

Simulation and Gaming: Simile or Synonym?

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Social studies educators are demonstrating heightened interest in "simulation games." In spite of this attention, the term "simulation games" lacks clarity and precision of meaning. The expanded application of simulation games for educational purposes demands the development of precise definitions of these processes. As a beginning, we must seek to answer these questions:

What is simulation?

What is gaming?

What is the distinction between these processes?

What is the relationship between them?

Simulation has a strange and new ring in educational circles. Yet, simulations have had an established place in classroom environments. Books, the most traditional of learning tools, are simulations. In most forms books, through the use of verbal and pictorial symbols, provide the reader with *representations of reality*.¹ Films, pictures, globes, sand table models—traditional components of the educators stock in trade—also qualify as simulations. Each seeks to represent the real world to the learner in accurate but simplified ways.

The use of simulations in many

contexts such as military science, industrial engineering and in several disciplines, has resulted in a myriad of definitions of simulation. These definitions range in nature from the broad and general to the specific and technical. In spite of such variability, a notion that appears persistently is that simulations are *representation of reality*.

For purpose of clarity the use of the term *representation* deserves two special considerations. First, a representation is a step removed from reality. Anyone who has visited a wax museum well knows that these awesomely realistic mannequins are not to be confused with life itself. They represent but do not duplicate reality.

Secondly, the accurateness of the representation must receive critical scrutiny by educators. As gaming *elements merge with simulations* such analysis is of special importance. In the construction of games, the desire to interest the player, to heighten the conflict, and in general, to make the game exciting can result in serious distortions in the representation. Such distortions can invalidate the game not only as a simulation but as a justifiable classroom strategy. Familiar to most children and adults is the parlor game, *Monopoly*. Although interest-

ing and exciting, its conditions and/or rules bear only slight resemblance to actual real estate practices. Such lack of precision demonstrates that *Monopoly* is neither a simulation, except perhaps in extremely crude form, nor a valuable classroom strategy.

The *representative* nature of simulations permits a more potent study of reality than natural conditions allow. This contradictory condition—being separate from, yet for some purposes, more powerful than reality—causes simulations to assume a fourth dimensional quality.

Simulations are controlled representations of reality. Because they allow study in ways that nature or natural conditions prohibit, they have received wide acceptance as research tools.¹ They permit expansion or compression of real time. Their separateness from reality allows greater objectivity than the study of the phenomena itself. Typically, the simulation process can be interrupted and repeated. Important for the educator, is that through simulation it is possible to simplify complex processes. Such powerful characteristics make wider classroom application of simulations long overdue.

Games recently developed for use in social studies classrooms seek to simulate conditions and rules that parallel political, social, or economic processes. Some are more precise in their representations than others. Discriminating judgment must be applied to these innovations. If games do not reconstruct reality in honest and accurate ways, they must be dismissed as gimmicks—for they are

neither well conceived instructional strategies nor simulations. A game is a contest (play) among adversaries (players) operating under constraints (rules) for an objective (winning, victory, or payoff).² The conflict manifested in most games gives them a decision-making characteristic. This potential for simulating decision-making processes gives games their significance for classroom use.

One way to distinguish between simulation and games is to define all games as simulations but not all simulations as games. Explicitly or implicitly, this relationship is reflected in much of the current literature. Careful analysis forces rejection of the former part of this statement. It appears clear to this writer that *only some games are simulations, and only some simulations are games.*

To claim that all games are simulations is to argue that dice, marbles, and table tennis represent real life processes in accurate ways. One can readily agree that elements of chance and/or skill are found in reality. However, to argue that these games represent such characteristics accurately would indeed be fallacious. Clearly, all games are not simulations. Further, only those games whose components (conditions and rules) parallel reality in precise ways qualify as simulations.

The position this article reflects owes much of its substance to two classification schemes: the first, that categorizes *games*, was developed by Clark C. Abt;³ the second, describing simulations, is the work of Richard Dawson.¹

GAMES*

<i>Kinds of Games**</i>	<i>Games Explanation</i>	<i>Example</i>
Games that Model Reality	Simulate real life processes	Inter-Nation
Games of Skill	Capabilities determine the games outcome	Chess Tennis
Games of Chance	Chance, not capabilities, determine the game outcome	Dice Roulette
Games of Fantasy	Activities that release individuals from conventional perception and inhibitions	Skiing

*The explanations and examples are the writer's interpretations. Both explanations and examples are taken from educational settings.

**Game classification developed by Clark C. Abt. Explanations have been modified by the writer.

SIMULATIONS

<i>Kinds of Simulation</i>	<i>Explanation</i>	<i>Example</i>
Physical representations	Simulations that represent reality	Globes Heart models
Pictorial representations	Simulations that use images (iconic representations)	Pictures Paintings Photographs
Verbal representations	Simulations that use oral and written language	Books Dialogue Recordings
Mathematical representations	Simulations that use non-verbal symbols	Geometric forms Computer language

Careful examination of these tables reveals that both classification schemes embody a continuum that ranges from the real or nearly real to the less real or unreal (see chart). Simulations range from physical representations that are closest to reality to mathematical representations that least resemble reality. On the other hand, games range from the fantastic or unreal to those that "model" reality or the nearly real. This synthesis of gaming and simulation reflects a view espoused by Huizenga and Spencer. Games seem to be separate from reality.

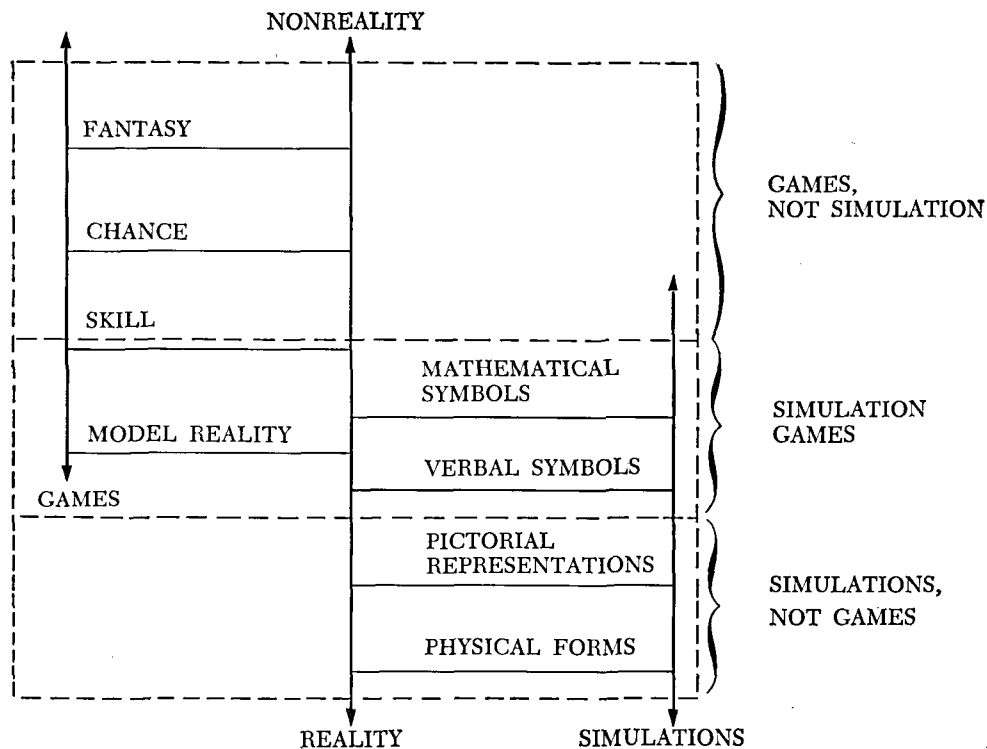
The gaming and simulation continuum in this chart reveal the relationship between these two processes. Gaming appears to have considerable potential for the use of imagination

and for the use of abstract relationships. On the other hand, simulations are rooted in reality and are more concrete. The tension between the two ends of the continuum, reality and non-reality, may be responsible for their attractiveness as instructional processes. A built-in fascination seems to characterize that which is almost real. This characteristic may well account for the heightened interest that educators consistently observe in learners who are using simulations.

A simulation is a carefully controlled representation of reality. It uses mathematical and verbal symbols to attain its semblance of reality. In the view of this writer, games distinguish themselves from simulations by being even more distant from real-

ity. When such gaming characteristics as conflict, players, rules and payoff are combined with simulation, they result in the representation of a particular decision making process. Only those games that depict reality

in precise and regulated ways are simulations—Finally, only *some* games can be properly called simulations—and *only* those simulations that have gaming characteristics are *simulation games*.



Simulation-Gaming Continuum

This chart is a physical representation of the schemes provided by Abt concerning games and Dawson concerning simulations. The additional element in the chart is the author's view that both of these schemes could be placed on a reality to non-reality continuum (center line). Simulations seem to approximate reality far more precisely and accurately than games.

This model attempts to illustrate the distinction between simulations and games. Games that use primarily verbal and mathematical symbols are simulations. It is also important to note that only verbal and mathematical simulations seem compatible with the gaming process. Physical and pictorial representations do not lend themselves to gaming principle. Games of skill, chance or fantasy do not possess sufficient 'reality' properties to be simulations.

REFERENCES

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