The Use of Trivial Pursuit in Teaching Community Living Skills to Adults With Developmental Disabilities

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Key Words: games • independent living • mental retardation • services, occupational therapy

The use of gaming provides variety, motivation, and renewed interest in activities developing community living skills. In this study, Trivial Pursuit, a popular adult game, was adapted for use with 16 adults with mental retardation attending a developmental center day treatment program. Game questions were developed for six categories of independent living based on the McCarron-Dial Street Survival Skills Questionnaire (SSSQ) and Curriculum Guide. A two-group, pretest-posttest design was used to evaluate the effectiveness of the game in teaching independent living skills. An analysis of variance on the measurement scale and for the total score on the SSSQ indicated significant differences in improvement rate after eight sessions with the game. Additionally, subjects found the Trivial Pursuit format interesting and absorbing. Results suggest that the gaming approach can be a valuable adjunct to traditional independent living training programs.

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Deinstitutionalization and normalization for people with mental retardation and developmental disabilities have been major trends for several years. These trends have been strengthened by the notion that all people, regardless of their mental or physical condition, should be exposed to conditions of living that are culturally normative (Wolfensberger, 1972). To benefit from these changes, people with mental retardation need to develop skills that will enable them to function as independently as possible in the least restrictive environment. Linkenhoker and McCarron (1983) suggest that these skills can be categorized into nine content areas: basic concepts; functional signs; tool identification and use; domestic management; health, first aid, and safety; public services; time; money; and measurement. Examples of skills for these areas appear in Table 1.

While the development of these skills is within the scope of many occupational therapy programs provided for adults with mental retardation, the therapeutic interventions being used within the programs are not always adequate to meet clients' needs. Standardized step-by-step programs, such as the Murdoch Center C & Y [Children and Youth] Program Library (Wheeler, Miller, Duke, Salisbury, Merritt, & Horton, 1977) or curricula containing behavioral objectives based on task analyses, are currently being used to teach people with mental retardation functional skills. These programs use an operant and often mechanistic intervention approach and rely on the use of prompting and positive reinforcement (Fredericks, 1980). In these programs, there is minimal variation in the methodology used for each client. This provides the consistency which is necessary for people with mental retardation to acquire new skills. However, it does not afford these persons the opportunity to make decisions or solve problems, which is equally important. The authors of these programs contend that the reinforcers used, the speed with which prompts are faded and new training steps introduced, and the option to modify the program enable the program to be individualized. However, this type of standardized program seems to vary in degree rather than style and does not recognize individual styles of learning.

Typically, occupational therapists and educators have used repetitious, rote, and drill exercises to teach community skills to the people with mental retardation. With drill and practice exercises, one client is usually receiving instruction or training while others are waiting for their turn. This wastes valuable therapy time. Moreover, drill exercises are often monotonous and do little to promote or sustain the client's interest. Handouts can be used in a group situation, but clients quickly lose interest in activities directed by handouts. This type of medium also has
limited use with clients who are mentally retarded and have motor handicaps.

Other methods therapists have used to develop community living skills include group discussion and role-playing. Several problems have been found with these methods. Participation in discussion requires a high level of verbal skill and the ability to attend to primarily verbal stimuli. These activities require the client to wait while others play out a situation and talk, which is difficult to do for clients functioning at a lower level, especially in large groups. Maintaining the clients’ interest and motivation in an activity is a major problem that therapists must contend with when using these techniques. Furthermore, the children’s play materials that are often used to help develop the skills of these adult clients can be infantilizing. Needed are age-appropriate activities that have practical relevance and motivational interest for the individual person (Kielhofner & Miyake, 1981).

The inadequacies of traditional therapeutic media and activities and the program constraints have created a need for occupational therapists to develop innovative methods of therapeutic intervention to facilitate the development of community living skills. Ideally, a therapeutic intervention program should enable an adult client with mental retardation to develop community skills in as functional a situation as possible.

**Literature Review**

Many authors have discussed the importance of and the implications for play and specifically games as treatment modalities used by occupational therapy personnel. The use of play and games as therapy is congruent with several occupational therapy frames of reference, including occupational behavior.

Kielhofner and Miyake (1981) suggest that play enables an individual to “process latent learning by increasing the general stock of knowledge that the person can draw upon in later circumstances” and that games should be included as “legitimate media for practice” (p. 375). According to Li (1981), an individual develops social and cognitive competencies through play. Florey (1971) also stresses the importance of play in development and states that “play can best be thought of as a learning process” (p. 276) that is intrinsically motivating. The key to intrinsic motivation is the pleasure inherent in the activity (Florey, 1969). White, according to Florey (1969), suggests that intrinsic motivation develops through play. For play to occur, and thereby to facilitate learning, White has suggested that the following variables are necessary: (a) an environment with human and nonhuman objects that allows for exploration, repetition, and imitation; (b) an environment that is free from stresses and is not associated with negative feelings; and (c) novelty in the nonhuman environment since “novelty is the stimulus that directs the intrinsic system” (p. 321). Play, according to Michelman (1971), allows individuals to acquire feelings of competence and mastery over themselves and the environment.

Games enable an individual to become an active participant in the learning process, and they are fun. Gordon (1970) has suggested that gaming formats are most effective in educational settings when used in conjunction with other media as an integral aspect of the program. She further stated that games can be used as a motivational technique, which in itself would be sufficient to warrant their use. Games are goal directed—the objective of winning provides a strong motivational force as does the game process itself. Since games require active participation, the individual playing the game is able to make decisions, solve problems, and become the initiator of events. In addition, games provide intrinsic and prompt feedback, which has been found to be a valuable reinforcement of learning (Gordon, 1970).

In occupational therapy, Hurff (1981) used adapted board games with people who have developmental disabilities to teach them daily living skills. She developed four different games to teach skills in money management, the use of public transportation, socialization, personal care, and cooking to 25 adolescents and adults who were mentally retarded. She discussed several advantages of using games as a treatment intervention: Games provide satisfying social experiences for, and increase communication among, the players; they also sustain interest and

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Skills Evaluated by the SSSQ</th>
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<td>Content Area</td>
<td>Skills</td>
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<tr>
<td>Basic concepts</td>
<td>Color recognition, color matching, spatial and quantitative concepts</td>
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<td>Functional signs</td>
<td>Sign and symbol recognition</td>
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<td>Tool identification and use</td>
<td>Tool recognition, function of specific tools and tool sets</td>
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<td>Domestic management</td>
<td>Ability to use utensils and appliances for food preparation and clothing maintenance</td>
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<tr>
<td>Health, first aid, and safety</td>
<td>Personal health care, hygiene, first aid and safety skills</td>
</tr>
<tr>
<td>Public services</td>
<td>Public transportation, shopping and post office services, banking, telephone and directory use</td>
</tr>
<tr>
<td>Time</td>
<td>Analog clock time, timed activities, digital time, calendar time</td>
</tr>
<tr>
<td>Money</td>
<td>Coin and currency identification, money equivalences, making change</td>
</tr>
<tr>
<td>Measurement</td>
<td>Temperature, liquid and linear measures</td>
</tr>
</tbody>
</table>

Note. For categorization of Content Areas refer to *Adaptive Behavior: The Street Survival Skills Questionnaire Manual* (pp. 8, 9) by D. Linkenhoker and L. McCarron, 1983, Dallas, Common Market Press. SSSQ = Street Survival Skills Questionnaire.
attention and provide a nonthreatening atmosphere in which participants can take risks and develop relationships. Finally, the skills and concepts learned by the individual person can be reviewed and practiced in games to reinforce learning (Hurff, 1981).

Foxx, McMorrow, and Schloss (1983) developed and evaluated a social skills training program for adults and adolescents with mental retardation which incorporates the commercial board game Sorry. They found that social skills such as politeness, conversation, and the ability to deal appropriately with compliments, criticism, confrontation, questions, and answers were improved by the program. In a related study, Foxx, McMorrow, Storey, and Rogers (1984) found that the Sorry game format could be used successfully to train these subjects in other social/sexual skills. In both these studies the authors found that the skills could be applied to other social situations.

This paper will describe a study designed to develop and evaluate the effectiveness of an adapted Trivial Pursuit game in teaching functional community skills to adults who are mentally retarded. The study evolved from a need for therapeutic interventions that provide novelty, are rewarding, are age-appropriate, and can be used in the large group situations typically found in developmental day programs. Trivial Pursuit was chosen because it was popular among nonhandicapped adults and had received much publicity, making it appealing and somewhat familiar to these clients.

Method

Subjects

Sixteen mentally retarded adults participating in occupational therapy programs at a day program center within a residential facility were selected as subjects. Subjects were assigned to experimental or control groups based on existing occupational therapy program schedules and constraints. It was arbitrarily decided that subjects scheduled for morning occupational therapy programs would serve as the control group and that subjects in afternoon occupational therapy programs would constitute the experimental group. There were 3 female and 5 male subjects in the experimental group, and six female and two male subjects in the control group. The subjects’ age range was 21 to 54 years, with the mean age being 35 years. The level of the mental retardation was profound in 2 subjects, severe in 9 subjects, and moderate in 5 subjects. Nine subjects were functioning in the severe range of adaptive behavior and 7 in the moderate range, as measured by the AAMD Adaptive Behavior Scale (Nihara, Foster, Shellhaus, & LeAnd, 1975). All subjects were able to communicate verbally. Six subjects had seizure disorders. No other physical disabilities were present.

Game Description/Materials

The game developed is an adapted version of Trivial Pursuit. A series of questions based in part on the McCarron–Dial Street Survival Skills Questionnaire (SSSQ) and its accompanying Curriculum Guide (Linchenkoper & McCarron, 1979) were developed for the following six categories: functional signs, domestic/measurement, health and safety, time and money, social skills, and public services and occupations. Each category contains 100 questions of varying levels of difficulty and corresponds to a color on the game board. (See Appendix 1 for sample questions from each category.) Each question is written on a color-coded index card. Some questions simply require a verbal response whereas others require the player to do something. The materials required for the game are as follows: Trivial Pursuit game board, markers and pie pieces, dice, adapted questions, clock with easily movable hands, ruler, 12-oz measuring cups, assortment of coins and bills, telephone, and sample menu.

The rules of the game were modified and are as follows:

1. Each player rolls the dice to determine who takes the first turn. The player with the highest number goes first, and the other players follow in a clockwise direction.
2. The player rolls the dice and moves his or her marker accordingly.
3. The therapist picks a card of the appropriate color and reads the question to the player.
4. A player receives a “pie” for a correct answer on any space of the board.
5. Each player takes only one turn at a time, regardless of whether or not his or her answer is correct.
6. If the player lands on a space that is the color of a pie that he or she already has, it will be his or her option to choose another category.
7. The therapist also encourages players to discuss each question after an answer has been given.
8. The therapist provides verbal prompts and cues to the player if he or she is having difficulty in answering a question. Whether or not a player will receive a pie for a correct answer after prompting is determined on an individual basis and left to the discretion of the therapist.
9. The first player to receive six different colored pies is the winner of the game. If the therapy session ends before the game is completed, the player with the most pies is considered to be the winner.
Instrument

The SSSQ was used to measure community living skills. It was administered according to standard procedures, both before and after the 8-week intervention period. The nine component scales for the SSSQ are as follows: (a) basic concepts, (b) functional signs, (c) tools, (d) domestics, (e) health and safety, (f) public services, (g) time, (h) money, and (i) measurements (Linkenhoker & McCarron, 1979).

Procedure

Subjects in both the experimental and control groups were seen in their occupational therapy programs for approximately 2 hours per week. However, for 8 consecutive weeks, subjects in the experimental group played the game for one of these hourly therapy sessions each week. During the other therapy hour, the experimental group subjects were exposed to the traditional therapeutic methods such as handouts, drills, and role-playing. The subjects in the control group experienced only the traditional therapeutic methods during the 8-week study period.

Results

The tabulation of the results was based on the SSSQ component scales 2, 4, 5, 6, 7, 8, and 9. Component scales 1 and 3 were omitted from the analyses because no questions in the adapted Trivia game were based on these categories. Table 2 shows the pre- and posttest means for the component scales and the total, in scaled scores, as well as the differences between the pre- and posttest scores.

When analyses of variance were performed on all pretest scaled scores, significant differences at the $p < .05$ level were found between the experimental and the control groups for component scales 5 and 6, health and safety and public services, respectively, and for the total scores. This indicates that there were significant preintervention differences between the two groups.

The analyses of variance performed on the differences between the pre- and posttest scaled scores were statistically significant for component scale 9, measurement, ($F_{1,14} = 7.62, p < .02$) and for the total score ($F_{1,14} = 4.98, p < .05$). While not statistically significant, this finding suggests greater improvements were made in all seven skill areas by the experimental group than by the control group.

Discussion

Overall, both experimental and control group subjects improved their total scaled scores. This suggests that both of the occupational therapy interventions—traditional and gaming—can be useful in improving performance on community living skills.

The greater improvements in scaled scores for the experimental group (see Table 1) suggest further that the adapted Trivial Pursuit game had an effect over and above that derived from the traditional occupational therapy intervention. This is consistent with Gordon's (1970) belief that integration of gaming into the regular program improves effectiveness. It also supports the notion that games are a viable therapeutic medium for occupational therapy.

It is interesting to note that measurements, the component scale with the significant difference in scores, is the skill area with which subjects were least familiar and which presented the greatest difficulty. This may indicate that an enriched approach is most useful with new or difficult information. The finding that the total scaled score difference was significant while the majority of the component scale scores was not may be explained by the wide range of scores between subjects and the small study size. However, it may also be the cumulative effect of multiple small changes across subtests, which create a larger overall change, that can be seen as significant.

The study has several limitations. First, subjects were not selected or assigned to groups randomly; a convenience sample based on existing therapy programs and schedules was used. There were several differences between the groups prior to the implemen-
mentation of the intervention, which resulted in the significant differences found for component scales 5 and 6 and the total pretest scores. One difference was that there were more male subjects in the experimental group (5 out of 8 subjects) and more female subjects in the control group (6 out of 8 subjects). Other possible differences might be prior community experience, participation in other day treatment programs, and age.

Second, 3 subjects in the control group were seen in occupational therapy programs directed by a therapist other than the author. This may mean that the treatment conditions between groups may not have been consistent: Different therapists may present the same material with different emphasis, style or feedback, either increasing or decreasing the changes desired.

Third, the study was conducted over a relatively short time period of 8 weeks. This may be inadequate for measuring total potential change. The SSSQ manual suggests a timeframe of 6 months between pre- and posttests. Both novelty and test effects may also affect the results in such situations. The ability of the study population to remember and learn from test questions is rather limited, however.

Fourth, the validity of the questions used in the game was not predetermined. However, most of the questions were based on the SSSQ Curriculum Guide, which has been pretested with this general population and on the SSSQ questions, which have been found to have acceptable content validity (Linkenhoker & McCarron, 1983).

Games are important in engaging people in learning experiences, improving their socialization and peer interaction, providing them with motivation, and getting them absorbed for extended periods of time without their seeming to be aware of the passage of time (Shrears & Bower, 1974). Our clinical study supports these notions. Although improvements on all the SSSQ component scales were not statistically significant, learning of community living skills apparently did occur. Scaled scores did improve, and clinical observations indicated that the subjects answered game questions with increased skill and were able to use skills such as functional signs and money management on community outings. Furthermore, the subjects enjoyed playing the game, remained interested throughout the therapy session, and often asked to play the game again the next time they attended occupational therapy. However, overuse of the game should be avoided to keep the interest and motivational levels high. An additional benefit of the game approach is the spontaneous interaction that occurred between subjects while they played the game. With these clients, such interaction does not typically occur in therapy.

The Trivia game used in the study provided novelty and was intrinsically motivating, two characteristics Florey suggests are important to learning (Florey, 1969, 1971). The Trivia game also allowed the subjects to test themselves against others in a nonterroring situation, which is important for the development of competence (Florey, 1969, 1971).

Currently, nonhandicapped adults have much interest in Trivia games as a leisure activity. The use of the adapted game with adults who are mentally retarded will enable them to participate in the same type of leisure activity, thereby fostering normalization. The adapted Trivial Pursuit game developed for this study appears to be a viable medium to use in therapy to facilitate the development of functional community living skills. It also appears to be effective in improving socialization and peer interaction, in motivating individuals, and in providing adults with mental retardation with an age-appropriate leisure time activity.

Appendix 1

The following are sample questions used in the adapted Trivial Pursuit game. A complete list of questions will be provided upon request.

Functional Signs
1. What does this symbol mean—picture of pedestrian crossing symbol?
2. Which of these signs means a place to go to eat your lunch—Restaurant or Restroom? (Subject points to correct word.)
3. What does this word mean—Flammable?
4. What word is this—Push?
5. If this word (Closed) was on the door of a store, could you go in?

Time and Money
1. Which is longer—a week or a month?
2. How many minutes are in an hour?
3. If you buy a candy bar that costs 20 cents and you pay for it with a quarter, how much change do you get back?
4. How many cents are in a half-dollar?
5. Move the hands of the clock so that the time reads 1:30.

Domestic Skills and Measurement
1. How do you buy butter, by the pound or by the dozen?
2. What happens if you put ice cream in the refrigerator?
3. Name at least three things you can eat for a good breakfast?
4. Measure the line on this card. How many inches is it?
5. How do you know when water is boiling?

Health and Safety
1. Name three things that are poison.
2. What would you do if you burned your hand on the stove?
3. What should you do if you hear the fire alarm?
4. What is a cavity?
5. Why do you have to be careful when you use a knife or scissors?
Social Skills
1. When should you say, “Excuse me”?
2. Should you get in a car with a stranger? Why or why not?
3. What happens if a person always tells lies?
4. What does it mean to pay someone a compliment?
5. If your friend were sitting alone and crying, what could you do?

Public Services and Occupations
1. What does a plumber do?
2. How much does it cost to make a call from a pay telephone?
3. What can you buy in the post office?
4. In a restaurant, what does it mean when you say you’re leaving a tip?
5. What does yellow mean in a traffic signal?

References