

Simulation Games — Give Them a Try

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“I hear, and I forget; I see, and I remember; I do, and I understand.”—Confucius.

Simulation games are teaching and problem solving techniques that are rapidly increasing in popularity — in the classroom, in corporate boardrooms, and in government. Their special benefit lies in their ability to make complex subjects and problems simpler and tedious tasks fun. The two words — Game and Simulation — are often used interchangeably, but there are important differences. Games are competitive encounters among players and involve both luck and skill. Some games are educational, others are not. Simulations, on the other hand, are models designed to provide the essence of real world phenomena without all of their complexity. A Simulation Game incorporates the characteristics of both. A wide variety of housing-related commercial games are now available (a partial listing appears at the end of this article) but simulation games don't appear to be entering the classroom nearly as fast as they are proliferating on publisher's lists. Why is this?

According to Zuckerman and Horn:

While they (simulation games) are seen often as exciting, involving, irreplaceable educational tools, simulation games are just as often viewed as highly complex, strange, slightly upsetting phenomena by teachers who have never used them, seen them used, or learned from them. . . they do depend on a high degree of student cooperation if they are to “work,” and there may be teachers possessed by nightmarish visions of being buried

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under a welter of playing forms, role descriptions, charts, tables, instructions, and discussion questions while their students bounce off the walls in happy, screaming chaos, pretending to “play a game.” (433)

A few of the frequently cited advantages of simulation games are:

1. Make learning more realistic
2. Help realize problems of real life situations
3. Get away from boredom of classroom — lecture situations
4. Fun

The disadvantages usually mentioned include:

1. Cost to purchase and rent commercially produced games
2. Time to learn to play and to play
3. Usually only a few people at a time can play — difficult to use with large lecture classes unless you break them up into small groups

Developing Your Own Simulation Game

An ideal way to incorporate simulation gaming into your teaching strategies is to develop (often with the help of your students) your own games.

New simulation games can emerge from the study and use of existing games. Any past, present, or future situation in which persons working in a society find themselves making decisions and taking action to change the course of events around them can be the subject of a simulation game.

Steps in Designing a Simulation Game

1. Define the problem area to be simulated. An example of a broad area that could be approached in a variety of ways would be “real estate.”
2. Define the objective and scope of the simulation. *Write* down a few statements that define clearly the purpose and *scope* of the simulation.

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Example: *Objective* — To understand how the real estate market works in our city.

Scope — Our major interest is in examining the ways in which real estate transactions are carried out at the local city level and to see the influence of mortgage financing and other factors on the operation of the real estate market.

3. Define the people and organizations involved. Simulation games involve social processes in which the key movement is provided by people, operating either as individuals or in groups as part of established or ad hoc organizations. Often here we represent people by “roles” which can be jobs, such as real estate broker, banker, etc. Within organizations people can also be identified by their roles as consumers, citizens, landowners, etc. Usually you start with the key organizations involved and then identify the key decision-makers within these organizations.

Example: *Organizations* — Board of Realtors, City Council, Community Action Organizations, etc.

Roles — President of Board of Realtors, HUD Regional Officers, Mayor, etc.

4. Define the motives and purposes of the players. Representation of a social environment in a simulation game is achieved through defining the goals of players and the rules concerning what they can and can't do with what resources and with what constraints.
5. Define the resources available to the players. Resources may be money, ownership of goods and services, the mayor's authority. Less tangible resources exist, such as, influence over other players or key information needed to make crucial decisions in the game.
6. Determine the transactions to be simulated and the decision rules to be followed. The substance of a game is the sequence of transactions between the players. It is important at this stage of game design to formulate a broad, general idea of the sequence of what each player will do during the game. Check this continually against the learning

objectives. Here you will be determining what types of transactions will be occurring (e.g. buying, selling, arranging mortgage financing, etc.) You will also then get an idea of who will interact with whom at each stage. Playing time cycles will also begin to be important considerations at this stage. Will one class period be used for one playing period or can several playing periods be fitted into one 50 minute hour? Should the game really be played in an all day sequence or can it be split into convenient time blocks to fit regular class hours?

Example: In the real estate game, the playing periods may be successive one week, or one month, or quarterly time periods in which players make decisions about buying or selling real estate, type of financing to use in real estate transactions, etc. At the end of each period, their decisions and those of the other players (perhaps rival real estate brokers) are made known and the results computed.

Rules of the game should be written at this stage as well. These rules state the manner in which things *can* be done in the game. They also list the constraints or things which *cannot* be done. Generally you will find it is a good idea to simplify as much as possible. One of the biggest faults of beginning game makers, is to make much too complicated a game.

Example: In a real estate mortgage game, it would be useful to have the money transactions in rounded-off amounts, so a rule might be that all prices must be rounded off to the closest \$100 or the closest \$10.

At the beginning, it is useful to specify only the minimum number or rules possible for play. That will enable you to see what the players do when they are given the chance. Then, as it becomes obvious for smooth play or realism that other rules are needed, they may be added.

7. Formulate the evaluation method. The notion of “game” implies win or lose to most of us. In some ways this is unfortunate because many social situations do not produce winners or losers. They simply produce results

of a process, which we can evaluate as “good or bad, valuable, or not.” To get something out of a simulation, it is important to look at what the outcomes really are and to then determine their value. One possibility is to measure them in terms of how well a player’s personal objectives are met, or, to what degree is the benefit of all humanity taken into account.

Example: In the real estate game, as in many business games, the obvious scoring method is the amount of profit made on the transactions simulated. You also need to consider consumer demands for quality products, mortgage limitations, etc.

At the end of the play (or at the end of playing periods) it is necessary to schedule an evaluation period, in which players can get together to talk about what they’ve learned and what the difficulties of play were. (In the use of simulation it is often this discussion which turns experience into conceptual learning.) In these periods they have the opportunity to evaluate the game far beyond the simple scoring criteria. Many simulations do not declare winners, but merely evaluate the results of play in many ways.

8. Develop simulation/game prototype. You’re now ready to actually put together the parts into a preliminary playing system. Among the basic decisions here will be whether you are going to use a familiar board game (which is useful for keeping track of resources), or a role play (where players interact with each other.) At this stage too, you will be designing the actual game materials. You will be making maps of the towns’ zoning areas, designing or simplifying business forms, etc. When you need to represent “chance” or “nature,” you can get some dice or make a simple spinner. A table of random numbers can also represent “chance events.”
9. Try out and modify prototype. There is no substitute for trying out the first draft of your simulation on your friends. It’s best to get

just a small group to play it first, not a whole class. What you are after is to find out if what you had in mind works. Your job during such try outs is to observe and write down the problems encountered. You shouldn’t be involved in the play yourself — some of the things to watch for during try-out:

- How much time was devoted to each playing period? Was that enough?
- Did the game instructions work well? Suggest changes.
- Did the players play the roles easily or with difficulty?
- Were there players who were inactive during play?
- Did the players have fun? Were they emotionally involved in the play?

Get your friends to participate and help. The people who have just played a game are its best critics. They can tell you things you couldn’t observe, such as what strategies they were using, how they “got around the rules,” why they rejected a seemingly obvious option, etc. Expect the need for changing the game; people in the real world don’t always act in accordance with their sociological descriptions — any of your living players will likewise be experiencing a different world than the one you had in mind.

Simulation Games You Can Obtain

Designing simulation games can be an exciting learning experience for both you and your students. If you are still unsure of how simulation games can fit into your classroom, you might want to study descriptions of how other housing educators have developed and are using simulation games. Ervin J. Bell, College of Environmental Design, University of Colorado, Boulder, CO. invented an *Urban Development Investment Game* (U-Dig) and Luis H. Summers, College of Environmental Design, University of Oklahoma developed *The House Design Game* — a user oriented operational gaming simulation that: a) involves the family in the design of their house, b)

shortens and improves the preliminary design stage, and c) informs the client and architect of the operational consequences of their decisions. These games were presented at the EDRA7 meeting and are reported in detail in the proceedings.

There are some excellent housing-related simulation games already on the market. Three relatively inexpensive simulation games that are not overly complex are:

The Newtown Educational Kit (\$18.00) is an educational game in which bidding for land, erecting buildings and holding public meetings simulates the often incompatible requirements of modern urban planning. Through the purchase of land and buildings, participation in discussions and voting on public issues, and reaction to random events affecting the community, players obtain a lasting understanding of forces which shape their communities. The easy-to-use Educational Kit focuses on the importance of competition and cooperation in the physical development of an urban community. Players must come to grips with both the economic and environmental welfare of the community as they debate private and public land use decisions and pollution control measures. Playing time may vary from 45 minutes to 2 hours. It is ideal for junior and senior high school students, beginning college classes, and as introductory material for civic groups and social organizations. Available from Harwell Associates, P.O. Box 95, Convent Station, N.J., 07961. *Streets* (\$37.00) is a teaching aid designed to increase the awareness of younger children to the build environment around them, and to encourage them to think of ways to improve their own neighborhood. To build this new awareness, STREETS uses eye-opening concepts about the shapes, sizes, textures, and features of streets and the buildings that line them; and the experience of observing and then creating, first through pictures and then through models, the student's own street scenes.

Working with a rudimentary foundation of the history of streets and cities and the reasons

why streets look the way they do, the STREETS program encourages the young child to take a closer look at the neighborhood in which he lives, think about how he would like to change that neighborhood, and see the impacts of those changes. The grade level is 3 thru 8 and the material is flexible so that teachers may choose to use any or all lessons in a given period of time. Also available from Harwell Associates, P.O. Box 95, Convent Station, N.J. 07961.

Househunt (\$8.95) is a simulation game that helps prepare consumers for making decisions in planning and fulfilling their shelter needs. Many of the problems, alternatives and skills useful in real life househunting are included in the game. Playing time takes 2-3 hours and as few as 20 or as many as 32 can play as househunters, real estate brokers and bankers. The game is most useful with high school age and young adults. *Househunt* is available from Changing Times Education Series, 1729 H Street, NW, Washington, D.C., 20006.

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