

# The Effectiveness Of Business Games In Management Training

justification for further empirical investigation

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The use of *business games* has become extensive and widespread since their development and introduction as a management training device in the late 1950's. Recent reports show that they may be used by as much as forty per cent of industry<sup>1</sup> and are *generally* felt to be effective in management training.<sup>2</sup> The position taken by most training directors appears to be that business games are valuable additions to their repertoire of training techniques, while the position advanced by some critics of the gaming approach is that games are worthless, or next to worthless. As business games are expensive both to develop and administer, resolution of this difference of opinion is not merely an academic exercise, but one with some implications for the

training director in terms of training effectiveness and efficiency. The development of a simple business game may run into several thousands of dollars, while administration may be far more expensive.<sup>3</sup>

## Empirical Findings

A recent and comprehensive review of empirical (with control groups) studies on the effectiveness of business games as management training devices concluded that actually very little empirical support exists for their use.<sup>4</sup> The article noted that neither game effectiveness nor ineffectiveness had been demonstrated, and that for the positive experimental findings which were located, an equal number of negative or inconclusive findings were uncovered as

well. Table 1 summarizes the studies cited in this literature review, classified by the claims most commonly made concerning what business games do. The categories of claims were developed from a content analysis of more than 50 games currently in use in industry, and are listed in descending order of frequency of mention.

As shown in Table 1, none of the claims concerning game effectiveness appear to be confirmed by the available empirical evidence. However, while not confirmed, they appear *not disconfirmed* as well. Thus, the evidence concerning the 10 most commonly made claims concerning game effectiveness must be considered equivocal and these claims should be subjected to further investigation. Because of this, a

**Table 1**  
Summary of Empirical Results  
(N = 12)

Claim	Number Of Studies With Findings That Were		
	Positive	Non-positive	Negative
Decision-Making Skills	0	2	0
Planning and Forecasting Skills	1	0	0
Recognition of the Interrelationships in Business	1	3	1
High Participant Interest and Motivation	2	1	1
Knowledge of Facts and Use of Specific Techniques	1	5	1
Interpersonal Skills	1	2	0
Bearing of the Consequences of Decisions	0	0	0
Organizing Ability	0	2	0
Communications Skills	0	0	0
Acceptance of the Computer	0	0	0

Note: The full claims are that business games teach or foster each of the areas listed above.

content analysis was undertaken of the non-empirical literature on business games to determine whether expert opinion supported any of the specific claims made by game designers and advocates.<sup>5</sup> While any evidence derived from expert opinion will shed some light on the issue of game effectiveness, such findings do not constitute the hard scientific results which are necessary to draw definitive conclusions and do not negate the need for further research in this area. With this caution in mind, we proceed with a discussion of the content analysis.

#### Procedure

A random sample of 100 books and articles on game effectiveness was drawn from the same exhaustive bibliography (consisting of about 400 sources) which was used in developing the literature review of empirical studies. Included within this sample were a large number of the most commonly cited works on games and a number of lesser known papers.

The main content analysis was

performed using the 10 game claims as initial categories in which to sort statements. Additional categories were developed as needed, and in all, a total of 42 were eventually used. Only one of the new categories contained more entries than did any claim shown in Table 1. This category was labeled "Broadening of Participants' Perspective" and contained 11 entries. The results of the content analysis are shown in Table 2.

In order to draw valid generalizations from any data, they must be reliable. Thus, 25 of the pieces (drawn at random from the sample of 100) were content-analyzed by a second judge to enable the determination of the reliability of the results. The pi index of inter-

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**Table 2**  
Content Analysis Results

Claim	Number and Percent Of Total Sample (N = 100) Making Claim
Decision-Making Skills	38
Planning and Forecasting Skills	28
Recognition of the Interrelationships in Business	47
High Participant Interest and Motivation	57
Knowledge of Facts and Use of Specific Techniques	14
Interpersonal Skills	18
Bearing of the Consequences of Decisions	7
Organizing Ability	15
Communications Skills	7
Acceptance of the Computer	6

Note: A complete listing of each claim by author(s), along with the bibliography used is available upon request from the authors.

coder reliability,<sup>6</sup> which is best for data such as these,<sup>7</sup> was then computed. Since it was found to be .84, it would appear that the content analysis has sufficient reliability to allow the drawing of conclusions from it.

### Results

As shown in Table 2, the first four claims concerning game effectiveness appear to have a large degree of support. These are the claims that business games teach or foster decision-making skills, planning and forecasting skills, recognition of the interrelationships in business and high participant interest and motivation. The claim with the most support is the motivation claim, followed by the interrelationship recognition, decision-making skills, and planning and forecasting skills claims. None of the remaining six claims appear to have much support. Thus, based upon this content analysis, there is some weight of expert opinion to support the contention that they are generally effective, or are effective in a large number of areas seems to be unfounded.

### Discussion

While the content analysis certainly does not provide sufficient grounds for questioning the results of the empirical review, it did uncover enough evidence to present a somewhat convincing argument that business game effectiveness in some areas cannot be dismissed offhand. Also, while game advocates have probably been extravagant in the claims they have made for business gaming as a management training device,<sup>8</sup> critics of such games appear to have been equally guilty of being over zealous in their pronouncements.<sup>9</sup> Thus, it would seem that a most important result of this study comes from the realization that *business games are not the panacea proclaimed by some; on the other hand, they are not without redeeming virtue*, as others have claimed. They do appear to have potential as a training device for some specific purposes and under relatively expert guidance. However, the full extent of this potential needs to be explored.

It should be noted in passing,

that the total number of published empirical studies cited in the review paper amounted to 12. As Table 1 shows, no more than seven studies were addressed to the examination of any one claim. This number is not large enough to constitute weight of evidence from which trends in the results bearing on each claim can be easily detected. Thus, some of the failure of the empirical review to demonstrate game effectiveness may have been due to an insufficient number of studies, and it would appear that more experimental studies are desperately needed in this area.

### Summary

While support for some claims based upon expert opinion is probably sufficient encouragement for continuing the use of business games, empirical validation is still a necessity. However, it appears that interest in such an endeavor has diminished since the mid 1960's. Only one of the studies reported in the empirical review was published after 1968. Furthermore, personal communication with most of the authors of the empirical studies provides little hope for future research in the field. None of those contacted have conducted or are planning to conduct new studies on game effectiveness. It would thus seem that the benefits of business gaming have become accepted without sufficient scientific support. Support from expert opinion, such as that uncovered in the content analysis should serve as a starting point and justification for further empirical investigation on gaming effectiveness. It is only a first step, however, in the collection of knowledge on business game effectiveness in management training.

### References

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3. Shubik, M., "Gaming: Costs and Facilities," *Management Science* (November, 1968), pp. 629-660.
4. Schriesheim, C. A., "Business Simulation Games: A Review of the Evidence and a Suggested Course of Action," *Proceedings of the Midwest AIDS Conference* (East Lansing, Michigan: American Institute for Decision Sciences, 1973).
5. Most of the articles and books included in the content analysis were authored by experienced practitioners in either industry or academia. Hence, collectively they were considered expert opinion. This literature enabled examination of the specific areas in which games are seen as being effective. Previous studies by others have concentrated on demon-

strating only that games are seen as being effective in general.

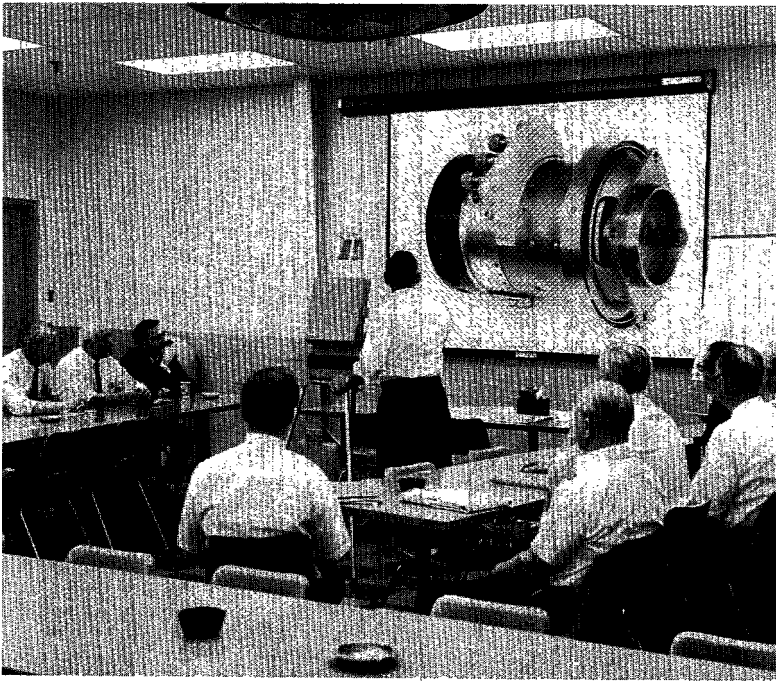
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7. See O. R. Holsti, "Content Analysis," *The Handbook of Social Psychology*, Second Edition, Volume Two, G. Lindzey and E. Aronson, Editors (Reading, Mass.: Addison-Wesley, 1968).
8. The authors do not claim to have been immune to the temptation of making excessive claims for business games as training devices. See C. A. Schriesheim, *The Introduction to Business Game: A Business Simulation for Freshmen Students*, Second Edition (Baltimore: Business Simulations, Inc., 1971).
9. For an example of such critics, see W. Christian. "Don't Bet on Business Games," *Business Automation*, (January, 1961), pp. 22-25+.

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