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ABSTRACT
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debriefing the game (the post game discussion), suggestions for
repeated plays, and the appendix. (Author)

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GUIDELINES FOR WRITING THE DIRECTOR'S MANUAL

FOR A SIMULATION GAME

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GUIDELINES FOR WRITING THE DIRECTOR'S MANUAL

FOR A SIMULATION GAME

INTRODUCTORY STATEMENT

The Center for Social Organization of Schools has two primary
objectives: to develop a scientific knowledge of how schools affect
their students, and to use this knowledge to develop better school
practices and organization.

The Center works through five programs to achieve its objectives.
The Academic Games program has developed simulation games for use
in the classroom. It is evaluating the effects of games on student
learning and studying how games can improve interpersonal relations
in the schools. The Social Accounts program is examining how a
student's education affects his actual occupational attainment, and
how education results in different vocational outcomes for blacks
and whites. The Schools and Maturity program is studying the effects
of educational experience on a wide range of human talents, competencies,
and personal dispositions in order to formulate -- and research --
important educational goals other than traditional academic achievement.
The School Organization program is currently concerned with authority-
control structures, task structures, reward systems, and peer group
processes in schools. The Careers and Curricula program bases its
work upon a theory of career development. It has developed a self-
administered vocational guidance device and a self-directed career
program to promote vocational development and to foster satisfying
curricular decisions for high school, college, and adult populations.

This report, prepared by the Academic Games program, provides
guidelines for game designers to help them write clear, concise and
meaningful manuals to accompany their simulation games.

ABSTRACT

The Director's Manual is an important part of any simulation game. This paper provides an outline that will help the game designer prepare a well-organized and effective manual. Six sections that should be in the manual are discussed: the overview of the game, preparing for the game session, the game session, debriefing the game (the post game discussion), suggestions for repeated plays, and the appendix.

OUTLINE FOR ORGANIZATION

The Director's Manual is the most important component of any simulation game designed for educational purposes. It is the means through which you, the game designer, familiarize the Game Director with the conceptual model and the playing materials of your game; instruct him how to introduce, use, and follow-up the game; and provide him with the information he needs to decide if the game is appropriate for his educational objectives.

The following outline will help you organize the information you include in the Director's Manual:

I. OVERVIEW OF THE GAME
    A. Introduction
    B. Teaching-Learning Objectives
        1. Cognitive Outcomes
        2. Affective Outcomes
        3. Concomitant Outcomes
    C. The Game Model
        1. Theoretical Assumptions
        2. Scenario
            a. Roles of the Players
            b. Goals of the Players
            c. Resources of the Players
            d. Setting of the Game
            e. Sequence of Events
            f. External Factors
    D. Materials for the Game

II. PREPARING FOR THE GAME SESSION
    A. Allocating Time
    B. Determining the Number of Players
    C. Preparing Materials
    D. Setting Up the Game

III. THE GAME SESSION
    A. Introducing the Game to the Players
    B. Playing the Game
        1. Rules (Annotated)
        2. Scoring
        3. Determining a Winner

IV.   DEBRIEFING THE GAME: THE POST GAME DISCUSSION

V.   SUGGESTIONS FOR REPEATED PLAYS OF THE GAME

VI.   APPENDIX

Suggestions for the information you may wish to include in each
of the sections are discussed in detail in the following pages. You
should develop the Director's Manual in conjunction with the game
materials, not as an adjunct to them. By writing the manual as you
design the game materials you will force yourself to make explicit
your reasons for adopting certain rules, procedures, and materials.
In addition, you will be able to test the manual when you test the
prototype game materials.

I.   OVERVIEW OF THE GAME

In the first section of the manual you should describe in detail
the purposes, the conceptual model and the playing materials of the
game. This will enable the Game Director to learn about the game,
and decide if the game is appropriate for his educational objectives.

A.   Introduction. The Introduction should be brief--no more
than four or five paragraphs--and should answer in general
terms the following questions. Each question can be answered
simply in one or two sentences.

1. For how many players, and what age or grade levels, is
the game designed?

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2. What pre-requisites (i.e. background, skills, etc.) are needed to play the game?

3. What is the purpose of the game--teaching, training, theory building?

4. What is the general theory embodied in the game model?

5. What concepts are emphasized in the game?

6. Why did you decide to design the game? That is, why do you think the game is the best medium for presenting the concepts? What research findings led you to conclude that a game might be more effective than other techniques?

7. Is the game an integral part of a curriculum unit? If not, in what types of curriculum units (courses) do you suggest the game be used?

B. Teaching-Learning Objectives. The Objectives section describes the outcomes the game is designed to produce. These may be stated generally in paragraph form, or specifically in itemized form. You should give the Game Director some idea of the under-standings, facts, attitudes, skills, etc., the players should learn as a result of playing your game. In your discussion of the objectives, you might consider the following:

1. Cognitive Outcomes. What main ideas, concepts, generaliza-tions, relationships does the game teach?

2. Affective Outcomes. What behavioral and attitudinal changes does the game promote?

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3. Concomitant Outcomes. What skills, incidental to the
primary objectives of the game, are developed and practiced
by playing the game? (For example, computational skills.)

C. The Game Model. This is perhaps the most important section in
the Overview of the Game. It is here that you convey to the
Game Director your view of that part of the real-life situation
you have attempted to simulate. His understanding of the con-
ceptual base of your game will influence considerably the kinds
of "on the spot" decisions he makes during the play of the game.
You will want him to be familiar with your assumptions so that
he will interpret the rules and procedures of play to reflect
accurately your ideas. Since a game is a simplified, abstract,
dynamic representation of real-world phenomena, you should be
careful to specify precisely those elements which have been
abstracted and included as well as those which have been excluded
from your game. Both you and the Game Director should be aware
of the kinds of behavior the actors in the real-life situation
are assumed to exhibit, given their motivations and resources.
In communicating your ideas to the Game Director, it might be
helpful to consider the following questions:

1. Theoretical Assumptions.

    a. Is your game based on a generally known and widely
    accepted theory? If so, what is the theory?

    b. What hypotheses have you formed and what personal

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assumptions have you made about the behavior of the

actors in the real-life situation? What observations,

or background reading, led you to these conclusions?

c. What elements of the real-life situation have you

included in the game? What elements have you excluded?

What are your reasons for making these choices?

2. Scenario.

a. Roles of the Players.

1. What actors in the real-life situation are repre-

sented by the players in the game? Do all players

represent equivalent actors? (For example, legis-

lators.) Or, do the players represent different

actors? (For example, some players represent teachers;

some, students; some, principals, etc.)

2. How much structure is provided by the roles? Does

the player's profile specify exactly how he must act

in certain situations? Or, does the player have

considerable latitude in determining how he will act?

3. Does the game require some players to take on roles

that do not have real-life counterparts--that is,

game roles? (For example, does the game require a

scorekeeper, a game coordinator, etc?)

b. Goals of the Players.

    1. What motivates the players to act? That is, what are their objectives in the game?

c. Resources of Players. What do the players have that they can use to help them achieve their goals? (For example, money, votes, goods, information, etc.) Are these resources available initially? Or, are they acquired as the game progresses?

d. Setting of the Game.

    1. Location.

        a. What is the geographic setting simulated (i.e. specific or general locale)?

        b. What is the organizational body simulated?

    2. Time.

        a. In what time period (i.e., past, present, future) or year is the game set?

        b. What period of time does each round represent?

        c. What time period does a game represent?

e. Sequence of Events.

    1. What is the order of play?

    2. How does the order of play reflect the theoretical assumptions?

f. <u>External Factors</u>. The external factors are those

elements of the real situation that are not directly

controlled by the actions and interactions of the

players, but are included through other game materials

and influence to some degree the outcome.

1. What external factors are included in the game?

2. How are they represented? (For example, chance

devices)

3. What probabilities did you use to construct the

materials representing the external factors? Why?

D. <u>Materials for the Game</u>. In this section you should enumerate all

the materials required for the game; describe in detail the

appearance, purpose, and quantities of the materials included in

the game package and whether or not you have included a copy, or

facsimile, in the Appendix. Also, indicate the items the Game

Director should supply. (For example, pencils, scratch pads, etc.)

II. PREPARING FOR THE GAME SESSION

Frequently, Game Directors will attempt to administer a game session

without preparing for it in advance. You have little control over the

amount and kind of preparation the Game Director will make. However, as a

safeguard it is useful to introduce this section by cautioning the Game

Director to familiarize himself completely with the Director's Manual and

the game materials before he attempts to administer the game session.

Also, you might suggest that the Game Director actually play the game

(with family or friends) so that he will have a working acquaintance

with the game materials and sequence of play, and will be sensitive

to unclear directions or situations for which he may have to interp,

or supply a rule. This experience will make him better able to introduce

and administer the session, and will give him the confidence to cope with

the unexpected situations so characteristic of games.

A. <u>Allocating Time</u>. The Game Director will need to make adequate

time allocations for pre-game preparations, the game session,

and the post-game discussion. It will be helpful if you give

him an estimate of how long it will take him to:

1. Train assistants. If your game is difficult for one person

to administer by himself, you might suggest that the Game

Director train a few persons to assist him during the

session. Prior to the game session, he should meet with his

assistants to acquaint them with the game materials and

sequence of activities; and, if possible, to play the game.

2. Prepare the game materials and set up the game.

3. Introduce the game to the players.

4. Play the game.

5. Conduct the post-game discussion.

B. <u>Determining the Number of Players</u>. Most games are designed to

accommodate a minimum and a maximum number of players. However,

depending upon the structure of the game, the Game Director may

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need some advice about assigning players to roles when there
are fewer or more players than the recommended maximum.

1. When there are fewer players than the recommended maximum
    and all the players play equivalent roles, it is unlikely
    that the Game Director will need to make any adjustments.
    However, if the players assume different roles, you should
    specify which roles (or profiles) should be removed and
    the order in which they should be removed. This advice
    would be essential if the players are to be organized into
    teams whose role composition differs.

2. When there are more players than the recommended maximum,
    you may wish to suggest one of the following ways to handle
    the extra persons:

    a. Assign two persons to one role. This has advantages,
        especially in games designed for younger children. The
        two individuals will have to decide collectively the
        strategy they will follow; and, at decision points,
        agree upon a course of action. By verbalizing his
        ideas, the player may become more aware of the reasons
        underlying his actions and, as a result, may achieve a
        broader understanding of his experience than would be
        possible if he were to play the role alone.

    b. Have the extra persons observe the game to note the
        behavior of individual players and its effect on the

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group process. Games are dynamic and players frequently

are so immersed in their own roles that they lose sight

not only of the way they respond to particular events,

but also of the actions of other players. Having such

information presented during the post-game discussion

may help the players gain greater insight into the

factors which contributed to the game's outcome. In

addition, the observers can lead the post-game discussion,

thereby relieving the Game Director of this responsibility

and, perhaps, fostering a greater degree of solidarity

among the group.

C. Preparing Materials. If the Game Director needs to do such things

as duplicate materials, cut out cards, assemble tokens, prepare

player's folders, count out money, make charts, etc., prior to

the game, you should warn him. Describe what he must do and, if

necessary, how he should do it.

D. Setting Up the Game. If you want to make sure that the Game

Director overlooks nothing, you should give him explicit instructions

regarding the way the room and playing surfaces should be arranged.

Novice Game Directors, in particular, will welcome and appreciate

a checklist they can follow. The Game Director's first step should

be to check the game materials to make certain that he has a complete

set. Next, he should arrange the room where the game will be played.

You should include a diagram, and a written explanation, of how the

tables (desks) and chairs should be placed. Then, you should tell

him where and how the players' materials and the undistributed

materials should be placed. Finally, mention what information,

or directions, should be written on a chalkboard.

III. THE GAME SESSION

Far too often, a Game Director has a nagative experience with a simu-

lation game because the Director's Manual was incomplete and did not

supply him with all the information he needed to administer the game

session. It is crucial, therefore, that before the game is considered

ready for general distribution the directions in this section of the

manual have been tested with persons representative of those who will

ultimately direct game sessions. If it is not possible for you to have

a draft of the entire manual completed for the first tryout session of

your game, you should make every effort to have this section written.

By so doing, you can have another person administer the game; otherwise,

you will be the only person sufficiently familiar with the mechanics

of the game to administer it. If you are freed of this task, you can

concentrate on noting the revisions required in the structure of the

simulation game, the game materials, and the instructions for the game

session. When you observe the session you are in a better position to

determine if the vocabulary used to introduce the game is appropriate for

the target population; to note the questions which are raised regarding

the rules and order of play; to listen for the points at which the players

become confused either because they have been given information too soon

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or because they need additional information; and to decide whether or not
the Game Director has enough information to make accurate interpretations
of the rules and to supply appropriate judgment decisions should it become
necessary for him to do so.

A.   Introducing the Game to the Players. The quickest way to
dampen players' enthusiasm for a game is to force them to listen
to a long list of directions and rules. It is generally the
case that, initially, the players can choose between only one
or two options; presenting them with several choices, irrelevant
to them at the start of the game, will only confuse them. The
easiest way to teach players how to play the game is to have
them begin to play it immediately.

The first time the players play the game they will probably
learn only the procedures (not the concepts you have listed for
the game's teaching-learning objectives). Consequently, you
should prepare the introduction of the game so that the first
session or the first few rounds are for "practice." In either
case, you should write a "script" for the Game Director to
follow--that is, write exactly what you want him to say and
indicate the points at which he should hold up materials he is
describing and when he should pause to let the players look at
materials or count tokens, etc.

If your game is one in which the rounds do not repeat the same
steps, then you will probably want the players to play an entire

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game for practice. If, on the other hand, your game is one in which the same sequence is repeated in each round, you will probably want the players to play only one round for practice.

You can choose to introduce the game in one of two ways. One way is to present each step and have the players decide for themselves how they will act; the other is to program the game and tell the players what their decisions are. The latter will require more effort on your part and may not be feasible for all games.

If you select the first alternative, then, at the end of the practice round, you should direct the Game Director to have the players redistribute the materials so that they start with the same set they had at the beginning of the practice round. It will be easier for the Game Director to do this if you repeat the list of materials and how they should be distributed and arranged. By making a fresh start, the players can benefit from the mistakes they made while they were learning how to play the game; otherwise, they would be penalized throughout the game for errors caused by ignorance.

If you choose to program the first round, the players can begin the second round without redistributing the materials. However, you must be careful to plan the decisions during the programmed round so that all the players whose scores are to be compared at the end of the game begin the second round with equivalent resources.

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B. <u>Playing the Game</u>. In designing the game, you may have allowed

for the players to perform their actions simultaneously, sequentially,

or a combination of both. If the players go through all or some

of the steps in sequence, you may want to neutralize the advantages

of a final position in the sequence by having the players take turns

in being player number 1. It is also possible that some players

will do something that is not covered by a rule. Often, such actions

are creative and realistically reflect what the actors in the

real-life situation would do, given the same conditions. But,

some Game Directors will inhibit the players by confining them to

only the actions specified in the sequence or order of play.

Therefore, you might want to advise the Game Director to allow the

players to do anything not specifically prohibited by the rules.

In addition to these hints, you should also include the

following in this section for easy reference by the Game Director:

1. <u>The Rules</u> (Annotated). If sets of rules are distributed to

the players, you should reproduce them for the Game Director.

In addition to stating the rule, you should explain how the

actions should be carried out; the constraints, if any, on

actions; and the penalties to be imposed when a player

violates a rule.

2. <u>Scoring</u>. Describe the procedures for scoring a round and for

recording the scores. You may also want to suggest that the

Game Director write the scores on a chalkboard or a chart so

that all the players can read them.

3. <u>Determining A Winner</u>. Describe how the game is ended and

how a winner is determined. If your game is one in which

the players will use end game strategies unrealistic to the

process simulated, you may want to suggest a means for ending

the game which will discourage end game strategies. (For

example, the roll of a die; a set of cards from which the

Director removes one card several rounds in advance of the

maximum to be played--one card would say "End the Game"; the

others, "Continue with the Next Round",; etc.)

IV. DEBRIEFING THE GAME: THE POST GAME DISCUSSION

One question unanswered by previous research with simulation games
designed for instructional purposes is whether or not the game is a suffi-
cient condition for some players to learn what the game purports to teach.
In many situations, some players do learn from the game, while many learn
from the discussion which follows the game.

Through discussion of the particular events in the simulation game,
the player should be able to better understand these events and thus
understand the general principles illustrated. Used in conjunction with
related readings, the activities become a mechanism for transfering these
generally stated principles to other situations. You may want to organize
your questions to focus first on the experiences the players had in the game;
next on the players' evaluation of the realism of the game model; and, finally,
on the principles the game is designed to teach.

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V. SUGGESTIONS FOR REPEATED PLAYS OF THE GAME

There are several reasons for including this section in the Director's Manual. In the first place, the first time the players play a game their learning may be limited to learning how to play the game, or their learnings may differ. If a game is played only once, its potential as a teaching tool may not be fully realized. Secondly, games are expensive commodities; you should make it possible for a Game Director to use your game several times. And, finally, as the game designer, you have spent many hours designing, improving and perfecting your game; undoubtedly, you will want it to be used, not shelved after one trial!

Each time the game is played, the players should have some purpose for playing it. You might suggest the following ideas for subsequent sessions:

A. Have the players discuss the strategies they used in the game and play the game again to either repeat the same strategy or test a different strategy. Then, the players should compare the outcomes and discuss why they are similar or different.

B. Have the players draw on their experiences in the game to formulate hypotheses about the real-life situation. Then, play the game again to validate their "theories."

C. Have the players critique the game model and, drawing on observations of real-world phenomena, redesign the game to incorporate elements that were excluded from your game model.

D. Have the players act as participant observers or as observers to collect data about the behavior of other players. Since

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simulation games are constructed to channel the players'

behavior so that similar behavior is exhibited across sessions,

the game can be used to develop observational skills and

techniques.

E. Capitalize on the game's motivational effect and use it to

practice the skills (for example, computational skills) which

may be required to play the game successfully.

VI. APPENDIX

Throughout the Director's Manual you will have referred to the

playing materials. In the Appendix you should include copies, or

facsimiles, actual size or reductions, of all the game materials. This

will make it easier for the Game Director to become acquainted with the

materials when he reads the manual, and he will not be required to have

a copy of the game with him to do so.