the major supplemental pedagogical tool.

While much progress has been made in the last fifteen years in game development and administration, it is my belief that much can be done to increase game effectiveness. Future improvement in game usage will require that we recognize and explicitly formulate guidelines on the following interrelated factors:

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1. Course structure
2. Course objectives
3. Game objectives
4. Game structure
5. Game administration

The remainder of this paper will be concerned with demonstrating how these factors are interrelated and how they may be used to construct guidelines for the future development of business games. In order to clearly demonstrate how these factors are significantly interrelated, it will be useful to utilize a model that I have developed. The symbols of this model are shown in Figure 1.

COURSE STRUCTURE

Course structure may be defined as a configuration consisting of a basic pedagogical teaching method, course objectives, and supplemental teaching aids set in a time constraint. The precise relationships of the components of this configuration are determined by the instructor who, when games are part of the course structure, acts as the game administrator. The course structure model that I am employing in this paper assumes that the basic pedagogical teaching method is the lecture and basic text; however, any supplemental teaching method could be the basic method if it is used predominantly. The fundamental and commonly used lecture and textbook method is illustrated in Figure 2.

The important point to note about course structure is that in this framework we attempt to teach concepts, principles, fundamentals, theories, ideas, and techniques. Supplemental teaching aids or methods are part of the model because they are frequently used to enhance the effectiveness of the conventional mode of lectures and textbooks. Supplemental teaching methods include cases, problems, readings, oral and written reports, and field trips.

In some cases, a single basic teaching mode may not exist. The course objectives are attained by use of various teaching techniques described above as supplemental.

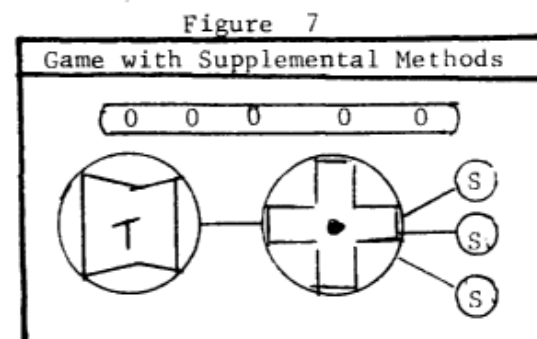
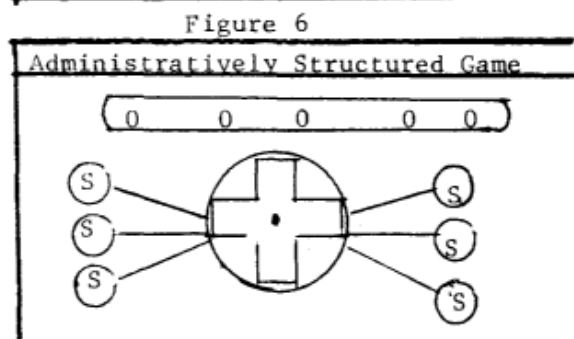
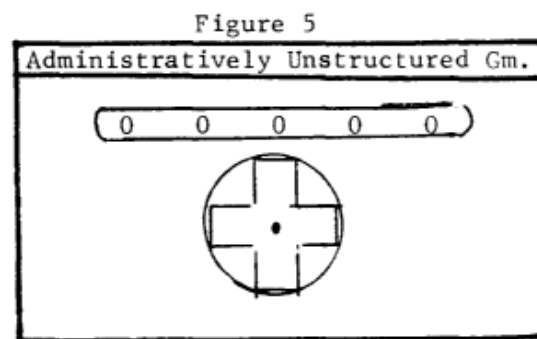
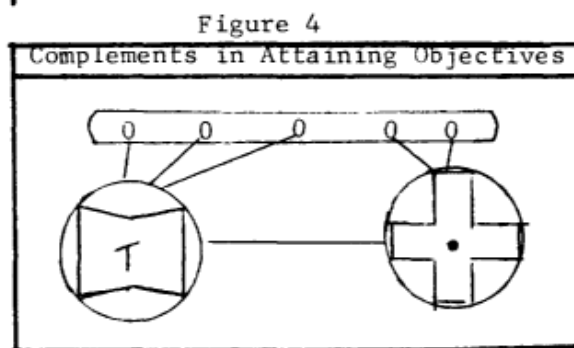
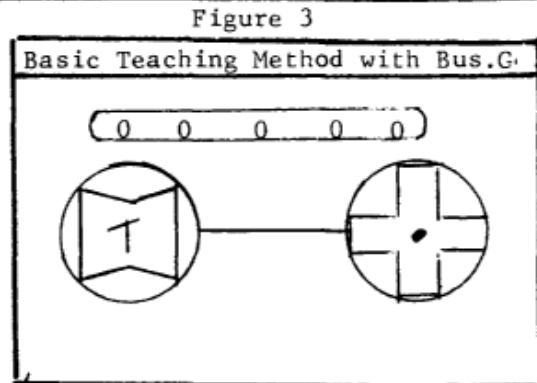
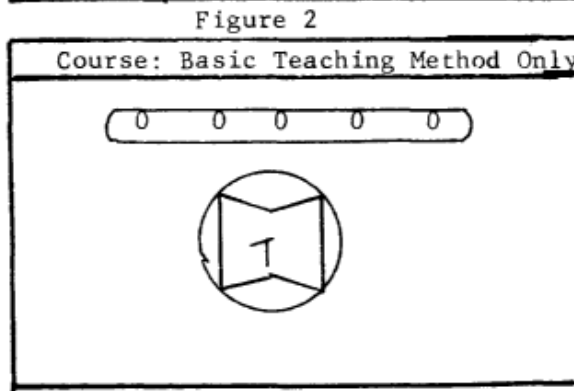
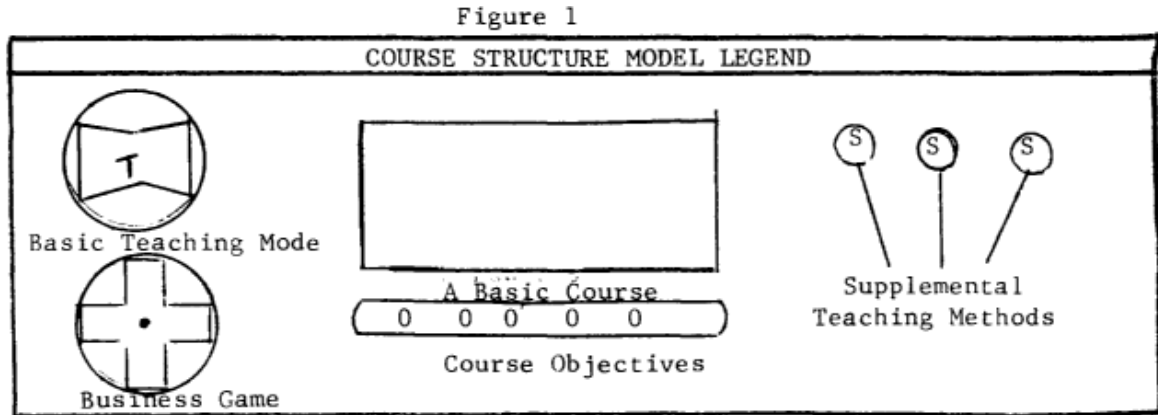
Even though some attempts have been made to make games the whole course structure, games are generally used as supplemental teaching aids. Although games are supplemental to a basic teaching mode, through highly structured administration, they can become the dominant pedagogical factor in a course. Figure 3 illustrates a course structure in which the game has parallel importance to a basic teaching method such as the lecture and textbook.

The basic elements of a course structure configuration which includes business games can assume different patterns and relationships. Figures 2 - 8 illustrate some variations in course structure. The important point to recognize as far as future research and game development is concerned is that different course structure patterns may enhance or diminish effectiveness of a particular game.

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GAME OBJECTIVES

Proponents of business games have advocated that games are capable of attaining multiple objectives. For example, following is a list of game objectives that were extracted from the ABSEL 1974 Conference Proceedings:



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1. Provide an opportunity to hone decision making and improve human relations skills through cooperative and competitive interaction with a student's peers [2, p.85].
2. Motivate the student to learn techniques [3, p.124].
3. Demonstrate the value of careful planning and analysis [4, p.124].
4. Provide future managers with practice of, insight into, and improvement of their main function- -decision making [5, p.124].
5. Expose students to operations in a competitive and realistic environment [6, p.143].
6. Place students in a managerial role without providing an actual business venture to operate [7, p.174].
7. Integrate material from various functional areas in a business curriculum [8, p.213].
8. Provide an environment in which students have the opportunity to experiment with the application of a -number of models as aids to decision making [9, p.245].
9. Encourage better understanding of the interrelation among various functions of a business [10, p.256].
10. Provide the framework for gaining greater knowledge and appreciation of those business functions outside the participant's own study, experience or prior training [11, p.257].
11. Develop better analytical abilities and improve decision-making skills from a company as well as a personal, departmental and/or functional point of view [12, p.257].

Given this rather lengthy list of objectives, a somewhat obvious but basic question should be asked: Are all games regardless of differences in design, scope, and nature capable of achieving all of the above objectives? That is, are there such basic differences in games so that one type of game may be better able to achieve a selected set of objectives than another? If the answer is yes, then future research should attempt to determine what set of objectives are best attained by a given type of game. For example, what game objectives are best achieved by the use of a complex functional game as opposed to a relatively simple general management game? Future research that fails to recognize that certain objectives are more relevant to some games than others may prove to be of limited value.

COURSE OBJECTIVES

A course without basic objectives would be comparable to a ship without a rudder. Well-defined objectives give direction and purpose to a course. Objectives properly formulated should give some clue as to what supplemental teaching aids are a proper part of the course structure.

There is considerable flexibility in how course objectives are expressed. They may be defined broadly or narrowly. Also, objectives may vary in nature; that is, some may be primary while others are secondary in nature. Nevertheless, it is important in the use of business games that attention be given to the stated objectives of a course.

Two examples of rather broad objectives might be the following:

To convey to students an understanding of basic concepts, principles and fundamentals which will be useful to the student in his personal life and business career.

To develop in the student a degree of proficiency in the use of concepts and techniques so that when the opportunity arises a meaningful use of knowledge acquired in the classroom can be made in a real world situation.

Some writers have questioned whether games can achieve objectives of the type listed above. For example, Keys has said:

Most games by design contain very little factual information worth learning. Furthermore, learning facts must compete with learning game rules and mechanics and with performance in the game. Additional time will be exhausted during game play by students responding to stimuli in the game such as the model, the group or advisor's interpersonal role.... Games do not cause students to learn the same things as texts and lectures [13, pp. 9, 15].

Given a course structure with multiple objectives, the basic mode of lectures plus textbooks may not be sufficient to attain all of the designated objectives. Certain objectives possibly may be best attained by the use of a business game as opposed to other supplemental teaching methods. Given a course structure with multiple objectives, it is possible that games are not alternatives to the basic teaching mode but rather serve as complements. For example, among the course objectives might be the objective to convey to students an understanding of how certain concepts and decision variables interrelate. Games have proven to be very effective in conveying to students interrelationships among managerial concepts, functions, and decision variables. Therefore, the use of a business game in connection with the basic teaching mode might be the most efficient means of achieving course objectives. The idea of games as complements to the conventional teaching mode is illustrated in Figure 4.

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If the above analysis is valid, then the question is not one of whether games are better than the conventional teaching mode but rather which supplemental teaching technique is best able to attain a given course objective. A game should be used only when a course objective justifies its use and when it is the most efficient means of achieving the objective. Consequently, it is my belief that future research should, in part, deal with the problem of identifying valid course objectives and determining which of these objectives are best attained by business games.

GAME STRUCTURE

A study of the 1974 conference proceedings alone will support the conclusion that games differ significantly in structure. Game structure refers to differences in purpose, design, and complexity. Business games may be classified as (1) simple or complex, (2) functional or general, and (3) interactive or noninteractive. These classifications are not necessarily mutually exclusive. For example, it is possible for a game to be a complex, noninteractive functional game.

The fact that games differ significantly poses certain problems that should be recognized in the evaluation of the effectiveness of games as learning tools. As previously discussed above, courses in which games are used may differ considerably in structure and in terms of objectives. Attainment of optimum educational value for course objectives may require selection of an appropriate business game.

A weakness of past research has been that no explicit research has been done on the differences of games in relationship to game effectiveness (achievement of game objectives). Kidron who has given some thought to this problem has pointed out that no theoretical framework prior to his article existed for a comparative study of business games. He has pointed out that effectiveness may vary among different games and as a result there is a need for comparative research on business games. To quote Kidron:

It is in the interest of the researcher and the practitioner to investigate the relationship between a set of independent variables that characterized games and their administration, and a set of dependent variables that may be used as a selection criteria for future uses of this training method....It is hardly acceptable to derive conclusions concerning the effectiveness of games versus different teaching techniques if only one game is used as the independent variable [14, pp. 455, 457].

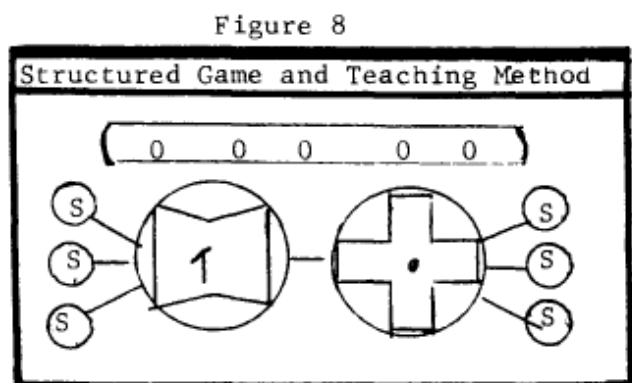
In the framework proposed by Kidron, game objectives are considered to be the dependent variable and game structure and game administration are among the independent variables. I believe that Kidron is correct in stating that future research must include a comparative study of current games. This research concerning differences in games must recognize that a particular game's educational value will vary directly with changes in game administration and course structure.

A review of the literature clearly reveals that games are becoming increasingly specialized, and that they are being used more and more in tremendous impact on game administration.

GAME ADMINISTRATION

One of the truly important, if not more important, gaming variable affecting the amount of learning is that of game administration. By game administration is meant the extent to which the instructor directs the activities of game participants. The administration of games may be classified as either (1) highly structured or (2) relatively unstructured. These two types of game administration are illustrated in Figures 5 and 6. A relatively unstructured administrated game would be one in which there is an absence of special assignments, written and oral reports, problems, cases, etc. Very little help or supervision on the administrator's part is given to the team participants in making decisions or in analysis of data. The basic assignment is simply the instruction to turn in a set of decisions at the designated intervals. On the other hand, a highly structured administrated game is one in which there is a predetermined set of assigned activities involving the use of cases, reports, problems, readings, etc. This has been referred to by some as the enrichment of game play. For the highly administratively structured game the instructor in his role as the administrator is a key element in the effectiveness of the game.

The 1974 Conference Proceedings clearly indicates that there is a trend toward development and usage of specialized or functional games, and that these games are being used in a framework of supplemental pedagogical devices. Figure 7 illustrates this type of game utilization. This is the course structure that I use for Introduction to Managerial Accounting: A Business Game [15]. The fact that games are becoming highly structured in administration may be an indication that the learning value of games per se is not considered significant. An extreme case of highly structured administration is illustrated in Figure 8. In this case both the basic teaching method and the business game are heavily laced with supplemental teaching aids.



In the past we have talked as though game play which was independent of course structure and game administration had intrinsic educational value. I believe that the learning experience in a highly

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administratively structured game is drastically different from the learning experience in a relatively unstructured administrated game. If this is the case, then future research should inquire into the nature and extent of the differences of learning that result when different styles of administration are used. Also, future research might be concerned with determining whether the highly structured administrated game tends to negate the unique contribution of game play per se in an unstructured setting.

SUMMARY

The above discussion resulted in a number of suggested guidelines for future development of business games. They may be summarized as follows:

Future development of business games and research on their effectiveness

1. must give explicit recognition to course structure;
2. should seek to determine what game objectives are best achieved by specific types of games;
3. should seek to determine the extent to which avowed game objectives complement course objectives;
4. should be concerned with identifying differences in games and determining the extent to which these differences result in different levels of game effectiveness;
5. should be concerned with determining the effect that different types of game administration have on the amount of learning that takes place within a business game experience.

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