

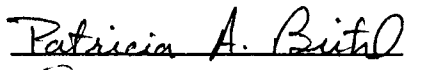
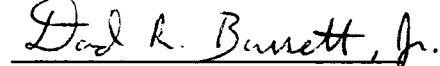
To the Graduate Council:

I am submitting herewith a thesis written by Melanie F. Collins entitled "Evaluation of Disability Simulations as a Teaching Tool for Undergraduate Students in Recreation and Related Fields."

I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Recreation and Leisure Studies.

  
Mary Dale Blanton, Major Professor

We have read this thesis  
and recommend its acceptance:

Accepted for the Council:

  
Associate Vice Chancellor and  
Dean of the Graduate School

EVALUATION OF DISABILITY SIMULATIONS AS A TEACHING TOOL  
FOR UNDERGRADUATE STUDENTS MAJORING IN RECREATION AND  
RELATED FIELDS

A Thesis

Presented for the

Master of Science

Degree

The University of Tennessee, Knoxville

Melanie Collins

December 1995

This thesis is dedicated to the "nontraditional student".  
When you read this you will know if this means you.

YOU CAN DO IT.

## ACKNOWLEDGMENTS

I acknowledge, with heartfelt appreciation, Dr. Mary Dale Blanton, whose teaching techniques inspired me to pursue this study and whose guidance and support enabled me to turn inspiration into a completed thesis. I also acknowledge Dr. Pat Beitel not only for all she has done to help me complete this study but for all that she does for the students who cross her path at The University of Tennessee. Dr. David Bassett was willing to give his time and attention to this study when he had, among other things, his own research to attend to. Having made that commitment, he was always available and supportive of my process and showed an interest in my research topic.

I thank Dr. Gene Hayes for providing me with the opportunity to pursue my graduate degree, something I had wanted to do for many years, through a graduate research assistantship with the TRACT grant, and for the many valuable experiences I had in the community and classroom as a result.

I appreciate many people, such as the jury of experts, who freely contributed their time and experience to help me with this study. What I learned from this process and from the people I have mentioned goes far beyond the pages of this study, and I thank them for their part in this rich experience.

## ABSTRACT

The purpose of this study was to design a set of disability simulation activities and to determine the logical validity of the activities for use as a teaching tool for students preparing for careers in recreation and related fields. The general circumstances of three disabilities, spinal cord injury, visual impairment and hearing impairment, were defined and were then evaluated by a jury of experts. This is referred to in the study as the Definition of Circumstances. The definitions described the physical, environmental and psycho-social circumstances of each of the disabilities.

Four disability simulation activities were designed, including parameters, rules and instructions for participation. The activities were evaluated by the jury of experts for logical validity. It was determined that each of the four disability simulation activities provided a sampling of the circumstances of each of the disabilities as defined in the Definition of Circumstances. The four activities were attending a campus sports event, attending a movie, bowling two to three games, and attending a live performance.

Forty-seven university students in an undergraduate therapeutic recreation class participated in the disability simulation activities as a class assignment. Of the 47 students in the class, 42 voluntarily participated in the study by contributing a written evaluation of their simulation experience on a non-standardized questionnaire containing open-ended questions. Each participant chose a partner/observer who also responded, in writing, to the simulation experience. The respondents described their thoughts, feelings and reactions to the physical, environmental and psychological/social experiences during the disability simulation activities. One class session was

devoted to a group discussion to provide participants with the opportunity to verbalize their thoughts, feelings and reactions after participating in the disability simulation activity.

Participants were assigned at random to one of three disabilities: spinal cord injury, visual impairment or hearing impairment. Participants then chose the activity they would attend from the four activities that were evaluated by the jury of experts. The rules, parameters and instructions were reviewed in class before beginning the simulation.

After the participants completed their written responses, the contents were examined for frequency of similar responses. The content of the participants' and the partner/observers' responses on the evaluations reflected the issues discussed in the Definition of Circumstances for each of the disabilities. For example, defined environmental barriers, such as accessibility of facilities and problematic interactions with non-disabled people, appeared frequently in the participants' and partner/observer's responses to the disability simulation experience. Psycho-social factors discussed in the Definition of Circumstances were represented in the responses, such as adjustment to life changes as a result of a disability, stress experienced by family and friends in the adjustment phase of a disability, and self-image. The defined physical circumstances of the need to develop daily living skills and learn to negotiate one's environment was well reflected in the responses.

Results of the study are summarized by the following statements.

1. The general physical, environmental and psycho-social circumstances of each of the three disabilities (spinal cord injury, visual impairment and hearing impairment) were defined by the Definition of Circumstances.

2. Each of the four disability simulation activities provided an opportunity for sampling the circumstances as defined.
3. The students' responses to participation in the disability simulation activities demonstrated that they sampled the circumstances, as defined, of the disability they assumed.

Results of the study led to three conclusions: (a) Disability simulation activities can be designed which will provide participants with a sample experience of having the disability, (b) Participation in disability simulation activities promotes specific changes in awareness and perception about the disability which participants can articulate, and (c) Disability simulation activities can be an effective tool for education and awareness when purposefully designed and when implemented with structure.

Recommendations for further study include replicating the study to establish reliability, assigning participants to an activity as well as a disability, and assigning each participant to more than one activity while simulating the same disability.

## TABLE OF CONTENTS

| CHAPTER . . . . .                                                          | PAGE |
|----------------------------------------------------------------------------|------|
| I. INTRODUCTION . . . . .                                                  | 1    |
| Purpose of the Study . . . . .                                             | 5    |
| Definition of Terms . . . . .                                              | 5    |
| Assumptions of the Study . . . . .                                         | 7    |
| Delimitations of the Study . . . . .                                       | 8    |
| Limitations of the Study . . . . .                                         | 8    |
| Significance of the Study . . . . .                                        | 9    |
| II. REVIEW OF LITERATURE . . . . .                                         | 11   |
| Introduction . . . . .                                                     | 11   |
| Attitudes Toward People with Disabilities . . . . .                        | 12   |
| Disability Simulations as an Intervention<br>for Attitude Change . . . . . | 24   |
| Use of Disability Simulations in Therapeutic<br>Recreation . . . . .       | 28   |
| Summary . . . . .                                                          | 30   |
| III. PROCEDURES . . . . .                                                  | 31   |
| Population . . . . .                                                       | 31   |
| Identification of the Sample . . . . .                                     | 32   |
| Determination of the Instrument . . . . .                                  | 33   |
| Criteria for Determining the Disability Simulation<br>Activities . . . . . | 35   |
| Selection of Jury . . . . .                                                | 36   |

| CHAPTER . . . . .                                     | PAGE |
|-------------------------------------------------------|------|
| III. (Continued)                                      |      |
| Administration of the Instrument . . . . .            | 37   |
| Disability Simulation Activities Assignment . . . . . | 38   |
| IV. ANALYSIS AND DISCUSSION OF DATA . . . . .         | 40   |
| Description of Participants . . . . .                 | 40   |
| Evaluation of Definitions of Circumstances and        |      |
| Discussion . . . . .                                  | 41   |
| Development and Evaluation of Disability Simulation   |      |
| Activities . . . . .                                  | 45   |
| Evaluation of Student Participants' Responses and     |      |
| Discussion . . . . .                                  | 52   |
| V. SUMMARY AND CONCLUSIONS . . . . .                  | 61   |
| Summary of Procedures . . . . .                       | 61   |
| Summary of Findings . . . . .                         | 63   |
| Conclusions . . . . .                                 | 64   |
| Implications . . . . .                                | 64   |
| Recommendations for Further Study . . . . .           | 65   |
| REFERENCES . . . . .                                  | 66   |
| APPENDICES . . . . .                                  | 70   |
| APPENDIX A. Participant Information and Consent Form  | 71   |
| APPENDIX B. Guidelines for Participants and           |      |
| Partner/Observers . . . . .                           | 74   |
| APPENDIX C. Participant Evaluation of Experience and  |      |
| Partner/Observer Evaluation on Experience             | 76   |
| APPENDIX D. Definitions of Circumstances . . . . .    | 79   |

|             |                                               |     |
|-------------|-----------------------------------------------|-----|
| APPENDIX E. | Part A: Definition of Circumstances:          |     |
|             | Disability Simulation Evaluations             | 88  |
| APPENDIX F. | Disability Simulation Activities              | 92  |
| APPENDIX G. | Equipment and Instructions                    | 94  |
| APPENDIX H. | Part B: Simulation Activities: Disability     |     |
|             | Simulation Checklist                          | 97  |
| APPENDIX I. | Student Responses: "Participant Evaluation of |     |
|             | Experience"                                   | 102 |
| VITA        |                                               | 115 |

## LIST OF TABLES

|          |                                                                       |    |
|----------|-----------------------------------------------------------------------|----|
| TABLE 1. | Evaluation of Definition of Circumstances .                           | 42 |
| TABLE 2. | Visual Impairment Evaluation . . .                                    | 46 |
| TABLE 3. | Hearing Impairment Evaluation . . .                                   | 47 |
| TABLE 4. | Spinal Cord Injury Evaluation . . .                                   | 48 |
| TABLE 5. | Activities attended by students during<br>disability simulation . . . | 52 |

## CHAPTER 1

### INTRODUCTION

Forty million Americans live with at least one physical or mental disability (Havens, 1992). There is a growing awareness of the need to remove the barriers that prevent people with disabilities from full realization of their potential for quality of life and contribution to society (Weisgarber, 1991). The Americans with Disabilities Act, passed into law in 1990, clearly establishes a mandate for eliminating environmental barriers that affect the quality of life for people with disabilities (Havens, 1992).

Attitude is a powerful component of the barriers experienced by people with disabilities. Our society's negative attitudes and perceptions of people with disabilities create more of a barrier than the physical environment or the limitations imposed by the disability itself (Gething, 1992; Weisgarber, 1991; Dattilo & Smith, 1990). Culturally-influenced attitudes are difficult for individuals to change (Raines, 1987). Professionals who work with people with disabilities have not escaped the tendency to hold attitudes about their clients which create barriers for the client (Giangreco, 1993; Paris, 1993; Gething, 1992; Tripp, 1988; Hamilton & Anderson, 1983). Nevertheless, these professionals have a particular responsibility to examine their attitudes toward people with disabilities for three reasons: (a) a professional who works with an individual with a disability influences the client's self-concept, (b) professionals make decisions about provision of services which affect their clients' quality of life, and (c) professionals who work with people with disabilities influence the attitudes of the general public (Gething, 1992; Weisgarber, 1991; Dattilo & Smith, 1990; Mobily, 1985).

ERIC and Sport Discus searches revealed that many studies have been conducted to assess the attitudes of health, human service and education students and professionals toward people with disabilities. These studies provide several examples of attitudes that need to be addressed among professionals who work with people with disabilities (Paris, 1993; Gething, 1992; Tripp, 1988). One example is Gething's study of attitudes of students and practicing professionals in health professions (Gething, 1992). Gething reported results indicating that health professionals may stereotype individuals with visible physical disabilities via the phenomenon of "spread of effect" (Gething, 1992; Maurer, 1987). This phenomenon describes the typical reaction to an individual with a physical disability; the observer assumes that the disability impairs the total person (Gething, 1992; Maurer, 1987).

In addition to studies of professionals' attitudes, the research literature also contains several studies designed to assess the effectiveness of curricular and professional teaching tools or interventions designed to change attitudes toward people with disabilities (Bhushan, Sanders & Puckett, 1994; Giangreco, 1993; Wesson & Mandell, 1989; Raines, 1987; Maurer, 1985). According to the literature the two teaching tools, or interventions, that are most effective and most commonly employed to examine the process of attitude change toward people with disabilities are: (a) providing information, and (b) contact, or exposure (Raines, 1987). Simulating a disability is a "contact/exposure" type of teaching tool.

Research literature in education, health and other human service professions has discussed role playing in the form of disability simulation tasks for at least the past twenty years (Bhushan, Sanders & Puckett, 1994;

Wesson & Mandell, 1989; Raines, 1987; Clore & Jeffrey, 1972). Simulating a disability is an experiential teaching tool which provides an opportunity for a person to sample the experience of living with a disability. Simulating a disability involves dealing with physical challenges of the environment, facing personal challenges created by the attitudes and perceptions of others toward the individual who is role playing having a disability, and, often, experiencing intense personal emotions evoked by these situations.

As college students prepare for careers working with individuals with disabilities, disability simulations may help them better understand the people they will be working with by providing "a more concrete experience than does a classroom lecture" (Bhushan et al., 1994).

In a recent study using a qualitative research method, Bhushan et al. (1994) asked the question, "How is a student's perceptions about disability influenced when he or she has a simulated experience of carrying out common activities as a person with a disability?" (ibid., p. 17). The subjects were undergraduate and graduate students enrolled in a graduate level course dealing with "special needs populations" (Bhushan et al.). Nine students out of a class of twenty-eight students volunteered to participate in the study. The academic majors of the nine students (all Caucasian, mean age 25.5 years) were child and family studies, counseling psychology, human services, and speech and hearing.

The simulation was conducted within the first few weeks of the course. Although only nine subjects participated in the study, all class members participated in the disability simulation. Students drew a piece of paper out of a hat describing a particular disability. Class instructors then provided the subjects with materials needed to simulate the disability (e.g. wheelchair, ear

plugs, etc.). Students were given a list of typical daily campus activities, such as using a pay phone or finding the call number for a book in the library, and were instructed to perform as many of the tasks as possible in one hour. Specific instructions, including safety instructions, were given for each disability being assumed.

In order to enhance safety, all students were paired with a partner whose assumed disability allowed for abilities that compensated for the partner's assumed disability.

Data was collected by using a "non-standardized interview question with a written response" (Bhushan et al. 1994). Students were given ten minutes to write their responses to the direction "Tell about your experience of being exceptional today" (Ibid.). Written responses were typically one page in length. The researchers read all nine statements and analyzed the data by looking for emerging themes. The researchers identified three major themes: (1) feelings about the situation (physical and psychological), (2) reactions of others, and (3) the effect of this experience on students' thinking about exceptionality.

The authors concluded that the subjects' disability simulation experience improved their awareness of the complex factors of living with a disability. Reactions of other people appeared to have a strong impact on the participants' feelings about the experience. The researchers also stated that the participants' written reflections indicated that the simulation activity "educated (them) in a way that other experiences failed to do" (Bhushan et al).

### Purpose of the Study

The purpose of this study was to design a set of disability simulation activities and to determine the logical validity of the activities for use as a teaching tool for students preparing for careers in recreation and related fields.

The sub-problems addressed were:

1. Define the circumstances associated with each of three different disabilities.
2. Develop and evaluate a set of disability simulation activities to correspond to one or more of the circumstances defined in sub-problem #1, to include parameters, rules, and instructions.
3. Evaluate the students' response to the disability simulation activity following their participation.

### Definition of Terms

Attitude: A belief or opinion based on one's perception.

Circumstances: The conditions that accompany or affect the state of having the disability.

Disability: Any condition which interferes with an individual's ability to use the mind or body to autonomously perform routine daily living skills, social skills, or physical or mental activities.

Disability Simulation Activity: A role play in which a participant assumes, as closely as possible, the characteristics of a particular disability and engages in specific tasks in real-life situations. For example, in order to simulate having

paraplegia, a participant remains in a wheelchair for two hours with legs tied together and follows instructions to travel, by automobile, from his/her dorm room on a college campus to eat at a restaurant off campus.

Equipment: Objects that are used to accomplish a task. The equipment used in the disability simulations are used to accomplish the task of assuming, as closely as possible, a specific disability.

Jury of experts: A group of individuals who have knowledge, experience or expertise about a subject which enables them to make judgments about information on the subject. In this study, the jury of experts will consist of individuals who are experts because they have formal training and experience with people with disabilities or they have the personal experience of living with a specific disability.

Logical validity: Also known as face validity; the condition in which a test is determined valid through definition.

Parameter: An established constant which provides form and structure for a function.

Perception: An understanding, view or awareness, obtained through the senses.

Rules: Regulations which dictate actions or procedures. In this study, rules are established for consistency of procedures in carrying out the disability simulation activities.

Simulation: An imitation or substitution of another event or object. In this study, simulation is the imitation of having a disability by using equipment and guidelines to limit the use of a physical function that participants would normally have (eyesight, hearing, ability to use legs).

### Assumptions of the Study

This study is designed based on the following assumptions

1. Experiential interventions can be valuable teaching tools for preparing students who will work with individuals with disabilities.
2. Each disability simulation task, once approved by a jury of experts, will provide a sample experience of living in the everyday world with a particular disability.
3. The participants will be capable of following the specific directions of the assigned disability simulation task.
4. The participants will respond honestly on the evaluation instrument.
5. Perceptions and attitudes of the participants engaging in the disability simulation activities can be evaluated by the instrument used.

### Delimitations of the Study

This study was delimited to the following parameters:

1. The subjects are undergraduate college students majoring in recreation or a related field, enrolled in a recreation course on special populations.

2. Three disability simulations are used (spinal cord injury, visual impairment and hearing impairment) which include specific instructions regarding task, setting (environment), and safety guidelines.
3. Participation or non-participation has no effect on grade or other standing of any student in the class.
4. Disability simulation activities are conducted within a four week time period.

#### Limitations of the Study

1. Subject selection is limited to a college class and is not random.
2. The disability simulations are of limited duration and therefore can only approximate the experience of having the actual disability.
3. The limited duration of the simulations does not allow for experiencing the process of adapting to a disability.
4. Results of the study are affected by the participants' level of willingness to follow the instructions and guidelines. Participants will not be observed by a researcher during the disability simulation activities.

#### Significance of the Study

Several studies have been conducted which indicate the need for change of attitude on the part of human service and education professionals toward people with disabilities (Paris, 1993; Gething, 1992; Tripp, 1988; Raines, 1987). Studies also indicate that the most effective way to change attitudes is through a combination of accurate information and contact/exposure, which includes the use of role plays such as disability simulations.

Research can be found on the use of disability simulations as interventions to promote change in attitude and/or perception in students preparing for education, health, and human service professions (Bhushan, Sanders & Puckett, 1994; Raines, 1987; Wesson & Mandell, 1985). A review of literature reveals that no similar studies are available in the field of therapeutic or community recreation. The Americans with Disabilities Act provides for the inclusion of people with disabilities in community recreation programs and services. Students in community recreation, therapeutic recreation and related fields will interact frequently with individuals with disabilities and will be service providers for these individuals. Professional development of students in these fields must include the development of an advocate stance and formation of healthy attitudes toward people with disabilities (Dattilo & Smith, 1990). Disability simulation studies are needed in these fields to provide important information for selection of curriculum which best prepares these students to assist people with disabilities in moving toward realizing their potential and satisfying their need to participate in community.

A review of literature also indicates that the results of disability simulation studies are inconsistent regarding the effectiveness of disability simulations as a teaching tool for preparing students to work with people with disabilities. Authors of studies argue that inconsistent results may be the result of inconsistent methodology, including questionable measurement instruments (Raines, 1987). Effectiveness of disability simulations have been studied for approximately the past twenty years. No studies were found throughout this time period which attempted to establish a consistent method of using this intervention.

This study will attempt to establish logical validity of specific disability simulations. Repeated use of these simulations in other studies could establish a consistent method for investigating their effectiveness at helping to prepare students who will, within the scope of their professions, provide services for individuals with disabilities.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

The attitudes and perceptions our society holds toward people with disabilities have been the subject of many studies. Some studies address the nature of commonly held attitudes and perceptions. Some studies attempt to identify interventions which affect change in those attitudes and perceptions. For approximately the past twenty years, disability simulations have been used in studies as an intervention for changing attitudes and perceptions of students and professionals in special education, rehabilitation counseling and related fields, toward people with disabilities.

Students majoring in therapeutic recreation, general recreation and related fields will become service providers, when they enter their professions, for people with disabilities. Students preparing for these professions need the opportunity to examine their personal attitudes and perceptions toward people with disabilities. Therapeutic recreation majors will work primarily with people with disabilities. General recreation majors and other students who will work in both the public and private sector will be expected to provide services for people with disabilities as a result of the mandate of the Americans with Disabilities Act. The literature is currently lacking in studies of interventions for attitude change within the field of recreation. Previous studies using disability simulation to affect attitude change in other fields provide a frame of reference for similar studies with students preparing for careers in therapeutic recreation, general recreation and related fields.

The primary purpose of this study is to establish the validity of the design of a set of disability simulation activities, and to assess the affects of participation in the disability simulation activities on the perceptions and attitudes of college students toward individuals with disabilities.

The topics discussed in this review have been organized in the following manner: (1) the study of attitudes toward people with disabilities, (2) intervention strategies designed to change attitudes toward disability, (3) use of disability simulation in therapeutic recreation and related fields, and (4) summary.

### Attitudes Toward People with Disabilities

The attitudes and perceptions of people without disabilities toward an individual with a disability can significantly affect that individual's quality of life (Weisgarber, 1991; Hallenbeck & McMaster, 1991; Dattilo, 1990; Raines, 1987; Maurer, 1985). In our society, attitudes and perceptions of the non-disabled toward people with disabilities tend to include the belief that such people are different and are less than equal (Gething, 1992).

While attitudes of the general population of non-disabled people affects the quality of life of people with disabilities, the attitudes and perceptions of professionals who function in a helping role have an even more significant impact on quality of life for a person with a disability (Gething, 1992; Weisgarber, 1991; Tripp, 1988). Health, human service, education and other professionals come into contact, in a helper role, at crucial stages of the disabled individual's development or rehabilitation. The attitude of the professional strongly affects the extent and appropriateness of the treatment,

the outcome of rehabilitation, and the individual's psychological and social adjustment (Paris, 1993; Gething, 1992; Weisgarber, 1991; Mobily, 1985).

The attitudes and perceptions of non-disabled professionals toward people with disabilities was addressed In a 1979 handbook published by the U.S. Department of Education. The handbook was designed to prepare vocational educators to work with students with disabilities who would be coming into the vocational classroom. The handbook included a description of nine negative attitudes typically held by persons without disabilities that perpetuate the discomfort with and avoidance of persons with disabilities. The nine attitudes of non-disabled persons that were described are: (1) apathy, (2) assumptions of inferiority, (3) fear of embarrassment, (4) fear of change, (5) focus on the disability rather than on abilities, (6) lowered expectations of ability and achievement, (7) paternalism, (8) stereotyping and (9) spread of effect (Maurer, 1985).

Spread of effect applies particularly to individuals with visible physical disabilities. It refers to the phenomenon in which judgments made by others about one's visible features tend to "spread" and lead to assumptions about characteristics which have nothing to do with the visible feature (Gething, 1992). For a person with a visible physical disability, the phenomenon involves assumption that the total person is impaired by the disability (Maurer, 1985; Gething, 1992).

Despite the importance of the professional's attitude toward an individual with a disability, studies indicate that the attitudes of professionals who provide services for people with disabilities and students training for these professions are similar to or more negative than the attitudes held by the general public (Giangreco, 1993; Paris, 1993; Gething, 1992; Weisgarber, 1991;

Raines, 1987; Hamilton & Anderson, 1983). Following are two examples of literature reflecting attitudes of those in the "helper role" toward people with disabilities.

The history of the American Association for Mental Retardation provides an example of how the attitudes of professionals toward persons with disabilities can affect quality of life of that individual. Formed in 1876, the original organization was titled "The Association of Medical Officers of American Institutions for Idiots and Feeble-minded Persons." The organization's purpose was to "promote examination of the causes, conditions and statistics of idiocy" and to "lend its influence to the establishment and fostering of institutions for this purpose" (Scheerenberger, 1983). In 1907, the name was changed to "The American Association for the Study of the Feeble-minded" and in 1933 it became the American Association on Mental Deficiency" (ibid.). At the organization's annual symposium in 1987, the association changed its name to its current title, "The American Association for Mental Retardation."<sup>1</sup> These name changes alone reflect an ongoing evolution of attitude toward individuals with the disability of mental retardation.

Tripp (1988) compared the attitudes held by 38 physical education teachers (mean age 40.2 years) and 47 adapted physical education teachers (mean age 35.5 years) toward individuals with disabilities. All had been teaching for at least five years in a public school district in Los Angeles County,

---

<sup>1</sup>This information was obtained by this writer by reviewing the AAMR journal collection in the library at University of Tennessee, Knoxville.

California. None of the physical education teachers had ever taught in adapted physical education.

Tripp used two attitude measurement instruments with each subject group. The first instrument, the "Attitudes Toward Disabled Persons Scale-Form B" contains 30 statements about people with disabilities. Respondents indicate their level of agreement with the statement on a Likert Scale ranging from (a) I agree very much to (f) I disagree very much. The second instrument was called "Rank Orders of Preferences for 10 Handicapping Conditions : (a) Close Friend, and (b) Self-Affliction." (Tripp, 1988). Subjects ranked 10 types of disability by preference, with "1" meaning "most preferred" and "10" meaning "least preferred" (Tripp, 1988).

Means of both groups were below the scale median on the Attitude Toward Disabled Persons scale. On the "Rank Orders" scale, both groups showed they would prefer for a close friend to have either an amputation or a harelip. Both groups showed lowest preference for a close friend with cerebral palsy or emotional disturbance. Self conditions most preferred by both groups were having an amputation or a stutter, and conditions least preferred were being blind or emotionally disturbed.

Tripp (1988) refers to limitations of this study but does not specify them. The author summarized the study by emphasizing that the difference in attitudes between the two groups was nonsignificant and that the scores indicated that both groups held negative attitudes toward people with disabilities. Tripp (1988) notes that there is limited research on physical education teachers' attitudes toward students with disabilities, despite the fact that the attitude of teachers toward students with disabilities affects the students' educational and social adjustment. Tripp recommends that further

research should include assessment of the reasons that some disabilities are viewed more positively than others.

Many studies have gone beyond simply examining attitudes of professionals in order to look for interventions which may produce positive attitude change (Paris, 1993; Raines, 1987; Hamilton & Anderson, 1983). The literature reveals two dominant interventions used to attempt to improve attitudes toward people with disabilities: (1) providing information, and (2) contact/exposure (Paris, 1993; Gething, 1992; Bedini, 1991; Raines, 1987). Equal-status contact with a person with a disability is described, in some studies, as the most consistent promoter of positive attitude (Paris, 1993; Gething, 1992; Sable, 1992). Equal-status contact refers to the disabled and non-disabled person being similar in age and/or educational, social or vocational status, or having other common characteristics through which two individuals relate to each other.

Several studies have used contact/exposure as an intervention for changing attitudes toward people with disabilities. Raines (1987) cites Donaldson's 1980 review of literature on interventions designed to change attitudes of people without disabilities toward people with disabilities. In Donaldson's literature review, the two themes or categories of interventions, (1) providing information and (2) contact/exposure, are presented. Contact/exposure can be live, audiovisual, structured or spontaneous (ibid., p. 5). The two themes or categories, providing information and contact/exposure, are present in the descriptions of studies that follow in this section of the literature review. Role playing, or simulation, is an extension of the contact/exposure category and will be discussed separately in a later section.

Gething (1992) examined the influence of an individual's visible physical disability, gender, and manner of behavior, and the effects of the interactions of these three variables, on the impressions formed by health professionals toward that individual. The author establish four hypotheses, summarized as follows: the effects of physical disability, gender, and manner (shy, neutral or brash) in a person on videotape would each significantly affect how that person is rated on a Semantic Differential scale, and also that these three characteristics would interact to influence Semantic Differential ratings.

The sample consisted of a combination of undergraduates in the health profession and practicing health professionals, totaling 636 subjects (436 females, 200 males). All subjects were enrolled in classes at one of two universities in Sydney, Australia either to obtain a degree or to obtain post graduate continuing education. Ages ranged between 19 and 65 years with a mean of 22.95 years and a standard deviation of 8.43. Eighty undergraduates were students in (in descending order of N), medicine, physiotherapy, occupational therapy, speech pathology, health record administration and nursing. The practicing professionals were nurses (N=139) and rehabilitation counselors (N=8).

The intervention consisted of twenty-minute videotapes portraying a twenty-year-old person interviewing for a job at a bank with a personnel officer of the same gender. Twelve videotaped "interviews" were made. Six pairs of videos matched manner (shy, neutral and brash), and applicant's gender so that those two variables were constant. The only variable that was manipulated between the two groups of viewers was the applicant's use of a wheelchair in one each of the pairs of videos.

Subjects were told that they would be participating in an investigation of how people form opinions of one another. Groups of twenty-five subjects at a time watched a version of the video tape, without knowledge that there were any other versions of the video tape.

Data was collected by giving the subjects a version of a Semantic Differential Scale immediately after watching the videotape. Subjects were instructed to respond to the scale as though they were the personnel officer.

Gething chose to use a version of the Semantic Differential Scale as the instrument to measure attitudes toward people with disabilities based on an argument he cites by Hennerson, Morris and Fitz-Gibbon that "it is useful for testing hypotheses in areas where people are likely to have strong emotions, but not well-thought out opinions" (Gething, 1992). Three developmental areas were addressed by the adjectives chosen for the instrument: social adjustment, coping-succumbing and psychological adjustment.

Results of the study provided support for the first three hypotheses. The fourth hypothesis, regarding effects of the interaction between the first three characteristics, was not statistically supported. Results of the Semantic Differential Scale clearly showed that the presence of the wheelchair led to overall devaluing of the person in the wheelchair, as subjects' perceptions of wheelchair users were significantly higher on the negative end of the bipolar adjectives ratings than the subjects' perceptions of the non-wheelchair users in all three developmental areas, for example: social adjustment (less likeable, more selfish, more cruel, less intelligent), coping-succumbing (more passive, more incompetent, less attentive), and psychological adjustment (less confident, more anxious, more mentally unstable).

Gething speculates that health professionals' negative attitudes toward people with disabilities may be a result of their level of contact. Health professionals generally come into contact with the person with a disability at a stage of crises or profound adjustment, rather than at a well-adjusted stage when the individual is fully participating in community. This is the stage at which the client with a disability needs help from the health professional in developing a sense of personal strength, power and responsibility. Gething states "Results reported in this paper suggest that such an orientation is not currently prevalent among health and service professionals" (1992).

Gething also states that the most important challenge for rehabilitation and inclusion is the attitudinal barrier, and health professionals need to focus on strategies for removing this barrier by changing their own attitudes. The Disability Awareness Package (Gething, 1992), designed for professional training, is discussed as an intervention for fostering attitude and awareness change among health professionals toward individuals with disabilities. The package includes educational videos, demonstrations, and simulation exercises.

Paris (1993) conducted a study of a similar subject group in the U.S. but using different methodology. The purpose of this study was to determine if attitudes toward people with disabilities differ among health professionals according to current professional status. The subjects were health-care students and practicing health-care professionals in the San Francisco Bay area. Student subjects were 297 medical and dental students. Eighty-two subjects were first-year medical students, 31 were first-year dental students and 112 were fourth year medical students. 46.5% of the students subjects were male and 53.5% were female. The mean ages of first-year medical students, first-year dental

students and fourth-year medical students were 24 years, 25.5 years, and 28.3 years, respectively. Of the 72 subjects who were health-care professionals, 58.3% were male and 41.7% were female. The age range for males was 21 to 59 years. The age range for females was 20-59 years. The professions represented by the subjects were physician, nurse, ophthalmologist, optometrist and psychiatrist. The method of the study was a survey. The "Attitudes Toward Disabled Persons scale-Form B" was used as the instrument. Paris states the "Attitudes Toward Disabled Persons scale is the best known and most extensively used and researched scale measuring general attitudes toward people with physical disabilities" (1993) and discusses the strengths and limitations Form B of the scale. Strengths of the scale listed by the author are: (1) established internal consistency and reliability (coefficients range from .72 to .87 for split-half reliability, and .71 to .83 for test-retest reliability), (2) established content, criterion-related and construct validity, (3) the scale measure attitudes of people with disabilities toward themselves as well as attitudes of people without disabilities toward people with disabilities, and (4) the description of people with physical disabilities is presented in a positive tone.

Criticisms of the Attitudes Toward Disabled Persons scale discussed by the author of the study are: (a) its structure is unidimensional, (b) the positively and negatively worded statements are not equally balanced, (c) it does not distinguish between disabilities in general and specific disabilities, and (d) some of the statement items do not distinguish between high and low scorers.

Data distribution and collection involved distributing 851 surveys to mailboxes at the schools or hospitals chosen for the study. In addition to the

survey, each subject completed a demographic questionnaire which also asked for information about the subject's history of amount and type of contact with people with disabilities.

39% of the first-year medical students, 43.8% of the fourth-year medical students, 51.4% of the dental students and 26.8% of the health professionals responded to the survey. Paris acknowledges that low response rate from health-care professionals affected the study because the small sample size may not represent the study's population of health-care professionals, biasing the results toward more positive attitude scores than is truly representative of the population group.

Results of the study showed that fourth-year medical students' attitudes toward people with disabilities were significantly more positive than first-year medical students' attitudes. Health professionals' attitude scores were lower (more negative) than fourth-year students, but not significantly lower.

The themes of providing information and contact/exposure as attitudinal change agents for people without disabilities toward people with disabilities emerge here; Paris cites several studies which support the suggestion that medical school curriculum and other health care curriculum may be responsible for more short term improvement in attitudes of the fourth-year students toward people with disabilities. The curricula which appear to be responsible for this change operate from a patient-orientation model rather than disease-orientation model, and put students in regular contact with people with disabilities as part of the medical training (Paris). This curriculum trend was present in the schools attended by the study's subjects.

Giangreco (1993) studied the personal experiences of 19 general education teachers regarding having had a student with a disability in his/her class within the preceding three years. The subjects (14 females, 5 males) were each from one of ten Vermont public schools, teaching kindergarten through ninth grade. Years of teaching ranged from two to twenty-one years.

All were certified in general education; three also had special education certification. Two of the 19 subjects stated they received inservice training on inclusion of students with disabilities into the general classroom. All 19 subjects had support from a classroom paraprofessional, special educators and other related service personnel. Giangreco (1993) states that "the majority" of the subjects either volunteered or were asked but not required to accept the student with disabilities into the classroom. The author does not specifically state what percentage of the 19 subjects fits this category.

Data collection involved semi-structured, tape-recorded interviews using a set of questions which could be asked in nonstandardized ways and in different order. Interviewers asked follow-up questions to verify accuracy of the subject's responses. Additionally, each subject completed a survey pertaining to demographic information such as subject's age, years of teaching experience, grade taught, etc.

Giangreco (1993) conducted data analysis by listening to all tape-recorded interviews, reading all transcripts from the interviews, and using categorical coding. Themes emerged and were reviewed by interviewers on the research team for consistency with their interview experiences with the subjects. Results of the analysis from the interview data were sent to all 19 subjects along with a report describing the general background of the subjects. Subjects were also sent a "member-check" which asked them to respond to questions

regarding: (1) accuracy of the subject background information, (2) consistency of the report findings with the subject's personal experience and (3) satisfaction level regarding maintenance of subject anonymity. Space was provided for additional comments that might help the researchers improve the accuracy of the report. 18 of the 19 subjects responded; all 18 responded positively to the three areas on the "member-check" survey. Two of the 19 subjects responded negatively regarding overall results of the study.

Giangreco (1993) describes the results of the study using the theme of transformational experience, based on the subjects' change from negative attitudes and perceptions of the student to positive attitudes and changes in behavior toward the student. Giangreco (1993) states that the following factors commonly related to the subjects' transformation experiences: (a) the subject developed a willingness to get to know the student, (b) the subject became willing to change his/her attitude toward the student, and (c) the subject developed interest in learning the skills needed to teach the student.

Giangreco also states the following about subjects who had a transformational experience: "Teachers described an emerging recognition that their initial expectations regarding the student with disabilities were based on unsubstantiated assumptions...teachers also reported beginning to view the child as a person rather than a disability, and they established a personal relationship with the student" (1993).

Following are representative statements by subjects from this study (Giangreco, 1993), reflecting the theme of contact/exposure as an intervention for change in attitude toward people with disabilities.

"I just realized that he had been in my classroom for a month or so, and I had no contact with him really. I have a student in my classroom, and I don't think I have even touched him... I had so much physical contact with all the other first

graders, patting them on the back, going up to them and talking to them. Other than saying "Hi Jon" when he came into the room, I basically didn't have any contact with him. I started realizing at that point that I have got to have some impact on him. He's one of my students. I had always said, "I have 13 students plus Jon," and then I realized: Why am I saying "plus Jon"? He's one of my students..."

"I started watching my own regular classroom students. They didn't treat him any differently. They went about their business like everything was normal. So I said, "If they can do it, I can do it." He's not getting in their way, they're treating him like everyone else. "

"They (students in class) were always letting me know when I forgot something. 'You didn't remember to include Sarah.' So they were very good at letting me know...Now that I have dealt with her, I have rolled her down the hill and I've taken her sliding with the other kids and stuff. She's a little girl like everyone else."

### Disability Simulations as an Intervention for Attitude Change

Disability simulations can be defined as "models or imitations of the disabling condition" (Carroll, 1991). Disability simulations have been used for the many years to sensitize teachers, health professionals, and students preparing for careers in special education, rehabilitation counseling and related fields to the needs and experiences of their future clients (Hallenbeck & McMaster, 1991; Wesson & Mandell, 1989; Raines, 1987).

Girl Scouts of America organization is dedicated to inclusion and to quality of life for youth with disabilities. The organization published a training manual for inclusion of youth with disabilities which contains disability simulation activities, including explicit instructions for leading participants through the simulations and briefing and debriefing participants before and after the simulation. The simulations are designed to assist troop members

and adult leaders in understanding "the reactions of a person with a disability to the barriers in the community" (Carroll, 1991).

The benefit of disability simulations is that they provide an opportunity to sample the experience of living with a disability. Maurer (1985) quotes Clore & Jeffrey from their 1972 study in which non-disabled students assumed a disability, stating that this experiential technique had "immediate and long-term effects on interpersonal attitudes toward (the) disabled " The simulation experience involves dealing with the physical challenges of the environment, the personal challenges created by the attitudes and perceptions of others toward the individual who is assuming the disability, and, often, the intense personal emotions evoked by the combination of these challenges (Bhushan et al., 1994; Hallenbeck & McMaster, 1991; Maurer, 1985). "Just as helping a blind person across the street is different from navigating a busy intersection when one is blind, a simulation of a handicapping condition is qualitatively different from seeing an instructional video tape, hearing a classroom lecture or interacting with a person with a disability" (Bhushan, Sanders & Puckett, 1994).

Another potentially beneficial aspect of disability simulations is that studies report changes in perception and attitudes on the part of an active observer of the participant engaged in a disability simulation. Raines (1987) again refers to Clore and Jeffrey's study to explain that the change agent for the observer appears to be observation of the person simulating the disability as he or she deals with real-life situations. Participant-observer pairs may both potentially experience attitude change from the simulation experience.

Raines conducted a study in 1987 for the purpose of examining "the relationship between reactions to an assumed disability task and how

disabilities are perceived" (1987). The author states that past studies of interventions designed to change attitudes toward people with disabilities have produced very inconsistent results. The author contends that this may be due researchers' assumptions that attitudes consist of only one dimension; positiveness-negativeness. The most commonly used instrument, the Attitudes Toward Disabled Persons, is discussed in terms of its limitations: (a) It is highly reactive and "susceptible to faking in the positive direction" (Raines, 1987); and (b) it is unidimensional (measures only positiveness-negativeness). Raines refers to studies which demonstrate that attitudes and perceptions of disabilities may more accurately be measured by a Multidimensional Scale method.

Raines studied the affects of participation in disability simulations on 18 undergraduate students (15 males and 3 females) enrolled in a rehabilitation counseling course. The subjects assumed two disabilities: one-hand bound and two-hands bound. Subjects were assigned three tasks: a private dinner, a public dinner, and studying in a library. Each task was done two times for a minimum of one hour: once with one hand bound and once with two hands bound. Before and after participating in the tasks, each subject completed ratings forms for three areas established by using multidementional scaling analysis: Visibility, Functional-Organic and Severity.

Results of the study indicated that the student's perceived level of threat in a task or situation determined the change in perception and attitude toward having a disability. Raines stated that emotional discomfort created by perceived threat in a new situation was a positive and perhaps necessary factor in producing cognitive changes in the understanding of having disability.

Raines' conclusions were that assuming a disability simulation task is an effective means of altering rehabilitation students' perceptions of disability and attitudes toward a person with a disability, and multidimensional studies may be more appropriate for measuring these changes than unidimensional attitude scales.

Recommendations for further research were disability simulation studies which focus on disability simulation tasks with greater and lesser degrees of perceived threat than those in this study, a larger sample size, and a control group.

There is a proliferation of literature on attitudes toward people with disabilities and on interventions which may promote attitude change. Generally, there are positive reports in the literature about simulations as an intervention for developing sensitivity toward people with disabilities. Some authors argue that the positive reports are typically anecdotal and that empirical evidence is "controversial and incomplete" (Rickman, 1993). Rickman refers to three different studies: Clore and Jeffreys in 1972, Wilson in 1971 and Wilson and Alcorn in 1969, which indicate that simulations may not be effective and may actually be counter-productive if not used specifically as a tool for problem-solving (ibid).

Another question about the results arises from the literature review, which reveals that there has been little, if any, consistency in the design and implementation of the simulations. Pfeiffer (1980) conducted a four-year study of a classroom disability simulation exercise using a wheelchair. The students were in a Masters of Public Administration program and the class was a course in disabilities. The purpose of the study was to "measure the effect of the experience upon the students so as to judge its usefulness as a tool for

education and awareness" (Pfeiffer, 1980). Pfeiffer discusses the debate over the use of simulations, citing studies by Hallenbeck in 1984 and by Siperstein and Bak in 1980 which conclude that simulations teach more about dependency than about the disability itself, and tend to reinforce negative attitudes about having a disability. Pfeiffer (1980) contends that the problems with using disability simulations arise when they are not purposefully planned and structured. "Good educational experiences rarely happen spontaneously. When that does occur, careful planning usually prepared the way for it" (Pfeiffer, 1980). Effective simulation exercises include specific rules for participants to follow and opportunities for participants to freely discuss their feelings and thoughts following participation. In addition, simulation should "fit into an overall context" (Pfeiffer), such as a class.

Pfeiffer analyzed journals written by the students, describing their reactions to the wheelchair exercise, by taking a frequency count of statements reflecting feelings and reactions toward the exercise. The statements were counted as positive, negative or neutral in terms of attitude toward the exercise, the wheelchair, the disability, the self and others. Pfeiffer concluded that, overall, the simulation was effective in generating thoughtful comments about disability and in producing a positive effect on attitude of participants.

#### Use of Disability Simulations in Therapeutic Recreation

Review of literature in therapeutic recreation studies reveals an abundance of articles stressing the importance of the therapeutic recreation specialist's role in advocating for quality of life for people with disabilities (Havens, 1992; Bedini, 1991; Dattilo & Smith, 1990; Mobily, 1985). Studies can be found which demonstrate the effectiveness of using therapeutic recreation

interventions to bring about changes in attitudes of non-disabled participants toward people with disabilities (Sable, 1992; McAvoy, Schatz, Stutz and Others, 1989; Hamilton & Anderson, 1983). The importance of knowing how to choose interventions which promote success/self-mastery for an individual with disabilities is also addressed in the literature (Mobily, 1975).

The recreation therapist's clients will be individuals with disabilities, as is true for special educators, rehabilitation counselors and others. The literature is lacking in studies related to interventions to address the attitudes and perceptions of the student or professional in the field of therapeutic recreation. One article, written by Lian, Bowen & Egger (1985), describes an inservice training program designed to increase the competency of recreation leaders working with people with severe disabilities. The article includes a description of the training procedures, which includes three examples of partner role-plays in which one participant role plays a person with a disability and the other participant role plays the recreation leader dealing with the other participant's behavior. A competency checklist is administered to participants before and after participation in the inservice to measure their feelings about their proficiency at working with people with severe disabilities. This was the only article found which included the use of a simulation activity in therapeutic or general recreation, and the focus of this article was on providing an experience as a recreation leader, not as a person with a disability.

No other literature was found relating to use of disability simulations, or other interventions, for affecting attitude or perception change toward people with disabilities within the realm of professional training for therapeutic recreation or general recreation.

## Summary

The review of literature shows consistency in finding that attitudes toward people with disabilities tend to be negative and full of stereotyping. These attitudes are often held by professionals who work with people with disabilities as well as the general public. There is agreement in the literature that these attitudes affect the quality of life of a person with a disability.

Interventions discussed in the literature which promote awareness and change of attitude fall into two categories: (a) providing information, and (b) contact/exposure. Equal status contact appears to be most effective for increasing awareness and changing attitudes and perceptions. Disability simulation interventions are a type of contact/exposure.

Although studies often report positive results from using disability simulations as an intervention, some authors question the effectiveness of simulations and call attention to the need for more structure and purpose to the methodology when using simulations. Consistency among studies regarding the design of the simulations is also needed in order to assess the results more effectively.

Finally, because students in therapeutic and general recreation will become service providers for people with disabilities when they enter their professions, studies using disability simulations need to be conducted to determine if simulations are an effective teaching tool for students preparing for these professions.

## CHAPTER III

### PROCEDURES

The purpose of this study was to design a set of disability simulation activities and to determine the logical validity of the activities for use as a teaching tool for students preparing for careers in recreation and related fields.

The sub-problems addressed were:

1. Define the circumstances associated with each of three different disabilities.
2. Develop and evaluate a set of disability simulation activities to correspond to one or more of the circumstances defined in sub-problem #1, to include parameters, rules, and description of equipment.
3. Evaluate the students' response to the disability simulation activity following their participation.

The procedures for this section are presented as follows:

(a) identification of the population, (b) identification of the sample, (c) determination of the instrument, (d) criteria for determining the simulation activities, (e) selection of the jury, (f) administration of the instrument, and (g) disability simulation activity assignment.

#### Population

The population of the study consisted of 47 undergraduate university students enrolled in a course entitled "Therapeutic Recreation for Special

Populations.” The students’ majors include 31 therapeutic recreation majors, 12 general recreation majors, three exercise science majors and one child and family studies major. Each student obtained a partner/observer who participated by completing a questionnaire after observing the participant during the activity.

### Identification of the Sample

The subjects of the study were 45 students who volunteered to participate by contributing their written responses upon completing participation in the Disability Simulation Activities. Three of these students did not follow the established parameters of the simulation. As a result their responses could not be included in the data pool. The disability simulation activity was a class assignment whether the student participated in the study or not. Students were clearly told that there was no penalty for choosing not to participate (for example, grading).

Students were randomly assigned to one of three different disabilities. The number of participants was divided evenly into the three categories of disability: spinal cord injury/paraplegia, visual impairment and hearing impairment. The participants signed an informed consent statement (Appendix A) and the “Guidelines for Participants and Partner/observers” checklist (Appendix B) in order to participate in the study. Students selected an observer (friend, classmate, etc.) to monitor the experience for risk management purposes. The observer was also required to read and sign the Guidelines checklist.

### Determination of Instrument

The literature review indicated that studies lacked consistency in the way that disability simulations were structured and carried out. Studies did not discuss rationale for the disabilities chosen, and there were no indications that someone with a disability had helped design the simulations for that particular disability.

It was determined that, for this study, the disability simulations would be constructed and then rated for logical validity by a panel of experts.

A review of literature revealed that the majority of studies used the "Attitudes Toward Disabled Persons" scale to measure participant response to disability simulations and other interventions intended to improve perception and attitude of people with disabilities. This scale has been criticized, even by its author, for certain weaknesses. One weakness is that it measures only negativeness/positiveness. Another weakness is that there is a susceptibility toward "faking" answers, based on the attitude that the respondent would like to portray.

Due to the experiential nature of disability simulations, it was determined that for this study the participants could best evaluate their experience in their own words. The contents of the written responses were analyzed by counting the frequency of statements that reflected the physical, environmental, and psycho-social circumstances as defined for the study. The participants and their partner/observers each answered six questions on a non-standardized questionnaire (Appendix C) upon completion of participation in the disability simulation activity. The questionnaire primarily contained open-ended questions which corresponded to the definitions of circumstances used to validate the simulations. One question

asked the participants and the partner/observers to rate the activity, on a five point Likert scale, for its value as a learning experience.

The disability simulations for this study were designed using the following procedures:

1. A definition of circumstances was written for each disability, with the intent of describing the general physical, environmental and psycho-social circumstances of the disability (Appendix D).
2. A "Definition of Circumstances" evaluation (Appendix E) was designed, using a five point Likert Scale. The purpose of the evaluation was to have the jury of experts rate how well each written section (physical, environmental, and psycho-social) defined the circumstances of the disability.
3. Four recreational activities (Appendix F) were chosen to offer the opportunity to sample the circumstances as defined. Participants selected one of the four activities for recreation participation.
4. An "Equipment and Instructions" form (Appendix G) was prepared to explain to students how to assume the disability .
5. A "Guidelines for Participants and Partner/Observers" was constructed to give specific rules and parameters that would enhance safety and realism of the simulation.
6. An evaluation was designed to rate how well each activity provided the opportunity to sample the defined circumstances for each of the three disabilities (Appendix H). The evaluation used a five point Likert Scale to rate the activities. The "Equipment and Instructions" form and the "Guideline for Participants and Partner/Observers" form were also rated on how well they establish safety and consistency for the activities.

7. A written questionnaire was designed to evaluate participant and observer responses to the disability simulation experience. The questionnaire corresponds to the three circumstances (physical, environmental and psycho-social) described in the Definition of Circumstances.
8. A jury of experts was selected to read the circumstances and make corrections, recommendations and additions. The suggested changes were incorporated into the Definition of Circumstances.
9. The jury rated the definitions by completing the "Definition of Circumstances" evaluation. The experts evaluated how well the written section (physical, environmental, and psycho-social) defined the circumstances of the disability.
10. The jury rated each of the four activities on a Likert Scale for each of the three disabilities.
11. The results of the jury's ratings of the Definition of Circumstances and of the four activities were tabulated.
12. The jury of experts also reviewed and informally evaluated the questionnaire for the participants and observers and made suggestions for changes and/or improvements.

#### Criteria for Determining Disability Simulation Activities

For this study, three specific disabilities were chosen for the simulations: (a) spinal cord injury resulting in paraplegia, (b) visual impairment, and (c) hearing impairment. Feedback about the structure and content of the Definition of Circumstances and the disability simulation activities was obtained from individuals experiencing one of the disabilities. The three disabilities were chosen for the following reasons:

1. It is possible that the participants could acquire any of the disabilities.
2. All three disabilities can be simulated by limiting the use of one area of the senses (visual impairment, hearing impairment) or body movement (paraplegia).
3. Spinal cord injury was chosen because many people who experience spinal cord injury are in the same peer group as the student participants and observers (age, lifestyle, socio-economic background).

Literature review also indicated that disability simulations may be more effective when used as problem-solving experiences (Raines, 1987). Thus, the choices of tasks were all recreational activities, since the student participants were majoring in recreation or a related field.

### Selection of Jury

The jury was composed of ten members. Seven panel members were professionals who work with people with disabilities. Three members were individuals who have one of the specific disabilities being used in the disability simulation activities.

Jury members who reside and work in Knoxville, Tennessee were: a professor in the Rehabilitation and Deafness Department at University of Tennessee; a director of a recreation therapy department at a physical rehabilitation center; two special education teachers at Fort Sanders Education Center; a recreation therapist and director of activities at a sheltered workshop program; a licensed speech therapist; a student and mother who had a severe hearing impairment; a graduate student in therapeutic recreation who was politically active in local and state organizations addressing accessibility issues, who had spinal cord injury with paraplegia and used a wheelchair; an

attorney who had been blind since 18 months old and was a member of the American Blind Lawyers' Association and committee member for the East Tennessee Council for the Blind's Scholarship Committee for blind and visually impaired students. One expert was a special educator and Coordinator of Technology for Orange and San Diego County School Systems, lived in San Diego, California.

#### Administration of the Instrument

Forms were delivered to seven of the experts by the principal investigator, and forms and instructions were reviewed. Seven instruments were either completed or reviewed with the principal investigator present. Three evaluations were conducted with jury members by the principal investigator over the telephone. Notes were kept of all verbal suggestions and critiques from the experts. The following recommendations were made and followed:

1. Definition of Circumstances for spinal cord injury:
  - a. Include information on complete vs. incomplete injury.
  - b. Include home stairs, closets, bathrooms.
  - c. Include terrain: grass, dirt or sand, gravel.
  - d. Include attitudes of non-disabled about accessibility.
  - e. Use less complicated medical terms.
  - f. Give more detail about associated medical problems.
  - g. Include height of water fountains.
2. Definition of Circumstances for visual impairment:
  - a. Add information about curb cuts.

- b. Include more about daily living skills.
- 3. Definition of Circumstances for hearing impairment:
  - a. Include issue of body language.
  - b. Include issue of isolation in "psycho-social circumstances" section.
  - c. Improve terminology; hearing impairment is overall disability.
  - d. Refer to people who are "deaf" and who are "hard of hearing" when discussing the disability.
  - e. Correction: use the term "speech reading" instead of "lip reading."

#### Disability Simulation Activity Assignment

The disability simulation activities were conducted over a period of approximately two weeks. The students were assigned at random to one of the three disabilities by drawing a slip of paper out of a hat. Students were given the following forms:

- 1. List of activity choices
- 2.. Equipment and Instructions form
- 3. Guidelines for Participants and Partner/Observers form
- 4. Informed Consent letter
- 5. Participant Evaluation of Experience questionnaire
- 6. Partner/Observer Evaluation of Experience questionnaire

The 45 students who volunteered to participate in the study signed the informed consent form and the Guidelines checklist. The equipment was supplied to the students by the principal investigator. The instructions, guidelines and informed consent forms were reviewed and discussed in class. A person who has paraplegia and uses a wheelchair visited class to

demonstrate and teach students how to use a wheelchair before participants began the simulation activity assignment.

Upon completion of the assignment, participants returned the completed questionnaires. On a previously announced date, one class session was spent on a group discussion about thoughts and feeling related to participation in the simulation experience.

## CHAPTER IV

### ANALYSIS AND DISCUSSION OF DATA

This chapter will discuss the analysis of the data collected from the jury of experts and from the student participants. The information is presented as follows: (a) description of participants, (b) evaluation of definitions of circumstances and discussion, (c) development and evaluation of disability simulation activities, and (d) evaluation of student participants' responses and discussion.

#### Description of Participants

The students who volunteered to participate in the evaluation of the disability simulation activities were 45 students, of a total of 47 students, enrolled in an undergraduate recreation class that focused on special populations. Thirty-one of the students were therapeutic recreation majors. Ten of the students were private and commercial recreation majors. Three of the students were exercise science majors. One student was majoring in child and family studies. Each participant chose a partner/observer (most chose someone who is not a classmate) who accompanied them throughout the simulation activity. The partner/observers provided written feedback describing their responses to the experience via a questionnaire which the student participants turned in to the principal investigator. Of the 45 volunteers, three did not follow the parameters of the disability simulation activity, so their written responses could not be used in the data analysis.

### Evaluation of Definitions of Circumstances and Discussion

In order to design the disability simulation activities and evaluate the logical validity of the activities, the principal investigator first wrote a Definition of Circumstances, which is a baseline definition for each of the three disabilities (spinal cord injury, visual impairment and hearing impairment), and defined the general circumstances of each disability. For each disability, three categories of circumstances were defined:

(a) physical circumstances (b) environmental circumstances and (c) psycho-social circumstances. The baseline information for the definitions was obtained through written information and through discussions with individuals who have the disability that was being defined.

The definitions were reviewed by members of the jury of experts, who provided suggestions for changes and additions. These suggestions are listed in Chapter III under the section titled "Administration of Instrument." After the changes were made to the definitions, the jury members then rated the Definition of Circumstances for each specific disability by responding to three questions on an evaluation form. The evaluation form asked the respondents to rate how well each of the three categories (physical, environmental, and psycho-social) defined the general circumstances of the disability.

Respondents answered the questions by circling a number on a five point Likert scale, with the number "1" representing "very poorly", the number "3" representing "adequately" and the number "5" representing "very well."

Results of the jury members scores for the Definition of Circumstances (Table 1) provided the information which follows.

Table 1  
Evaluation of Definition of Circumstances  
(Scores assigned by jury of experts)

| RATING SCALE |        |          |      |           |
|--------------|--------|----------|------|-----------|
| 1            | 2      | 3        | 4    | 5         |
| Very poorly  | Poorly | Adequate | Well | Very well |

**QUESTIONS**

1. Does the "Definition of Circumstances" define the general physical circumstances of the disability?
2. Does the "Definition of Circumstances" define the environmental circumstances of the disability?
3. Does the "Definition of Circumstances" define the psycho-social circumstances of the disability?

**SPINAL CORD INJURY**

| Jury Member # | Question #1<br>Physical | Question #2<br>Environmental | Question #3<br>Psycho-social |
|---------------|-------------------------|------------------------------|------------------------------|
| 1             | 4                       | 4                            | 4                            |
| 2             | 4                       | 4                            | 4                            |
| 3             | 5                       | 5                            | 5                            |
| 4             | 4                       | 5                            | 5                            |
| 5             | 4                       | 4                            | 4                            |

"4" = 80%      "4" = 60%      "4" = 60%  
 "5" = 20%      "5" = 40%      "5" = 40%

**VISUAL IMPAIRMENT**

| Jury Member # | Question #1<br>Physical | Question #2<br>Environmental | Question #3<br>Psycho-social |
|---------------|-------------------------|------------------------------|------------------------------|
| 1             | 4                       | 5                            | 4                            |
| 2             | 5                       | 5                            | 5                            |
| 3             | 4                       | 4                            | 4                            |
| 4             | 5                       | 4                            | 5                            |

"4" = 50%      "4" = 50%      "4" = 50%  
 "5" = 50%      "5" = 50%      "5" = 50%

**HEARING IMPAIRMENT**

| Jury Member # | Question #1<br>Physical | Question #2<br>Environmental | Question #3<br>Psycho-social |
|---------------|-------------------------|------------------------------|------------------------------|
| 1             | 4                       | 5                            | 4                            |
| 2             | 5                       | 5                            | 5                            |
| 3             | 5                       | 5                            | 5                            |
| 4             | 5                       | 5                            | 5                            |

"4" = 25%      "4" = 0%      "4" = 25%  
 "5" = 75%      "5" = 100%      "5" = 75%

**SPINAL CORD INJURY:** A total of five jury members rated the Definition of Circumstances for spinal cord injury. The results of the evaluation showed 100% agreement among the jury of experts that the Definition of Circumstances defined the general circumstances of having the disability. This was demonstrated by scores of 4 "well" or 5 "very well", in all three categories (physical, environmental and psycho-social) from every jury member.

For the physical circumstances category, 80% of the respondents rated the Definition of Circumstances at 4, and 20% rated it at 5 on the Likert scale. For the environmental and psycho-social circumstances categories the scores were identical. Of the respondents, 60% rated the Definition of Circumstances at 4, and 40% rated them at 5 on the Likert scale (Table 1).

**VISUAL IMPAIRMENT:** A total of four jury members rated the Definition of Circumstances for visual impairment. The results of the evaluation showed 100% agreement among the jury of experts that the Definition of Circumstances defined the general circumstances of having the disability in all three categories by scores of 4 "well" or 5 "very well" for each category from every jury member.

For all three categories of the Definition of Circumstances for visual impairment, the scores were identical. 50% of the respondents rated the definitions at 4 and 50% rated them at 5 on the Likert scale. Two jury members' scores were the same across all three categories, i.e., one rated all 4's and one rated all 5's (Table 1).

**HEARING IMPAIRMENT:** The results of the evaluation of the Definition of Circumstances for hearing impairment showed 100% agreement among the jury of experts that the Definition of Circumstances defined the general

circumstances of having the disability in all three categories. This was demonstrated by scores of 4 “well” or 5 “very well” for each category from every jury member.

For the physical circumstances category, 25% of the respondents rated the definition at 4 and 75% rated it at 5 on the Likert scale. For the environmental circumstances category, 100% of the respondents rated the definition at 5 on the Likert scale (Table 1). For the psycho-social circumstances category, 25% of the respondents rated the definition at 4 and 75% rated it at 5 on the Likert scale (Table 1). The same respondents each gave the same ratings in this category as they did in the first category, physical circumstances.

Jury members were also asked to review a draft of the questionnaire which the students would use to evaluate their experience, and to offer suggestions for improvements to the questionnaire. Their suggestions included the following

1. Add to the “Participant Response to Experience” a question about changes the participant would make in the environment or other circumstances. This suggestion was followed and the question was included on the participant response form.
2. Clarify meaning of question #6 on Disability Activity Simulation Checklist. This was a valuable suggestion. It was not followed because it was not made until late in the evaluation process and other jury members had already rated the Disability Simulation Activities on the six-question evaluation form using the question as it is. This suggestion will be addressed in Chapter IV under the section titled “Evaluation of Disability Simulation Activities and Discussion.”

### Development and Evaluation of Disability Simulation Activities

After reviewing the results of the jury of experts' ratings of the Definition of Circumstances for each of the disabilities, four recreational activities were selected for the disability simulation. The recreational activities were selected for the purpose of providing student participants with an opportunity to sample the circumstances of the disabilities as defined in the Definition of Circumstances. After assigning the students at random to one of the three disabilities, the students were given a choice to participate in any one of the following four activities:

1. Attending a sports event on campus.
2. Bowling two to three games on campus or at a local bowling alley.
3. Attending a movie on campus or at a local movie theater.
4. Attending a live performance on campus or at a local site.

These activities were selected for the following reasons

1. Authors of some disability simulation studies believe that disability simulations are more effective when they relate to specific problem-solving tasks that have meaning and application for the participant (Rickman, 1993). The majority of the students participating in the study had academic majors in recreation or a related field and will have a role in providing recreational services for individuals with disabilities.
2. An individual with a disability needs opportunities to discover personal recreational interests and learn how to access them within the

community. The selected activities represented diverse areas of recreational interest so that participants could sample this exploration process.

3. All four activities are offered on the university campus, which reduced possible transportation problems for student participants.

The four activities were accompanied by written instructions for assuming the disability which included parameters, rules, descriptions of equipment (e.g. a wheelchair for those assuming spinal cord injury) and instructions for using the equipment. The four activities and the written instructions on parameters, rules and description of equipment formed the Disability Simulation Activities which the jury of experts rated for logical validity.

The jury of experts then rated each of the four Disability Simulation Activities on a six-question evaluation using a 5 point Likert scale. Jury members rated how well each Disability Simulation Activity provided the opportunity to sample the circumstances as described in the Definition of Circumstances for each of the three disabilities (spinal cord injury, visual impairment and hearing impairment). Tables 2, 3 and 4 report the jury members' ratings for each of the six questions on the evaluation for the Disability Simulation Activities.

The results of the evaluations showed that for visual impairment (Table 2) and hearing impairment (Table 3), on all six question items for all four activities there was 100% agreement among the jury of experts that the four activities provided the opportunity for participants to sample the circumstances defined in the Definition of Circumstances. This was demonstrated by scores of 4 "well" or 5 "very well" on each of the six questions from every jury member.

**Table 2**  
**Visual Impairment Evaluation**

Disability Simulation Activities: Scores given by jury members

| Rating Scale  |                 |            |            |                     |
|---------------|-----------------|------------|------------|---------------------|
| 1             | 2               | 3          | 4          | 5                   |
| Very poorly   | Poorly          | Adequate   | Well       | Very well           |
| Jury member # | 1: Sports event | 2: Bowling | 3: Movie   | 4: Live performance |
| <b>1</b>      | Question 1      | 5          | Question 1 | 5                   |
|               | Question 2      | 5          | Question 2 | 5                   |
|               | Question 3      | 5          | Question 3 | 5                   |
|               | Question 4      | 5          | Question 4 | 5                   |
|               | Question 5      | 5          | Question 5 | 5                   |
|               | Question 6      | 5          | Question 6 | 5                   |
| <b>2</b>      | Question 1      | 5          | Question 1 | 5                   |
|               | Question 2      | 5          | Question 2 | 5                   |
|               | Question 3      | 5          | Question 3 | 5                   |
|               | Question 4      | 5          | Question 4 | 5                   |
|               | Question 5      | 5          | Question 5 | 5                   |
|               | Question 6      | 5          | Question 6 | 5                   |
| <b>3</b>      | Question 1      | 4          | Question 1 | 4                   |
|               | Question 2      | 4          | Question 2 | 4                   |
|               | Question 3      | 4          | Question 3 | 4                   |
|               | Question 4      | 4          | Question 4 | 4                   |
|               | Question 5      | 4          | Question 5 | 4                   |
|               | Question 6      | 4          | Question 6 | 4                   |
| <b>4</b>      | Question 1      | 4          | Question 1 | 5                   |
|               | Question 2      | 5          | Question 2 | 5                   |
|               | Question 3      | 5          | Question 3 | 5                   |
|               | Question 4      | 4          | Question 4 | 4                   |
|               | Question 5      | 5          | Question 5 | 5                   |
|               | Question 6      | 5          | Question 6 | 5                   |
| "4" = 33 %    |                 | "4" = 29%  | "4" = 29%  | "4" = 29%           |
| "5" = 67%     |                 | "5" = 71%  | "5" = 71%  | "5" = 71%           |

#### Questions

- Does the activity provide an opportunity to sample the physical circumstances as defined?
- Does the activity provide an opportunity to sample the environmental circumstances as defined?
- Does the activity provide an opportunity to sample the psycho-social circumstances as defined?
- Does the "Equipment and Instructions for Assuming a Disability" form provide clear directions?
- Does the "Guidelines for Participants and Partner/Observers" form address the safety issues of the activity?
- Does the "Guidelines for Participants and Partner/Observers" form promote effectiveness of the activity?

**Table 3**  
**Hearing Impairment Evaluation**

Disability Simulation Activities: Scores given by jury members

| Rating Scale  |                 |            |            |                     |
|---------------|-----------------|------------|------------|---------------------|
| 1             | 2               | 3          | 4          | 5                   |
| Very poorly   | Poorly          | Adequate   | Well       | Very well           |
| Jury member # | 1: Sports event | 2: Bowling | 3: Movie   | 4: Live performance |
| 1             | Question 1      | 5          | Question 1 | 5                   |
|               | Question 2      | 5          | Question 2 | 5                   |
|               | Question 3      | 5          | Question 3 | 5                   |
|               | Question 4      | 5          | Question 4 | 5                   |
|               | Question 5      | 5          | Question 5 | 5                   |
|               | Question 6      | 5          | Question 6 | 5                   |
| 2             | Question 1      | 4          | Question 1 | 5                   |
|               | Question 2      | 5          | Question 2 | 4                   |
|               | Question 3      | 5          | Question 3 | 4                   |
|               | Question 4      | 5          | Question 4 | 5                   |
|               | Question 5      | 5          | Question 5 | 5                   |
|               | Question 6      | 5          | Question 6 | 5                   |
| 3             | Question 1      | 5          | Question 1 | 5                   |
|               | Question 2      | 5          | Question 2 | 5                   |
|               | Question 3      | 4          | Question 3 | 4                   |
|               | Question 4      | 5          | Question 4 | 5                   |
|               | Question 5      | 4          | Question 5 | 4                   |
|               | Question 6      | 5          | Question 6 | 5                   |
| 4             | Question 1      | 4          | Question 1 | 5                   |
|               | Question 2      | 4          | Question 2 | 5                   |
|               | Question 3      | 4          | Question 3 | 5                   |
|               | Question 4      | 5          | Question 4 | 5                   |
|               | Question 5      | 5          | Question 5 | 5                   |
|               | Question 6      | 5          | Question 6 | 5                   |
| "4" = 25 %    |                 | "4" = 25%  |            | "4" = 17%           |
| "5" = 75%     |                 | "5" = 75%  |            | "5" = 83%           |

#### Questions

- Does the activity provide an opportunity to sample the physical circumstances as defined?
- Does the activity provide an opportunity to sample the environmental circumstances as defined?
- Does the activity provide an opportunity to sample the psycho-social circumstances as defined?
- Does the "Equipment and Instructions for Assuming a Disability" form provide clear directions?
- Does the "Guidelines for Participants and Partner/Observers" form address the safety issues of the activity?
- Does the "Guidelines for Participants and Partner/Observers" form promote effectiveness of the activity?

**Table 4**  
**Spinal Cord Injury Evaluation**

Disability Simulation Activities: Scores given by jury members

|               |                 |           |            |    | Rating Scale |        |                     |           |           |
|---------------|-----------------|-----------|------------|----|--------------|--------|---------------------|-----------|-----------|
|               |                 |           |            |    | 1            | 2      | 3                   | 4         | 5         |
|               |                 |           |            |    | Very poorly  | Poorly | Adequate            | Well      | Very well |
| Jury member # | 1: Sports event |           | 2: Bowling |    | 3: Movie     |        | 4: Live performance |           |           |
| 1             | Question 1      | 3         | Question 1 | 4  | Question 1   | 3      | Question 1          | 3         |           |
|               | Question 2      | 5         | Question 2 | 5  | Question 2   | 4      | Question 2          | 4         |           |
|               | Question 3      | 3         | Question 3 | 4  | Question 3   | 3      | Question 3          | 4         |           |
|               | Question 4      | 5         | Question 4 | 5  | Question 4   | 5      | Question 4          | 5         |           |
|               | Question 5      | 5         | Question 5 | 5  | Question 5   | 5      | Question 5          | 5         |           |
|               | Question 6      | na        | Question 6 | na | Question 6   | na     | Question 6          | na        |           |
| 2             | Question 1      | 5         | Question 1 | 5  | Question 1   | 5      | Question 1          | 5         |           |
|               | Question 2      | 5         | Question 2 | 5  | Question 2   | 5      | Question 2          | 5         |           |
|               | Question 3      | 4         | Question 3 | 5  | Question 3   | 5      | Question 3          | 5         |           |
|               | Question 4      | 4         | Question 4 | 3  | Question 4   | 4      | Question 4          | 4         |           |
|               | Question 5      | 4         | Question 5 | 4  | Question 5   | 5      | Question 5          | 4         |           |
|               | Question 6      | 5         | Question 6 | 5  | Question 6   | 5      | Question 6          | 5         |           |
| 3             | Question 1      | 5         | Question 1 | 5  | Question 1   | 5      | Question 1          | 5         |           |
|               | Question 2      | 5         | Question 2 | 5  | Question 2   | 5      | Question 2          | 5         |           |
|               | Question 3      | 5         | Question 3 | 5  | Question 3   | 5      | Question 3          | 5         |           |
|               | Question 4      | 5         | Question 4 | 5  | Question 4   | 5      | Question 4          | 5         |           |
|               | Question 5      | 5         | Question 5 | 5  | Question 5   | 5      | Question 5          | 5         |           |
|               | Question 6      | 5         | Question 6 | 5  | Question 6   | 5      | Question 6          | 5         |           |
| 4             | Question 1      | 5         | Question 1 | 5  | Question 1   | 5      | Question 1          | 5         |           |
|               | Question 2      | 5         | Question 2 | 5  | Question 2   | 5      | Question 2          | 5         |           |
|               | Question 3      | 5         | Question 3 | 5  | Question 3   | 5      | Question 3          | 5         |           |
|               | Question 4      | 5         | Question 4 | 5  | Question 4   | 5      | Question 4          | 5         |           |
|               | Question 5      | 5         | Question 5 | 5  | Question 5   | 5      | Question 5          | 5         |           |
|               | Question 6      | 5         | Question 6 | 5  | Question 6   | 5      | Question 6          | 5         |           |
| 5             | Question 1      | 5         | Question 1 | 5  | Question 1   | 4      | Question 1          | 5         |           |
|               | Question 2      | 5         | Question 2 | 5  | Question 2   | 4      | Question 2          | 5         |           |
|               | Question 3      | 4         | Question 3 | 4  | Question 3   | 3      | Question 3          | 5         |           |
|               | Question 4      | 4         | Question 4 | 4  | Question 4   | 4      | Question 4          | 4         |           |
|               | Question 5      | 5         | Question 5 | 5  | Question 5   | 5      | Question 5          | 5         |           |
|               | Question 6      | 4         | Question 6 | 4  | Question 6   | 4      | Question 6          | 4         |           |
|               |                 | "3" = 7%  |            |    | "3" = 3%     |        |                     | "3" = 10% | "3" = 3%  |
|               |                 | "4" = 21% |            |    | "4" = 21%    |        |                     | "4" = 21% | "4" = 21% |
|               |                 | "5" = 72% |            |    | "5" = 76%    |        |                     | "5" = 69% | "5" = 76% |

#### Questions

1. Does the activity provide an opportunity to sample the physical circumstances as defined?
2. Does the activity provide an opportunity to sample the environmental circumstances as defined?
3. Does the activity provide an opportunity to sample the psycho-social circumstances as defined?
4. Does the "Equipment and Instructions for Assuming a Disability" form provide clear directions?
5. Does the "Guidelines for Participants and Partner/Observers" form address the safety issues of the activity?
6. Does the "Guidelines for Participants and Partner/Observers" form promote effectiveness of the activity?

For spinal cord injury/paraplegia (Table 4), there was agreement among the jury members (scores of 4 or 5) with the following exceptions:

- For activity number one, sports event, one jury member rated the activity at 3 "adequate" for question one "Does the activity provide an opportunity to sample the physical circumstances as defined?" and question three "Does the activity provide an opportunity to sample the psycho-social circumstances as defined?".
- For activity number two, bowling, one jury member rated the activity at 3 "adequate" on question number two "Does the activity provide an opportunity to sample the environmental circumstances as defined?".
- For activity number three, movie, one jury member rated the activity at 3 "adequate" on question number one "Does the activity provide an opportunity to sample the physical circumstances as defined?". Two jury members rated the activity at 3 "adequate" on question number three "Does the activity provide an opportunity to sample the psycho-social circumstances as defined?".
- For activity number four, live performance, one jury member rated the activity at 3 "adequate" on question number one "Does the activity provide an opportunity to sample the physical circumstances as defined?".

There was a high degree of consistency in the scores given by the jury of experts on the "Definition of Circumstances" evaluations for the three disabilities (spinal cord injury, visual impairment and hearing impairment). The scores indicate agreement among jury members that the "Definition of Circumstances" for each of the disabilities defined "well" or "very well" the general circumstances of having the disability.

There was also a high level of agreement among the jury members who evaluated the "Disability Simulation Activities" for visual impairment and hearing impairment. The scores indicate agreement among the jury members that the activities, and the rules, parameters and equipment to be used to engage in the activities, together provide participants with the opportunity to sample the general circumstances of the disabilities.

The evaluation of the Disability Simulation Activities for Spinal cord injury/paraplegia was the only area in which inconsistency among jury members' scores occurred. Two of the five jury members for spinal cord injury rated all four of the activities at "4" or "5" on all questions. One jury member gave one score of "3" for one of the six questions on the "bowling" activity. This jury member gave scores of "4" and "5" on all other questions for all four activities. The remaining two jury members gave all the other "3" ratings described above.

The "movie" activity scores provide an illustration of the variation among jury members' scoring for spinal cord injury. This activity received a "3" or "adequate" from two jury members on question number three "Does this activity provide an opportunity to sample the psycho-social circumstances of the disability?". The other three jury members rated this activity at "5" or "very well" on the same question.

Although jury members did not consistently agree on how well the activities would provide the opportunity to sample the defined circumstances for spinal cord injury, there was 100% agreement that the four activities would at least provide "adequate" sampling of the physical, environmental and psycho-social circumstances. In general the activities' scores for spinal cord injury were much better than "adequate." Of the 116 questions answered

to rate the four activities, the total number of 3 "adequate" scores was seven. The other 109 questions scored 4 "well" or 5 "very well."

One factor which may have influenced the results of the simulation evaluations is the personal contact the principal investigator had with several jury members. In the process of obtaining feedback on the Definition of Circumstances in order to improve the definitions, the principal investigator had contact with jury members at least twice. Some of the evaluations were done in the presence of the principal investigator and some were done by telephone. It is possible that the contact affected the jury members' scores. Sending the information and evaluations by mail would have helped provide information on intertester reliability of the instrument.

Question number six on the Disability Simulation Activity was described by one jury member as being too ambiguous. Establishing the parameters for the simulation activities is extremely important for developing a consistent method of using and evaluating the activities. For future use of the evaluation the question could be stated more clearly as follows: Does the form, "Guidelines for Participants and Partner/Observers" establish the parameters and rules necessary to support the goal of sampling the defined circumstances of the disability?

#### Evaluation of Student Participants' Responses and Discussion

Table 5 shows the number of students who participated in each of the four disability simulation activities. All students chose the movies or bowling for their disability simulation activity, with the exception of one student who assumed hearing impairment and attended a campus football game.

Table 5

## Activities attended by students during disability simulation

| <u>Disability</u>       | <u>Sports event</u> | <u>Movie</u> | <u>Bowling</u> | <u>Performance</u> |
|-------------------------|---------------------|--------------|----------------|--------------------|
| Spinal cord injury (12) | 0                   | 8            | 4              | 0                  |
| Visual impairment (15)  | 0                   | 9            | 6              | 0                  |
| Hearing impairment (15) | 1                   | 12           | 2              | 0                  |

The student participants and their chosen partner/observers completed their evaluations after participating in the disability simulation activity. 45 students contributed the participant and the partner/observer evaluations to the pool of data. Of these evaluations, 42 pair or 84 evaluations were used for data analysis. Three students assumed their assigned disability and went to a restaurant instead of choosing one of the four established activities. Because this activity had not been evaluated for logical validity, the participants' responses on the evaluations could not be included in the pool of data.

The purpose of the disability simulation activities was to provide student participants with an opportunity to sample the circumstances of the assigned disability as defined in the Definition of Circumstances (Appendix D). The evaluation asked the respondents to describe their thoughts, feelings and reactions to their physical, environmental and psychological/social experiences during the disability simulation activity. Participants and partner/observers were also asked what they would change if they could, as a result of their simulation experience. Finally, participants and partner/observers were asked what the most significant was that they learned from the activity. The response statements from the evaluations are listed in order of frequency of the statement (Appendix I).

Question number one, physical circumstances, generated several of statements from each disability group about the increased effort required to perform everyday tasks that are simple and familiar without the disability. These statements correspond with the Definition of Physical Circumstances for all three disabilities, where the need for attention to learning or relearning daily living skills is addressed. Following are statements from each assumed disability which illustrate typical responses:

(Spinal cord injury: participant) "It took me 2 times longer to do something than someone who had an ability."

(Visual impairment: participant) "Every little task that meant nothing to me prior to this became difficult."

(Hearing impairment: participant) "I never realized the problems of having any kind of hearing loss before, and the impact it had on doing such a simple task as going to a movie."

Question number two, environmental circumstances, generated many responses from all three groups of disabilities about the accessibility problems of the facility where the activity took place. Frequent responses from participants and from partner/observers in the spinal cord injury group included problems with entrance ramps, lack of space for wheelchairs in a movie theater, doors too heavy or too awkward. Frequent responses about accessibility from participants and partner/observers in the visual impairment group included lack of information in Braille or another medium accessible to a blind person, problems with sidewalks being too damaged to walk on without tripping, and curbs being difficult to negotiate. Four of the six bowlers from the visual impairment group stated they could not tell where they were in the lane in order to know when to release the ball. There were frequent responses from the participants and partner/observers in

the hearing impairment group about inability to enjoy a movie because of lack of access to the dialogue. By far the most frequent statements from both respondents in this group, however, dealt with the communication difficulties. This was the one simulated disability which, from the respondents' statements, created a handicap for the hearing person as well as the person who was hard of hearing, because they both lost their primary means of communication with each other.

For all three disability groups, there were frequent similar statements from participants and partner/observers about the reactions of other people in the environment: "people stared", "people avoided eye contact", "people were helpful/nice/friendly", "people were rude/made fun" and "people seemed to feel sorry for participant."

Following are sample statements from the evaluations, related to environment, which reflect commonly expressed thoughts and feelings of participants and partner/observers.

(Spinal cord injury: participant) "I had to sit in the back of the theater by the garbage can."

"I had one experience in which three women proceeded to step over my legs to get to another section of the theater instead of walking around me. They didn't even say excuse me. They just looked at me as if I was a fixture on the floor. This irritated me."

"Accessibility is not always convenient. The wheelchair ramp was about 50 yards from the front door, and the handicapped parking space was in front of the front door. This didn't make much sense."

(Visual impairment: partner/observer) "When I was ordering popcorn, the guy at the counter asked me, 'and what would he like to drink?' I replied 'Why don't you ask him?'"

(Participant) "The rail at the bowling alley was broken and kept falling off. It did not help at all."

(Hearing impairment: participant) "The environment is actually not what makes the disability difficult. The people in it is what makes it hard. If everyone was deaf, the environment would be easy to deal with."

(Hearing impairment: partner/observer) "Communication is practically lost without hearing or writing, if the individuals cannot sign."

For question number three, psychological/social circumstances, certain words (awkward, embarrassed, left out, isolated, dependent, frustrated) were found repeatedly as participants described their feelings about the experience. The most frequent statement made by the spinal cord injury group referred to feeling awkward, ashamed or embarrassed. The next two most common statements referred to feeling isolated and feeling dependent. The most frequent statement made by partner/observers in this disability group referred to the participant being physically isolated from others. Following are representative statements from this disability group:

(Participant) "I did not realize how awkward I would feel. Feelings of shame were present. It felt strange to need so much from my partner. It was stressful for my partner to assume this responsibility."

(Partner/observer) "She had to sit in the aisle of the theater, away from me, and she seemed to be in the way. It seemed almost to be a fire hazard."

The most frequent statement made by the visual impairment group referred to feeling dependent on the partner or feeling a loss of independence. The statement which followed "dependent" in frequency was isolation or feeling left out. The most frequent statements from partner/observers in the visual impairment group were feeling responsible for the participant and feeling frustrated in the role of responsibility. Sample statements follow.

(Participant) "I felt left out at times when there was laughter, and sometimes I was talked over."

(Partner/observer) "I can see how someone would become very frustrated in the real situation if someone else constantly needed help. I never got use to the difficulties of (participant) being blind."

Three statements frequently made by the participants in the hearing impairment group were feeling frustrated by the communication barriers, feeling isolated, and sensing a personality change to passive, withdrawn, and quiet. The most frequent response from partner/observers in this group referred to feeling frustrated by the inability to communicate with the participant. This was the only disability group in which partner/observers expressed feeling lonely or personally affected by the participant's disability, and statements clearly indicated that this was due to loss of communication with the participant. Sample statements follow.

(Participant) "I could not participate fully in conversations with my friends. I could identify with feeling left out of the normal world. I found myself being extra quiet. Talking among my friends was difficult. Even though they wanted me to participate in the conversation, it was easier for them to let me stay in my own world. I realized how lonely being hearing impaired could be in the general environment."

(Partner/observer) "I'm not used to being around someone who is deaf, and it was weird not having anybody to talk to."

Question number five asked the respondents what environmental or other changes they would make as a result of their simulation experience. All of these frequently suggested changes reflect issues discussed in the Definition of Circumstances for the three disabilities. Results are the combined responses of participants and partner/observers.

For spinal cord injury group the responses were primarily related to physical access to facilities, with location and angle of ramps being the most frequent response. For visual impairment, the most common response was more information available in Braille or other touch-sensitive objects for blind people in public places. The two most frequent responses from the hearing impairment group were to have closed caption at the movies, and more people need to learn sign language.

Question number five asked respondents to describe the most significant thing they learned from participation in the disability simulation activity. Responses were extremely varied and reflected a wide range of attitudes and perceptions. The one predominant response was gratitude to have the function that was limited during the simulation activity. The second most frequent response was increased respect or empathy for people who live with the disability.

The last question asked the participants and the partner/observers to rate the activity they participated in, on a five point Likert scale, for its value as a learning experience, with "1" representing "strongly disagree", "3" representing "neutral" and "5" representing "strongly agree". Of the 42 participants, 16 rated the activity 4, "agree". and 26 rated the activity 5, "strongly agree". Of the 42 partner/observers, 3 rated the activity 3, "neutral"; 21 rated the activity 4, "agree" and 16 rated the activity 5, "strongly agree". Two partner/observers did not rate the activity. The results of the last question indicate that all participants "agree" or "strongly agree" that the disability simulation activity is a valuable learning experience.

One factor to consider is that the wording of the last question is leading and this may influence how the participants rate the activity. It would be beneficial to change the wording to a more neutral statement.

The content of the participants' responses on the evaluations corresponded with issues discussed in the Definition of Circumstances for each of the disabilities. Environmental barriers, such as accessibility of facilities and problematic interactions with non-disabled people, clearly appear in the participants' responses to their disability simulation experience.. Psycho-social factors discussed in the Definition of Circumstances were also

represented in the responses of the participants, such as adjustment to life change as a result of a disability, stress experienced by family and friends in the adjustment phase of a disability, and self-image. The physical circumstances of the need to develop daily living skills and learn to negotiate one's environment was well reflected in the responses.

The results indicate that the students were able to sample the circumstances of having the disability. This does not mean that all students had an experience which improved their attitude or perception about people with disabilities. The limited duration of the activity does not provide for the opportunity to adapt to the disability. As discussed in the review of literature, in order for disability simulations to be effective at positively influencing attitudes and perceptions of participants, they should fit into the framework of education about disabilities and other teaching strategies should accompany their use. Prior to participation in the disability simulation activities, the student participants were exposed to individuals with disabilities who spoke to the class. A person with spinal cord injury came to class and demonstrated the use and handling of the wheelchair to the class. The disability simulation activity also included a follow-up classroom discussion to help participants clarify for themselves and each other what the experience taught them.

Student participants were given the option of participating in any of the four activities which had been rated for logical validity. A majority of students chose to attend a movie. In their responses many participants stated that they thought the simulation activity would be easy, and they were surprised to discover how challenged they were by assuming the disability and attending the activity. This supports the validity of the activity for

providing the participants with the opportunity to sample the circumstances of the disability.

Because participants could choose among activities, there was no way to control the number of respondents for any specific activity. Assigning participants to an activity would provide a control for this.

The single participant who simulated being hard of hearing and attended the football game knew sign language, and she chose a partner/observer who also knew some sign language. Both respondents reported during the group discussion (both were class members) that the simulation activity was not that much of a challenge for them. This provided an opportunity to discuss the process of adapting to the disability, and to discuss how much difference is made by the removal of environmental barriers such as lack of a common medium of communication. The participant did, however, still identify learning experiences in the psycho social area. The participant stated that she noticed her personality changed from friendly and talkative to quiet and somewhat withdrawn as a result of the reaction of others to her disability, and the stress of having limited information from the environment due to hearing loss.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

This chapter contains a summary of the study. It consists of five parts: (a) summary of procedure, (b) summary of findings, (c) conclusions, (d) implication, and (e) recommendations for further study.

#### Summary of Procedures

The purpose of this study was to design a set of disability simulation activities and to determine the logical validity of the activities for use as a teaching tool for students preparing for careers in recreation and related fields. The study involved a jury of experts who rated a definition of circumstances for each of three disabilities: (1) spinal cord injury/paraplegia, (2) visual impairment, and (3) hearing impairment. The Definition of Circumstances for each disability described the physical, environmental and psycho social circumstances of having the disability.

After the jury evaluated the Definition of Circumstances for each disability and determined that they defined the general circumstances of the disability, a set of disability simulation activities was designed, to include parameters, rules, and description of the equipment. The four activities were attending a campus sports event, attending a movie, bowling two to three games, or attending a live performance. The jury then evaluated the set of disability simulation activities and determined that each of the four activities provide participants with the opportunity to sample the circumstances as described in the Definition of Circumstances.

The subjects were 42 undergraduate university students in a therapeutic recreation class with special populations as the curriculum. The participants also chose a partner/observer, who did not have to be a classmate, to accompany them during the disability simulation activity. All students in the class were required to participate in the simulation, but only those students who volunteered to contribute their written responses to the study were participants. 96% of the total class volunteered to participate in the study. Three of the volunteers' evaluations could not be included in the data because parameters for the activity were not followed, so 42 students' evaluations, or 91% of the total number of class members, were actually used for data analysis. There was no penalty for not volunteering to participate and no incentive for participation (for example, grading). Student responses were confidential and were viewed only by the principal investigator.

Students were assigned at random to one of the three disabilities, and were given the choice of participation in any one of the four activities. The rules, parameters and instructions for simulating the disability were reviewed in class with the students. Training on the use of a wheelchair was provided prior to participation in the activity.

Upon completion of the activity, student participants and their partner/observers completed an open-ended questionnaire in which they responded to questions about their experience. The responses were evaluated by examining the content of the statements for frequency and for relationship to the issues discussed in the Definition of Circumstances for each of the disabilities.

The students participated in a group discussion following their participation in the disability simulation activities, which provided them

with an opportunity to verbally express thoughts and feelings related to their experience and to clarify for themselves what they learned from the experience.

### Summary of Findings

Within the limitations of the study, based on analysis of the data collected, the following findings were reported:

1. According to the jury of experts, the general circumstances of each of the three disabilities (spinal cord injury, visual impairment and hearing impairment) were defined well or very well by the Definition of Circumstances.
2. According to the jury of experts, the disability simulation activities, which included parameters, rules and instructions for assuming the disability, provided an opportunity for sampling the circumstances as defined.
3. Participation in the disability simulation provided the students with a sampling of the circumstances of the assumed disability, as defined in the Definition of Circumstances. This was indicated by the content of the participants' responses on the evaluations. Response statements corresponded with issues discussed in the Definition of Circumstances for each of the disabilities. Environmental barriers listed in the Definition of Circumstances, such as accessibility of facilities and problematic interactions with non-disabled people, appeared frequently in the participants' responses. Psycho-social factors discussed in the Definition of Circumstances were also represented in the responses of the participants, such as adjustment to life changes as a result of a disability, stress experienced by family and friends in

the adjustment phase of a disability, and self-image. The physical circumstances related to difficulty with daily living skills and to negotiate one's environment was also well reflected in the responses.

### Conclusions

Within the limitations and the delimitations of this study, and based on the purpose of the study, the following conclusions can be made:

1. Disability simulation activities can be designed which will provide participants with a sample experience of having the disability.
2. Participation in disability simulation activities promotes specific changes in awareness and perception about the disability which participants can articulate.
3. Disability simulation activities can be an effective tool for education and awareness when purposefully designed and when implemented with structure.

### Implications

Students in recreation and related fields, especially therapeutic recreation, are future providers of services for people with disabilities. The implication of this study for students in recreation and related fields is that using disability simulation activities can help prepare students professionally by increasing their awareness of the physical, environmental and psychosocial circumstances that future clients face in the pursuit of healthy leisure habits.

More studies need to be conducted to evaluate the effects of using a consistent method of designing and implementing disability simulation activities as a teaching tool for students in recreation and related fields.

### Recommendations for Further Study

Based on the findings of this study, the following recommendations are made for further research:

1. There is limited information available in the literature about the use of disability simulations in general recreation or therapeutic recreation. Further studies need to be done to increase the information base on the use of disability simulation activities in recreation and related fields. Replicating this study would serve to refine the methodology and provide consistency in methodology among studies.
2. Future evaluations of the Definition of Circumstances and the disability simulation activities should continue to include input from people who have the disability being defined.
3. Future studies should involve assigning participants to a specific activity as well as to the disability to control for the number of participants who will provide data for analysis of the activity.
4. Future studies should assign one participant to more than one activity, with the participant assuming the same disability.
5. Future studies should, if possible, use longer periods of disability simulation.

## REFERENCES

## References

Bedini, L. (1991). Modern day "freaks"? The exploitation of people with disabilities. Therapeutic Recreation Journal, 25, (4), 61-70.

Bhushan, L. & Sanders, M. & Puckett, K. (1994). Students' perceptions of disability as affected by simulation experiences. Tennessee Education, 24 (1), 17-20.

Carroll, M.; Ed. (1990). Focus on Ability: serving girls with special needs. New York, NY: Girl Scouts of the U.S.A.

Dattilo, J. & Smith, R. (1990). Communicating Positive Attitudes Toward People with Disabilities Through sensitive Terminology. Therapeutic Recreation Journal, 24 (1), 9-17.

Giangreco, M. F. (1993). I've counted Jon: Transformational experience of teachers educating students with disabilities. Exceptional Children, 59 (4), 359-372.

Hallenbeck, M. J. & McMaster, D. (1991). Disability Simulation for Regular Education Students. Teaching Exceptional Children, 23 (3), 12-15.

Hamilton, E.J. & Anderson, S.C. (1983). Effects of leisure activities on attitudes toward people with disabilities, 17, (3), 50-57.

Havens, M. (1992). Bridges to Accessibility. Hamilton, MA: Project Adventure, Inc.

LIFE: Leisure Is For Everyone. (1993). Center for Recreation and Disability Studies; Curriculum in Leisure Studies and Recreation Administration; University of North Carolina; Chapel Hill, NC.

Maurer, L. (1985). Opening Doors: Educating the Disabled. Arizona State Department of Education, Phoenix Division of Career and Vocational Education; Arizona University; Tucson College of Education; Tucson, AZ. (Paper based on handbook was presented at the 63rd Annual Convention of the Council for Exceptional Children; Anaheim, CA, April 15-19, 1985).

Mobily, K. (1985). A philosophical analysis of therapeutic recreation: what does it mean to say "We can be therapeutic?" Part 1. Therapeutic Recreation Journal, 19, (1), 14-26.

Paris, M. J. (1993). Attitudes of medical students and health-care professionals toward people with disabilities. Archives of Physical Medicine and Rehabilitation, 74, (8), 818-825.

Pfeiffer, D. (1989). Disability simulation using a wheelchair exercise. Journal of Postsecondary Education and Disability, 7, (2), 53-60.

Raines, S. and Others. (1987). Perceptual and Emotional Effects of Assuming a Disability. Paper presented at the Annual Conference of New England Educational Research Organization; Stratton, VT.

Sable, J. (1992). Collaboration to create an integrated camping program: design and evaluation. Therapeutic Recreation Journal, 26, (3), 38-38.

Scheerenberger, R.C. (1983). A history of mental retardation. Baltimore, MD: Brooks Publishing Co.

Tripp, A. (1988). Comparison of attitudes of regular and adapted physical educators toward disabled individuals. Perceptual and Motor Skill, 66, (2), 425-426.

Weisgarber, R. (1991). Disability and the Concept of Quality of Life. Quality of life for Persons with Disabilities. Gaithersburg, MD: Aspen Publishers, Inc.

Wesson, C. & Mendell, C. (1989). Simulations promote understanding of handicapping conditions. Teaching Exceptional Children, 22 (1), 32-35.

## APPENDICES

## APPENDIX A

## **PARTICIPANT INFORMATION AND CONSENT FORM**

**Dear Student:**

My name is Melanie Collins, and I am a graduate student in therapeutic recreation at the University of Tennessee at Knoxville. I am conducting a study, as partial fulfillment for a master's thesis, on the effects of participation in disability simulation activities on students. The purpose of the research is, first, to establish validity of specific disability simulation activities, and second, to evaluate the effects of the simulation experience on the participating students.

You will be participating in the process of completing a disability simulation activity over a time period of approximately a two and a half weeks. The time you will spend actually participating in the disability simulation activity itself will be approximately two to four hours. Your assignment involves the following:

1. classroom information and instruction
2. assignment of a disability (hearing impairment, visual impairment or spinal cord injury/paraplegia)
3. obtaining a partner
4. obtaining the equipment, as described in class, needed to simulate the disability
5. completing checklists and consent forms and returning them to your instructor
6. choosing your activity from a specific list provided in class
7. arranging to participate in the activity
8. engaging in the activity
9. completing a written response about your experience
10. possible participation in a classroom or group discussion with other participants about the overall experience

The possible risks you may encounter as a result of participation in this study are:

1. You will be role playing having a physical disability you do not have and are not adjusted to, therefore you will not have use of muscles or senses you are accustomed to using in everyday situations. This may create some physical situations in which you could injure yourself unless you are using caution and remain aware of your circumstances.

The possible discomforts you may encounter are:

1. The change in your physical status may create some emotional discomfort as you attempt to engage in everyday activities such as getting dressed, moving from one place to another, etc.
2. As a result of assuming the physical disability, you may experience reactions from others in your environment which may be emotionally unfamiliar and uncomfortable.

Your risk has been minimized by the following steps:

1. The verbal review in the classroom of these instructions reinforce their effectiveness and provide you with the opportunity to ask questions or obtain clarification about the guidelines and instructions.
2. The design of the simulation activities, the guidelines and the instructions have been reviewed by a panel of professionals in fields related to disability and have passed their approval for safety.

There is no direct benefit to you personally for participating in the study by allowing your responses to the activity to be used as data in the thesis.

In this particular study, there are no alternative procedures available. Participation as described is the only method of participating in the study.

Your confidentiality will be protected in this study in the following manner:

1. You will not be required to use your name on any forms or in any forum in which you share your thoughts, feelings, attitudes, etc. about your experience.
2. Any form or written information with your name or signature will be kept in the files of the class instructor and will be made available only to the Institutional Review Board, if requested, as proof that you were informed of the nature of the study prior to giving your consent to participate.
3. You will not be observed by a researcher during your participation in the disability simulation activity.
4. Results of the study will be published as part of the Master's thesis; however your name or identity will not be revealed.

If you have any questions about your participation in this study, please contact your course instructor (Dr. Mary Dale Blanton, Department of Recreation and Leisure Studies, University of Tennessee at Knoxville, 615-974-6045) who will inform me of your questions, and I will supply you with the information you need.

Your participation in this study is voluntary. There are no penalties, or loss of benefits to which you would otherwise be entitled, for non participation in the study.

You may terminate your participation in the study at any time by informing the course instructor that you do not want your written or verbal data to be contributed to the data collection for the study.

-----  
I hereby give my permission to take part in the study described by Melanie Collins in this letter.

-----  
Signature of Participant

-----  
Date

## APPENDIX B

## **Guidelines for Participants and Partner/Observers**

Recreation 320

Fall Semester 1995

### **Disability Simulation Activity**

The participant and the partner/observer each need to complete the following form. Please read the following guidelines, checking each item after reading it, sign your name at the bottom of the checklist, and return this form to your course instructor before beginning your participation in the disability simulation activity.

1. \_\_\_\_ To ensure safety and effectiveness of the activity, each participant is to perform the entire simulation activity with a partner/observer. The partner/observer's role is to assist the participant only when necessary, to help ensure safety, to observe the circumstances and events during the activity, and to provide feedback after the activity is completed, based on personal observation and experience.
2. \_\_\_\_ Safety is the first priority. Do not fool around or take any risks to your safety or your partner's safety.
3. \_\_\_\_ Both the participant and the partner/observer will respond in writing to their experience immediately after, or as soon as possible after the simulation activity is completed. Take mental or written notes during the simulation activity about events, feelings, and other observations which are significant to you.
4. \_\_\_\_ Instructions for obtaining the materials and equipment needed for each disability simulation will be supplied in the classroom. The participant may be responsible for obtaining some equipment per instructions given.
5. \_\_\_\_ Once you begin the simulation activity, do not inform others you come in contact with that you are participating in a simulation. Imagine as best you can that, during the simulation activity, you actually live with the disability you are assuming.
6. \_\_\_\_ Do not attempt to drive an automobile while assuming the disability for the simulation activity. You will need to arrange for transportation, if necessary, to the location of the activity.
7. \_\_\_\_ Do not give up the simulation activity unless a situation becomes physically dangerous or unbearably uncomfortable in any way. If you do need to stop assuming the disability, reflect upon the fact that you would not have this option if you truly had the disability you are simulating.
8. \_\_\_\_ Begin and end assuming the disability at home.

Signature\_\_\_\_\_

Partner/Observer Signature\_\_\_\_\_

## APPENDIX C

## **Participant Evaluation of Experience**

Recreation 320  
Therapeutic Recreation for Special Populations  
Fall 1995

### **Disability Simulation Activity:**

**Please complete all your answers on the accompanying form. Do not write on this form.**

1. My thoughts, feelings and reactions related to the physical experiences of assuming the disability are:
2. My thoughts, feelings and reactions related the environmental experiences of assuming the disability are:
3. My thoughts, feelings and reactions related to the psychological and social experiences of assuming the disability are:
4. The changes I would make in the environment or other circumstances I have discussed are:
5. The most significant thing I learned from this activity was:
6. The assigned disability was: (on response form, please circle one)

(1). spinal cord injury/paraplegia      (2). hearing impairment      (3). visual impairment

7. On the response form, please circle the number which indicates your response to the following statement:

"I found the Disability Simulation Activity experience to be a valuable learning experience."

|                   |          |         |       |                |
|-------------------|----------|---------|-------|----------------|
| 1                 | 2        | 3       | 4     | 5              |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

## **Partner/Observer Evaluation of Experience**

Recreation 320  
Therapeutic Recreation for Special Populations  
Fall 1995

### **Disability Simulation Activity:**

**Please complete all your answers on the accompanying form. Do not write on this form.**

1. My thoughts, feelings and reactions related to the physical experiences of assuming the disability are:
2. My thoughts, feelings and reactions related the environmental experiences of assuming the disability are:
3. My thoughts, feelings and reactions related to the psychological and social experiences of assuming the disability are:
4. The changes I would make in the environment or other circumstances I have discussed are:
5. The most significant thing I learned from this activity was:
6. The assigned disability was: (on response form, please circle one)

(1). spinal cord injury/paraplegia      (2). hearing impairment      (3). visual impairment

7. On the response form, please circle the number which indicates your response to the following statement:

"I found the Disability Simulation Activity experience to be a valuable learning experience."

|                   |          |         |       |                |
|-------------------|----------|---------|-------|----------------|
| 1                 | 2        | 3       | 4     | 5              |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

## APPENDIX D

## **Definition of Circumstances for Section 1: Spinal cord injury/Paraplegia**

When the result of spinal cord injury is paraplegia, the injured person loses sensation and muscle functioning of the lower extremities due to spinal cord damage below the cervical region of the spine. Cognitive functioning is not impaired because the brain is not affected.

Spinal cord injuries are most commonly caused by automobile, motorcycle or diving accidents. Gunshot wounds, falls, and person-to-person contact (such as sports), are also frequent causes of spinal cord injury. The majority of spinal cord injuries occur in males during their late teens to mid thirties. This means that many individuals with spinal cord injury are likely to be in the same age or peer group as college students.

### **Physical Circumstances**

Degree of paralysis and amount of sensation lost varies among individuals. A complete thoracic injury means that all motor (muscle) and sensory (nerve) function is lost below the site of the injury on the spinal cord. This includes loss of bowel and bladder control. An incomplete thoracic injury means there is some motor or sensory functioning left. Several factors determine the extent of the loss, such as amount of damage to the spinal cord at the site of the injury, quality of post-injury treatment, and the individual's motivation and effort to progress with physical rehabilitation. A person with paraplegia usually has the capacity to learn how to be highly independent in daily living activities. New skills, such as transfer techniques and mastering the use of a wheelchair, must be learned in order to achieve this. Old skills which were taken for granted in the past (such as getting dressed) must be re-learned. If a person with paraplegia has a complete injury, then this person would not have bowel and bladder control and would have to learn the skills to manage this condition.

Neurological impairment that results from spinal cord injury causes several medical concerns during and after the rehabilitation process. Complications with the cardiovascular, respiratory and gastrointestinal systems and the skin need medical attention. Joint contractures and loss or reduction of joint motion are also possible. These concerns are typically addressed during the acute phase of treatment and are often manageable through regular preventive measures.

### **Environmental Circumstances:**

Although the spinal cord injury itself is often not a handicap, physical environmental barriers are. Some examples of barriers in the home are:

- the design of appliances and fixtures in the home
- deep pile carpeting
- storage spaces too high
- cooking areas and sinks reachable only by "parallel parking" the wheelchair
- no grab bars or seats in the shower.
- stairs
- narrow doorways
- inaccessible closets
- bathrooms too small

Some examples of barriers outside the home are:

- the height of elevator buttons
- the height of parking meters

- the height of light switches
- the height of coin-operated telephones
- height of water fountains
- stairs
- steep ramps
- restroom stalls too narrow for wheelchair
- no grab bars in toilet stalls, narrow doorways
- revolving doors
- street curbs
- seating space in public places
- parking spaces too narrow to exit vehicles.
- terrain (grass, sand, gravel, dirt) that makes it difficult to maneuver wheelchair
- attitude of those responsible for facilities: "Can't change, this is how it is done."

Another environmental factor is the physical separation from friends due to physical public barriers. People in wheelchairs may be physically separated from others by the seating available for them. There may be more exposure to others using wheelchairs due to the physical environment and /or as a result of the common experience of having a disability which involves using a wheelchair.

A person with spinal cord injury deals regularly with the misconceptions and attitudes of others. Some people will avoid interaction altogether, others will patronize or express sympathy if they view the injury as an ongoing tragedy.

The list of environmental barriers is nearly inexhaustible. The person with paraplegia constantly discovers barriers in new situations and must learn to anticipate and plan for these situations in order to participate in the world outside the home..

### **Psycho-social Circumstances:**

A spinal cord injury happens suddenly, and changes an individual's world drastically. It is important to remember that each person who has a spinal cord injury brings his or her own life experiences and personality to the process of coping with the effects such a sudden life change. Basically, the individual who faces the effects of spinal cord injury is likely to go through the stages of grief (denial, anger, depression and acceptance) as would anyone who experiences profound loss and life change. This is a process which takes time, and not all individuals go through all these stages.

A psychological consideration in the early stages of rehabilitation is the stress associated with adapting to all the physical changes and physical barriers in the environment. This is emotionally demanding, especially when first discovering the physical barriers in the community.

Some people with spinal cord injury, especially young adults, experience the loss of former friends and relationships. Friends and/or family may have a very difficult time adjusting to the change, just as the person with the spinal cord injury does. Important relationships often endure, but the social support network may change. It is common for someone with a spinal cord injury to find that his or her peer group has changed to some degree. New peer groups tend to include others who use wheelchairs and are facing the same issues associated with this profound change. Friends may even feel that they don't know the person anymore.

Dynamics of being in a wheelchair affect social interactions in other ways. For example the person sitting in the wheelchair is not on the same physical height level as others who are not in chairs. This effects eye contact, requires the person in the chair to always have to look up at others to converse, and puts the person in the chair in a "one down" position.

Initially, the overall sense of loss of control and freedom is a very difficult adjustment. Activities which were previously spontaneous now often require more planning, adaptations, and possibly more dependence on others.

Sexuality and fertility becomes an important issue of adjustment. Addressing these issues is considered an important element of a rehabilitation program. The physical changes that affect sexual functioning are complex, and they vary among individuals. The person with paraplegia must adjust to physical changes in sexual functioning as well as psychological changes in order to come to the understanding that a fulfilling sexual existence is still possible. Changes for males are usually greater in the area of physical functioning and fertility, although there are many resources for improving these functions. Women often maintain fertility and have the ability to carry a child to term. Women, however, may have greater psychological issues to adjust to, such as concerns over whether the wheelchair or the physical status interfere with being seen as attractive or desirable in our society.

The physical, environmental and psycho-social circumstances of spinal cord injury/paraplegia are extensive. Adjustment takes time, and it is a very individual process.

## **Definition of Circumstances for Section 2: Visual impairment**

Visual impairments include a range of visual problems from limited central vision or peripheral vision to total blindness. A person is considered "legally blind" when, after vision is corrected as much as possible, the person can see less at 20 feet than a person with normal vision at 200 feet. Someone who has a limited field of vision (usually this means that vision is limited to an angle of about twenty degrees) is also considered "legally blind." The term "blindness", however, generally refers to the condition in which there is no sight at all. "Visual impairment" more accurately describes the condition of limited vision.

### **Physical Circumstances**

Blindness and visual impairment can be caused by disease, accidents, or physiological conditions, and can occur at birth or at any time throughout life. Because visual impairments take many forms, it is difficult for sighted people to fully understand what visual impairment is like. It is important to remember that descriptions of a person's visual loss do not automatically indicate how functional a person might be. Each person with sight loss has individual physical skills, strengths, limitations, personality traits and circumstances which contribute to functional level. Some of the physical characteristics which determine how a person adjusts to sight loss are:

- balance and coordination
- tactile sensitivity (especially sensitivity in the hands and feet)
- general physical health and medical condition

A person who is blind may choose to learn to use a cane and/or a guide dog. Both require training by a qualified professional, and can provide a high level of independence for the person who learns these skills.

Whether a person is born with visual loss or loses vision sometime late, daily living skills must be developed. For example, systems for finding and matching clothes must be developed. The home environment must be organized and managed so that objects and information can be found.

### **Environmental Circumstances.**

There are many adjustments to consider in the environment. Each individual with a visual impairment will have his or her own strengths and limitations in dealing with his or her unique environment. Here are a few examples of environmental circumstances:

- Crosswalks can be confusing for a blind or visually impaired person, unless a guide dog is present. For example, when cars turn right on a red light at a crosswalk, a blind person will have more difficulty using sound cues to know when to cross the street. This person may use the parallel surge of traffic as a cue for the light change. When several cars also turn right on red, it becomes difficult to tell when it is safe to cross.
- While curb cuts are helpful for people in wheelchairs, they are confusing for people who are blind or visually impaired. A curb provides a clear marker of the end of the sidewalk and the beginning of the street. With curb cuts, a person who is blind or visually impaired has difficulty determining where the street actually begins.
- Signs are helpful only when they are placed in a location and at a height which a person who is blind or visually impaired can find and reach. Numbers or words that are painted on (classroom numbers, etc.) cannot be used for information. When letters or numbers are raised or when Braille is provided, the information on the sign can be used.
- The over helpfulness, without asking, of sighted people in the community is one of the biggest distractions for a person who is blind or visually impaired. This often interferes with a process or system that the person has established to function in the environment.
- Sighted people do not give directions or instructions well because they do not think with the concept of being blind. Sighted people tend to depend heavily on body language to communicate and do not attend closely to verbal cues (don't listen well). Sighted people miss much verbal information from a person who is blind or visually impaired. Sighted people also tend to use words such as "here, there, this, that way" etc. These words do not provide a person who is blind or visually impaired with enough information.

### **Psycho-social Circumstances**

There are differences in the adjustment process for the person who has been blind since birth or early childhood and the person who has lost vision later in life. There are advantages to both situations. Advantages of being blind or visually impaired since birth or early childhood include:

- Adjusts to the disability and the environment during the developmental years, likely to be less fearful about having the disability.
- Easier to learn to read Braille as a child, just as it is easier to learn to read with sight as a child than it is as an adult.
- More highly developed tactile sense and auditory sense for the person who is blind since birth or early childhood.
- May be healthier overall; often loss of sight later in life is due to another illness such as diabetes, or due to the aging process

Advantages of losing vision later include:

- Has visual pictures from the past to use as information; can understand the communication style of sighted people more easily
- More opportunity to experience different parts of life before loss of sight. The person who is blind or visually impaired often misses out on many experiences due to others being overly protective throughout the individual's formative years.

Some other psycho-social circumstances to which a person with blindness or with a visual impairment must adjust are:

- Family or significant others may feel embarrassed about blindness and discourage the blind or visually impaired person from going out into public.
- Adjustment to being blind is often easier than adjustment to how the blind person is perceived by other people. A blind person may feel uncomfortable about how he or she is perceived by sighted people. Some blind people have been taught to feel shame about the disability, and will try not to appear blind or visually impaired.
- People tend to underestimate abilities of a blind person. A person who is blind or visually impaired is often deterred from employment and recreation opportunities, not by lack of ability or motivation, but by the fears of sighted people.
- Sighted people often treat blind people as though they do not have full mental capacity. A person who is blind or visually impaired may experience a sense of needing to excel just to be considered "normal." People who are blind do not want to be singled out or have the disability focused on. The desire is to be considered no less able than anyone else.

What is most important to remember is that when you are interacting with a person who is blind or has visual impairment, you are dealing with an individual who has personal strengths, limitations and personality traits just as you do. Having visual impairment is simply part of this individual's life portfolio. Think how you like to be treated by others, and treat this person the same way.

## **Definition of Circumstances for Section 3: Hearing impairment**

Hearing impairments range from mild to profound in terms of hearing loss. Profound deafness, which occurs in only a small percentage people with hearing loss, refers to inability to hear and understand any speech, even with a hearing aid. The term "hard of hearing" refers to the condition when some amount of speech can be heard and understood with a hearing aid. How a person is affected by the hearing loss depends on several factors, such as age at which the hearing loss occurred, how the hearing loss is addressed and dealt with, and degree or range of the loss of hearing. Loss of hearing in the range of sound where speech is heard is more of a handicap than loss in the other sound ranges. The greater the ability to hear and understand human speech, the easier it is for a person born with hearing impairment to develop literacy in the language of the dominant culture and to develop world knowledge, because much of learning in our hearing-dominated society is done through audition.

For this Definition of Circumstances, the terms "deaf" and "hard of hearing" are used when referring to the general disability of hearing impairment. There is controversy about the terms. Many people who are deaf rather be called "deaf" than "hearing impaired" because they do not consider being deaf an impairment. This is a point worth considering. Is speech always the best or most important medium of learning and communication in our society?

There are differences in the physical, environmental and psycho social circumstances of a person who is deaf and a person who is hard of hearing. There are also some commonly shared circumstances.

### **Physical Circumstances**

#### **Pre-lingual and Post-lingual hearing impairment:**

- Language and speech skills are acquired by the age of five. Pre-lingual hearing impairment refers to hearing loss which occurred before the age of five. It will require more effort for this person to develop spoken language and literacy skills. If

hearing loss occurred after the age of five, this is referred to as post-lingual hearing impairment. The person's speech pattern will be more developed, by hearing peoples' standards, and will sound more familiar to hearing people.

#### **Types of hearing impairment:**

(1) conductive hearing impairment is caused by interference in conducting or transmitting sound vibration from the outer or middle ear to the inner ear. Some people are born with incomplete or malformed auditory canals. Conductive hearing loss is generally treated surgically or medically. Hearing aids work well with this type of loss because it is volume rather than clarity which is lost, and most hearing aids simply amplify all sound.

(2) Sensorineural hearing impairment is caused by damage to auditory nerve fibers or other sensitive mechanisms in the ear. Sound is often not just lost but distorted. Treatment for this type of hearing impairment is more complicated. There is no surgical treatment, and a hearing aid doesn't help when sound distortion is the main problem. Recent developments in hearing aids have produced devices that help reduce some distortion.

**Degree and definitions of hearing loss:** (dB = decibel loss, referring to the use of decibels to measure the amount of hearing that is lost)

|          |          |                                                                                                      |
|----------|----------|------------------------------------------------------------------------------------------------------|
| Mild     | 27-40 dB | Difficulty with distant sounds, needs to be close to source of sounds.                               |
| Moderate | 41-70 dB | Understands conversational speech one-to-one. May miss group discussion information.                 |
| Severe   | 71-90 dB | Can only hear loud sounds close up.                                                                  |
| Profound | 91+ dB   | May be aware of vibration, loud sound. Relies on vision for processing information. Considered deaf. |

#### **Causes of deafness/hearing impairment**

- Heredity
- German measles in mother during pregnancy
- Premature birth
- Other infant and childhood diseases
- Trauma/impact to the ear
- Repeated exposure to loud noise

#### **Signs and symptoms of hearing impairment in a child:**

- Child complains of earaches or ear discomfort, ringing noises, buzzing noises
- Child listens to television, radio, etc. at loud volume
- Child doesn't respond when spoken to in a normal voice
- Child tends to withdraw socially or shows lack of interest; daydreams
- Distorted speech patterns
- Frequent confusion about what someone said

#### **Communication methods of people who are deaf/hard of hearing:**

- Speech reading: Not all people who are deaf or hard of hearing read speech, and even a skilled lip reader understands about 20-30% of other person's speech.
- Sign language (American Sign Language or some form of manually coded English)
- Finger spelling
- Writing
- Some use spoken language and some do not.

### **Environmental Circumstances**

Some of the issues and barriers that a person who is deaf or hard of hearing face are:

- **Background noise:**  
Background noise interferes with the ability to hear one source of sound, such as a person's voice, and interferes with the effectiveness of a hearing aid because it amplifies *all* sounds.
- **Blinking light:**  
Lighting that changes intensity may distract people who are deaf or hard of hearing while they are trying to concentrate on visual cues from a speaker or signer.
- **Lack of skills on part of hearing people to communicate without using speech**  
People who are deaf or hard of hearing need to be able to face the person they are communicating with. They need to be able to see facial expressions, gestures and other body language.
- **Use of interpreters:**  
Classroom formats often make it necessary to have an interpreter in the classroom. The interpreter should be thought of as a set of ears, not a mediator between a hearing person and a person who is deaf or hard of hearing. Hearing people should talk directly to someone who is deaf or hard of hearing, not to the interpreter.
- **Using the telephone (without assistive devices)**
- **Traffic situations where sound is used to communicate (car horn, siren, etc.).**
- **Television, movies and other media which are not captioned for people who are deaf or hard of hearing so that they can follow the dialogue.**

### **Psycho-social Circumstances**

There is an emotionally charged controversy over "oral" verses "total" communication for the deaf. Learning speech at the earliest age possible became the focus of "rehabilitation" for the deaf and hearing impaired for many years, and was considered more important than learning signing skills. Children who are deaf or hard of hearing have been expected to adjust to the hearing world by using speech, which starts them out in life with the message that they are not "normal" and must learn adaptations which make them "normal." This is very hard on the developing self-concept of a child. Today, we know that learning manual rather than oral communication at an early age does not preclude one from also learning speech and, in fact, provides a wider base of communication and learning skills.

People who are deaf or hard of hearing may experience challenges to their psycho-social well-being for many reasons. One reason is that they may miss much verbal information, which makes it more difficult to have satisfying interactions with hearing people. The second reason is that many people underestimate the person's intelligence, either because interactions are affected, information is missed, or the person's learning skills have been affected by lack of access to the English language. If a person who is deaf or hard of hearing also has difficulty monitoring his or her voice volume, or has a speech pattern that differs from that of a hearing person, this may add to the perception of others (who don't understand hearing impairment) that this person is less intelligent or that something is "wrong" with them. When these things happen the person who is deaf or hard of hearing often has to deal with self-esteem issues.

A person who is deaf or hard of hearing may feel isolated or left out in a group of hearing people. In one-to-one situations, it is easier to ask someone to repeat or clarify information. This becomes more complicated in group settings, and the group moves the dialogue along at the pace of the hearing people. The needs of the individual with hearing impairment tend to get put aside by the group.

Certain social skills become very important for developing/maintaining self-esteem and establishing satisfying social interactions. A person who is deaf or hard of hearing often has to be assertive by asking others to repeat or clarify information, or ask for other needs to be met. If you were deaf or hard of hearing, some of the ways you would have to assert your needs include:

- Asking people to face you when talking to you.
- Asking, perhaps often, for information to be repeated or clarified.
- Asserting that you need an interpreter for a situation such as a class, conference, etc.
- Letting others know that background noise is interfering with your ability to hear someone speak or listen to one source of sound.
- Asking for visual presentations of spoken information whenever possible.
- Asking for printed or visual information ahead of time if you are learning something from another person, such as in a classroom situation.
- Letting others know when background light changes are interfering with your ability to use visual information to understand what is happening in a situation.

#### Summary

Some of the very basic physical, environmental and psycho-social circumstances of hearing impairment have been described in this definition. It is important to remember that any person who is deaf or hard of hearing is first and foremost an individual with strengths, talents and limitations. Beyond some of the common circumstances shared by persons who are deaf or hard of hearing, the disability will affect this person's life in away that is unique to this individual.

## APPENDIX E

**PART A. DEFINITION OF CIRCUMSTANCES**  
**Disability Simulation Evaluation**  
**Section 1: Spinal cord injury/Paraplegia**

Please read the "Definition of Circumstances for Spinal cord injury/Paraplegia." To what extent does the definition of circumstances answer the following questions?

Please circle the number to the right of each question to indicate:

|             |        |          |      |           |
|-------------|--------|----------|------|-----------|
| 1           | 2      | 3        | 4    | 5         |
| Very poorly | Poorly | Adequate | Well | Very well |

1. Does the "definition of circumstances" define the general physical  
circumstances of the disability?

1    2    3    4    5

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Does the "definition of circumstances" define the environmental  
circumstances of the disability?

1    2    3    4    5

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Does the "definition of circumstances" define the psycho-social  
circumstances of the disability?

1    2    3    4    5

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Judge # \_\_\_\_\_

Date \_\_\_\_\_

## PART A. DEFINITION OF CIRCUMSTANCES

### Disability Simulation Evaluation Section 2: Visual impairment

Please read the "Definition of Circumstances for Visual impairment." To what extent does the definition of circumstances answer the following questions?

Please circle the number to the right of each question to indicate:

|             |        |          |      |           |
|-------------|--------|----------|------|-----------|
| 1           | 2      | 3        | 4    | 5         |
| Very poorly | Poorly | Adequate | Well | Very well |

1. Does the "definition of circumstances" define the general physical  
circumstances of the disability?

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Does the "definition of circumstances" define the environmental  
circumstances of the disability?

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Does the "definition of circumstances" define the psycho-social  
circumstances of the disability?

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Judge # \_\_\_\_\_

Date \_\_\_\_\_

## PART A. DEFINITION OF CIRCUMSTANCES

### Disability Simulation Evaluation

#### Section 3: Hearing impairment

Please read the "Definition of Circumstances for Hearing impairment." To what extent does the definition of circumstances answer the following questions?

Please circle the number to the right of each question to indicate:

|             |        |          |      |           |
|-------------|--------|----------|------|-----------|
| 1           | 2      | 3        | 4    | 5         |
| Very poorly | Poorly | Adequate | Well | Very well |

1. Does the "definition of circumstances" define the general physical circumstances of the disability? 1 2 3 4 5

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Does the "definition of circumstances" define the environmental circumstances of the disability? 1 2 3 4 5

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Does the "definition of circumstances" define the psycho-social circumstances of the disability? 1 2 3 4 5

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Judge # \_\_\_\_\_

Date \_\_\_\_\_

## APPENDIX F

**DISABILITY SIMULATION ACTIVITIES**  
**RECREATION 320**  
**THERAPEUTIC RECREATION FOR SPECIAL POPULATIONS**  
**FALL 1995**

**Choose one of the following activities for your disability simulation assignment:**

1. Attend a sports event on campus.
2. Bowl 2-3 games at the Student Center bowling alley located in the University Center, or at a local bowling alley. If you wish to use the lane which has a rail, you will need to call and arrange for a time to use it.
3. Attend a movie on campus or at a local movie theater.
4. Attend a live performance (music, play, dance, etc.) on campus or at a local site.

To carry out your assignment, follow the instructions on the following forms:

1. "Instructions and Equipment "
2. "Guidelines for Participants and Partner/Observers"

## APPENDIX G

## **Equipment and Instructions**

### **Recreation 320**

#### **Therapeutic Recreation for Special Populations**

**Fall 1995**

#### **Disability Simulation Activity**

### **SPINAL CORD INJURY (PARAPLEGIA) SIMULATION**

**1. Equipment:** 1. A wheelchair

2. Piece of cord, rope, or anything that will work to tie legs together

**2. Instructions:** When you use the wheelchair, tie your legs together at your thighs and at your ankles. This will keep you from automatically using your legs. A volunteer is providing three wheelchairs for class participants, for 48 hours per person. Use the sign-up sheet in order to reserve a chair and arrange a time to pick it up.

Proper use of a wheelchair requires training. You will need to know how to use the chair when you assume this disability. Demonstration and training will take place in the classroom. You will learn how to control the chair, transfer in and out of the chair, maneuver at curbs ,and how the partner "spots" the person in the chair.

Remember that while you are in the wheelchair, you have no use or control of your legs. Your upper body must do all work

### **VISUAL IMPAIRMENT SIMULATION**

**1. Equipment:** Two 2" x 3" opthamological eye patches with self-adhesive (will be supplied in class)

**2. Instructions:** When ready to begin the simulation, have your partner/observer help apply a patch to each eye. Remove the protective paper and apply one of the pads just below the eyebrow—the narrow end should be positioned toward the nose. The eye area should be covered so that the eyelid stays closed. Be sure all parts of the adhesive area of the patch are applied firmly to the skin.

These patches will block out a significant amount of light but you will see changes in amount of light. Keep in mind that most people who are diagnosed as "blind" do see some amount of light.

### **HEARING IMPAIRMENT SIMULATION**

1. Equipment: One pair of foam earplugs, Noise Reduction Rating 29 decibels.  
(will be supplied in class)

2. Instructions: To wear the earplugs, with clean hands roll the plug back and forth between fingers into a tight cylinder. Immediately insert compressed plug into ear canal. Hold plug in place until it expands to give snug, comfortable fit.

This equipment will not totally eliminate sound. The ear plugs block out 29 decibels which will simulate a moderate hearing lost.

## APPENDIX H

Judge # \_\_\_\_\_  
Date \_\_\_\_\_

## PART B. SIMULATION ACTIVITIES

### Disability Simulation Checklist Section 1: Spinal cord injury/Paraplegia

#### **Activity #1: Attend a sports event on campus.**

After reading the "Definition of Circumstances for Spinal cord injury/Paraplegia," please rate how effectively this activity provides a sampling of the defined circumstances.

You will need the "Equipment and Instructions" form and the "Guidelines for Participants and Partner/Observers" form in order to answer the questions

Circle the number to the right of each question to indicate:

| 1           | 2      | 3        | 4    | 5         |
|-------------|--------|----------|------|-----------|
| Very poorly | Poorly | Adequate | Well | Very well |

1. Does the activity provide an opportunity to sample the physical circumstances as defined? 1 2 3 4 5

Comments \_\_\_\_\_

2. Does the activity provide an opportunity to sample the environmental circumstances as defined? 1 2 3 4 5

Comments \_\_\_\_\_

3. Does the activity provide an opportunity to sample the psycho-social circumstances as defined? 1 2 3 4 5

Comments \_\_\_\_\_

4. Does the "Equipment and Instructions for Assuming a Disability" form provide clear directions? 1 2 3 4 5

Comments \_\_\_\_\_

5. Does the "Guidelines for Participants and Partner/Observers" form address the safety issues of the activity? 1 2 3 4 5

Comments \_\_\_\_\_

6. Does the "Guidelines for Participants and Partner/Observers" form promote effectiveness of the activity? 1 2 3 4 5

Comments \_\_\_\_\_

Additional Comments \_\_\_\_\_

Judge # \_\_\_\_\_

Date \_\_\_\_\_

## PART B. SIMULATION ACTIVITIES

### Disability Simulation Checklist

#### Section 1: Spinal cord injury/Paraplegia

**Activity #2: Bowl 2-3 games at the Student Center bowling alley located in the University Center or local bowling alley. If you wish to use the lane with a rail, you will need to make arrangements for a time to use it.**

After reading the "Definition of Circumstances for Spinal cord injury/Paraplegia," please rate how effectively this activity provides a sampling of the defined circumstances.

You will need the "Equipment and Instructions" form and the "Guidelines for Participants and Partner/Observers" form in order to answer the questions

Circle the number to the right of each question to indicate:

| 1           | 2      | 3        | 4    | 5         |
|-------------|--------|----------|------|-----------|
| Very poorly | Poorly | Adequate | Well | Very well |

1. Does the activity provide an opportunity to sample the physical circumstances as defined?

1   2   3   4   5

Comments \_\_\_\_\_

2. Does the activity provide an opportunity to sample the environmental circumstances as defined?

1   2   3   4   5

Comments \_\_\_\_\_

3. Does the activity provide an opportunity to sample the psycho-social circumstances as defined?

1   2   3   4   5

Comments \_\_\_\_\_

4. Does the "Equipment and Instructions for Assuming a Disability" form provide clear instructions?

1   2   3   4   5

Comments \_\_\_\_\_

5. Does the "Guidelines for Participants and Partner/Observers" form address the safety issues of the activity?

1   2   3   4   5

Comments \_\_\_\_\_

6. Does the "Guidelines for Participants and Partner/Observers" form promote effectiveness of the activity?

1   2   3   4   5

Comments \_\_\_\_\_

Additional Comments \_\_\_\_\_

Judge # \_\_\_\_\_  
Date \_\_\_\_\_

**PART B. SIMULATION ACTIVITIES**  
**Disability Simulation Checklist**  
**Section 1: Spinal cord injury/Paraplegia**

**Activity #3: Attend a movie on campus or at a local theater.**

After reading the "Definition of Circumstances for Spinal cord injury/Paraplegia," please rate how effectively this activity provides a sampling of the defined circumstances.

You will need the "Equipment and Instructions" form and the "Guidelines for Participants and Partner/Observers" form in order to answer the questions

Circle the number to the right of each question to indicate:

|             |        |          |      |           |
|-------------|--------|----------|------|-----------|
| 1           | 2      | 3        | 4    | 5         |
| Very poorly | Poorly | Adequate | Well | Very well |

1. Does the activity provide an opportunity to sample the physical circumstances as defined? 1    2    3    4    5

Comments \_\_\_\_\_

2. Does the activity provide an opportunity to sample the environmental circumstances as defined? 1    2    3    4    5

Comments \_\_\_\_\_

3. Does the activity provide an opportunity to sample the psycho-social circumstances as defined? 1    2    3    4    5

Comments \_\_\_\_\_

4. Does the "Equipment and Instructions for Assuming a Disability" form provide clear instructions? 1    2    3    4    5

Comments \_\_\_\_\_

5. Does the "Guidelines for Participants and Partner/Observers" form address the safety issues of the activity? 1    2    3    4    5

Comments \_\_\_\_\_

6. Does the "Guidelines for Participants and Partner/Observers" form promote effectiveness of the activity? 1    2    3    4    5

Comments \_\_\_\_\_

Additional Comments \_\_\_\_\_

Judge # \_\_\_\_\_  
Date \_\_\_\_\_

**PART B. SIMULATION ACTIVITIES**  
**Disability Simulation Checklist**  
**Section 1: Spinal cord injury/Paraplegia**

**Activity #4: Attend a live performance (music, play, dance, etc.) on campus or at a local site.**

After reading the "Definition of Circumstances for Spinal cord injury/Paraplegia," please rate how effectively this activity provides a sampling of the defined circumstances.

You will need the "Equipment and Instructions" form and the "Guidelines for Participants and Partner/Observers" form in order to answer the questions

Circle the number to the right of each question to indicate:

| 1           | 2      | 3        | 4    | 5         |
|-------------|--------|----------|------|-----------|
| Very poorly | Poorly | Adequate | Well | Very well |

1. Does the activity provide an opportunity to sample the physical circumstances as defined?

1 2 3 4 5

Comments \_\_\_\_\_

2. Does the activity provide an opportunity to sample the environmental circumstances as defined?

1 2 3 4 5

Comments \_\_\_\_\_

3. Does the activity provide an opportunity to sample the psycho-social circumstances as defined?

1 2 3 4 5

Comments \_\_\_\_\_

4. Does the "Equipment and Instructions for Assuming a Disability" form provide clear instructions?

1 2 3 4 5

Comments \_\_\_\_\_

5. Does the "Guidelines for Participants and Partner/Observers" form address the safety issues of the activity?

1 2 3 4 5

Comments \_\_\_\_\_

6. Does the "Guidelines for Participants and Partner/Observers" form promote effectiveness of the activity?

1 2 3 4 5

Comments \_\_\_\_\_

Additional Comments \_\_\_\_\_

## APPENDIX I

**Student Responses: "Participant Evaluation of Experience"**  
**Question 1: Physical Circumstances**

Spinal Cord Injury (12 participants)

| Statement                                                                                 | <u>Participant</u> | Frequency |
|-------------------------------------------------------------------------------------------|--------------------|-----------|
| -Uncomfortable to sit in wheelchair for duration of simulation activity                   |                    | 6         |
| -Difficult to do everyday tasks, familiar activities                                      |                    | 6         |
| -Difficult to maneuver wheelchair (declines, changing surfaces, changing directions, etc. |                    | 5         |
| -Difficult to push myself in wheelchair (tiring)                                          |                    | 4         |
| -Difficult to transfer in and out of car                                                  |                    | 2         |

Partner/observer

|                                                           |   |
|-----------------------------------------------------------|---|
| -Difficult to maneuver wheelchair                         | 5 |
| -Difficult to help participant transfer in and out of car | 4 |
| -Participant had difficulty wheeling self in wheelchair   | 1 |
| -Physically tiring to load and unload wheelchair          | 1 |
| -It took time and patience to carry out everyday tasks    | 1 |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 1: Physical Circumstances**

Visual Impairment (15 participants)

| Statement                                                                                                      | Participant | Frequency |
|----------------------------------------------------------------------------------------------------------------|-------------|-----------|
| -I felt disoriented (confused, didn't know where I was)                                                        |             | 9         |
| -I noticed increased use of other senses (smell, hearing, touch, sensitivity to light and temperature changes) |             | 8         |
| -Simple tasks, familiar activities became more difficult                                                       |             | 7         |
| -My sense of balance was off                                                                                   |             | 5         |
| -I felt a loss of physical control                                                                             |             | 2         |
| -I missed seeing facial expressions and body language                                                          |             | 1         |

Partner/observer

|                                                      |   |
|------------------------------------------------------|---|
| -Simple tasks became more difficult for participant  | 2 |
| -Being partner/observer required much energy from me | 1 |
| -It was easy to assist the participant               | 1 |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 1: Physical Circumstances**

Hearing impairment (15 participants)

| Statement                                                                                                                 | Participant | Frequency |
|---------------------------------------------------------------------------------------------------------------------------|-------------|-----------|
| Car Comments                                                                                                              |             | 17        |
| -Couldn't hear car radio                                                                                                  |             | (9)       |
| -Uncomfortable to ride in car                                                                                             |             | (4)       |
| -Couldn't hear noises I am used to while in car                                                                           |             | (4)       |
| -Had to continually concentrate on my surroundings                                                                        |             | 6         |
| -It felt physically uncomfortable to see and not hear                                                                     |             | 6         |
| -The world was much more quiet during simulation. I didn't realize how much noise I am accustomed to hearing all the time |             | 5         |
| -I could hear sound but they were muffled, unclear                                                                        |             | 4         |
| -My sense of balance was off                                                                                              |             | 3         |
| -I could feel vibrations from music (movie, loud car radio)                                                               |             | 3         |
| -I used my vision a great deal more than usual                                                                            |             | 3         |
| -Couldn't tell how loud I was talking                                                                                     |             | 2         |
| -Simple tasks became more difficult                                                                                       |             | 1         |

Partner/observer

|                                                                 |  |     |
|-----------------------------------------------------------------|--|-----|
| Car comments                                                    |  | 6   |
| -It was uncomfortable riding in the car together.               |  | (3) |
| -Participant couldn't hear car radio                            |  | (3) |
| -I noticed that the participant concentrated more on everything |  | 2   |
| -I was tired from efforts to communicate with the participant   |  | 2   |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 2: Environmental Circumstances**

Spinal cord injury (12 participants)

| Statement                                                                 | Frequency |
|---------------------------------------------------------------------------|-----------|
| <u>Participant</u>                                                        |           |
| -The facility had accessibility problems:                                 | 25        |
| -Ramps were too steep                                                     | (5)       |
| -No decent space in movie theater for wheelchairs                         | (4)       |
| -Doors were difficult to negotiate (heavy, awkward location, etc.).       | (3)       |
| -Counters too high (concession stands, at bowling alley, etc.).           | (3)       |
| -One step down to get from sitting area to the floor of the lane          | (2)       |
| -Movie aisles too narrow                                                  | (1)       |
| -Elevator button too high                                                 | (1)       |
| -Other problems (not specified)                                           | (7)       |
| -People stared                                                            | 8         |
| -People were nice (friendly, helpful)                                     | 7         |
| -People avoided eye contact                                               | 6         |
| -People were rude                                                         | 4         |
| -People appeared to feel sorry for me                                     | 4         |
| -I felt isolated because of the seating arrangement for wheelchairs       | 3         |
| -Employees of the facility didn't know how to address accessibility needs | 3         |
| -UT campus is poorly equipped for wheelchair access                       | 2         |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 2: Environmental Circumstances**

Spinal cord injury (cont'd)

| Statement | Frequency |
|-----------|-----------|
|-----------|-----------|

Partner/observer

|                                                   |       |
|---------------------------------------------------|-------|
| -Facility had accessibility problems:             | 11    |
| -Doors difficult to negotiate                     |       |
| -Ramps too steep                                  |       |
| -No decent space in movie theater for wheelchairs |       |
| -Counters too tall                                |       |
| -Other accessibility problems (not specified)     |       |
| <br>-People stared                                | <br>5 |
| -People were nice (helpful, friendly)             | 4     |
| -People were rude                                 | 4     |
| -People avoided eye contact                       | 2     |
| -People seemed to feel sorry for the participant  | 2     |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 2: Environmental Circumstances**

| Statement | Visual impairment (15 participants) | Frequency |
|-----------|-------------------------------------|-----------|
|-----------|-------------------------------------|-----------|

Participant

|                                                                    |   |
|--------------------------------------------------------------------|---|
| -Lack of information in Braille or other medium for blind people   | 5 |
| -People were rude                                                  | 5 |
| -People stared                                                     | 5 |
| -I couldn't tell where I was in the lane when I tried to bowl      | 4 |
| -Problems walking on sidewalks and over curbs                      | 4 |
| -Bowling rail at University Center bowling alley fell off the wall | 3 |
| -People seemed to feel sorry for me                                | 2 |
| -People were nice (friendly, helpful)                              | 2 |

Partner/observer

|                                              |   |
|----------------------------------------------|---|
| -People stared                               | 7 |
| -Facility had accessibility problems         | 4 |
| -Problems walking on sidewalk and over curbs | 3 |
| -People were nice (friendly, helpful)        | 2 |
| -People were rude                            | 2 |
| -People didn't seem to react at all          | 2 |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 2: Environmental Circumstances**

**Hearing impairment (15 participants)**

| Statement | Frequency |
|-----------|-----------|
|-----------|-----------|

**Participant**

|                                                                    |   |
|--------------------------------------------------------------------|---|
| -People stared, gave strange looks, made fun, talked about me      | 8 |
| -I could not enjoy the movie because I missed out on the dialogue  | 7 |
| -People got frustrated and gave up trying to communicate with me   | 3 |
| -I felt left out of conversations d/t no mutual way to communicate | 3 |

**Partner/observer**

|                                                                                             |   |
|---------------------------------------------------------------------------------------------|---|
| Felt frustrated by inability to communicate with participant                                | 6 |
| -Had to repeat everything                                                                   |   |
| -Had to face participant while talking                                                      |   |
| -Had to use much body language (facial expressions, hand signals)                           |   |
| -People stared, gave strange looks, made fun, talked about participant                      | 6 |
| -Couldn't communicate because we didn't know sign language                                  | 5 |
| -People in public were impatient with participant, low tolerance for communication problems | 2 |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 3: Psycho-social Circumstances**

**Spinal cord injury (12 participants)**

| Statement | Frequency |
|-----------|-----------|
|-----------|-----------|

**Participant**

|                                                         |   |
|---------------------------------------------------------|---|
| -I felt awkward, ashamed, embarrassed                   | 8 |
| -I felt dependent on my partner for help                | 4 |
| -I cannot imagine having to be in a wheelchair for life | 4 |
| 4. I felt isolated being in a wheelchair                | 4 |
| 5. I was afraid that people would feel sorry for me     | 3 |
| 6. I felt that I was seen as inferior                   | 2 |

**Partner/observer**

|                                                                    |   |
|--------------------------------------------------------------------|---|
| 1. The participant was isolated from others                        | 5 |
| 2. I kept helping too much or too little felt                      | 3 |
| 3. It was hard to deal with seeing the participant in a wheelchair | 2 |
| 4. I was concerned about how people would react to the participant | 2 |
| 5. I felt embarrassed                                              | 2 |
| 6. I felt very responsible for the participant                     | 2 |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 3: Psycho-social Circumstances**

Visual impairment (15 participants)

| Statement | Frequency |
|-----------|-----------|
|-----------|-----------|

Participant

|                                                             |    |
|-------------------------------------------------------------|----|
| -I felt dependent on partner for help, loss of independence | 12 |
| -I felt nervous, scared                                     | 5  |
| -I felt isolated, left out, withdrawn                       | 6  |
| -I felt embarrassed, awkward                                | 4  |

Partner/observer

|                                                                                                                |   |
|----------------------------------------------------------------------------------------------------------------|---|
| -It was difficult being responsible for the safety of the participant.                                         | 5 |
| -I was frustrated by the needs of the participant                                                              | 5 |
| -I realized the difficulty of the challenges the participant faced<br>The participant was isolated from others | 4 |
| -I kept helping too much or too little                                                                         | 4 |
| -I was comfortable with the participant's disability                                                           | 3 |

**Student Responses: "Participant Evaluation of Experience"**  
**Question 3: Psycho-social Circumstances**

| Statement | Hearing impairment (15 participants) | Frequency |
|-----------|--------------------------------------|-----------|
|-----------|--------------------------------------|-----------|

Participant

|                                                                    |  |   |
|--------------------------------------------------------------------|--|---|
| -I felt frustrated by the communication barrier                    |  | 9 |
| -I became more quiet, withdrawn, passive                           |  | 6 |
| -I depended on my partner's help                                   |  | 3 |
| -I became less interested in the activity or the interactions      |  | 3 |
| -I realize that a disability requires time and effort to adjust to |  | 2 |
| -I felt insecure due to the communication barrier                  |  | 2 |

Partner/observer

|                                                                                    |  |   |
|------------------------------------------------------------------------------------|--|---|
| -I felt frustrated by the participant's to loss of hearing                         |  | 5 |
| -I was aware of the emotional difficulties the participant had due to hearing loss |  | 4 |
| -I missed being able to talk to the participant                                    |  | 4 |
| -I noticed that participant was not enjoying the movie                             |  | 2 |
| -The participant became more quiet/withdrawn/passive than usual                    |  | 2 |

**Question 4: "The changes I would make in the environment or other circumstances I have discussed are..."**

**Spinal cord injury**

|                                                                              |   |
|------------------------------------------------------------------------------|---|
| -Better location of entrance ramps (closer to entrance and to parking)       | 5 |
| -Improve angle of ramps                                                      | 5 |
| -Better seating in public places for people who use wheelchairs              | 4 |
| -Improve accessibility in general for people in wheelchairs                  | 3 |
| -Seating for people in wheelchairs that doesn't isolate                      | 2 |
| -More blue "handicapped" signs                                               | 2 |
| -Improve design of doors and doorways                                        | 2 |
| -More access ramps on UT. campus                                             | 1 |
| -Improve floor surfaces in public places                                     | 1 |
| -Make automobiles that allow greater mobility and independence               | 1 |
| -Larger bathrooms and bathroom stalls in public places                       | 1 |
| -Lower counters in public places                                             | 1 |
| -Eliminate "step down" to lane at bowling alleys                             | 1 |
| -Wider aisles in movie theaters                                              | 1 |
| -Educate people about disabilities                                           | 1 |
| -Involve people with disabilities in designing and planning public buildings | 1 |

**Visual impairment**

|                                                                                              |   |
|----------------------------------------------------------------------------------------------|---|
| -More Braille and other touch-sensitive objects as markers for blind people in public places | 8 |
| -Improve sidewalks and curbs                                                                 | 4 |
| -Make sure adaptive equipment is in good working order                                       | 2 |

- Textured markings on bowling lanes so blind people know where they are 2
- More adaptive equipment in recreational facilities 1

### Hearing impairment

- Closed caption for movies at theaters 11
- More people need to learn sign language 10
- A better understanding/attitude toward people with disabilities 3
- Change the way non-disabled people treat people with disabilities 3
- No changes needed 2
- Train employees to work with people with disabilities 2
- Educate the general public about disabilities 2
- More people to sign for the deaf at public events (like UT football games) 2
- More visual cues in public buildings 2

## VITA

Melanie Collins is originally from Quartz Hill, California. She attended Brigham Young University where she received a Bachelor of Science degree in Recreation Management, with an emphasis in therapeutic recreation, in 1979.

After graduating she gained extensive experience at developing and implementing therapeutic recreation programs in mental health and chemical dependency treatment settings. In 1993 she accepted a position as a graduate research assistant at The University of Tennessee in Knoxville and began pursuing a Master of Science degree in Recreation and Leisure Studies.

Her curiosity about disability simulations was sparked by Dr. Mary Dale Blanton's use of simulations as part of her curriculum for students in a therapeutic recreation class for special populations. This led to her decision to investigate the use of disability simulations as a teaching strategy.

She is certified as a Therapeutic Recreation Specialist by the National Council for Therapeutic Recreation Certification. She has a strong interest in various forms of experiential learning. She completed Project Adventure's "Adventure Based Counseling" course and has worked as a facilitator for ropes course activities in Knoxville and in Charlotte, North Carolina.

She received a Master of Science degree in Recreation and Leisure Studies with an emphasis in therapeutic recreation in December of 1995. In the spring of 1995 she was awarded the Edith M. Jessop award for outstanding leadership in recreation.