

———— Part II ————
**Specific
Classroom Skills**

THREE

Role Playing, Simulations and Simulation Gaming

■ INSTRUCTIONAL GOALS

Upon completion of this chapter and the nurse educator learning experiences, the learner will be able to:

- Devise ways to use role playing in the classroom
- Compare and contrast role playing, simulations, and simulation gaming
- Find ways to utilize simulations in the classroom
- Identify ways to use simulation games in the classroom

Upon completion of this chapter, the more advanced nurse educator will be able to:

- Devise three ways to use process simulation theory
- Plan and execute a role playing situation demonstrating a frequent communication problem and its solution.
- Use the theory of mental simulation or chaos theory to plan, implement, and evaluate one or more educator/learner situations.
- Design a problem statement for research related to using role playing, simulation, or simulation gaming issues.

Key Terms

Accommodative learning	Parallel simulation presentation
Active case-study simulation	Post-simulation discussions
Assimilative learning	Process simulation theory
Behavior rehearsal	Role playing
Chance	Role reversal
Chaos theory	Serial simulation presentation
Common simulation presentation	Simulation
Debriefing	Simulation game constraints
Experiential learning	Simulation game payoffs
External validity	Simulation game rules
Information processing	Simulation games
Internal validity	Symbolic replication of reality

Introduction

This chapter presents a rationale for the teaching/learning procedures explored; introduces the process simulation theory; examines differences and similarities among role playing, simulation, and simulation games; and delves into the evidence for their use. Methods of using each learning strategy and ways of designing and using learning systems for each approach are also presented. Process simulation theory is discussed first because it provides the underpinnings for the three teaching/learning strategies that appear in this chapter.

Process Simulation Theory

Process simulation theory provides a framework for understanding role playing, simulation, and simulation gaming, and stands at the center of self-directed action by examining rehearsals of likely future events and replays of past events.

Process simulation theory can provide a framework for understanding role playing, simulation, and simulation gaming. Process simulation stands at the center of self-directed action. Process simulation serves a problem-solving and emotional regulation function for turning imagined experience into action. It includes rehearsals of likely future events and replays of past events. Mental simulations make courses of action seem real or true. When individuals actively

envision future events, they later express greater confidence the events will occur. This effect of simulation on enhanced likelihood may create a state of readiness. Because imagining how events are going to take place, simulation provides information essential to planning and checking on their viability in the real world. The information derived provides a plan of action (Pham and Taylor, 1999). For more information, see page 179 “Theories that Explain Simulation Processes.”

Rationale for Active Learning Skills

The three procedures—role playing, simulation, and simulation gaming—all necessitate active learning and process simulation. Alternatively, rote memorization tends to emphasize **assimilative learning** that is very easy to forget. Thinking at a level of cognitive complexity requires an exercise of three interdependent categories of skills: problem-solving, communication, and self-awareness. Self-awareness need not be thought of as a psychological process. Self-awareness includes exploring cultural, group, and interpersonal dynamics, and reflecting on how one’s own motives may interfere with thinking clearly about a problem (Blatner, 2002).

Accommodative skills cannot be learned by reading a number of books. The kinds of skills nurse educators need are flexible, creative, rational, practiced, and learned in interaction, including risk-taking, self-expression, providing feedback, and encouragement. This kind of learning is called **accommodative learning** (Blatner, 2002).

Assimilative learning is rote memorization and is easily forgotten.

Accommodative learning is learned by practicing skills that are learned in interaction with others and that provide feedback and encouragement.

Role Playing

The first active learning technique to be explored is **role playing**. What is role playing? How is role playing used with learners? What possible effects can participating in role playing have on learners? Role playing is a way of projecting oneself into the future in a “what if” scenario. Although the outcome cannot be controlled, if role playing is accomplished in a safe environment such as a respectful classroom, this teaching/learning strategy can be a flexible and an effective tool.

Role playing is rehearsal for the future that focuses on a given situation that contains two or more different viewpoints or perspectives that are played out according to a brief description of their character.

In most role-playing situations, the learner practices taking the role of someone else. Spontaneity in role playing is a major goal, and too much briefing of characters is discouraged. Role playing is also called sociodrama. Sociodramatic situations always involve more than one person and are focused on problems that are relevant to the classroom group.

■ Nurse Educator Challenge

Name three times it would be beneficial to use role playing.

When to Use Role Playing

Role playing can be used to:

- *Learn helpful ways to relate to clients or learners*—learning to be a nurse educator consists of more than learning facts or procedures. It involves the process of learning a helpful way of relating to clients or learners. One of the most common sources of non-helpfulness is the misinterpretation of the other's behavior. Role playing provides practice in situations for which learners have little experience.
- *Change attitudes*—when nursing learners are able to play the client or learner role, they become sensitized to aspects of behaviors, thoughts, and feelings they may never have been conscious of before. This new awareness can be used to effect changes in the nurse educator's attitudes and behavior, and can lead to improvement in the quality of relationships, and to feelings of increased self-esteem and mastery (Miaskowski and Maxwell, 2002).
- *Involve the class in active learning*—although the role players are the most involved in the role playing situation, the whole class is involved in active listening, posing questions and comments about what they observed, sharing their observations with the rest of the class, and thinking of ways to use what was learned with clients or other learners. A sense of involvement and identification can develop even in those who are less verbally active.
- *Devise new teaching/learning perspectives*—when novice nurse educators are able to play the learner's role, they become more aware of what a class or individual learner may be going through. Insights come to light and new perspectives abound that can be used to enhance the teaching/learning partnership.

- *Enhance critical thinking*—role playing is a teaching/learning method that is particularly helpful when interpersonal relationships and/or critical thinking are the focus of learning objectives. Role plays dramatize an event or situation that can bring forth the process of critical thinking (University of New Mexico College of Nursing, 2006).
- *Meet related learning objectives*—role playing should be selected as a learning experience when learning objectives dovetail with potential benefits.
- *Forecast decisions*—role playing is the preferred method for predicting decisions in situations in which a small number of people are involved, they are in conflicts that involve large changes in the situation, and for which little information exists about similar events. Five case studies showed that role playing is more accurate (56%) than expert opinion (16%) for predicting decision-making outcomes, and provide better information than traditional methods to predict the success of novice doctors (Armstrong, 2000).
- *Resolve conflict*—role playing can be used when conflict occurs in the classroom or clinical setting (University of New Mexico College of Nursing, 2006). If a situation such as an argument between two learners arises spontaneously during class, the nurse educator can take the opportunity to have the two learners reverse roles and begin to understand the other's viewpoint.
- *Encourage synthesis and evaluation of information*—role playing takes learners out of their chairs and helps them “learn by doing” (Lovecraft, Chapin, Parker, and Sadler, 2006).

The next section provides some uses for role playing that have appeared in recent literature.

Uses of Role Playing Found in Literature

Role playing has been used to:

- Shed light on the impact of cultural context, assist with negotiation and dispute resolution, and bring realism and experience into the classroom (Frank, 2006; Meligrana and Andrew, 2003).
- Enhance learners' cultural competency (Cooper, 2004)
- Help counsel adolescents with substance abuse issues (Fagan, 2006)
- Help prevent substance abuse (Hecht and Kreiger, 2006)
- Teach families how to talk to their children about death (Gebara and Tashijan, 2006)

- Transport prevention interventions from research to real-world settings (Rohrbach, Grana, Sussman, and Valente, 2006)
- Teach parents how to control their anxiety (Fisak, Oliveros, and Ehrenreich, 2006)
- Show clients how to reduce anxiety and depression (Abramovich, 2006)
- Provide an approach with community mental health clients (Kirsh and Tate, 2006)
- Teach couples how to reduce their stress (Pinet, Bodenman, Shantinath, Cina, and Widmer, 2006)
- Teach nurses how to discuss smoking in a nonjudgmental way (Lee, Hajek, McRobbie, and Owen, 2006)
- Develop managers (Raelin and Coghlan, 2006)
- Practice effective job interview procedures (Marks and O'Connor, 2006)
- Teach staff how to help clients with developmental or cognitive disabilities (Arco and du Toit, 2006)
- Teach African American and Latina girls how to practice applying condoms as a way to reduce STDs (Mennick, 2005)
- Recruit nursing students to play a standardized patient with pharmacy students and then write a self-reflection paper (Haddad, 2006)
- Teach nurses skills for learning pain management ((Miaskowski and Maxwell, 2002)
- Teach nurses to enact end of life scenarios such as helping children deal with the death of a parent or loved one (Mayo Clinic, 2006)
- Teach ethics (Schwartz & Weber, 2006).
- Teach critical thinking (Staib, 2003)

■ Nurse Educator Challenge

Name three benefits that can be derived from role playing.

Benefits Derived from Role Playing

Some benefits that can be derived from role playing are:

1. Increased empathy that can be used in relationships with clients, peers, and nurse educators and can be acquired while learning to identify thoughts and feelings of others.
2. The opportunity to experience the results of hostility, threats, and suspicion.

3. The opportunity to experience the constructive results of tolerance and empathy.
4. The opportunity to fuse cognitive, affective, and perceptual-motor learning—learners not only hear about a problem, but live through it.
5. The opportunity to practice playing a role can help learners reach a criterion level of behavior for related learning objectives.
6. The opportunity to present information to others. For example, a subgroup can show the larger group what has occurred, rather than tell them or write about it.
7. The opportunity to discuss sensitive issues in a relatively safe environment, the classroom.
8. A stimulation of critical thinking through decision making and problem solving as verbal exchanges occur.
9. Immediate feedback about their communication skills and other behavior for role-playing learners (University of New Mexico College of Nursing, 2006).
10. The opportunity for collaborative application of what has been learned.
11. The opportunity to synthesize aspects of the topic in the creative process of formulating the role play itself.
12. The opportunity to reach a better understanding of the topic as the learner analyzes the role play after its presentation.
13. The opportunity to practice in relating education with experience that is the optimal path to true learning (Dewey, 1963).
14. The opportunity to lead to sustained knowledge, which is vastly different from facts that are superficially memorized.
15. It allows learners to evaluate each other further advancing knowledge and understanding, which corresponds to the highest level of Bloom's taxonomy (Bender, 2005).
16. It allows learners to remain anonymous and thus free to be more creative (Nelson and Blenkin, 2007).

Why Some Nurse Educators May Not Use Role Playing

Dr. Epstein had been using lecture for many years, but now her school was moving toward active learning. She had no idea how to help learners be more active, nor did she want to learn. When the Dean asked faculty to summarize their attempts toward active learning in their classroom, Dr. Epstein remained silent. A young nurse educator who was familiar with role playing tapped her senior colleague on the arm. "Why don't you sit in on my class on Tuesday. You can see how much students can learn from role playing."

Nurse educators may shy away from using role playing for two basic reasons: lack of awareness of its benefits and fear of its consequences. The nurse educator's fear of the consequences of role playing may be due in part to lack of exposure to the method and to lack of skill of the role-playing process. Learners, too, may feel anxious or fearful about role playing if they have had past negative experiences with the method or if they feel inadequate or unprepared. Written, verbal, or programmed instructional materials can be used prior to class to introduce learners to role playing.

Disadvantages of Role Playing

Stuart, a new nurse educator, had read several articles on the benefits of role playing and was anxious to try it out with learners. He didn't have much time to prepare for class, but he figured he could talk learners through the process, even though he wasn't quite sure what to do or how to prepare learners.

Possible disadvantages, especially for inexperienced nurse educators, are that time is needed to develop and set up a role playing situation and some learners may be shy or anxious when asked to role play in front of the class (University of New Mexico College of Nursing, 2006). These disadvantages can be minimized through practice with the technique; like any skill, role playing requires practice. The nurse educator can ask members of the class to help set up the role-playing situation, suggest how to handle shy learners, and so on. This not only enhances their critical thinking and assertiveness skills, but helps the nurse educator, who acts as classroom manager throughout all three phases.

Using Role Playing Situations in Class

Role-playing exercises can take time to prepare and execute, but student motivation and accomplishment can be high. Novice nurse educators might take this set of behaviors one step at a time while more seasoned nurse educators may be ready to jump right in and start role playing with the next class (Teed, 2006).

■ Nurse Educator Challenge

What is the first step a nurse educator must take after deciding to use role playing in a classroom? Give a rationale for your answer.

Preparation for and Planning Role Plays

It is wise for novice nurse educators to participate in role playing practice prior to attempting the method with learners. Seasoned faculty members, friends, or even

Nurse Educator Tip

Considerations for Role-Playing Situations

There are three major phases in the development of a role-playing situation:

- Preparation.
- Action and discussion, and
- Evaluation and replay.

family members can be asked to assist in role-playing practice. Once nurse educators have gained some experience with the method themselves, it will be easier to direct learners.

Steps in using role playing situations include (Teed, 2006):

Step 1: Define objectives and ask questions

What topics or concepts should the exercise cover?

How much time is available to work on the exercise?

What will be expected of learners? (research, reports, presentations, or only in-class feedback?)

Will learners role-play in pairs or in front of the class?

Should a challenge or conflict element be introduced?

Step 2: Choose context and roles

Decide on a problem related to the chosen topic(s) of study.

Choose a setting—make it realistic, but not necessarily real.

Consider using or adapting material other educators have prepared.

Define each role player's goals, characteristics, and what happens if the goals aren't achieved.

Alternate approaches:

Assign learners to collect characters' background information via research.

For more advanced learners, provide the class with a role play demonstration, written steps to follow, and assign them to develop and implement the role play situation.

Generally, two learners are chosen to role play a situation, although more than two people may be required. To begin, it might be wise to limit role playing situations to two people. Choose role players randomly or because of their assertive characteristics, ask the class to draw a role playing card out of a hat or bowl, or ask for volunteers. It might be best to obtain volunteers from the population of learners who have had experience with role playing. This will make the educator's job easier and is more likely to lead to a better outcome. The role-playing situation should be chosen to depict problem situations that are relevant to all class members. It is useful to pretest the written description to make sure it is comprehensive and understandable (Armstrong, 2000). Otherwise, critical classroom time may need to be spent explaining the situation.

Jenna, a new nurse educator, chose a role playing situation set in the middle of the emergency department. She instructed members of the audience to make some of the typical machine and voice sounds. With all the noise and confusion, no one was able to focus on the role playing situation.

It is helpful at first to choose problem situations that are not too complex or threatening; this allows the nurse educator and learners to gain confidence and achieve success with the method. Jenkins and Turick-Gibson (1999) found that using diabetes mellitus as the focus of a role-playing situation allowed learners to solve life-like problems, develop sensitivity and awareness of the client's life experience with illness, and generate empathy toward individuals diagnosed with diabetes. Use of double-entry journals also led to an increase in critical thinking behaviors as well.

The nurse educator may choose to present a particular problem situation, it may grow out of classroom or clinical difficulties, or a group of learners or the entire classroom group may volunteer to formulate a problem situation. Which of these is used depends on time constraints, the level of sophistication of the learners, and the learning objectives to be met. For example, if independent learning and peer collaboration are part of the learning objectives, the nurse educator would not choose the problem situation. Learners would be encouraged to become actively involved in choosing and detailing the problem situation.

Roberta, a new nurse educator, decided to try out role playing after she learned about its many uses. Since the learner group was so small, she decided to use verbally agreed upon role playing situations. Many learners looked confused

and unsure of how to proceed. Roberta promised herself to provide handouts of the problem situation and how to develop a role playing situation prior to using the technique with learners again.

Step 3. Role Instructions

Instruct learners in their roles before they read the situation descriptions. Players are not to be over-briefed on their roles, as this may lead to restricted or overplayed roles. No attempt is made to tell players what to say or do in the role-playing situation; this is where spontaneity and creativity take over. Role players can be asked to talk among themselves about their parts and suggest any props and their placement in the setting. If learners look confused, it may be helpful to talk to them individually about the role, interview them “in role,” and draw out their thoughts about playing the role, gently involving them in the situation (Blatner, 2002).

While the role players are reading their role descriptions, the nurse educator briefs the audience about their roles. Depending on the learning objectives, the audience may be asked to observe the general interaction of players or to watch for specific events. The nurse educator attempts to relax both players and observers to enable them to derive benefit from the exercise.

■ Nurse Educator Challenge

What information should instructions to role players include?

Role instructions should include:

- Telling learners which roles they will be playing before they read the written situation description.
- Asking role players to act as they themselves would act given the role and situation, or asking them to act as they believe the persons they represent would act.
- Instructing players to improvise but to remain in their roles (Armstrong, 2000).

Problem situations may be written out or verbally agreed upon. Written problem situations are probably best because role players can refer back to the facts, and copies can be distributed to the entire class for their edification. Role descriptions are only viewed by the role player the description pertains to. If it isn't possible to find seasoned role players, 5 × 8 role cards with specific role descriptions can be provided, and learners allowed 10–15 minutes to look over their character

descriptions and get into their roles for the exercise. If learners voice reservations about their character, the nurse educator asks what their reservations are prior to the actual role-play. Learners may be unable at first to research an issue from a perspective very different from theirs because they may reinterpret objective data as support for their pre-existing world view (Teed, 2006).

Alternate approaches:

Assign roles prior to the role playing situation so learners can study their roles, obtain background information, etc.

Divide students into several small groups (groups of five are ideal) and present each group with a problem to role play.

As with any other educational tool, the role-playing situation is not considered an isolated item, but as part of a larger instructional plan. The nurse educator must decide whether skill training is desired or needed. The plan can include opportunities for testing out new insights by actual pre-practice prior to playing the role in class.

■ **Nurse Educator Challenge**

Dora wrote out a role play description, but everyone in the class looked confused. What might be the problem? Give a rationale for your answer.

The written role-playing situation and character descriptions must provide enough detail to make it seem real and to give sufficient direction for players and observers to understand the scene. Irrelevant situational facts or past history are omitted to minimize opportunities for the group to become sidetracked. Once the situation and role are set, both should be written out and provided to the role players.

Decisions regarding the description and casting of characters may be decided by a committee, the class group, or the nurse educator. If little is known about the class, it may be better to ask for volunteers than to assign parts in advance. If learners are known by the nurse educator, they can be chosen on the basis of their ability to play the role without becoming threatened. If learners are asked to play certain roles they are not comfortable with, they usually give a constricted performance that detracts from the usefulness of the exercise. If a role has unfavorable characteristics, it can be assigned to someone who has sufficient status and self-confidence to carry it out.

In some cases, the nurse educator might play this type of role to move the class more easily into the instructional method. The nurse educator might take on a role even if there is no role with unfavorable characteristics in order to decrease learner anxiety about performing and to demonstrate how to be spontaneous when playing it out. Beginners in the role-playing method are assigned to roles with which they are familiar or comfortable, or the nurse educator can ask for volunteers.

■ Nurse Educator Challenge

When should role players be allowed to take more difficult roles? Give a rationale for your answer.

Once learners have had some practice in role playing, they can be encouraged to take on more difficult roles during which greater insight and cognitive and affective learning can be gained. With experience, learners can also be trained in these aspects and take on peer-supervised roles. This can build leadership skills in learners. Once all these decisions have been made, the nurse educator moves on to Step 4.

Step 4. Introduce the exercise to the class

Engage learners by describing the setting and the problem. Determine how many learners have participated in role playing activity before by asking for a show of hands. If roles have been cast, this information is helpful in case one or more role players requires a coach or encouragement. The names of learners who have been involved in role playing situations should be collected for upcoming role playing situations.

Only the situation need be provided to the rest of the class. It is important to explain the relevance of the role-playing situation to the whole class. Information about the relevance of the situation and a brief summary can be written down and passed out to class members, or a short introduction that includes this information can be given by the nurse educator.

The nurse educator tells the class that role playing is the next activity, that it is not meant to focus on personal or private feelings, and that the task of the group is to watch carefully and analyze the role, not the person playing the role.

The members of the class are informed they are to serve as observers, clarifiers, analyzers, and sources of feedback to the role players once the exercise has

ended. Thus all learners are involved in this method, some more actively than others. The nurse educator encourages the rest of the class to remain quiet during the role playing, but to be observant, to take notes for later discussion, and to actively listen.

Step 5. Begin the role play

The nurse educator says something like, “Okay, let’s start the role play.” If the role playing is floundering or class members whisper, the nurse educator should ask everyone to remain quiet if they get caught up in the role play and speak. Remind them to “Please remain quiet.” If any viewers make disparaging comments about one or more role players, the educator must cut off or rechannel remarks that attack or expose feelings or thoughts learners would prefer to keep private. The nurse educator sets the tone by reminding viewers to comment on the roles as enacted, not on the person playing the role.

Dwayne was conducting his first role play and was perplexed. The role playing learners reached an impasse and looked to Dwayne to get them back on track. He couldn’t come up with a solution so he decided to end the role play.

■ Nurse Educator Challenge

What would you suggest Dwayne do instead of ending the role play?

When learners reach an impasse because of miscasting, the nurse educator can step in and play the role or ask the class for a volunteer to help out. If players have been under-briefed, inadequately briefed, or are novice role players, the nurse educator can coach the players with comments such as, “You’re being too easy on her; give her a hard time, the way it would happen in real life,” or “Remember to stay in your role.” Class members can also be chosen by the nurse educator and coached on how to give feedback and/or to serve as alter egos or coaches by standing behind the role players and whispering encouragement or suggesting what to say or do next.

Step 6. Timing and Ending a Role Playing Situation

Timothy, a new nurse educator, kept looking at the clock once the role playing situation began. He hadn’t given the group any direction on how long to stay

Nurse Educator Tip

A Sample Role Playing Situation

Situation: There is a physician on a medical unit who has angered many nurses by his rude, hostile, and verbally aggressive behavior. Tension on the unit has escalated and something has to be done.

Nurse educator role description: You just completed an assertiveness course and you believe it's up to you to discuss the situation with the physician and try to work out a more cooperative relationship with the man. Use assertiveness approaches such as Broken Record, Negative Assertion and Negative Inquiry, Assertive Probing, Content-to-Process Shift, Momentary Delay, Time Out, and Joining the Attacker.

Physician's role description: You don't understand the problem, don't have time to discuss the situation, and continue to be annoyed with the nurse. You use unfair criticism, procrastination, guilt induction, passive resistance, and intimidation to keep control in the situation.

in role and he wasn't sure how long to let it go on, especially since one of the role players kept getting out of role.

Sufficient time must be allowed for adequate coverage of the situation. The nurse educator sees to it that everyone moves into their roles at the same time; learners who talk as themselves, rather than in their assigned roles, can destroy the mood of the action. The nurse educator also encourages role players to stay in their roles and suggests an approximate time to play out the scene, for example, 10–15 minutes. The nurse educator will step in and stop interaction if the pertinent concepts have been demonstrated.

The role-play situation should not go on overly long. A role-play situation should be cut when:

1. Enough behavior has been exhibited to provide for appropriate discussion and class analysis.
2. The class can speculate about what would happen if the action were continued.

3. There is a natural closing, such as the end of an interview.
4. The learners reach an impasse because they have been miscast or not adequately briefed.

Step 7: Debriefing

Once action is cut by the nurse educator, the entire group is brought together to discuss and analyze the action. A large circle, or a circle within a circle, can be used to facilitate discussion. If the class is very large, small-group discussions can be formed by dividing the classroom into sections. Movable chairs are useful but not necessary. In large lecture sections where desks are not movable, learners can turn around or face sideways to join in a group discussion.

Each group is given a number of specific questions to discuss. These can be written on paper or on the chalkboard, or shown on an overhead projector. Following small-group discussion, the entire group can be reconvened, and the nurse educator can ask each group to present its findings. Points that were omitted or need underlining can then be discussed by the nurse educator or learners.

Sometimes the nurse educator may ask the players to comment critically on their performance, prior to others doing so. This allows the role players to set the tone for constructive class criticism. The nurse educator monitors criticism to ensure that comments about acting ability or personality traits are not the focus of discussion. Rather, the discussion is directed toward role-playing content and how it might illuminate the problem the group is attempting to solve. In addition, observers are directed to bring observations, not opinions, to the discussion.

If the class does not have the prerequisite skills to provide constructive feedback, the nurse educator might teach the group to make “I” statements when commenting by role modeling them, or hand out a list of rules for constructive feedback with examples:

- “I think the doctor was trying to make the nurse feel guilty.”
- “I noticed the doctor wasn’t looking at the nurse.”
- Comments that imply blame or inadequacy, such as “You should have been more convincing,” or “Why didn’t you . . .,” are to be avoided.

It might be best to provide a handout of rules prior to the role-playing situation and ask learners to be familiar with them when they come to class. That way, learners will know what kind of comments are helpful and start making them.

The nurse educator encourages classroom participation after the role play, including asking questions, evaluating, and suggesting ways to use what has been learned.

Step 8. Summary

At the end of the discussion, the nurse educator helps the group to summarize what was learned from the role-playing situation and to reach that can be applied to similar interactions. Examples of this type of statement are:

- “I think we have discussed several ways of dealing with the problem including”
- “It seems important to try to understand the verbal and nonverbal behavior of others.”

■ Nurse Educator Challenge

Once the role playing discussion is over, what options does the nurse educator have? Which is the best choice from the options? Give a rationale for your answer.

Step 9. Replay (optional)

At this point, the entire class may be given the opportunity to recast players and replay the scene to allow for further practice and to implement suggestions made by the class, or the players can be asked to reverse roles in order to gain insight into the others' behavior. **Role reversal** may be particularly useful if anger or conflict occurred in the role play; taking the other's role can provide information about why the other might be defensive or attacking. Another alternative measure is to develop a new role-playing situation and test out whether summary statements and generalizations hold in the new situation.

Role reversal is taking the role of the other person for the purpose of understanding his or her viewpoint.

Step 10: Assessment

If grades will be given for a written project associated with the role play, presentations, questions asked of role players, and even involvement in interactive exercises can be graded. Special considerations for grading in-class role-playing exercises include (Teed, 2006):

- Playing in-character
- Working to further the character's goals
- Making statements that reflect the character's perspectives
- Stepping back and analyzing the characters' situations and making statements that indicate understanding or that relate to theory

Other Role Playing Possibilities

At least two other possibilities are available for role playing situations: assign an out-of-class role play and role play online (Gibbs, Doggett, and Frost, 2005).

Out-of-Class Role Play

The nurse educator can assign learners in pairs to role play a situation. They then report back in writing including:

- What was learned,
- The difficulties they encountered, and
- Any questions that remain.

Online Role Playing

Jade, a new nurse educator, was invited to learn about a new virtual learning environment used for role playing. On one online project she participated in an online role playing session with the computer. Jade entered the environment in the disguise of a character she chose, and participated by anticipating the way in which her given character would interact.

Gibbs, Doggett, and Frost (2005), Bender (2005) and Ip, Linser, and Jasinski (2002) extolled the virtues of the virtual world for role playing. Online role playing offers additional possibilities:

- Asynchronous learning can be used, giving the learner time to think about their responses and not be put on the spot to answer or role play.
- The nurse educator can monitor learner communication in their small groups as they discuss plans for their virtual role play; this not only provides information about their small group skills, but also about their ability to use critical thinking skills.
- Once a small group is ready to go live, the rest of the class become the audience and negotiate for future role playing roles.
- Learners compensate well for the lack of visual and auditory cues by writing in “Ring Ring Ring” for a telephone, adding information about facial expressions, mentioning when a role player is having an internal dialogue, and detailing actions through notes such as “They hug each other and sit down at a table.”
- Members of the “cast” serve as discussion leaders, identifying the main themes, issues, and conflicts within their topics, and respond to questions and comments from the rest of the class.

- Immersion in the topic helps learners develop insight into real issues they have faced and helps them work through the issues in a meaningful way.
- Completing a role playing situation forces learners to incorporate all they have learned in class along with bringing in personal experiences.
- Online role playing can lead to feelings of enjoyment at the “fun” role playing was.
- Role playing can become more and more valuable when learners assume more and more responsibility over the process, when they are challenged to think and reflect, and when they can deploy significant facts rather than just memorize them.
- Assessment by both the role players and the audience occurs in which the value of the performance is assessed in terms of its organization as well as its relevance to the topic in general.

Simulation

In role playing, learners frequently adopt roles they will not play in real life. They often spontaneously create a role, and are given little or no instruction on what to say or do. In simulations, the roles played are controlled and structured to a greater degree by information and feedback. **Simulations** are focused on the adoption of the role that the learner will perform in real life, such as pretending to be a nurse educator prior to actually being a nurse educator.

Simulations are controlled, structured, and focus on adoption of a future role.

A simulation is an operating model that displays processes over time. A model simplifies and introduces clarity through substitution. It is dynamic, because it shows how a system changes over time. A simulation extracts important aspects of a future performance. When using simulation, time can be compressed or expanded, feedback and emergency situations can be introduced to limit errors in transfer to real life, and variety in practice conditions can be planned. For example, learners may be asked to simulate what goes on in a classroom, at a bedside, or any other kind of situation they may be part of in the future.

Theories that Explain Simulation Processes

When many learners and factors are involved, simulations can become as hectic as any real-life situation. Leigh and Spindler (2004) introduced **chaos theory** as one framework for identifying the skills and knowledge nurse educators might need to anticipate

Chaos theory helps find the underlying order in apparently random data.

and respond to during the uncertainties generated during a large-scale simulation. Systems such as groups or classrooms units may appear disordered, but chaos theory is really about finding the underlying order in apparently random data. Use of this theory can allow nurse educators to quickly and accurately select and apply appropriate learning-centered interventions.

Knowing when to intervene and when to observe and stay quiet are skills nurse educators must develop to facilitate effective simulations. Many of these skills come with experience. As with role playing, it is suggested nurse educators try out their simulations and also be part of other faculty simulations prior to using them with learners.

Process simulation is another theory that explains how simulations harness the imagination using mental processes, and explores how they relate to self-regulation and coping skills (Taylor, Pham, Rivkin, and Armor, 1998). Humans can envision the future and then regulate their behavior and emotions to bring it about.

Social cognition researchers have studied how problem-solving activities can move learners toward an envisioned future. Taylor et al. (1998) reviewed the evidence for imagining hypothetical events and found at least nine empirical investigations demonstrating that people are more apt to believe events will actually occur following mental simulation as opposed to following other cognitive activities. This could be because when one envisions completing a procedure with a client or doing well on an exam, mental pictures are created that may lead to uncovering opportunities and problem solving in ways previously not considered. Rehearsing a process—either in the mind or with real objects—forces the learner to identify and organize the steps involved in the activities needed to get there and yields a plan for how to do it. According to Taylor et al. (1998), such behaviors also help regulate emotional states, such as performance anxiety.

Taylor et al. (1998) compared process simulations (imagining the steps in the process to get a good grade on an exam), and outcome simulations (imagining getting an A on an exam and feeling confident and proud). Learners who used process simulations for five to seven days before their midterms reduced their test anxiety and did better on their exams than those who just pictured themselves doing well. The same process also worked for learners assigned to complete a project. The researchers concluded that the process simulation enabled the learners to use planning and problem-solving skills to aid them in a timely completion of their projects. Simulation process skills can also be taught to clients to assist them to complete learning tasks, follow nursing advice, and be successful attaining their own goals.

■ Nurse Educator Challenge

Explain one way to use mental simulation with learners. Demonstrate it to the class or to a small group of colleagues and obtain feedback.

Other Forms of Simulations

A simulation is designed to achieve learning objectives. It can be a group or individual activity. Roles could be written for a whole hospital staff or community group, thus allowing an active role for every member in a large classroom. Learners may interact with one another or with media such as written nursing notes and nursing care plans, computer printouts, film loops, or even simulated clients (manikins) and laboratories (Earle, 2006; Inglis et al., 2004; Barach, Satish, and Strenfert, 2001; Kendall and Harrington, 2003). Whatever the method, learners are always actively involved, because they must constantly interact with people or with materials.

By extracting a slice of life (the referent situation), highly complex situations can be simplified to increase skill practice. For example, by not including any information on the medical, nutrition, or other hospital departments, nursing behaviors can be focused on, thus simplifying the simulation.

Nurse Educator Tip**Helping Learners Do Well on Exams**

Use a mental simulation exercise to help learners do well on exams. Read the following statement aloud, provide a handout with the words on it, and ask learners to complete this exercise for five minutes every day for a week prior to their exam:

See yourself studying and hold this picture in your mind. Eliminate all distractions by seeing yourself turning off the TV, radio, and any other sounds and declining any offers from friends to go out. See yourself sitting at your desk or at the library studying chapters and going over your notes. See yourself covering the material easily and calmly and learning a lot.

Learners are presented with cues and consequences similar to those that occur in real life and are asked to react to conditions as they would in the actual nursing situation. Simulations can provide an opportunity for learners to draw fragmented bits of information into a meaningful whole. Reading about a situation or even observing one never provides the feeling of what it is really like to be in the situation; simulation can.

Feedback in Simulations

Feedback in simulations is provided in ways that replicate natural channels. Educator/learner personality clashes are avoided because materials and/or peers provide feedback. Potential danger for participants can be reduced by building in interpersonal and physical protection. High costs can be avoided by using inexpensive materials.

Potential Uses and Benefits of Simulation

Some types of learning objectives that lend themselves especially well to simulation are those that emphasize:

1. Affective behavior
2. Combined affective and cognitive and/or perceptual-motor learning
3. The learner's interaction with a complex and reactive environment
4. Incorporation of the behavior with the learner's self-image
5. Application of behavior in a variety of contexts
6. Problem-solving skill
7. The assimilation of the relationship between behavior and its consequences
8. Creativity and experimentation
9. Memory or practice drill

Whereas written multiple-choice or essay questions reveal how learners think they ought to behave, simulations place them in situations that elicit how they do behave. Examples of nurse/client or client/client situations that have been or could be simulated as learning experiences are:

- The dying process
- Aging
- The nurse/client relationship
- The nursing home experience
- Individual, group, or family nursing interviews

- Sessions of teaching, supportive, or task groups
- Physical assessment
- Nursing diagnosis with appropriate intervention
- Leadership and assertive behavior
- Community dynamics and emerging problems

Types of Simulations

Some simulations require that the learner(s) complete a series of assessments or carry out problem-solving procedures.

Active Case-Study Simulation

Jeffrey, a seasoned nurse educator, decided to use active case-study simulation with his graduate students. He gave them information about a case that matched the topic of the text he'd assigned for the week. Jeffrey gradually disclosed more and more information by having a colleague enter class halfway through, pretending to be a family member of the client under study, and disclosing genetic information to which the learners were not initially privy.

In the **active case-study simulation**, information is presented to participants in a preset pattern; additional material is gradually disclosed via the kind of source that would provide it in the real-life environment. For example, if new information is provided in real life via lab tests, lab information could be available on a unit computer at crucial times during the simulation.

In an active case-study simulation, information is gradually disclosed to learners.

Simulation situations are designed to become progressively more complex. There are often critical decision points where several choices are presented; once a choice has been made, the learner is directed to a preset conclusion. This kind of simulation can be structured so that of the three choices, one is the most efficient and helpful, one is not harmful but is inefficient, and the other either impedes helpful actions or is harmful. The following example illustrates opening directions for a simulation portraying nursing leadership behaviors:

It is three o'clock, and you are the head nurse on a surgical floor. You are about to report off duty. Three unexpected admissions arrive, you find the unit manager drunk in the treatment room, and Dr. Jones, the senior resident, wants to make rounds with you. What happens in this situation depends on your leadership

behavior. You may use any of the materials or people available to you to solve the problem. This simulation will end when you have solved each of the subproblems.

Some materials available for this simulation might be admission and history notes for the three new admissions, information about the past work record of the ward clerk, and data about the head nurse's previous relationship with the senior resident.

Available people might include role players such as a unit manager and/or senior resident. The complexity and completeness of the simulation would be dependent on learning objectives, the nurse educator's creativity, time constraints, and learner entry skill.

The simulation could call for learners to write down the simulations preselected points once they have consulted specific answers. Cues and prompts could be used or deleted according complexity level deemed to be important.

Symbolic Model Simulation (Manikins)

Another type of simulation uses symbolic models in the nursing laboratory. For example, various types of manikins have been developed to simulate cardiac arrest, colostomy irrigation, urinary catheterization, hip fracture care, and more (Currie, Hoy, Tierney, Bryan-Jones, and Lapsley, 2003; Lotz, 2007). Some manikins allow practice with many nursing skills. One targets key skills for in-hospital care including women's health, obstetrics, post-partum care, wound assessment and care, and general patient care. Pre-programmed scenarios provide standardized training while customizable scenarios and real time educator control allows adaptation to meet individual learner needs.

Flexible manikin platforms allow multiple accessory modules to be added, including trauma, NBC, and bleeding control for use in multiple clinical settings. Some features of manikins include anatomical landmarks, trachea and esophagus, along with simulated lungs and stomach that allow the practice of many procedures, including NG, OG, tracheal care, and suctioning. Normal and abnormal heart sounds, breath, and bowel sounds, and fetal heart tones provide skills in auscultation. Rhythm variants allow practice in interpreting ECGs using standard clinical monitors. A nurse educator-controlled blood pressure arm allows for realistic palpation and auscultation. Systolic and diastolic pressures, auscultatory gap, and volume are variable. An articulating IV arm allows for practice of IV cannulation, medication administration, and site care and maintenance

A manikin can allow for practice in medication dose calculations and administration through intramuscular injections at the deltoid, gluteal, ventrogluteal, and thigh sites. Optional modules can be added for breast examination, post-surgical

mastectomy care, fundus massage skills, and assessment and care of wounds and surgical incisions.

Cindy, a new educator, was assigned to the nursing lab. She received an orientation to SimWoman, a computerized manikin, that can be programmed by the nurse educator to interact with learners using a variety of phases. When three learners in hospital uniform arrived at the lab, Cindy watched while they practiced making life and death decisions, working with the manikin. The patient simulator had been programmed by faculty to react to the care given. The learners started by draping and screening the manikin, showing how to maintain privacy. The manikin spoke and told the learners how she felt. This gave them a chance to practice communication skills, and talk to the manikin, who responded. The learners explained each procedure they planned to undertake and asked appropriate questions. The learners identified an irregularity in the heartbeat, and although they performed the necessary treatment, the simulated client “crashed.”

■ Nurse Educator Challenge

You are the nurse educator about to work with a group of learners and a manikin. What would be your first act? Give a rationale for your answer.

Working with Learners and Manikins

Manikins can be used to provide guided practice, more self-directed practice, and to evaluate learning. The learner may be presented with a specific manikin and directed to deal with the specific physical problem being demonstrated. At first the learner would be taught how to deal with the problem. Later, the learner might be asked to work with the manikin without cues or prompts; this time the physical situation could be used as an evaluation of what has been learned.

Advantages of working with a manikin are that they allow learners to experience situations they may never encounter during their regular rotations in hospitals, while providing a safe environment that can be regulated. At first, nurse educators write the scenarios. Advanced students may be given an opportunity to create a scenario as a class project.

Symbolic Replication of Reality Simulations

Symbolic replication of reality simulations or materials are used to evoke responses similar to those that would occur in the real-life situation. For example, although no

alarm clocks go off at the change of shift, nurses are frequently working under the pressure of too little time to accomplish tasks.

During symbolic replication of reality, time constraints and hierarchical relationships are portrayed symbolically.

By building in written time constraints or setting off an alarm clock or buzzer, the nurse educator can dramatize the constraints of time through the use of symbolic events. To represent hierarchical relationships symbolically, learners who are enacting doctor

or nursing administrator roles sit in chairs, while learners who are playing staff nurse roles sit on the floor.

Behavior Rehearsal

Another type of simulation is the **behavior rehearsal**. In this simulation situation, nursing learners play themselves and say and do exactly what they would with an

In behavior rehearsal, learners play themselves and obtain practice for upcoming situations.

actual client or learner. This can be a dry run for actual nurse/client interviews or teaching sessions.

The nurse educator, a learner who has mastered the skill to criterion, or printed programmed instructional materials could serve as the client and as feedback

for the practicing learner. The example below illustrates the kind of dialogue that might occur when teaching a handicapped client how to deal with social situations by using the behavior rehearsal technique.

Learner nurse: Let's pretend you're going to the party you mentioned. What's the first thing you think will happen?

Nurse Educator/Client: I won't go in a wheelchair.

Learner: Sure you can.

Nurse Educator/Client: I don't think it would help to reassure me. Find out why I can't go in a wheelchair.

Learner: Why can't you go in a wheelchair?

Nurse Educator/Client: Everyone looks at me. They think I'm a freak.

Learner: Perhaps you need to find a way to put them at ease. What about telling them or showing them how you want to be treated?

Nurse Educator/Client: I can't.

Learner: Try it.

- Nurse Educator/Client:* Okay. Would you push my chair over to that tree?
Learner: Then what would happen?
Nurse Educator/Client: They would push me, I guess.
Learner: Okay, then you know how to handle that; now let's go through that conversation.
Nurse Educator/Client: Which one?
Learner: Where you see me looking and you ask me to push you over near the tree.
Nurse Educator/Client: Okay.
Learner: (stares at wheelchair)
Nurse Educator/Client: Would you mind pushing me over to that tree?
Learner: Not at all.

In this illustration, cues and prompts were used, and cognitive, affective, and psychomotor practice were made available.

Debriefing a Simulation

George, a seasoned nurse educator, had facilitated a simulation of the emergency department after a fire had destroyed most of an elementary school. The class had dived into their roles and actively evaluated, treated, and/or referred the survivors to a physician. Even after George called "time," participants continued to play their roles.

Large simulations can exhilarate the classroom and start all kinds of learning processes. Even small simulations provide fodder for analysis of behavior that can enhance transfer to real-life nursing situations.

Debriefing or post-simulation discussions can enhance learning. The purpose of a debriefing or discussion after the simulation ends is to cool down and analyze what happened (Peters and Vissers, 2004). During the simulation, action is occurring and there may be little time for analysis.

In the case of an exploratory or first-time use of a simulation, the debriefing facilitator (usually the nurse educator) cannot claim to know exactly how to

Debriefing or post-simulation discussions allow learners a chance to analyze what happened, ask questions, and process information.

proceed, but the basic focus is for participants to learn about perceptions of all other participants so they understand their effect on others. For this reason, a joint debriefing is suggested (Peters and Vissers, 2004).

Not only participants, but all learners in the classroom can also contribute to and learn from the simulation. Debriefing sessions can serve as a source of information about the naturalness and usefulness of the behaviors or role cards in the simulation, and participant views can also be used to validate observations or impressions observed by the nurse educator.

■ Nurse Educator Challenge

What is the purpose of debriefing after a simulation? Give a rationale for your answer.

Purposes of Debriefing

Debriefing can:

- Allow participants to exchange experiences without interference from the nurse educator
- Provide feedback to the nurse educator about the design and correctness of the simulation
- Enhance transfer of learning to real-life nursing situations
- Serve as a vehicle for retention of knowledge and skills
- Discuss ways learners can support each other in applying the acquired knowledge and skills in the real-life situation
- Provide simulated examples of mutual understanding, interpersonal conflict, communication skills (or lack thereof), creating a shared vision, team building, joint problem solving and decision making, assessment, and testing of procedures.

Debriefing Questions

After allowing learners to volunteer their reactions to the simulation, the nurse educator can ask one or more of the following questions to enhance transfer of learning:

1. What events and processes did you observe or experience?
2. How much do these events and processes resemble real-life processes?
3. What did you learn from participating in or observing this simulation that offers clues for action in real life?

4. How doable, desirable, and practical are these actions in the real-life situation and what obstacles or barriers would have to be overcome?
5. How could you overcome these barriers to provide high-level care?

Although these questions are provided in a linear fashion, a more cyclical process often occurs. Analysis of a given simulation situation can give rise to a revision of the facts presented, amended observations, and even refuted earlier explanations (Peters and Vissers, 2004). The more open to discussion the nurse educator is, the more likely analysis will rise to a higher level of critical thinking.

■ Nurse Educator Challenge

How could you extend the simulation learning experience for learners? Give a rationale for your answer.

Simulation-Related Assignments

The nurse educator can also give a homework assignment to use journal writing (see Chapter 5) to extend the analytical learning process. This requires each learner to organize the material and debrief on an individual basis. The richness of responses can be increased in this activity as learners weave their own personal thread of observations and reactions through others' statements and behaviors, and link them to theoretical concepts. Another benefit of adding this step to the learning process is that writing provides a permanent record of each learner's experience (Petranek, Corey, and Black, 1992).

All of the comments in this section are applicable to debriefing simulation games. The only differences are that if a simulation game is played in rounds, the nurse educator may wish to debrief after each round.

Simulation Use and Design

Prior to attempting to design a simulation, the nurse educator needs to try out and use already developed simulations. Participation in a simulation is a first step. Next, the nurse educator might try running or facilitating a simulation. A walk-through, either alone or with friends or peers, or a practice session is necessary prior to using the simulation with learners. The nurse educator needs to be familiar with all materials and directions; it is suggested that a checklist of activities, procedures, and materials be used to help to guide the educator and learners through the simulation. The checklist can also be used to plan follow-up discussions and introductory comments.

If learners have never used simulations, a short lecture or description of the method or programmed instructional materials can be used to introduce them to the concept of a simulation. Then the learners might first be exposed to relatively simple simulations and be directed in a summary or evaluation session. Learners who have had experience with simulations can be exposed to more complex ones, and in this case the nurse educator would take a less directive role, playing the role of facilitator in a post-discussion (debriefing) to consolidate learning, or even allowing a learner to take that role.

A simulation is one kind of learning system; as such, its design should follow all the principles discussed in Chapter 2. A simulation would be designed or used only when called for by the learning objectives. System constraints must be examined to ensure that there is sufficient freedom to innovate and enough time allotted for designing the simulation. Task or goal analysis would reveal appropriate content and its sequencing.

Once simulation is chosen as the method, an essential question to ask when designing one is, “How much reality information is needed to achieve learning objectives and involve the learner?” To answer this question, a situation is whittled down to its basic core elements and then choose those that fit with learning objectives and can be demonstrated relatively easily and inexpensively.

There are certain basic frameworks that can be adapted to changing content. For example, in the active case method, materials and directions are changed depending on objectives, but the basic process of design remains the same. Likewise in a practice or symbolic model simulation, materials, directions and/or problem-solving situations change, but the format remains. Simulations are based on learning objectives that lead to a specific model of reality to be enacted. In the following objective, a specific model is presented:

Using the family interview guide, learners will conduct a forty minute initial interview with a simulated family.

Forty minutes is an appropriate period of time for a nurse to interview a family, and necessary material can be covered in this period. Entry skills are evaluated and prerequisite skills (including an introduction to simulation as a method of instruction) are given if needed. If the designer decides to do so, a pretest is devised and given. At this point, the designer might reexamine whether simulation is the most appropriate teaching method. If so, the family interview guide would be developed or located. (This step flows from the model.) A scenario and/or role information must be provided for each player. There are a number of alternatives available to the educator at this time including.

1. All players can be given the same scenario (**common simulation presentation**).
2. Different information or instructions can be given to different players (**parallel simulation presentation**).
3. Additional information can be revealed to players at critical points in the simulation (**serial simulation presentation**).
4. All players can start with the same information, with some players possessing “secret” information and additional information being presented to all players at prescribed intervals during the course of the simulation combinations.

In a common simulation presentation, all learners are given the same scenario.

In a parallel simulation presentation, different information or instructions are given to different players.

In a serial simulation presentation, additional information is revealed to players at critical points in the simulation.

Boxes 3–1, 3–2, and 3–3 show some materials that could easily be developed for a family interview simulation. The scenario may be a written outline, a list of the sequence of events, or a general description of the flow of the simulation.

Box 3–1 Family Interview Simulation, Outer Envelope

Enclosed are four other envelopes, containing:

1. General directions

One of the players is now to open the general directions envelope and read the directions aloud to the rest of the players.

2. Nine role cards

After reading general directions aloud, open the role card envelope.

Each person is to draw a card without reading it. Do not let others see your role card.

3. Timekeeper directions

The person who draws the Timekeeper role card opens this envelope only when “time” has been called.

4. Recorder directions

The person who draws the role of recorder opens this envelope which says:

Please return all materials to their appropriate envelopes so that others who follow you can use this simulation easily.

These directions are found inside a small envelope that is placed, along with the other envelopes, in the larger, outer envelope.

Box 3–2 General Directions for the Family Interview Simulation

General Directions

Read the directions that follow aloud to the group:

This is a simulation visit by the nurse to the Cronin family. Seven to eight players are required to complete the simulation adequately. The timekeeper may play two roles if he or she feels able to complete both tasks.

Now open the FAMILY ROLE CARD ENVELOPE. Place the role cards with FAMILY ROLE CARD side facing up on the floor or on a table. All players are to choose a card and read the direction to themselves only. Players are to say, "I'm ready to play" when they understand their roles. When all players have signaled their readiness, the timekeeper begins play. (The timekeeper will begin and end play and lead the post-simulation discussion.) Any questions that need further clarification should be directed to the instructor.

Note: Copyright 2006, Carolyn Chambers Clark

Box 3–3 Sample Role Card for Family Interview Simulation

Nurse Role

You are going to interview the Cronin family and make an initial assessment using the family interview guide.

You may refer to the guide as you interview the family. Begin the interview as if the family has come to the out-patient clinic for assistance with the youngest son's (John's) bedwetting. Seat the family in the circle and begin the interview.

Linda, a new nurse educator, took a workshop on using simulations with learners and was excited about trying the strategy. She knew a flow chart might help her plan the sequence of events, but she wasn't sure how to begin. She consulted with Rudolfo, a more seasoned nurse educator, who was very gracious with his time and showed her two flow charts he'd developed. He gave her a copy of both and offered to critique her attempts at a flow chart or help in any way he could.

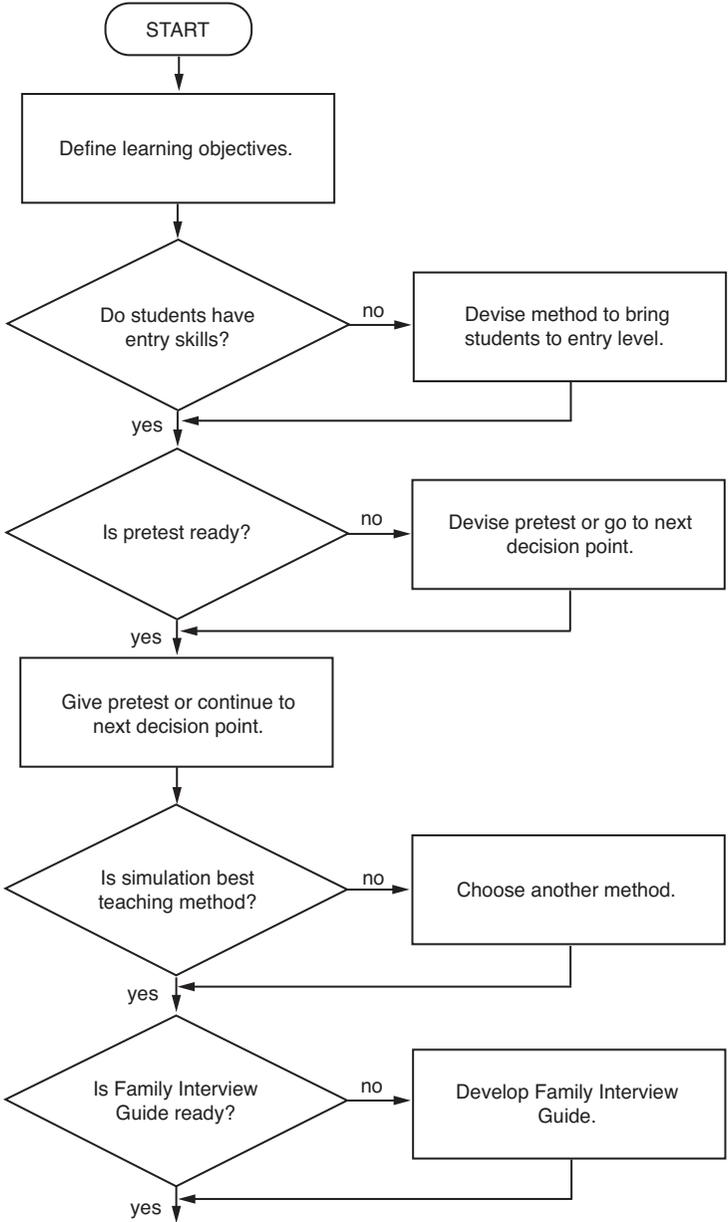
A useful tool in designing simulations (and other learning experiences) is the flow chart. It allows the designer to plan the sequence of events and their relationship to one another. See Figure 3–1 for the flow chart for the family interview simulation.

The nurse educator chooses whether props, cues, materials, name tags, and so on are to be used and how they can be incorporated into the simulation. The sequence of interactions is decided upon, and a method for communicating the designed sequence to participants is planned. The post-simulation discussion (debriefing) is usually an open discussion between players and the nurse educator. The operation and structure of the model is discussed, and players analyze their strategies and relate them to behaviors of other players and to their real counterparts.

Personal feelings and reactions to the simulation are also encouraged. Questions to be focused on during debriefing can be verbalized by the nurse educator, written out, or placed on audiotape. The nurse educator may be available during the simulation to coach or direct. If the nurse educator decides not to be present, learners can be asked to audiotape or videotape the simulation, or one of the participants can be assigned the role of recorder and directed to take play-by-play notes of what has occurred. These records can then be used in debriefing, with or without the presence of the nurse educator.

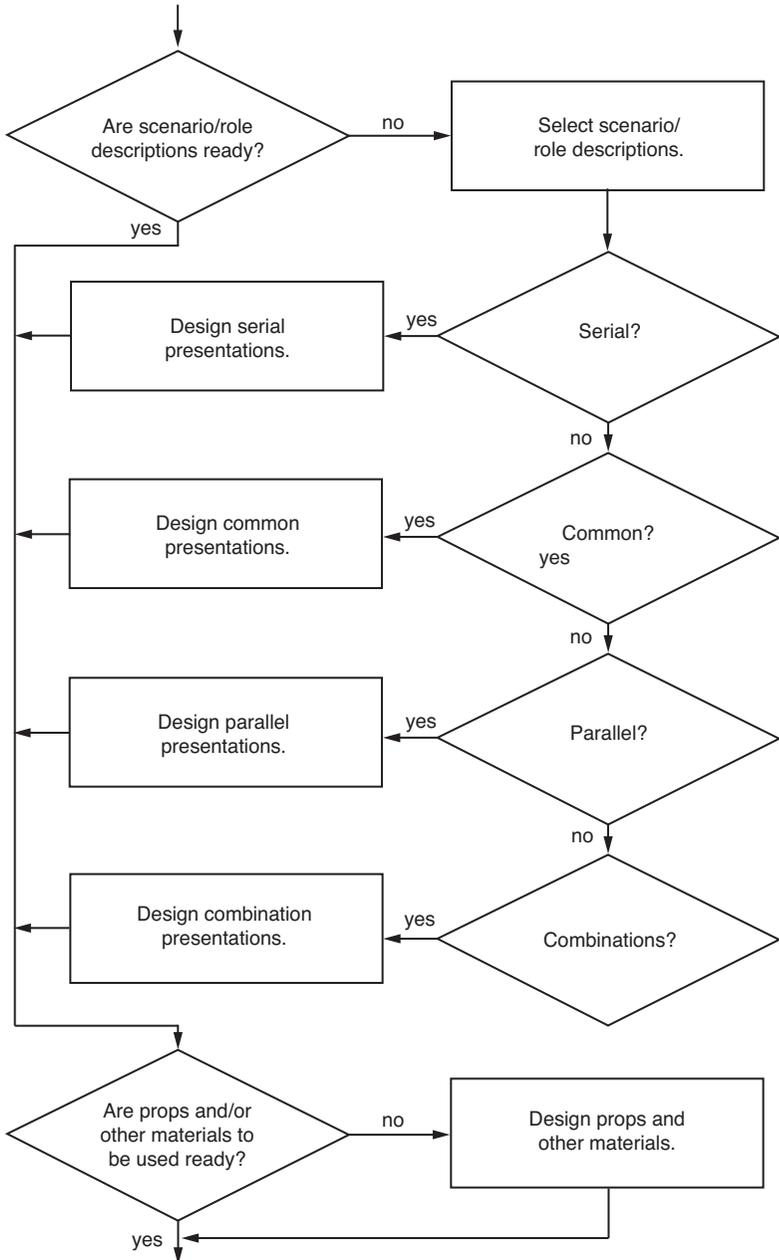
Decisions about debriefing and the presence of the nurse educator are based on learner ability, simulation sophistication, specificity of directions, time constraints, a wish not to influence the flow of the simulation, or a wish to encourage learner responsibility for learning. Posttests can be developed based on whether productive or reproductive learning is desired. If the debriefing or simulation practice itself serves as sufficient evaluation, no posttest is given.

Figure 3-1 Flow chart for family interview simulation



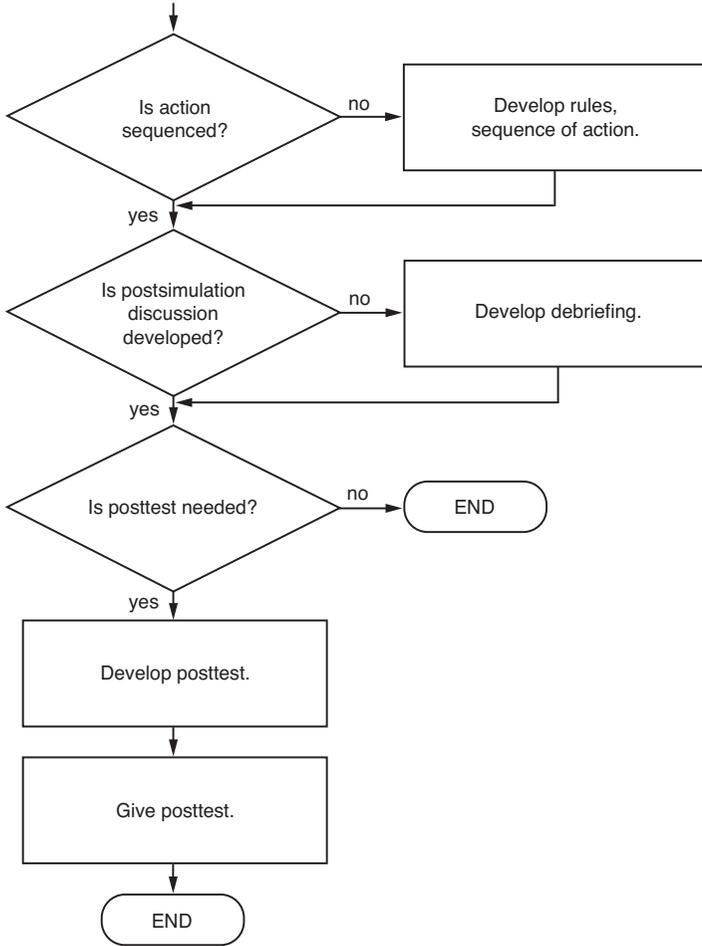
(continues)

Figure 3-1 Flow chart for family interview simulation (continued)



(continues)

Figure 3-1 Flow chart for family interview simulation (continued)



KEY:

Beginning and end of process



Decision point



Prescribed action



Where to go next



Instructor's Simulation Manual

In addition to developing instructions and materials for participants, it is wise to develop an instructor's manual. This can be used for the designer's own reference, by learners when no nurse educator is present, or by other nurse educators who wish to use the simulation but are inexperienced in its use.

An instructor's manual for a simulation usually contains the following information:

- Brief overview of the model
- Instructional objectives
- Nurse educator role(s)
- How to select and prepare participants
- How to introduce and conduct the simulation
- Debriefing directions and/or specific questions to use during discussion
- Bibliography

■ **Nurse Educator Challenge**

If you were developing a simulation, how could you divulge information to participants as the simulation unfolds? Give a rationale for your choice.

The overview often contains two or three sentences regarding the number of players involved, their general level of learning, the model upon which the simulation was based, and how the simulation can be integrated within the curriculum. Instructional objectives are stated in the instructor's manual, along with specific ways the simulation can help learners to attain them. In most simulations, the nurse educator plays the role of umpire.

At times, the nurse educator may serve as a resource person who supplies information at critical points in the simulation—for example, by entering with a simulated telegram or message from a prominent person or source. Simulations (and simulation games) use this kind of dramatic situation to add to the excitement and fun of learning. The nurse educator can also serve as a more conventional resource person who refers participants to available sources of information about the problem at hand. In some simulations, the nurse educator may play roles such as timekeeper, or more specialized roles such as client. In some simulations, the nurse educator is the dispenser of materials and evaluator of simulation play, while in others participants direct the action. The role the instructor is to play in the simulation is carefully described in the manual.

The instructor's manual can contain a statement to be read to the participants explaining what a simulation is and preparing them for the activity. For simulations that require specific prerequisite skills, these skills are listed in the manual, and suggestions are listed for bringing participants to entry level.

Pretests and their use are explained if applicable. A key to criterion performance on the pretest is also helpful. In some simulation situations, learners are chosen to play roles, in others they are assigned to roles, or their role is based on the chance draw of a card. The designer needs to think through the value of each assignment method and select the most appropriate one.

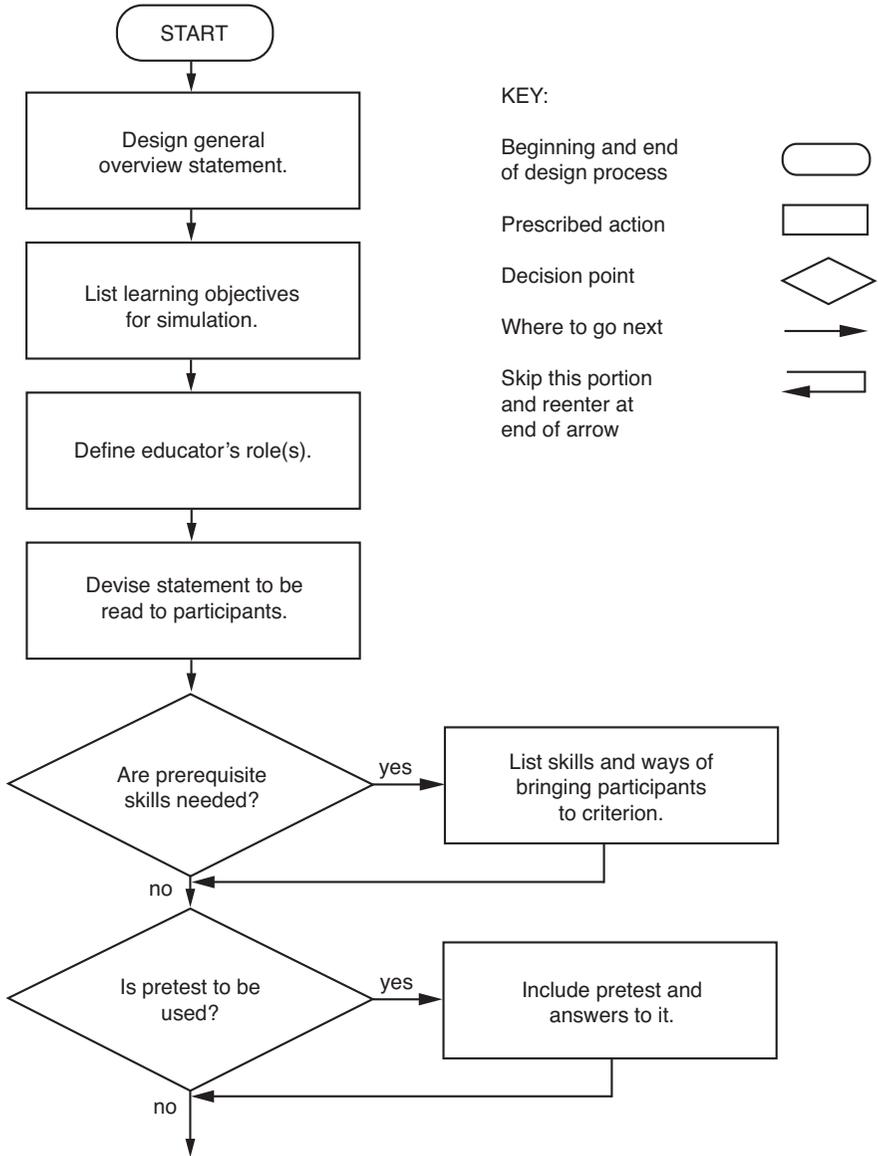
It is helpful to indicate the sequence of activities for the simulation. Some information to include is:

- When to pass out materials
- When new information is to be presented to the participant(s)
- What the main players are assigned to do
- What props or cues are needed
- What materials need to be copied or prepared prior to the beginning of the learning experience

The importance of debriefing is explained in the manual, and specific questions to use during that phase of the simulation experience are listed. Alternative suggestions for debriefing, such as asking learners to tape or write a record of the simulation, are also described. The role of the nurse educator or learner group leader in debriefing is explained as the person who reinforces instructional objectives and helps evaluate the effects of simulation.

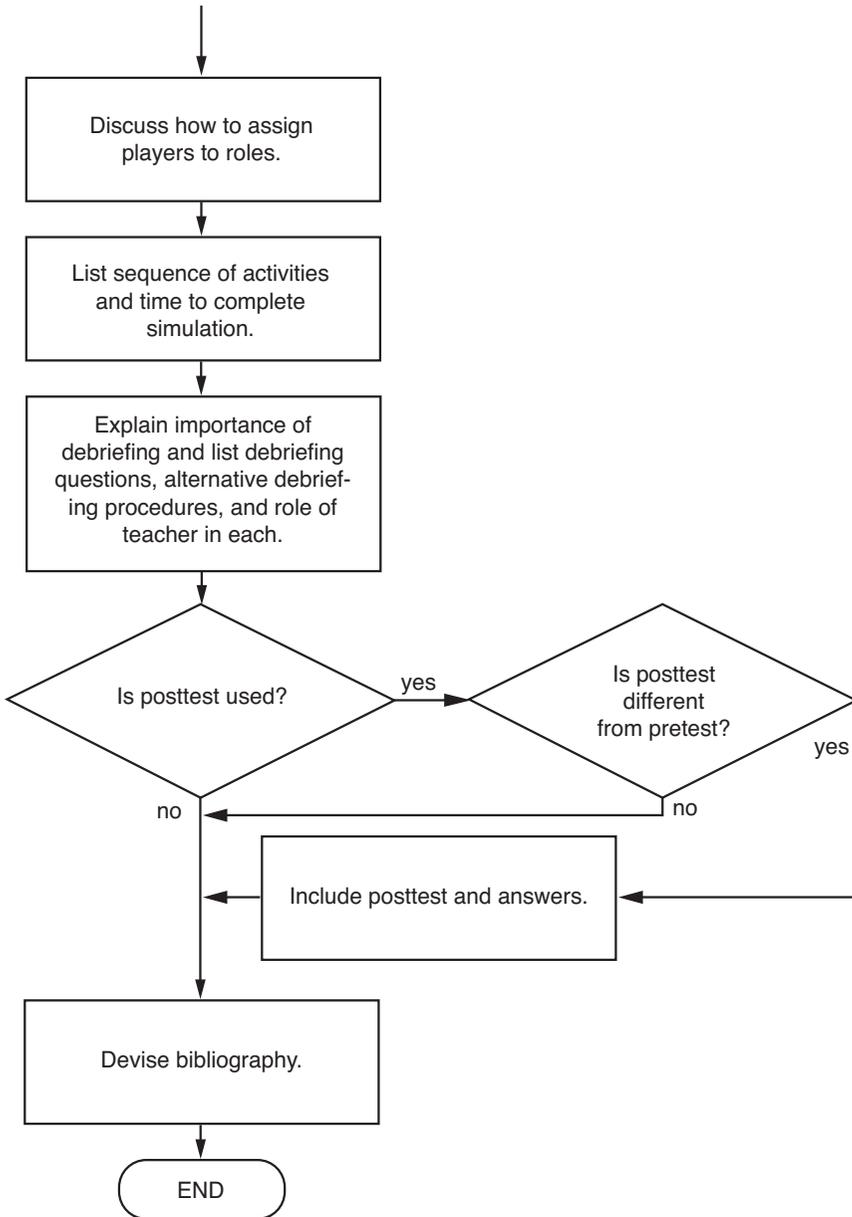
A posttest is included if applicable and if it differs from the pretest, and suggestions for its use and scoring are included. A bibliography of materials used in the construction of the model includes relevant readings or references to other related simulations that can be used. The level of sophistication and depth of coverage of an instructor's manual depends on the designer. If the simulation is being published for a large audience of potential users, an in-depth coverage is suggested. If the simulation is to be used by the designer only, minimal coverage is probably needed. Figure 3–2 shows a flow chart for the design of an in-depth instructor's manual for a simulation.

Figure 3-2 Flow chart for an in-depth instructor's simulation manual



(continues)

Figure 3-2 Flow chart for an in-depth instructor's simulation manual (continued)



Tryout and Revision

Simulation tryouts and revisions are actually part of simulation design process because feedback from tryout and revision often produces changes that can result in clearer models and more playable learning experiences. Having learners enact the simulation will reveal gaps, omissions, and inconsistencies. The nurse educator needs to be prepared for the unexpected when a simulation is first tried out; what appeared to be understandable and useful in thought may turn out to be incomprehensible or useless in practice.

Feedback from players can be invaluable and should be encouraged. Once the nurse educator can pass the point of taking negative criticism personally, feedback can be used to improve the simulation. Many times players develop new insights or can suggest additional material that adds substantially to the depth and focus of a simulation. It may be wise to develop a feedback form and request that players complete it after having finished the simulation. Another way to collect information about needed revisions is to ask for reactions to the simulation materials and directions during debriefing. Figure 3–3 shows the process of development of a simulation. The next section describes working with simulation games.

Agnes, a new nurse educator, had heard about simulation games and read about their use in business and other classes. She couldn't see how playing games was going to help anyone learn. In fact, she thought it was downright foolish until she attended a workshop and played a simulation game herself. That evening, she started to develop her own simulation game.

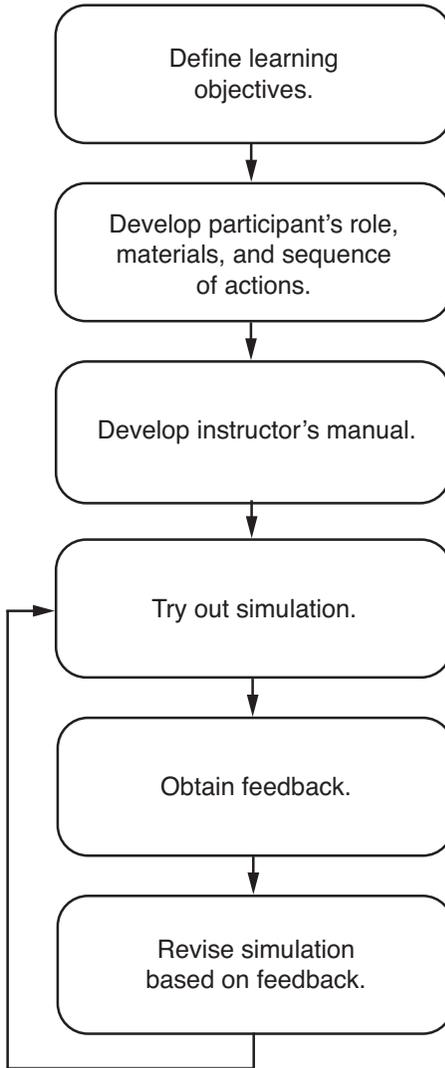
■ Nurse Educator Challenge

Explain why you think Agnes changed her mind? What is it about simulation gaming that is attractive to participants in the learning strategy?

Simulation Games

Simulation games combine the properties of simulations—an operating model that displays processes over time—with the properties of games—roles, goals, activities, constraints, and payoffs. Playing roles is an element of simulation gaming (and some simulations). In simulation games, roles are defined in interacting systems, and players are given instructions about constraints on their behavior and the rewards

Figure 3–3 Design process for a simulation



Note: The circular arrow means the nurse educator repeats the steps as needed.

or punishments (payoffs) they will receive for specific behaviors.

Simulation games differ from role playing in the degree of structure and direction in their emphasis on interaction processes rather than individual roles. Simulation games differ from simulations in that the former have constraints—such as time, mobility, available resources, rules to follow—payoffs—such as bonus chips or other symbols of winning or losing—options to skip a turn, and “fun.” In most cases, chance is involved, such as accruing points as the result of the throw of dice or the draw of a card.

Simulation games often use game boards, score sheets, and various objects such as bonus chips, dice, playing cards, and manuals to direct play. Monopoly is an example of a game. Props are often used in simulation games. These can be real objects used in the referent situation or symbolic references, such as gold chips, that represent a million dollars.

Simulation games can have a competitive element when two teams or individual members compete for a prize, for a solution, or to win. There are also noncompetitive or cooperative games when a hospital staff, community agency personnel or faculty, and learners of a school of nursing might cooperate to achieve a joint goal. Some learning goals for cooperative games might be to increase communication and understanding of others. Simulation games can be used to teach cooperation and collaboration between a small number of individuals—a nurse and client, for example—or among members of very large groups, such as the staff of a hospital.

The nurse educator builds in competitive or cooperative aspects and decides how many players could minimally and maximally play the game. Whether a simulation game focuses on cooperative communication aspects or on maximizing learning of content, problem solving, or cognitive skills depends on the learning objectives.

Benefits of Simulation Gaming

There are well-documented reasons for using simulation games (Camino & Calcagno, 1995; Shepherd & Cosgriff, 1998; Livingston, 1999; Mercado, 2000; Ryan, 2000; Meligrana & Andrew, 2003). Simulation games have been shown to:

- Prepare learners for professional practice
- Encourage, stimulate, and motivate learners
- Engage learners in critical thinking

Simulation games combine the properties of simulations with the properties of games, including constraints, rules, chance, rewards, and payoffs.

- Develop problem-solving skills
- Enable learners to understand issues from multiple perspectives
- Provide an experiential approach to learning
- Foster creativity, imagination, and better retention of theoretical ideas and concepts
- Assist learners in learning how to negotiate systems

Advantages of Simulation Games

Many claims have been made for simulation gaming as a total learning experience, and it is. The advantages of using simulation games in the classroom are:

- *Learners prefer simulation games*—they have fun playing them and learn from them (ExperienceBuilders, 2003; Randel, Morris, Wetzel, and Whitehill, 1992). This finding can be both an asset and a liability. Nurses who think learning must be a serious business can convey this attitude to learners; this nurse educator learning problem can result in a dissipation of learner concentration on the simulation game.
- *Learners learn in a new order*—the other major substantiated finding is that

In information processing, the learner receives information, comes to understand the general principle, infers applications, and then acts.

In experiential learning, the learner acts first, understands the particular example, generalizes, and acts in a new circumstance.

knowledge gained from simulation gaming experiences (experiential learning) proceeds in a reverse sequence from knowledge gained from information processing. In **information processing**, the learner receives the information, comes to understand the general principle, infers particular applications, and then acts by using the general principle in a particular instance. In **experiential learning**, the steps are acting, understanding the particular case, generalizing, and acting in a new circumstance.

Information processing requires less time, but learners frequently complain that they cannot apply what they have learned. Such comments probably mean they do not really understand the principle and how to particularize. While the experiential learning that occurs in simulation games (and simulations and role playing) is time consuming, all three represent graphically the principles and consequences of one's actions.

For example, it is difficult to overlook the connection between acting in a simulation by choosing to delay a client's p.r.n. pain medication, and receiving feedback from the client about the delay. The consequences of learners' actions are immediately evident, forcing them to deal with the complaining client.

Experiential learning does not neglect the interpersonal aspects of problem solving that information processing experiences often do. Within the simulation game format, players need to think through plays or moves, but they also need to persuade teammates of the effectiveness of a particular action.

- *Being actively involved in creating simulation games yields maximum benefits*—Boocock (1994), one of the pioneering users of simulation games in education, found that the maximum benefits of simulation games are likely to occur when one takes an active role in their creation. This is one good reason to involve learners in the creation of a simulation game. Not only will it reduce the time the nurse educator spends developing the simulation game, but it will benefit learners who must use critical thinking skills to devise a game that matches the learning objectives.

Motivation will be inherent if game creation is part of the learning objectives for the course and learners are graded on their efforts, and because of the sheer fun of development.

- *Simulation games can change players' attitudes or behaviors*—this only happens if the planned experiences within the games require them to employ knowledge or skills related to a particular attitude or behavior. For this reason, the design of simulation games as a learning system requires that objectives be closely tied to instructional experiences, and that game plays be tied to learning objectives. If simulation games can change attitudes, nurse educators' consideration of them as teaching methods is especially timely at present, when nurses' self-concepts are changing as nursing roles expand, nursing skills become more complex and demanding, and assertiveness with peers is stressed (Clark, 2003).

Simulation games provide a relatively safe, standardized practice environment. Learners need be less concerned about harming the (simulated) client or pleasing the nurse educator, and should concentrate on learning the task at hand. Well-designed simulation games that control and structure outcomes can also provide reliable evaluation tools for judging learner performance.

Disadvantages of Simulation Games

There are several disadvantages to using simulation games as a teaching strategy.

- *It may be difficult for nurse educators to operate in ways that run counter to many of their instincts*—one of the most difficult tasks is yielding control of the class to the rules of the game. Also, nurse educators may find it difficult not to help learners who request it, yet the game may call for ambiguity, and to help learners when they ask for it may be counterproductive to learning. Also, there is a temptation to explain thoroughly all the rules of the game prior to play; since the experience itself will clarify rules, this, too, can be counterproductive. Nurse educators may also feel a strong urge during the debriefing period to lecture participants about the meaning of the simulation game or to explain the experience (see Debrief/Discussion in the simulation section for ideas about how to debrief), rather than to assist them in interpreting and understanding the experience.
- *The largest obstacle may be that nurse educators may not know and understand how to use a simulation game*—they may balk at the idea of using it if they distrust its validity. They may complain that some games represent only a part of reality situations, or that chance and uncertainty should not be included. This objection may be based on a misunderstanding of game models; a model is a simplification and abstraction of elements the game designer decided are important. There are ways of modifying existing games or of designing new games that nurse educators may consider more representative of reality.

This book should begin to help nurse educators to overcome these practical problems, and become enthused about the many benefits this learning approach offers.

Trudy, a seasoned nurse educator, had finally talked the dean into putting some money in the budget to purchase a simulation game. Once she had the money available, Trudy had to come up with a simulation game that met learning objectives for her courses.

■ **Nurse Educator Challenge**

What indicants did Trudy use to decide which simulation game would be best for her purposes? Give a rationale for your answer.

Evaluating Available Simulation Games

Available simulation games need to be carefully evaluated for their potential as teaching tools, especially in the areas of:

- Learning objectives and the model
- Game fit with existing curriculum
- Availability of pretests and posttest
- Playability
- Pragmatics

Fit with Learning Objectives

To decide whether a particular simulation game might meet learner learning needs, examine the relationship between learning objectives and the game model. Some questions to be asked in this area are:

1. Are the learning objectives stated in behavioral terms?
2. Are the learning objectives relevant to learner needs for learning?
3. Is there a one-to-one relationship between learning objectives and game plays?
4. Are all learners involved in game play all the time?
5. How relevant is the simulation game experience to the real world of the learners' clinical experience?
6. Does the debriefing session (or some other built-in mechanism) assist learners in drawing out and interpreting principles learned through playing the game?

Fit within Existing Curriculum

Simulation games should not be used simply as a time filler or novelty item. Yet, available simulation games may not lend themselves to instructional plans. Some questions to ask in this area are:

1. What is the theoretical model in the simulation game?
2. Does the model reinforce the existing curriculum?
3. Where in the curriculum can the simulation game be used to reinforce other learning experiences?
4. Is the game too long or too short to fit within classroom time constraints?
5. If the simulation game does not fit within curriculum or time constraints, can it be modified easily by changing rules or materials, or by using rounds of play rather than the entire game?
6. Can the game be used effectively as a homework or remedial assignment?

Pretests and Posttests

Simulation games can be used for learning as well as for evaluation purposes. Simulation games that include pre- and posttests may have an added advantage for the nurse educator. Some questions to be asked in this area are:

1. Is there a pretest included in the simulation game?
2. Is there a posttest included?
3. Does the pretest adequately tap learner learning prior to playing the game as spelled out in the objectives and as formulated in the game structure?
4. Does the posttest evaluate learner learning from playing the simulation game?
5. Does the posttest evaluate important aspects of learner learning?

Playability

A simulation game can seem to be challenging, interesting, and relevant according to its objectives, topics, and structure. When learners play the game, inconsistencies, unknowns, rule gaps, and irrelevant playing materials may be found. Questions to be asked in this area are:

1. Are clearly stated rules included with the simulation game?
2. Do the rules seem enforceable or unreasonable?
3. Are there inconsistencies in game plays?
4. Are there irrelevant or missing playing materials?
5. Has the simulation game been tested and revised with similar nursing populations?
6. Is there information included with the simulation game describing nursing educator and learner evaluations of the simulation game?

Pragmatics

In addition to theoretical issues, the nurse educator considers pragmatic issues when deciding whether or not to use or purchase simulation games. Some of these issues are:

1. Is the game available for preview and/or is specific information available from the author or publisher regarding theoretical issues?
2. What is the cost of the simulation game?
3. Is the cost prohibitive?
4. How easily can game materials be obtained?
5. If the game cost is high, is there a kit available to enable nurse educators to develop their own materials for the game?
6. How much playing space does the game require?

7. How many learners can play the simulation game at once?
8. How does the number of players required to play the game affect its various uses within the curriculum?
9. How portable is the simulation game; can it be played at home or in a car?
10. How many simulation games need to be ordered to be used efficiently for learner learning?
11. How much preparation prior to play does the simulation game require?
12. Are there sufficient directions for the nurse educator to run the game?
13. Is there a clear, specific instructor's manual that can be obtained for preview, even if the simulation game itself cannot be?
14. Are there specific debriefing questions included with the simulation game?

How to Run a Simulation Game

Trying an unfamiliar learning experience can be a frightening situation, especially in the case of a simulation game where action may be fast and the unexpected is apt to occur. A run of some simulation games may be noisy and seemingly chaotic. Even quiet games can be complex. It is therefore imperative to become familiar with all instructions, rules, and materials prior to attempting to run one. Sitting in while someone else runs the simulation game or being a participant can provide the familiarity needed.

Effectiveness of game play can be increased and learners will benefit if the nurse educator feels comfortable with parts of the game including game boards, artifacts, and any audiovisual equipment that are used as an adjunct to learning. Loose dice, signs, or score sheets may be lost, so it is helpful to have extra copies available.

■ Nurse Educator Challenge

What steps should a nurse educator take prior to running a simulation game?
Give a rationale for your answer.

Preparing to Run a Simulation Game

Ways to prepare for running a simulation game include:

1. *Completing a run-through with colleagues*—a run-through is an excellent way of learning the mechanics of the game and also of anticipating any difficulties that might occur when running the game with learners.

2. *Talking with other educators who have run the game*—more experienced nurse educators can help provide important information such as advice about how to run the game, or discussing problems they encountered.

Ramon, a new nurse educator, did not want to ask for help with running a new simulation game, even though he knew he needed it. When Cecily, a seasoned nurse educator, asked him how he was doing and to come to her office anytime if he needed assistance, he waited two weeks before taking her up on her offer. Ramon was glad he had swallowed his pride and gone to see Cecily because she gave him a lot of good advice not only on how to run a simulation game, but she volunteered information on how to integrate the game with his other course materials and told him she would be glad to be his assistant the first time he ran the game.

3. *Finding ways to integrate the game with other course materials in the curriculum*—prior to using the game with learners, it is useful to find ways to integrate the game with other course materials, including behavior objectives, goals, and content.

Some guidelines to be used in introducing a simulation game to learners are:

1. Have additional assistants available to run large or complex games, if possible.
2. Make a time schedule for the game run and refer to it often. Setting a clock to go off after a certain number of minutes may be a useful way to remind participants of when to stop a specific activity.
3. Decide whether to give out game materials or directions to players in advance of playing the game. The advantage of giving out materials in advance is that players may be better prepared to play their roles. The disadvantage is that players may not read the materials or forget to bring the materials to the scheduled class.
4. Arrive early to set up game materials, arrange furniture, and plan use of classroom space.
5. Decide whether observers or only active players are allowed to speak during game play.
6. Keep all explanations brief and simple.
7. Move quickly from talking about the game to demonstrating a cycle of play by touching and having learners touch the game materials as they are discussed.
8. Be aware that learners may be both confused and excited about playing a simulation game; tell them that game play will clarify directions and rules, and resist explaining the rules.

9. Describe the overall sequence of events: the play, major interactions, and when or whether debriefing will begin and end.
10. Use a chart or other media form to emphasize the meaning of symbols, resources, constraints, and payoffs.
11. Field questions by answering matter-of-factly and briefly, then move on to the next point in describing the sequence of play.
12. Consider having learner volunteers demonstrate a round (or part of a round) of a game to orient learners to play.
13. Rather than explaining game rules to learners several times, ponder the use of comments such as, “You can do anything in the game you do in the real world,” or put the responsibility back on the learner, “I don’t know. Get together with your classmates and see what you can figure out.”
14. Set the game-playing tone by being facilitating, enthusiastic, impartial, a resource person, and a co-learner.
15. Pass out materials to game players.
16. Observe the process of the game for significant events, and then verbalize observations to players during debriefing.
17. Protect key resources and “secret” information to be revealed at critical points during the game or debriefing.
18. Avoid blaming players for their actions or trying to analyze their motivations.
19. Create an emotionally safe climate for learning.
20. Announce the time remaining for playing the game at various intervals during play.
21. Watch for game players who becoming increasingly uncomfortable in their role and reassign them to less demanding tasks.
22. Watch for game players who innovate by changing rules. If the changes do not disrupt play, do not intervene, but comment on the change in debriefing.
23. Allow adequate time for debriefing—at least twenty minutes.
24. Encourage players to express their thoughts and feelings about the game prior to discussing cognitive learning and the game model. This action will decrease the chance that emotion will interfere with learning.
25. After players have vented their feelings, encourage them to describe what they experienced in the game, to analyze the consequences of their behavior, and to draw conclusions about the use of what was learned for real-life situations.
26. Always give credit to the game designer, and do not replicate materials unnecessarily.

Simulation Game Design

Nurse educators may not be able to find a simulation game that suits their purposes. In that case, it may be necessary to design one. Designing a simulation game forces the nurse educator to think clearly and decide what elements of the real-life situation are relevant to learning.

The simulation game design process includes many of the same steps that simulation design requires:

- Develop behavioral objectives
- Present one model of reality
- Determine entry skills and current level of learning (pretest)
- Conceptualize the game structure and model

At this point, and at various points along the way, it is beneficial to generate alternative strategies to accomplish specified objectives before a design decision is made, such as: “Is this the most effective way to make the model concrete to learners?”

Input from others familiar with simulation game design can be helpful. Brainstorming with a group of peers or learners can also produce many ideas, some of which will usually be modifiable or directly applicable to the design process. As with any creative problem-solving quest, premature closure of possible strategies can result in a mediocre solution.

While designing a simulation game, the following issues must be explored: How many participants are required? How important will role playing be? Is a game board necessary? Is cooperative or competitive play to be encouraged? What is the sequence of play? How will debriefing and evaluation be implemented? What manuals and directions are necessary?

Each of these critical decisions will be discussed in turn. Discussion of topics in this order in no way implies they are considered in this linear fashion during the design process. Rather, design is the result of interactive decisions and refinements.

Number of Participants

An early question to ask is, “How many players are needed to represent this slice of reality?” Generally, small social systems, such as the nurse/client relationship, can be represented by two to four players. Larger social systems, such as families or groups, may require four to fifteen players. A simulated hospital unit or college faculty may require 15 to 50 players or more.

Role Playing within a Simulation Game

If it is decided that role playing is an essential element of the simulation game, specific role information for players is developed. One of the main advantages of using a simulation game format is that it requires players to learn the consequences of actions and to take responsibility for them.

In some simulation games, roles are imprecisely defined because the model is imprecise. In such cases, the player role may be to use spinners, dice, cards, and accompanying materials to compete or cooperate with other players.

When designing this type of simulation game, deciding on the choice of resources and materials players will use to achieve their goal(s) is the next logical step. Resources are translated into physical representations that can be purchased, exchanged, or won. For example, attaining a learning goal can be represented by a plastic or cardboard key (to the door of knowledge), and power or wealth can be expressed by using play money or chips. Decide what representative object is most likely to meet game objectives, enhance playability, and be cost effective.

Game Boards

The nurse educator decides whether a game board is necessary to serve as the focus of learning or as a symbol of moving forward in time or learning. If so, the board should depict essential symbolic focuses, and time, learning frames, or rounds should be visualized and sketched on paper. Size of the board and its potential mobility should also be considered.

Competition or Cooperation

The nurse educator decides whether competition, cooperation, collaboration, or a combination will be expressed during play, and how to build in the type of interactions

Nurse Educator Tip

Writing Role Descriptions

Write role descriptions without assigning attitudes and values. For example, you are a nurse about to begin a counseling relationship with a psychiatric client. Make all responses as a helpful psychiatric/mental health nurse would. An example of a role description that would not work is “You are an anxious nurse about to begin a counseling relationship with a paranoid client who hates nurses.”

you desire. If participants compete against each other for a prize or score, competition is fostered. If participants are assigned cooperative or collaborative tasks or have a joint goal, cooperation and collaboration are fostered. If teams compete for a prize or score, cohesiveness and cooperative are fostered intra-group, and competitiveness is encouraged between groups. To decide which of these models is pertinent, the designer examines the reality slice being modeled and attempts to replicate essential aspects.

Sequence of Play

The sequence of play is designed so as to model the referent situation. Sequencing play is part of the design process that is especially related to other issues such as constraints, activities, payoffs, and chance.

Game Constraints

One constraint to be considered is time. Some questions to be asked in this area are: Is it important to limit player time to complete tasks? In the referent situation is time a factor?

Simulation game constraints include such items as restricting time and limiting resources, mobility, or access.

If so, then some way of limiting time to complete tasks is built in to the sequence of play. For example, a timekeeper or an automatic timer can be used to simulate the pressures of time found in the real-life situation.

Other **simulation game constraints** that might be considered are:

- Limited information sources
- Physical or social condition and mobility
- The amount of power, money, or resources players start out with or can acquire
- Access to educational, political, social, or health institutions.

While considering these issues, it is important to formulate ideas about activities that could be sequenced to represent the referent situation, and how activities might fall into a hierarchy such as game rounds and payoffs.

Game Payoffs

Simulation game payoffs are designed based on the conceptual model being used. For

Simulation game payoffs are items like fake money, points, and reward stars.

example, if winning and scoring are important aspects of the model, score sheets and directions for scoring are developed. Other possible payoffs are accruing fake money, points, reward stars, and related items.

Simulation Game Chance Factors

Chance can be added to simulation games by introducing chance cards, spins of a wheel or spinner, or throws of a dice. Chance should be introduced only if it corresponds to real-world chance factors—such as flood, natural disaster, or genetic mutation, and not at the whim of the designer or because no other strategy for sequencing is apparent.

Game chance factors correspond to real-world chance factors.

Simulation Game Rules

As sequence of play begins to be formulated, ideas for **rules** may occur to the designer. Rules always relate to the sequence of play, but they could include formulations such as: “No player can begin Round 2 until Round 1 has been completed,” “Chance cards are to be drawn following the occurrence of the simulated disaster.”

Simulation game rules always relate to the sequence of play.

Herb, a seasoned nurse educator, usually had no difficulty creating a workable simulation game no matter what topic his continuing and community education director requested. For some reason, when she gave him his next assignment, he couldn't come up with one idea.

■ Nurse Educator Challenge

What advice would you give Herb about removing the blocks to his creative process? Give a rationale for your answer.

Removing Blocks to Creating a Simulation Game

It is not unusual to become mentally blocked in the creative process of depicting the referent situation. There are a number of techniques that can be used to remove mental blocks including:

1. *Using transformations*—some questions to stimulate ideas are: How can I combine elements to depict reality? How can they be rearranged? Modified? Magnified? Minimized? Reversed?
2. *Using a thesaurus*—a thesaurus is a rich source of ideas. Look up the word connection for ideas like tie, bridge, tunnel, and clasp. One solution would be

to use tunnels as props linking concept representations, or concepts could be placed on cards and tied together to represent their connection.

3. *Using analogies and metaphors*—a simulation game is often an attempt to replicate a social system. When unable to think of a social system model, it is beneficial to think of physical or biological systems. For example, ask: How do biological systems deal with this problem? How would an animal deal with this problem? More specifically, if the problem is to demonstrate the concept of incorporation, ask: How does a bee take in pollen? How does a coffee pot take in water and ground coffee?
4. *Taking trips to stimulating places*—when unsure about how to use materials to represent a concept, it is often profitable to go to a variety, hardware, or art store where new ideas can be generated by looking at the diverse assemblage of materials and then deriving new ways to use or combine them.
5. *Participating in a pleasurable activity*—place the problem completely out of mind and become submerged in a pleasurable physical or social activity. Mental blocks sometimes disappear when this is done.

Debriefing Simulation Games

Debriefings are usually held following play of the game. Concepts and principles can be underlined during play through the use of programmed instructional manuals or in-game discussions about why certain players are acting in certain ways. As in simulation debriefings, some or all of the following are pertinent:

- Analysis of player strategies
- Cause-and-effect relationships revealed through the game model
- Relating the model to the referent situation
- Noting both accurate parallels and omissions, and personal reactions to playing the game

Posttests

Nurse educators decide whether more specific evaluation procedures are needed. If they are, a posttest is developed to focus on cognitive, affective, or perceptual-motor learning, depending on the model used to develop the simulation game. Posttests and pretests are the same test when reproductive learning is important.

Simulation Game Directions or Manuals

Participant manuals or direction sheets are developed to provide background information for participants. If the simulation game is packaged in a box, participant directions can be printed on the inside cover. If this is not feasible, directions can be placed on durable, preferably waterproof, material. Participant directions usually contain:

- An overview of the game purpose
- The reason for a simulation game being the method of choice for this purpose
- A brief statement of the range of participants who can play the game (for example, from five to eight players)
- Suggestions for using the game as a learning experience

Simulation Game Objectives

Learning objectives are stated. For some simulation games, objectives are placed on separate cards that correspond to the round being played. If there are rounds, there may be objectives for each round. The card for each round is read aloud by one designated player and is placed next to participants for ready reference. If there are no rounds, objectives can be stated on a separate sheet of paper.

Game Model

The next section of the participants' manual includes a brief but clear statement of the game model. It is here that the designer conveys to the user which part of the real-life situation the game seeks to simulate.

Player Roles

Players' roles can be stated in the manual or placed on separate role cards. Role cards are specific and may include specific statements to say at specific points in the game.

Game Resources

The manual specifies what resources are included. Resources will depend on the game model and could range from telegrams to politicians concerning health care legislation to nursing care plans. All game parts should be described in detail; a drawing or picture of materials can be helpful. The manual also includes an estimate of how long it will take to play the game and a list of game rules and scoring procedures, if applicable. If debriefing is part of the game, specific directions are included. Suggestions for repeated plays of the game or specific rounds can also be added.

Instructor or Game Runner Manual

The content of the manual will be influenced by the game model, but it should minimally contain an overview of the game and model, learning objectives, entry skills, pretest, scenario/role descriptions, game materials, sequence of play, rules, scoring procedures, debriefing procedures, and posttest (if applicable).

In addition, instructor anxiety can be decreased by adding additional structure. For instance, directions can be given about how the instructor can allocate time, perhaps by giving the instructor or game runner time estimates about how long it will take to train game running assistants, prepare materials, set up the game, introduce the game, and conduct the post-game discussion.

The manual should indicate if pre-game preparations are needed, like reproducing charts or other materials. Specific written instructions proposing words to use in introducing the game to participants are also helpful. Many of the suggestions for the design of simulations also hold for simulation game design, including the development of feedback forms to be used to evaluate the simulation game.

Tryout and Revision

The external validity of a simulation game can be tested by how well the game models the real world.

The internal validity of a simulation game can be measured by judging whether participant decisions over time conform to the environment of the simulation, or by testing whether better learners outperform poor learners.

Tryout and revision are important aspects of simulation game design. Most games cannot be claimed to be valid until the game has been played ten times, with the last three plays requiring no changes, although not everyone agrees with this rule of thumb. The **external validity** of a simulation game can be tested by how well the game models the real world. The **internal validity** of a simulation game can be measured by judging whether participant decisions in a simulation game over time conform to the environment of the simulation, or by testing whether better learners outperform poorer learners (Faria and Wellington, 2005).

Ethical and Mechanical Issues

While tryouts and revisions are being completed, the nurse educator begins to grapple with ethical and mechanical decisions. If the simulation game is designed while the nurse educator is a faculty member, it is important to clarify whether the copyright

to the game belongs to the school or the educator. Many game designers are quite free in sharing their games; other sell their games to publishers or print them themselves. Designers who spend several years designing, perfecting, and using a simulation game must consider this issue.

Suggestions for the Use of Inexpensive Gaming Materials

It may be useful to explore the use of inexpensive gaming materials. Simulation games use game parts and unusual materials that are not easily copied, or that require more permanent construction than regular paper allows. Yet, more permanent materials often mean higher cost. These suggestions show how inexpensive yet relatively durable materials can be used.

1. Use 3 × 5" unlined index cards for role player descriptions. Information can be typed on the card and then a bar of paraffin wax can be run over it to provide fingerprint and waterproofing.
2. Purchase poker chips or chips from other games, or cut out circles of construction paper of different colors to represent power, money, status, and so on.
3. Tape together two small pieces of tag board (available in art stores) to serve as a fold-up game board. After painting (or drawing with a felt-tip pen) game routes, rounds, or whatever on it, a paraffin bar can be run over it for protection from spots or fingerprints.

Nurse Educator Tip

Dealing with Mechanical Considerations for Simulation Games

Mechanical considerations for simulation games include asking such questions as:

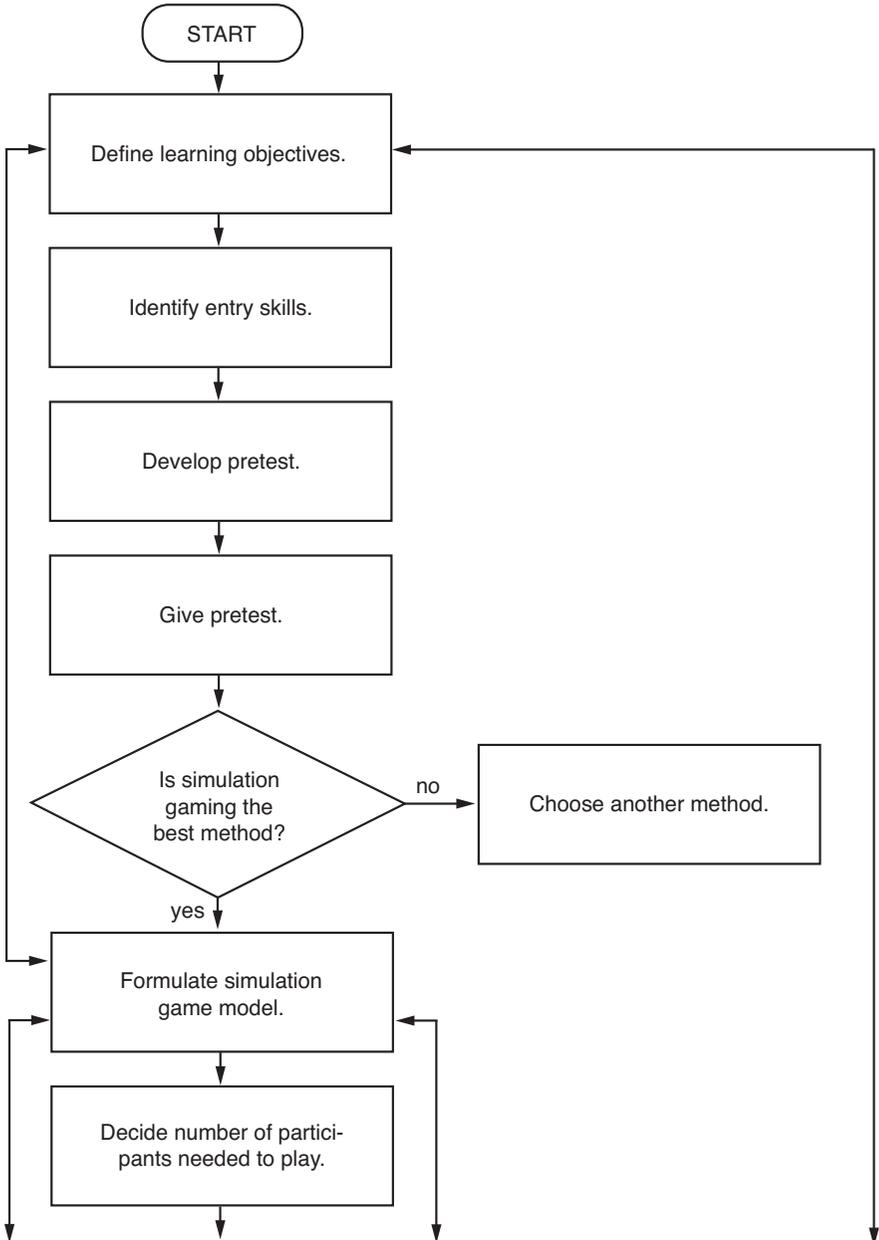
- Does the college have facilities for printing copies of the game?
- If so, how are these negotiated for?
- Are fees or charges to be permitted for allowing others to use the gaming materials?
- If so, are these to cover printing and developing costs only, or does the nurse educator expect to make a profit?

4. Purchase oilcloth or soft plastic and cut to size for a fold-up game board. Polyester paint, which is virtually nonremovable, can be used to paint on relevant information. It is suggested that the board be first sketched in pencil and then traced over with brush and paint.
5. Use large manila envelopes to hold smaller letter envelopes, which in turn are used to hold role cards, directions, assessments and other game materials. Again, paraffin wax protects the materials through many plays.
6. Find a box container company that makes various-sized boxes; one size may be the exact size needed to house simulation gaming materials, yet can be purchased in quantities at much lower cost than single boxes from a variety store.
7. Check out offset rates as opposed to copying rates; large quantities of score sheets or game directions can be offset by a college print shop.
8. Use soft materials to package simulation games if they are to be mailed. Burlap makes an attractive container for simulation game materials and is often lighter than a box. The burlap pouch can be placed inside a large padded mailing envelope and mailed safely and relatively inexpensively. Other soft materials can also be used, but all require sewing skills (two sides are sewn and a hook and eye used to hold the bag closed), special glue, or stapling equipment.
9. Use overhead transparency sheets or lightweight flexible plastic to protect game directions or manual covers. The sheets can be stapled to either side of a one- or two-page direction sheet, or they can be used as the front and back cover for participants' or instructors' manuals.
10. Browse through arts-and-crafts books. A local, general library collection usually includes many arts-and-crafts books that can supply ideas for inexpensive materials.

Special equipment (or an inexpensive facsimile) can often be found in variety, art, or hardware stores. Figure 3–4 shows a flow chart for a simulation game design.

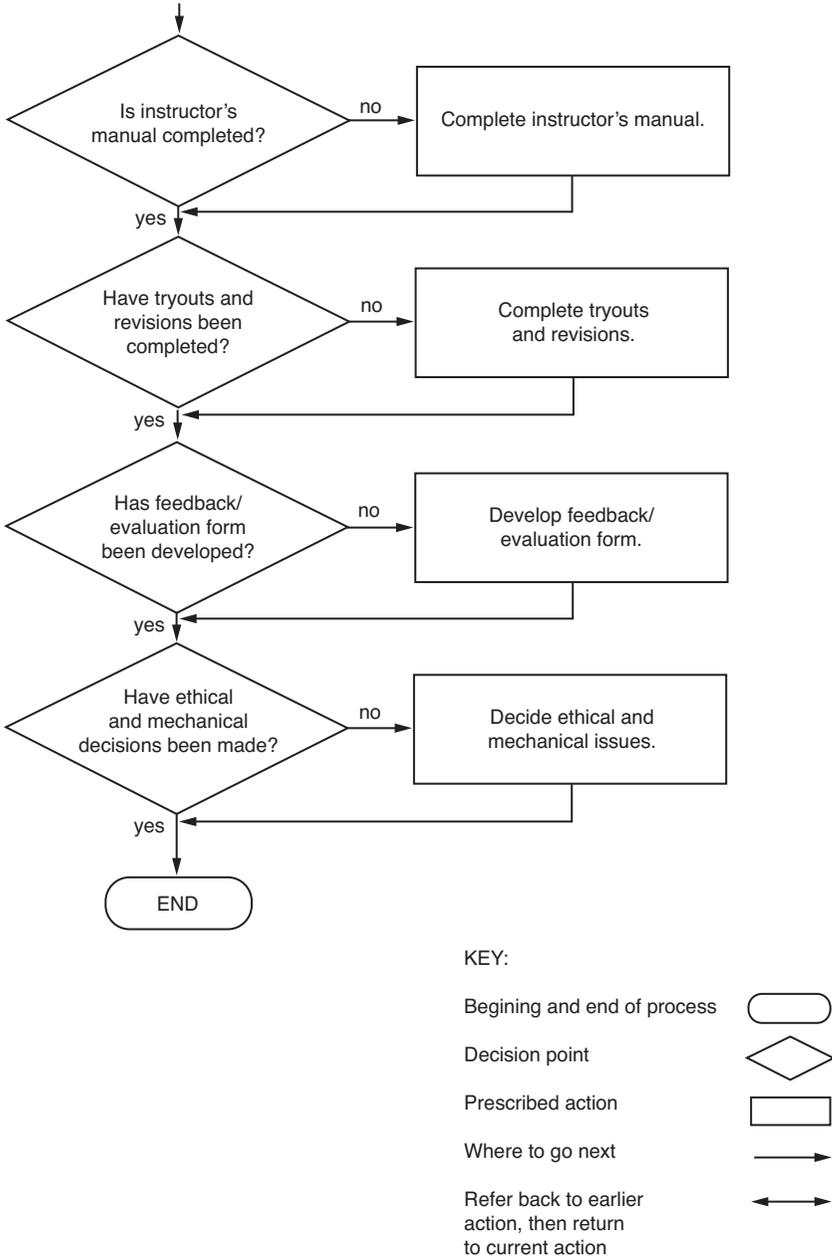
This chapter presented a rationale for using role playing, simulation, and simulation gaming. Process simulation theory and chaos theory provided the underpinnings for the methods. Differences among the three learning strategies as well as specific directions on how to develop, implement, and evaluate results were provided. Chapter 4 focuses on peer learning and other group methods, including working with large classes.

Figure 3-4 Flow chart for simulation game design



(continues)

Figure 3-4 Flow chart for simulation game design (continued)



EXERCISES FOR NURSE EDUCATORS

1. Matching learning objectives to method

Write down the learning objective(s) you wish to achieve. Then write down which of three formats (role playing, simulation, simulation gaming) you plan to use to meet your objective(s). Then tell why you chose the particular format rather than another.

2. Simulation flow chart

Draw a flow chart for a 20– to 60–minute simulation. Refer to Figure 3–2.

3. Simulation design

Design the materials needed to conduct the 20– to 60–minute simulation you have chosen, including:

1. Pretest
2. Materials to be used, such as guide, assessments, etc.
3. Role descriptions/scenarios
4. Props and other cues, such as signs, name tags, etc.
5. Sequence of action
6. Debriefing questions
7. Posttest

4. Instructor's manual

Design an instructor's manual for the 20– to 60–minute simulation you have chosen.

5. Feedback for simulation design

Design a feedback form to use in tryouts and revisions of the simulation.

6. Learn more about simulation/gaming

Do one of the following:

1. Read the latest issue of *Simulation & Gaming*.
2. Adapt or use someone else's simulation or simulation game in a nursing class or with colleagues.
3. Have a focus group with 4–10 learners and get their ideas about using simulations and/or simulation games in class. Be sure to provide definitions of both prior to asking learners for feedback.
4. Attend a simulation gaming conference or an educational conference that presents simulation and/or simulation gaming.

7. Evaluating simulation games

Evaluate at least one simulation game using the criteria listed in this chapter.

8. Running a simulation game

Choose a simulation game and complete the following tasks:

1. Become familiar with the materials, sequence of play, and directions.
2. Complete a run-through with a group of peers or friends.
3. Devise a list of potential difficulties in using the simulation game.
4. Decide how the game could be integrated into a course.
5. Try out the game with a group of learners or faculty.
6. Prepare questions to use in debriefing (if the game doesn't include them).

9. Simulation game flow chart

Draw a flow chart for a 20- to 60-minute simulation game. Refer to Figure 3–3.

ADVANCED LEARNING EXPERIENCES

10. Simulation game design

Design the materials and make decisions about the design of the simulation game based on the flow chart you developed.

11. Process simulation theory

Devise three ways to use process simulation theory.

12. Journal writing

Use journal writing excerpts to develop a paper suitable for publication.

13. Manikin

Write a scenario for a manikin like the one Cindy observed.

14. Research

Devise a role playing, simulation, or simulation gaming problem statement for a research study.

References

- Abramovich, E. (2006). Application of CBT in an inpatient setting: Case illustration of an adult male with anxiety, depression, and Axis II symptoms. *Clinical Case Studies*, 5, 305–330.
- Arco, L., & du Toit, E. (2006). Effects of adding on-the-job feedback to conventional analog staff training in a nursing home. *Behavior Modification*, 30, 713–735.
- Armstrong, J. S. (2000). Role playing: A method to forecast decisions. In J. S. Armstrong (Ed.), *Principles of forecasting: A handbook for researchers and practitioners*. Norwell, MA: Kluwer Academic Publishers. Retrieved September 26, 2006 from http://author.ecu.edu/csah/ah/upload/role_playing_byArmstrong.pdf

- Barach, P., Satish, U., & Strenfert, S. (2001). Health care assessment using simulation. *Simulation & Gaming, 32*, 147–155.
- Bender, T. (2005). Role playing in online education: A teaching tool to enhance student engagement and sustained learning. *Innovate, 1*, (4). Retrieved February 7, 2007 from <http://www.innovateonline.info/index.php?view=article&id=57>
- Blatner, A. (2002). *Role playing in education*. Retrieved February 2, 2007 from <http://blatner.com/dam/pdntbk/flplayedu.htm>
- Bodenman, G., Pihet, S., Shantinath, S. D., Cina, A., & Widmer, K. (2006). Improving dyadic coping in couples with a stress-oriented approach: A two-year longitudinal study. *Behavior Modification, 30*, 571–597.
- Boocock, S. S. (1994). The John Hopkins Games Program. *Simulation and Games, 25*(2), 172–178.
- Camino, E., & Calcagno, C. (1995). An interactive methodology for “empowering” students to deal with controversial environmental problems. *Environmental Education and Research, 1*(1), S9–74.
- Cooper, E. O. (2004). Federal grant helps nursing students boost their cultural sensitivity. *Quest (Winter)*, 1–4, 23. Retrieved February 9, 2007 from <http://www.odu.edu/ao/instdv/quest/sensitivity.pdf>
- Currie, C. T., Hoy, D., Tierney, A. J., Bryan-Jones, J., & Lapsley, I. (2003). HipMod: Development of a multi-agent audit-based computer simulation of hip fracture care. *Health Informatics Journal, 9*(3), 183–191.
- Dewey, J. (1963). *Experience and education*. New York: Collier Books.
- Duke, R. D. (1975). The unanticipated consequences of modifying learning games for research on social behavior. In J. Elliot and R. McGinty (Eds), *Proceedings of the 14th Annual Conference of the North American Simulation and Gaming Association*. Los Angeles: University of Southern California Press, 117–120.
- Earle, D. (2006). Surgical innovation: Surgical training and simulation lab at Baystate Medical Center. *Simulation & Gaming, 13*, 53–60.
- ExperienceBuilders. (2003). *A comparison of simulation-based and conventional training methods*. Retrieved October 1, 2006 from http://www.experiencebuilders.com/eb/why/white_papers/simulationeffectiveness.pdf
- Fagan, R. (2006). Counseling and treating adolescents with alcohol and other substance use problems and their families. *Family Journal, 14*, 326–333.
- Faria, A. J., & Wellington, W. J. (2005). Validating business gaming: Business game conformity with PIMS findings. *Simulation & Gaming, 36*(2), 259–273.
- Fisak, B. J., Oliveros, A., & Ehrenreich, J. T. (2006). Assessment and behavioral treatment of selective mutism. *Clinical Case Studies, 5*, 382–402.
- Frank, A. I. (2006). Three decades of thought on planning education. *Journal of Planning Literature, 21*, 15–67.
- Gebara, J., & Tashijan, H. (2006). End-of-life practices at a Lebanese hospital: Courage or knowledge? *Journal of Transcultural Nursing, 17*, 381–388.

- Gibbs, G. R., Doggett, C., & Frost, S. (2005). Virtual learning environments for efficient health service practitioner education. Proposal for health services in West Yorkshire. Retrieved September 27, 2006 from <http://www.hud.ac.uk/hhs/teaching/nursingvle.htm>
- Haddad, A. (2006). Playing a standardized patient in an ethics course: What nursing students learn. Creighton University. Retrieved February 1, 2007 from <http://chpe.creighton.edu/Chpe/snapshots/Haddad/nursing.pdf>
- Hecht, M. L., & Kreiger, J. L. R. (2006). The principle of cultural grounding in school-based substance abuse prevention: The drug resistance strategies. *Journal of Language and Social Psychology*, 25, 301–319.
- Inglis, S., Sammon, S., Justice, C., et al. (2004). Cross-cultural simulation to advance learner inquiry. *Simulation & Gaming*, 35, 476–487.
- Ip, A., Linsler, R., & Jasinski, M. (2002). *The zen of being an effective “Mod” in online role-play simulations*. Retrieved February 7, 2007 from <http://ausweb.scu.edu.au/aw02/papers/refereed/ip/paper.html>
- Jenkins, P., & Turick-Gibson, T. (1999). An exercise in critical thinking using role playing. *Nurse Educator*, 24(6), 11–14.
- Kendall, K. W., & Harrington, R. J. (2003). Strategic management education incorporating written or simulated cases: An empirical test. *Journal of Hospitality and Tourism Research*, 27, 143–165.
- Kirsh, B., & Tate, E. (2006). Developing a comprehensive understanding of the working alliance in community mental health. *Qualitative Health Research*, 16, 1054–1074.
- Lee, M., Hajek, P., McRobbie, H., & Owen, L. (2006). Best practice in smoking cessation services for pregnant women: Results of a survey of three services reporting the highest national returns, and three beacon services. *Journal of the Royal Society for the Promotion of Health*, 126, 233–238.
- Leigh, E. & Spindler, L. (2004). Simulations and games as chaotic learning contexts. *Simulation & Gaming*, 35(1), 53–69.
- Livingston, I. (1999). Role-playing planning public inquiries. *Journal of Geography in Higher Education*, 23(1), 63–76.
- Lotz, K. S. (2007). *Get real. Simulated patients and hospitals help boost not only the number of students reached, but how well they learn*. Retrieved March 12, 2004 from <http://www.nurse.com>.
- Lovecraft, A., Chapin, W. D., Parker, D. C. W., & Sadler, D. (2006, February). *Simulations and role playing (S&RP) ITrack Summary*. Presented at the 2006 APSA Teaching and Learning Conference Track Summaries. Washington, DC.
- Marks, M. & O'Connor, A. H. (2006). The round-robin mock interview: Maximum learning for minimum time. *Business Communication Quarterly*, 69, 264–275.
- Mayo Clinic. (2006). *Teaching the art of compassion: Herberger College of Fine Arts and Mayo Clinic partnership*. Retrieved February 1, 2007 from <http://community.uui.asu.edu/features.mayo.asp>.
- Meligrana, J. F. & Andrew, J. S. (2003). Role-playing simulations in urban planning education: A survey of learner learning expectations and outcomes. *Planning Practice & Research*, 18(1), 95–107.

- Mannick, F. (2005). Preventing STDs in African American and Latina girls. *The American Journal of Nursing, 105*(8), 22.
- Mercado, S. A. (2000). Pre-managerial business education: A role for role-plays. *Journal of Further and Higher Education, 24*(1), 117–126.
- Miaskowski, C. & Maxwell, T. L. (2002). *The art and science of pain management: The nurse's role in teaming with the clinician and empowering the patient*. Presented to the Twenty-Seventh Annual Congress of the Oncology Nursing Society. Retrieved September 26, 2006 from http://www.cmecorner.com/macmem/ons/ons2002_12.htm
- Nelson, D.L., & Blenkin, C. (2007). The power of online role-play simulations: Technology in nursing education. *International Journal of Nursing Education Scholarship, 4*(1), 1-12.
- Peters, V. A. M., & Vissers, G. A. N. (2004). A simple classification model for debriefing simulation games. *Simulation & Gaming, 35*(1), 70–84.
- Petranek, C. F., Corey, S., & Black, R. (1992). Three levels of learning in simulations: Participating, debriefing, and journal writing. *Simulation & Gaming, 23*(2), 174–185.
- Pham, L. B., & Taylor, S. E. (1999). From thought to action: Effects of process-versus outcome-based mental simulations on performance. *Personality and Social Psychology, 25*(2), 250–260.
- Raelin, J. A., & Coghlan, R. (2006). Developing managers as learners and researchers: Using action learning and action research. *Journal of Management Education, 30*(5), 670–689.
- Randel, J. M., Morris, B. A., Wetzel, D., & Whitehill, B. V. (1992). The effectiveness of games for educational purposes: A review of the research. *Simulation & Gaming, 25*, 261–276.
- Rohrbach, L. A., Grana, R., Sussman, S., & Valente, T. W. (2006). Type II translation: Transporting prevention interventions from research to real-world settings. *Evaluation and the Health Professions, 29*, 302–333.
- Ryan, T. (2000). The role of simulation gaming in policy-making. *Systems Research and Behavioral Sciences, 17*, 359–364.
- Schwartz, M. S., & Weber, J. (2006). A business ethics national index (BENI): Measuring business ethics around the world. *Business and Society, 45*, 382–405.
- Shepherd, A. & Cosgriff, B. (1998). Problem-based learning: A bridge between planning education and practice. *Journal of Planning Education and Research, 17*, 148–357.
- Staib, S. (2003). Teaching and measuring critical thinking. *Journal of Nursing Education, 42*(1), 498–508.
- Taylor, S. E., Pham, L. B., Rivkin, I. D., & Armor, D. A. (1998). Harnessing the imagination: Mental simulation, self-regulation, and coping. *American Psychologist, 53*(4), 429–439.
- Taylor, S. E., Pham, L. B., Rivkin, I., & Armor, D. A. (1998). Harnessing the imagination: Mental simulation and self-regulation of behavior. *American Psychologist, 53*, 429–439.
- Teed, R. (2006). *How to teach using role-playing*. Retrieved January 22, 2007 from <http://serc.Carleton.edu/introgeo/roleplaying/howto.html>
- University of New Mexico College of Nursing. (2006). *Teaching and learning strategies*. Retrieved September 27, 2007 from http://hsc.health.unm.edu/consg/critical/role_playing.shtml.

