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THE DEVELOPMENT OF A LEISURE KNOWLEDGE TEST

THESIS

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By

Patty S. Forsyth, B.A.

Denton, Texas

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The purposes of this study were to develop an instrument to measure knowledge of leisure opportunities, and determine the reliability of the instrument. Subjects included 292 orthopedically impaired, nine to fourteen year old children. A multiple-choice format is used. The content is based on four domains. These are entertainment, games, sports, and arts and crafts. The domains are sub-categorized into who, where, what, when, and cost of activities. The Kuder-Richardson formula 20 showed a reliability coefficient of .81. The Pearson, point biserial correlation was used to determine item-test correlations. Correlations below .20 were revised. Items with a difficulty level of 70 percent and above were also revised. The results indicated that the instrument had been successfully developed.

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CHAPTER I

INTRODUCTION

The trend toward the increasing importance of leisure is evident with the shortening of the work week, the increase of time-saving appliances in homes, improvement of medical techniques to lengthen life expectancy, increases in discretionary income, and increased paid vacations (7). The growth of free time available to the bulk of the population is a concern for many educators and recreators because of the lack of preparation that many people have for meaningfully using their unobligated time. For example, research has indicated that an inability to cope with leisure is a prime factor in alcohol/drug abuse, suicide, and other maladaptive behaviors (7).

Efforts have recently begun to help individuals develop patterns of leisure that are meaningful to them. For example, in an attempt to improve leadership many universities are offering programs to educate students in areas of leisure counseling, leisure education, therapeutic recreation, and recreation and leisure management. Park and Recreation service systems are attempting to provide an increasing variety of leisure opportunities to meet the needs of the public. As well as providing programs and facilities,

parks and recreation service systems also seem to be increasingly aware of the need to provide services that will facilitate the leisure development of potential users (4). School systems are also being urged to play an increasing role in helping students develop the understanding, skills and knowledge about leisure to enable them to make even more personally satisfying leisure decisions (6).

The recent emphasis on making the pursuit of leisure a meaningful and rewarding experience for the individual is directed not only at assisting the bulk of the "normal" population in using their free time more constructively, but also to meeting the leisure needs of handicapped members of society. The necessity for an emphasis on leisure education for the handicapped individuals is that, due to their disability, they may devote a greater part of their lives to leisure rather than to work (9).

A move to improve leisure services for the handicapped was taken in the early 1970's when the former Bureau of Education of the Handicapped, now the Office of Special Education, listed recreation as a national educational priority. In 1975 the Congress passed Public Law 94-142, which states that school districts must include in their programs individualized planning for handicapped persons (1). Under related services the individualized educational plan (I.E.P.) called for the assessment of recreation and leisure functioning. The increased concern with promoting leisure

development emphasizes the need to develop an understanding of the components of successful leisure functioning and appropriate means to measure if maximal leisure functioning has been achieved.

There seem to be several prerequisites in order for an individual to successfully engage in personally satisfying leisure experiences. First, individuals need to develop an understanding of the concept of leisure and then have an awareness of potential leisure opportunities. In addition, Bregha (3) suggests the maintenance of one's freedom throughout a lifetime as a necessary pre-condition of leisure. He proposes that leisure occurs when a person has freedom from constraints such as daily work routines, family responsibilities, or even worry. In addition to feeling freedom from something, a person must have the freedom to choose what he wants. Thus, leisure is linked to knowledge and wisdom because both form part of the ability to choose with intelligence and responsibility.

Neulinger (9) supports Bregha (3) by stating that the primary prerequisite for leisure is freedom. Freedom implies a state in which a person feels that what s/he is doing is by his or her choice. Neulinger points out that perceived freedom is not an all or nothing affair. It can be looked at by degrees, with ideal leisure implying a state at the extreme end of the continuum of perceived freedom.

Freedom can be related to knowledge in that an individual who has less knowledge of leisure opportunities may be at the low end of the continuum of perceived freedom. Therefore, a person knowing fewer leisure alternatives may perceive himself or herself limited in his or her participation opportunities. This creates a feeling of confinement or lack of alternative actions which according to Neulinger may block attainment of an ideal leisure state (9).

The ability to be independent, self-sufficient in judgement and expression, are fundamental conditions of both freedom and leisure (3). Bregha (3) sums up the concept of leisure by stating that leisure depends on knowledge of options, the ability to choose goals that will bring happiness, inner strength and independence, and finally an environment which is conducive to leisure.

Several systematic attempts to outline components of the overall process of leisure functioning have been undertaken. Most of these systems include a component concerning knowledge of leisure that Bregha (3) considers so important. Gunn and Peterson (5) state that in order for meaningful leisure to take place, an individual must acquire diverse knowledge and skills as well as positive attitudes and self-understanding of leisure and personal preferences. They outlining four content areas for the leisure functioning

process. These include

1. developing awareness of leisure values and attitudes;
2. developing social-interaction skills;
3. developing leisure-activity skills;
4. developing knowledge of leisure resources.

Mundy and Odum (7) have also outlined components for the overall leisure functioning process. One critical component in this process focuses on increasing clients knowledge of the "what, where, and how" of recreation participation. Overall, clients need to be

1. introduced to unfamiliar recreation activities;
2. acquire a knowledge of what an activity involves and "how to do it;"
3. develop entry level skills;
4. have opportunities for participation in a wide variety of recreation activities and facilities.

The purpose of such an approach is to enable a person to have knowledge, skills, and some interest in recreation activities.

The approaches taken by Bregha (3), Neulinger (9), Mundy and Odum (7), and Gunn and Peterson (5) all include knowledge of leisure resources as an essential factor for assessing the leisure functioning of an individual. Knowledge is viewed as a prerequisite to successful leisure functioning. Unfortunately, to date little effort has been made to develop a valid/reliable approach to assessing an individual's level of knowledge about leisure. Therefore, it is important to develop a valid/reliable test which will measure this component. This thesis will be aimed at

developing a prototype knowledge test for use as a part of the overall leisure assessment process.

Statement of the Problem

This study involved the construction of a Leisure Knowledge Test to be used to determine the knowledge of leisure opportunities of nine to fourteen year old orthopedically impaired children. Orthopedically impaired children were selected to be the subjects for two reasons.

1. They were the available test population via the Leisure Diagnostic Battery Project (11).
2. There was the possibility of modifying and adapting the instrument to a wide variety of other populations.

Purposes of the Study

The purposes of the study were

1. To construct a test to measure knowledge of leisure opportunities.
2. To determine the reliability of the Leisure Knowledge Test.

Definition of Terms

The following terms were used in the study.

1. Leisure: Participation in and enjoyment of a non-work activity or experience during unobligated time.
2. Knowledge: The familiarity with and awareness of

a particular subject or branch of learning.

3. Orthopedically Impaired: Includes individuals in mainstream or special class environment in a school setting who have orthopedic impairment which adversely affects educational performance. Will include those with impairments caused by some congenital anomaly (e.g., poliomyelitis, bone tuberculosis, etc.) or is adventitious and results from other causes (e.g., cerebral palsy, amputations and fractures or burns which cause contractures). Can also include individuals listed as "other health impaired" which includes those with limited strength, vitality or alertness, due to chronic or acute health problems such as heart condition, tuberculosis, rheumatic fever, nephritis, asthma, sickle cell anemia, hemophilia, epilepsy, lead poisoning, leukemia, or diabetes, which adversely affects a child's educational performance.

Delimitations of the Study

The delimitations of this study were

1. Development of the knowledge instrument was confined to only one population and a specific age range of children. The population was orthopedically impaired children, ranging in ages from nine to fourteen years.
2. Knowledge was limited to level one of Bloom and Krathwohl's knowledge definition (2).

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CHAPTER II

REVIEW OF LITERATURE

Literature in support of developing this thesis was reviewed in the following areas: (1) rationale for including knowledge as a component of a model of leisure functioning, (2) definition and overview of the knowledge component, (3) procedures for test construction, and (4) test format. The reviewed sources help provide a basis for understanding the importance of the knowledge component and means of testing an individual's knowledge of leisure.

The Knowledge Component of Leisure Functioning

Several authors have included knowledge of leisure resources as a main component necessary for leisure functioning. Gunn and Peterson (8, p. 200) suggest four content areas for the leisure education process and to facilitate overall leisure functioning. (See Figure 1, page 10). These include

1. developing awareness of leisure values and attitudes;
2. developing social-interaction skills;
3. developing leisure-activity skills;
4. developing knowledge of leisure resources.

Gunn and Peterson (8, pp. 200-205) describe knowledge of leisure resources as a cognitive process. The goal of this area is to assess any problems an individual has with

<p>LEISURE-VALUE-AND-ATTITUDE AWARENESS AND DEVELOPMENT</p> <p>1.1 Leisure Awareness</p> <p>1.2 Self-Awareness</p> <p>1.3 Leisure and Play Attitudes</p> <p>1.4 Related Participatory Problem Solving</p> <p style="text-align: right;">1.0</p>	<p>SOCIAL-INTERACTION SKILLS</p> <p>2.1 Interpersonal/Dyad</p> <p>2.2 Small Group</p> <p>2.3 Large Group</p> <hr/> <p>Cooperation and Competition</p> <p style="text-align: right;">2.0</p>
<p>LEISURE RESOURCES</p> <p>4.1 Activity Opportunities</p> <p>4.2 Personal Resources</p> <p>4.3 Family and Home Resources</p> <p>4.4 Community Resources</p> <p>4.5 State and National Resources</p> <hr/> <p>Knowledge and Utilization</p> <p style="text-align: right;">4.0</p>	<p>LEISURE-ACTIVITY SKILLS</p> <p>3.1 Traditional</p> <p>3.1.1 Sports</p> <p>3.1.2 Aquatics</p> <p>3.1.3 Outdoor Activities</p> <p>3.1.4 Fitness</p> <p>3.1.5 Expressive Arts</p> <p>3.1.6 Home and Family Activities</p> <p>3.1.7 Mental Activities</p> <p>3.1.8 Community Services</p> <p>3.1.9 Appreciation Activities</p> <p>3.2 Non-Traditional</p> <p>3.2.1 Spontaneous or Unstructured Play</p> <p style="text-align: right;">3.0</p>

Fig. 1--Leisure Education Model

knowledge of leisure opportunities. Questions which might be included in the knowledge component area are, "When can I play?", "How do I get there?", and "What's available to me?". Knowledge of leisure resources aids an individual in finding personally meaningful leisure pursuits. By finding leisure pursuits which are enjoyable, a person therefore increases his/her potential for leisure functioning.

Mundy and Odum (10) also discuss models of current recreation programs which are available for disabled persons. These program components which are evident in many therapeutic recreation systems include: (1) recreation activities, (2) developmental/rehabilitation/therapy, (3) recreation-education, (4) participation in recreation activities in a community, (5) leisure participation. The emphasis of this program structure is upon recreation activities. Clients may

- (a) be introduced to unfamiliar recreation activities,
- (b) acquire a knowledge of what an activity involves and "how to do it",
- (c) develop at least a minimum skill in unfamiliar and familiar activities, and
- (d) have opportunities for participation in a wide variety of recreation activities within the facility.

Figure 2 illustrates the recreation-education component. This component focuses on increasing a client's knowledge of the "what, where, cost, and how" of recreation participation. In addition, the component focuses on increasing the client's awareness of his/her leisure interests. The contents which

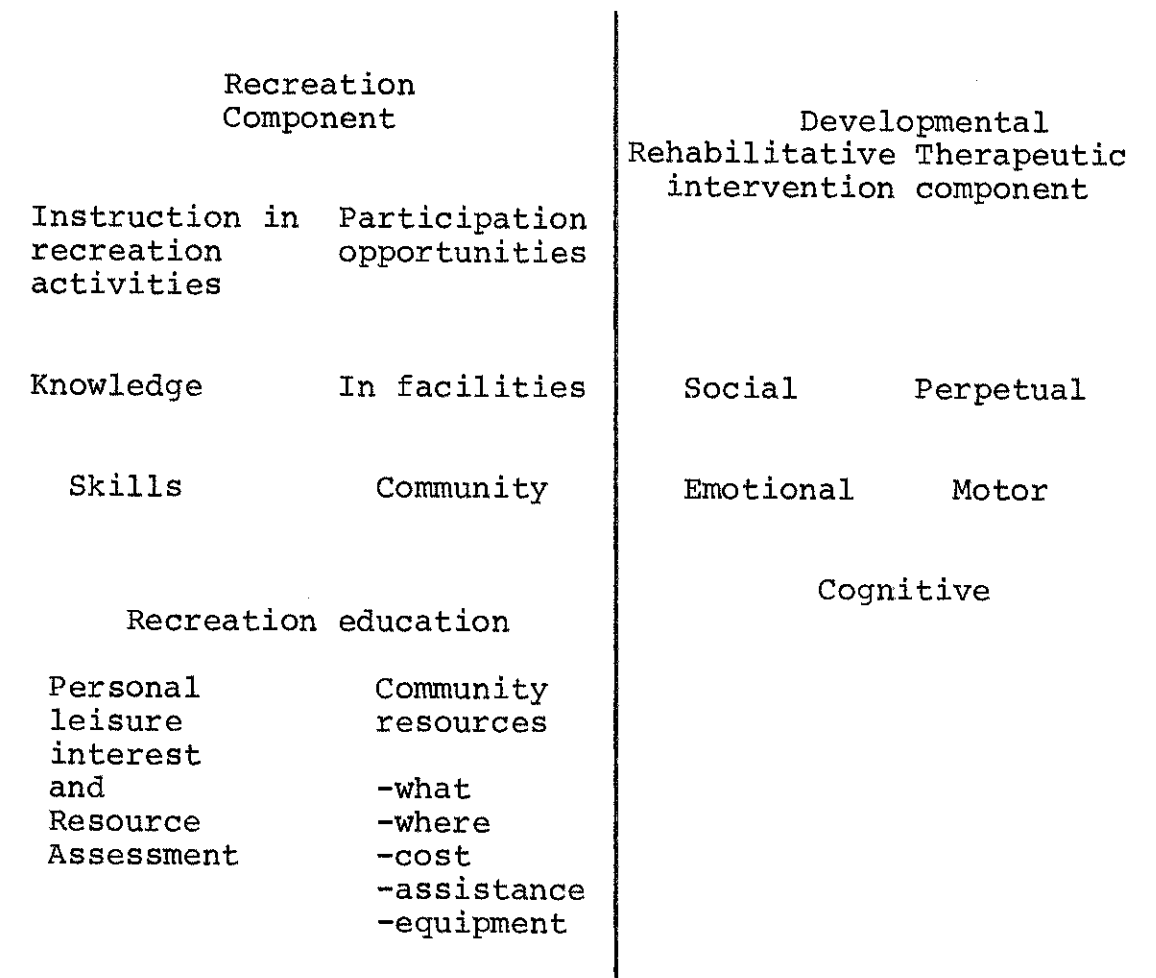


Fig. 2--Therapeutic Recreation Program

form this component suggest that by increasing an individual's knowledge of both leisure interests and community resources that the individual will be better able to pursue leisure that is personally meaningful.

Finally, Witt and Compton (17) have developed five major components which are critical in assessing leisure functioning of handicapped children. These include

1. leisure values;
2. leisure attitudes;
3. leisure knowledge;
4. leisure skills (social and physical);
5. decision-making.

Here again, knowledge of leisure is essential in a model developed to describe an assessment and leisure education process.

The identification of knowledge as an important factor in implementing leisure education and assessing leisure functioning has made the development of an instrument to measure this component imperative. In order to derive such a component a fuller understanding of the meaning of knowledge of leisure was necessary. To do this, Bloom and Krathwohl's (2) Taxonomy of Cognitive Objectives was reviewed and the following working definition was constructed.

Definition of Knowledge of Leisure

Bloom and Krathwohl (2) discuss three levels of knowledge. Level one is knowledge of specifics, level two is knowledge of ways and means of dealing with specifics, and level three is knowledge of universals and abstractions in a field.

Knowledge of specifics emphasizes concrete referents. Knowledge is at a low level of abstraction. This level of knowledge may include knowledge of terminology or knowledge of persons, places or events.

Knowledge of ways and means of dealing with specifics includes organizing and inquiry. Here knowledge is at an intermediate level. It emphasizes a subject using information rather than just awareness of specifics.

Knowledge of universals and abstractions is the highest level of knowledge. Universals and abstractions are the large structures, theories and generalizations that dominate a subject.

The following definition was derived using Bloom and Krathwohl's (2) level one of knowledge as a base. Level one was used because this type of knowledge is concerned with awareness only and was considered an initial prerequisite for leisure functioning.

Level one knowledge is evidence of remembering by recognition or recalling information or phenomenon in a form very close to that in which it was originally encountered (2). This type of knowledge is familiarity with the characteristics of what, where, when, and how concerning an individual's environment.

Knowing specifics about a play, recreation, or leisure opportunity does not imply that an individual possesses the ability or desire to engage in that opportunity. Specific knowledge implies only that the individual is aware of the inherent characteristics surrounding a play, recreation, or leisure opportunity, i.e., what it is, how it's done, when it's done, and who can do it. Thus, this level of knowledge is awareness centered rather than action oriented.

Knowledge of specifics is manifested in a testing situation by appropriate responses to presented signals and

cues. Signals and cues can be auditory, visual, tactual, or olfactory (2).

The knowledge component is an important portion of any assessment of leisure functioning. It is repeatedly seen in models of therapeutic recreation and leisure education developed by leading authorities in these fields. The perceived necessity of the component of knowledge for assessing leisure functioning and the working definition of knowledge are the foundation for developing an instrument to measure this component.

Procedure for Test Construction

The construction of any test is usually done with specific steps and goals to follow. Several authors on test construction have developed a series of steps to be followed in preparing tests. Steps for planning a test as a whole are presented here from the work of Bean (1). The procedures and guidelines include

1. Defining the Purpose of the Test: There must be a determination of the level of measurement, the degree of difficulty, the length and the thoroughness of the test;
2. Problems of Test Administration: The test should provide the administrator with careful instructions for answering the questions. The instructions should be printed on the test forms or in the manual;
3. The Scoring Procedure: Answer lines should be in a straight row. They can either be to the right or at the left of the questions. Double-spacing of answers increases speed and accuracy of scoring;
4. Weighting Scores on Composite Tests: Sections are often weighted according to the test writer's

- subjective judgement of their relative worth.
5. Analysis of Content: The test writer must decide what he or she is trying to evaluate by testing. When this is achieved, the test should cover all areas and topics of concern. Ultimately the test writer decides on a form of test item which best fits his purpose:
 6. Tentative Outline of the Proposed Test: An outline should be prepared after the analysis of objectives. It is a rough plan for formulating the types of questions, the number of questions, and the weight given to each question.

Gronlund (7, pp. 79 and 105) adds two more steps to this list of procedures and guidelines for test construction:

7. To Determine Validity: This procedure is done to determine the extent to which a measuring instrument measures what it was intended to measure.
Types of validity:
 - a. Content validity is the extent to which a test measures a representative sample of the subject-matter content. It is the adequacy of the sample.
 - b. Criterion-Related Validity is used whenever test scores are to be used to predict future performance or to estimate current performance on some valued measure other than the test itself.
 - c. Construct Validity may be defined as the extent to which test performance can be interpreted in terms of certain psychological constructs. Examples of this include reading comprehension, critical thinking and intelligence tests.
8. To Determine Reliability: This refers to the consistency of measurement. That is how consistent test scores are from one measurement to another.
Types of reliability:
 - a. Test-retest method is when the same test is given twice.
 - b. Equivalent-forms method is giving two forms of the test to the same group in close succession.
 - c. Split-half method is giving the test once. The scorer scores two equivalent halves of the test.
 - d. Kuder-Richardson method. The test is given once. The total test is scored and the Kuder-Richardson formula is applied.

These procedures provide a comprehensive overview of the steps needed for developing a reliable and valid test.

Applied to the current study, they should facilitate a thorough job of test construction and validation.

Knowledge Tests Using the Objective Test Format

The construction of a knowledge test appears to be best when an objective test format is utilized. Several authors who have developed knowledge tests have used objective test items. Snell (12), for example, has constructed a series of physical education knowledge tests. The tests are constructed in the multiple-choice format. The multiple-choice items consist of five alternatives from which the student chooses one.

Peters (11) developed a Biblical Knowledge Test. This test consisted of four parts: a five choice multiple-choice section, a true-false section, a matching exercise, and a slight variation of the matching exercise. The test was developed to test content knowledge of the Bible.

A Health Knowledge Test was developed by Bridges (3) to assess knowledge of health facts. The question format consisted of multiple-choice questions which covered thirteen areas of health knowledge.

Swarty (13) constructed a test for girls basketball which covers five important areas of basketball knowledge. This test included several objective type questions including true-false, completion, best answer, and pictorial.

A test called the Three-Decision Multiple-Choice test was developed by Willey (16). The test offers the student five options, the individual selects the correct answer and two definitely wrong options. When an examinee is not certain of the correct answer, he must draw on his recall of relevant partial knowledge and on his analytical skill. This test measures total knowledge of an area as well as partial knowledge.

Hewitt (9) developed a Comprehensive Tennis Knowledge Test. In this test he included objective type questions such as true-false, multiple-choice, diagrammatic, completion, matching, and yes-no items.

The final instrument reviewed was done by Decker and Caetano (4). They developed an itemized questionnaire with yes-no and "do not know" as the question format. The purpose of this instrument was to obtain information in order to improve an individual's level of natal knowledge.

The literature review of constructed knowledge tests shows support for an objective type format. No format other than an objective type was found in any of the literature concerning knowledge tests. For the current study, a multiple-choice format was chosen for the Leisure Knowledge Test because it has certain advantages over the other objective formats. According to Wagner (15) a multiple-choice format is the most effective method to measure knowledge.

He suggests that the multiple-choice format is the most objective evaluation of an individual's knowledge of a given subject.

Gronlund (6) supports the objective test format by adding that they all have two things in common. They limit the type of response a student can make and the individual must demonstrate either specific or general knowledge to record a correct answer. Gronlund (6, p. 175) lists the advantages of an objective test:

1. This format is effective for measuring knowledge of facts;
2. An objective test provides the testor with an extensive sampling of subjects, due to the large number of questions that can be included in a test;
3. It limits the type of answer called for. The questions have one answer which is right over all the others;
4. Scoring is quick, easy and consistent;
5. This format usually encourages individuals to develop a comprehensive knowledge of facts on a subject area.

Gronlund (6) adds that multiple-choice type questions have an advantage over all the other objective formats because they can measure various types of knowledge effectively.

Bean (1) adds two other advantages he feels the multiple-choice format offers. These are

1. The factor of chance success is reduced with the four of five possible answers. Therefore, the individual must know that the other answers are incorrect in order to choose the right responses;
2. A multiple-choice item test can display a wide variety of materials which can be readily used in test form.

Furst (5) suggests that there are certain advantages which the multiple-choice item holds over the other major types of objective test formats. These advantages are as follows.

1. The multiple-choice item is extremely adaptable. It has an unusually wide range of uses.
2. The multiple-choice item appears to be relatively free of response sets. A response set refers to "any tendency causing a person consistently to make different responses to test items than he would have made had the same content been presented in a different form" (5, p. 252).
3. It generally provides greater test reliability per item than does the true-false type of test.
4. It generally can provide more analytic data than the true-false test. The alternative on a multiple-choice item can provide the examiner with some basis for assessing errors.

Procedures for Development of Multiple-Choice Items

Several authors on test construction have established criteria which are essential for the development of multiple-choice type items. Furst (5) explains that multiple-choice items should consist of two parts: a stem or a lead, and a list of suggested alternatives, one which is correct or clearly the best. The stem or lead may take a variety of forms, but two cover most uses. The two forms consist of direct questions and the incomplete statement. The alternatives, usually consist of four or five items. Of these options two or three are logically possible.

Furst (5, pp. 252-258) further illustrates suggestions for writing multiple-choice items. They include

1. Present a single, definite problem in the lead. The student can grasp the problem quickly and go on to consider the alternatives.
2. Include as much of the item as possible in the lead. This cuts down on reading.
3. State the lead in positive terms, as a general rule. Negative statements tend to confuse the reader since most items usually ask for choice of correct or best answer.
4. Make the alternatives consistent with the lead. The alternatives should be logically and grammatically consistent with the lead.
5. Make the alternatives reasonably similar. They should be similar in content, grammatical form, degree of precision, and length.
6. Make the alternatives as brief as possible.
7. Make the alternatives plausible and attractive.
8. Use such options as 'none of the above' with discretion. Do not overuse, and if it is offered, it should appear as the correct answer in a proper portion of the items.

Bean (1, pp. 62-72) supports the writing rules by

Furst (5) with a few additional rules. These rules include

1. If a question or item depends in any way upon a preceding one, neither must reveal the answer to the other .
2. Answers should follow a random pattern. The placement of correct answers should not follow a regular pattern.
3. The vocabulary should be appropriate to the group for which it is intended.

Travers (14, p. 95) also suggests two rules not mentioned by Furst (5) and Bean (1) for writing a multiple-choice test. They are

1. The problem stated in the lead must have a definite answer. The answer must be clear-cut.
2. The suggested solutions should require the pupil to make discriminations of the kind which he has been trained to make. The items must not be too difficult.

Summary

The reviewed literature illustrated the importance of including a knowledge test component of leisure resources in batteries aimed at assessing leisure functioning. The next step was to determine the most effective way to measure such knowledge.

Reviewing evaluation and methods books, there was greatest support for an objective test format. The knowledge tests reviewed used several different objective formats. The multiple-choice format appeared to be the most favorable for measuring all types of knowledge. Thus, the multiple-choice type format was chosen for the leisure knowledge test. Using one format made the test consistent, easier to score, and decreased the chance for guessing the correct answer. This type of format also covers many topic areas with fewer questions. Finally, literature was reviewed which gave procedures for test and item construction.

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CHAPTER III

TEST CONSTRUCTION METHODS AND OUTCOMES

The purpose of this chapter is to describe the methods used to construct a Leisure Knowledge Test and determine its reliability. The following steps were taken to complete the task.

Step 1.0 To Operationally Define Knowledge.

1.1 A literature review of knowledge was conducted. The levels of knowledge which were discussed in the previous chapter were reviewed and level one was selected as the focal point for the developed definition. This level included knowledge of specifics. It has an emphasis on concrete referents. This level of knowledge may include knowledge of terminology, knowledge of persons, places or events.

1.2 The next task was to gather literature concerning knowledge of leisure resources. This review included the work done by Gunn and Peterson (2) and Mundy and Odum (3).

1.3 A preliminary definition of knowledge was prepared for review by a panel of experts. The experts who reviewed the definition included the National Advisory Committee of the Leisure Diagnostic Battery Project (LDB), plus Peter Witt and David Compton of the LDB staff.

1.4 The final version of the knowledge definition was

developed with modifications suggested by the panel of experts. The knowledge definition is as follows: Knowledge is the evidence of remembering by recognition or recalling information or phenomenon in a form very close to that in which it was originally encountered (1). Knowledge is familiarity with the characteristics of what, where, when, and how concerning an individual's environment.

Knowing about leisure opportunity does not imply that an individual possesses the ability or desire to engage in that opportunity. Knowledge implies only that the individual is aware of the inherent characteristics surrounding a leisure opportunity, i.e., what it is, how it's done, when it's done, and who can do it. Thus, this level of knowledge is awareness centered rather than action oriented.

Knowledge is manifested in a testing situation by appropriate response to signals and cues presented. Signals and cues can be auditory, visual, tactual, or olfactory (1).
Step 2.0 To Develop a Test Administration Procedure.

2.1 The first step was to select a subject population and develop an administration procedure appropriate to this group. It was determined the subject population would be orthopedically impaired children, ages nine to fourteen years.

This population was selected to coincide with the Leisure Diagnostic Battery of tests being developed at North Texas State University. The knowledge test would be one of

several scales developed to assess an individual's leisure functioning. Therefore, orthopedically impaired individuals were selected due to the availability of subjects for pre-testing and final testing of the instrument.

2.2 The next task was to construct instructions for the subjects. The instructions for the Leisure Knowledge Test were made up of simple, familiar, and short terms and sentences. Large words and unfamiliar terms were excluded because testing was done on nine to fourteen year old orthopedically impaired children.

2.3 This task consisted of developing explicit testing instructions for the examiner. It was decided that the general instructions should be read aloud to all subjects. Once the instructions were read, the examiner would then ask if any further explanation was needed. The examiner would also be instructed that the test could either be given in a group or individually. This would depend on the ability level of the children tested. A slow or poor reader, for example, may need to be tested individually so that the examiner can assist in reading each question.

2.4 With both sets of instructions completed, members of the Leisure Diagnostic Battery staff reviewed them and clarified any misleading instructions.

2.5 The final version of instructions were then developed.

Step 3.0 To Develop a Scoring Format.

3.1 This procedure consisted of deciding where the answer blanks were to be placed, and the spacing needed for the blanks. The suggestion was made by LDB staff members to have the answer blanks go before the number of each question. There were two reasons for this suggestion. One was that the scoring would be faster by running down the left column where answers are in clear sight. Two, subjects would have an easier time finding the answer blanks.

Step 4.0 To Weight the Test Questions.

4.1 Based on the literature review, a multiple-choice type format was decided on as the best way to measure an individual's knowledge of leisure opportunities. One response was required for each item. The final decision was that all the items on the knowledge test would carry the same weight because all areas of concern were equal in importance.

Step 5.0 To Decide on Content Areas.

5.1 Several meetings with Peter A. Witt and David M. Compton, and a review of Robert Overs' (4) list of leisure activities led to deciding on four areas of leisure for which questions would be developed. Overs' (4) list of activities consist of nine topic areas. These areas range from voluntary activities to games such as Scrabble. After analyzing the topic areas, a decision was made to include questions concerning: a) sports, b) games, c) entertainment,

and d) arts and crafts. The four topic areas were thought to be the most appropriate to the age group being tested. Questions dealing with plant breeding, home decorating, or debate were not thought to be as familiar to the target age group.

5.2 With the selection of topic areas completed, more specific definitions were needed for each area. The area of sports included team sports, mechanical sports, aquatics, outdoor sports, and spectator sports. Games included target games, passive games, tag games, active games, and word games. Entertainment included questions on museums, movie theaters, plays, music, and community recreation centers. The final area of arts and crafts consisted of questions on handicrafts and painting activities.

5.3 The next procedure was to determine the best way to ask questions concerning knowledge of each area. The knowledge definition states that what, where, when, who and cost are the essential ingredients for determining one's awareness of leisure opportunities. Therefore, questions on what is offered, where activities are offered, when activities are offered, who can participate, and how much it costs to participate made up the content of the test items along with the topic areas of sports, games, entertainment, and arts and crafts.

5.4 For clarification an operational definition was

developed for the terms what, where, when, who and cost.

- a. What refers to knowledge of which thing or things, events, or conditions are happening or exist. An example: Which activity is a word game?
- b. Where refers to the place or location at which an event will take place. An example is: Where is a professional football game usually played?
- c. When refers to during or at what time period something takes place. It also refers to upon what occasion a piece of equipment should be worn or used. An example is: Helmets are worn by players when they participate in which activity?
- d. Who refers to what person or persons can participate in an activity or go to a specific place. An example is: Art galleries and museums can be visited by who?
- e. Cost refers to the price paid to enable an individual to do something. An example is: Which of the games listed below costs the most money to participate in?

Step 6.0 Analysis of Test Content.

6.1 The review of literature supported measuring knowledge with an objective type format. The first version of the instrument was designed in a completion type format only.

6.2 This version was sent to the panel of experts for review.

6.3 With the suggestions made by the panel of experts, some questions were discarded, some questions were added, and a few problem words were changed.

6.4 In order to test out the first version, a bench test was arranged and held at various locations around Dallas, Texas. These areas included: Duncanville, Grand Prairie, Irving, and Lancaster. Testing was completed from May 16 through May 27, 1980. The subjects of testing were seventeen orthopedically impaired, ten to fourteen year olds. The tests were administered by two staff members on the Leisure Diagnostic Battery Project at North Texas State University.

6.5 The findings from this bench test showed the need for further test revisions. The completion type format was too difficult for the subjects. Other problems included:

- a. Disabilities preventing the child from filling out the test by himself.
- b. Disabilities preventing the child from responding verbally. A verbal response was necessary in a few situations where the child's disability hindered his/her control over extremities.
- c. The completion type format took the subjects between twenty to thirty minutes to complete. This was considered too long.

6.6 A revision was made to change the format to a

multiple-choice type. The reasoning was to keep the format simple and consistent with the literature and to keep the requirements for verbal response and writing ability to a minimum.

Step 7.0 To Develop a Second Version of the Knowledge Test.

7.1 The first outline of questions consisted of forty-four multiple-choice items. Several questions were new and other questions were revised to multiple-choice from the previous completion type format. The forty-four questions dealt with the four activity areas discussed earlier. These areas include sports, games, entertainment, and arts and crafts. Within these areas questions asked what activities are offered, when activities are offered, where activities are offered, who can participate, and how much money does it cost to participate.

7.2 This version of the test was reviewed by the Leisure Diagnostic Battery Project staff. Three suggestions for changes were made. The first was to cut down the number of questions in the test. Forty-four questions would take too much time to complete. Thus, forty-four questions were decreased to twenty-two. The new version (Appendix A) consisted of two questions in each activity category concerning what and where. It also included one question in the activity categories Entertainment and Sports concerning when, who and cost. Questions on when, who and cost were

not included in the categories Games and Arts and Crafts. The second suggestion was to change the wording in the instructions from "correct answer" to "best answer." This was suggested because more than one of the alternatives in a question could be correct, but only one was the best answer.

The final change was to add questions which concern the type of equipment an individual needs to participate in an activity.

Step 8.0 To Conduct a Readability Study.

8.1 The purpose of this step was to determine the reading difficulty of the Leisure Knowledge Test. An assessment of readability was made by using the Forbes Method (1). This particular method measures word difficulty according to standards listed in the Thorndike Century Junior Dictionary (5).

8.2 Three samples of 100 words each were taken from the test to be analyzed. The samples were selected at the beginning, middle, and end of the test.

The first 100 word sample was taken by counting the first word of the item of a test and counting the first 100 word sample exactly. The middle sample was selected as near the midpoint of the test as possible. Starting with the middle item, words were counted to the initial word of an item close to fifty words back. The remainder of the

middle 100 word sample was secured by counting the difference from 100 words beyond this middle point.

The third sample was taken by counting backwards from the last word of the test until 100 words were counted. If the 100 words ended within an item, the evaluator proceeded backwards until the first word of an item was reached, then in order to get exactly the 100 words, the evaluator omitted the number of words over 100 at the end of the sample.

8.3 Each word of each sample was looked up in the 1935 Thorndike Century Junior Dictionary. The number following the definition in this dictionary is the weight for that word. These numbers range from one to twenty, representing the first twenty successive thousands of words most commonly used in the English language. Any word listed without a weight was given a weight of twenty-one, indicating its being in the third 10,000 or above category. Only words having a weight of four or above were considered a difficult word and thus, had its weight counted. Words used more than once in the samples were given their appropriate weights each time they were used.

8.4 The weights for the three samples of each test were totaled and divided by the number of words in the samples. In some instances, the words within a sample were not listed in the Thorndike Dictionary. These words were not counted as part of the overall 300 words. The statistic

obtained from the above three steps was 1.345, which was compared to Forbes Table (1). (See Table I. below) The obtained reading difficulty score was at a twelfth grade reading difficulty level.

TABLE I

FORBES INDEX OF VOCABULARY DIFFICULTY

Index of Vocabulary Difficulty	Projected Grade Level
1.4510 and above	College
1.2510 - 1.4509	12th Grade
1.0510 - 1.2509	11th Grade
.8510 - 1.0509	10th Grade
.6510 - .8509	9th Grade
.4510 - .6509	8th Grade
.2510 - .4509	7th Grade
.0510 - .2509	6th Grade
.0509 and below	5th Grade

8.5 The reading difficulty was also calculated for the test instructions. The sample included all the words in the directions of the test because they consisted of less than 300 words. The value was calculated as .5116 which was compared to the Forbes Table (1). The result showed an eighth grade reading difficulty level.

8.6 Based on the findings of the readability level, changes had to be made to lower the difficulty level of the test. The changes consisted of deleting high value words and replacing them with lower value ones.

9.0 To Determine the Internal Consistency of the Developed Test and Make Appropriate Test Revisions.

9.1 The version two test was administered to a sample of seventy-two, ten to fourteen year old normal males and females attending Dallas Parks and Recreation Department programs. The subjects were selected by the staff members at the recreation center. Members of the Leisure Diagnostic Battery staff administered the battery on site in August, 1980.

9.2 The correlation of each item was determined with the total test score. Items with correlations below .20 were selected for revision. The measure of correlation was the Pearson's point biserial correlation of each item with the total test score. The correlations are shown in Table II. No items were below .20, therefore, no changes were required due to this factor.

9.3 The Kuder-Richardson procedure was used to determine the internal consistency of the test. The reliability coefficient given for the total test was .94. This indicated that this version of the test was highly reliable.

9.4 The test was originally given as a norm referenced test. The purpose was to see how well the average child performed and to establish norms to which individual scores could be compared. Version two was given to "normal", ten

to fourteen year olds. It was expected that these children would do better on the test than orthopedically impaired children, the eventual target population for whom the test was being developed.

The version two mean was 19.0 and the standard deviation was 4.7 for the overall test scores. The highest possible score was 22.0. Examination of these scores showed that the test was too easy for normal children. In order to get more variation in test scores and a lower overall mean, the difficulty level needed to be increased.

TABLE II
ITEM-TOTAL TEST CORRELATIONS

Item	Correlations
1 . . . . .	.43
2 . . . . .	.38
3 . . . . .	.60
4 . . . . .	.75
5 . . . . .	.72
6 . . . . .	.49
7 . . . . .	.64
8 . . . . .	.23
9 . . . . .	.65
10 . . . . .	.87
11 . . . . .	.68
12 . . . . .	.84
13 . . . . .	.79
14 . . . . .	.52
15 . . . . .	.72
16 . . . . .	.47
17 . . . . .	.66
18 . . . . .	.67
19 . . . . .	.73
20 . . . . .	.70
21 . . . . .	.65
22 . . . . .	.76

9.5 Using the general information generated from steps 8.0, 9.2, and 9.3, version two of the knowledge test was revised (version three). A readability review of version two led to the development of a list of difficult words (Table III.) These words were used as a guide to help lower the reading difficulty level of the test.

TABLE III

DIFFICULT WORD LIST ON KNOWLEDGE TEST

Greenhouse	Horseshoes
Motion Picture	Adults
Writing	Golf
Rink	Recreation
Tag	Participate
Soccer	Schedule
Basketball	Baseball
Watercolors	Players
Band	Roller
Movie	Crafts
Drugstore	Puzzle
Hiking	Helmets
Elderly	Galleries
Magazine	Museums
Community	

A decision was made to keep certain high value words in the instrument. The 1935 Thorndike Dictionary may not be applicable to certain words used in 1980. The level of difficulty given to words such as television, soccer, and softball may be too high for today's usage of these words. The familiarity of such sports and changes in technology may have altered the difficulty level of these terms. Therefore, these terms remain in the knowledge test.

Many words were deleted in order to lower the reading difficulty level. The words considered for removal can be found on the Difficult Word List (Table III.). The removal of such words resulted in complete revision of questions 2 and 22, and in other instances one or two words were changed in questions 7, 8, 9, 10, 17 and 19.

One final revision was made to complete version three of the knowledge test. The reviewers suggested that one question concerning when, who and cost should be added to the Games and Arts and Crafts categories. This addition made version three a twenty-eight item test.

Step 10.0 To Determine the Internal Consistency of the Version Three Test for Orthopedically Impaired, Nine to Fourteen Year Old Children.

10.1 Version three of the knowledge test (Appendix B) was administered to 292 orthopedically impaired children. This procedure was done as part of the total battery of tests administered by Hawkins and Associates during the months of November-December, 1980. Hawkins and Associates were hired as subcontractors by North Texas State University to conduct the field testing of the Leisure Diagnostic Battery. The subjects were selected by the staff of individuals directing the Leisure Diagnostic Battery testing for Hawkins and Associates. The test sites covered sixteen states. Table IV lists the cities and states of the test

sites along with the total age by sex distribution of subjects.

TABLE IV

TEST SITES AND AGE BY SEX DISTRIBUTION

Sites:

Chicago, Illinois	Rock Hill, South Carolina
Oak Park, Illinois	Greenville, South Carolina
Portland, Oregon	San Jose, California
Durham, New Hampshire	Washington, District of Columbia
Tacoma, Washington	Alexandria, Virginia
Albertson, New York	Silver Springs, Maryland
Fairfax, Virginia	Lexington, Kentucky
Miami, Florida	Charlottesville, Virginia
Baltimore, Maryland	Downey, California

Subject Distribution:

<u>SEX</u>	<u>AGES</u>						<u>Totals</u>
	9	10	11	12	13	14	
Male	15	32	18	28	25	35	153
Female	17	18	30	22	27	25	139
Totals	32	50	48	50	52	60	292

10.2 Descriptive data of age and sex were selected to determine if there was any significant difference on the performance level of the test due to one or both factors. Age and sex were looked at as separate factors and then as an interaction effect.

The F values, significance level and degrees of freedom for age, sex and the interaction effect are given in Table V.

TABLE V
ANALYSIS OF VARIANCE RESULTS

	DF	F	p
Age	1,280	2.9	< .09
Sex	5,280	2.9	> .01
Interaction	5,280	0.9	> .44

The age factor showed significant differences in performance levels on the test. The results showed that as a child increased in age, s/he scored higher on the test. Thus, as an individual increases in age s/he becomes more knowledgeable of leisure opportunities.

The sex factor showed no significant difference on performance of the test. Therefore, the sex of the individual taking the test did not make a difference in the performance level. In addition to the separate analysis of the age and sex factors, the interaction of the two was also assessed. The results showed no significant differences due to the joint effects of age and sex.

In summary, there was a significant difference on the performance level according to age, but not with sex or the interaction of sex and age. As the child gets older, without regard to sex, s/he performs better on the knowledge test.

10.3 The Kuder-Richardson 20 procedure was used to determine the internal consistency of the test. The

reliability coefficient given for the total test was .81. This indicated a highly reliable instrument according to the Kuder-Richardson formula.

10.4 The version three mean was 19.9, the standard deviation was 4.9, and the range was 4 - 28. The highest possible score was 28.0. Therefore, the mean was lowered from that of version two, which was 19.0 out of a possible score of 22.0.

Step 11.0 To Draft a Final Version of the Knowledge Test.

11.1 The information gathered from the item analysis and item difficulty tables were used to make revisions for the final version of the knowledge test. The correlation of each item with the total test was determined. Items with correlations below .20 were selected for revision. The measure of correlation used was the Pearson, point biserial correlation of each item with total test score. The item analysis data is shown in Table VI. Items 8 and 25 were below .20, therefore revisions were needed. (See Table VI, p. 43.)

11.2 The difficulty level for each item is illustrated in Table VII. Items with a difficulty level of 70 percent and above were revised. These items were considered too easy for the target population. (See Table VII, p. 44.)

TABLE VI
ITEM-TOTAL TEST
CORRELATIONS

Item	Correlations
1 . . . . .	.21
2 . . . . .	.33
3 . . . . .	.37
4 . . . . .	.41
5 . . . . .	.40
6 . . . . .	.37
7 . . . . .	.21
8 . . . . .	.15
9 . . . . .	.47
10 . . . . .	.25
11 . . . . .	.35
12 . . . . .	.30
13 . . . . .	.51
14 . . . . .	.22
15 . . . . .	.39
16 . . . . .	.36
17 . . . . .	.39
18 . . . . .	.36
19 . . . . .	.33
20 . . . . .	.29
21 . . . . .	.44
22 . . . . .	.33
23 . . . . .	.28
24 . . . . .	.31
25 . . . . .	.15
26 . . . . .	.51
27 . . . . .	.32
28 . . . . .	.36

Corrections were made for each item that needed to be rewritten in order to raise the difficulty level of the response choices or clarify the intent of the question. Distractors were picked for rewriting if they only attracted a small percentage of respondents or if they did

TABLE VI
ITEM DIFFICULTY COEFFICIENTS

Items	Difficulty Level
1 . . . . .	.55
2 . . . . .	.69
3 . . . . .	.84
4 . . . . .	.89
5 . . . . .	.87
6 . . . . .	.65
7 . . . . .	.63
8 . . . . .	.32
9 . . . . .	.83
10 . . . . .	.65
11 . . . . .	.67
12 . . . . .	.66
13 . . . . .	.80
14 . . . . .	.66
15 . . . . .	.70
16 . . . . .	.90
17 . . . . .	.93
18 . . . . .	.68
19 . . . . .	.57
20 . . . . .	.73
21 . . . . .	.84
22 . . . . .	.73
23 . . . . .	.63
24 . . . . .	.52
25 . . . . .	.53
26 . . . . .	.78
27 . . . . .	.78
28 . . . . .	.84

not appropriately distinguish high and low scores on that item. A list of corrections that were made is shown in Table VIII.

11.4 A final version of the Leisure Knowledge Test was constructed and is included in Appendix C. In several cases the right answer was changed to make it closer to the distractors, thus increasing the difficulty. In several cases

the question was changed because either the question category was wrong (question #27) or to improve the readability (question #4).

TABLE VIII

ITEM CORRECTIONS

Item	Type of Revision
3	Distractor b
4	Question
5	Distractors c and d
8	Distractor b
9	Distractor b
13	Distractor b
16	Distractor d
17	Distractors b and d
20	Correct Answer
21	Distractor c
22	Distractor b
26	Correct Answer
27	Distractors a and c
28	Distractors a and d

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CHAPTER IV

SUMMARY OF RESULTS

This study was concerned with developing a reliable instrument for testing orthopedically impaired children on their knowledge of leisure opportunities. The instrument did not include finding out if the child likes or even participates in any of the activities.

Several procedures were involved in the process of test construction. The three major steps included: 1) developing a test format, 2) constructing reliable test questions, and 3) writing an appropriate set of test instructions. After several trial formats, a multiple-choice type was decided upon. Once this was completed, four alternative choices for each item were drafted. This procedure went through several revisions. After field testing, the content of the Leisure Knowledge Test was derived. In final form it consisted of twenty-eight items, with five response choices for each item.

The third major step was developing test instructions. The instructions were kept short and simple for easy readability by the target population.

Other minor considerations included printing the instructions in all capital letters in order to give them more

emphasis. The question and answer blanks were arranged in a manner to enhance easy readability and reduce any confusion as to where answers were to be placed. The layout also clarified which alternatives were to be considered for each item.

The final procedure of this study was testing the reliability of the developed instrument. Three procedures were conducted to measure the reliability of the knowledge test. They included looking at item-test correlations, item difficulty and internal consistency. Changes were made as needed using the information gathered from the item-test correlations and the item difficulty tables. The final procedure consisted of testing the internal consistency of the test by using the Kuder-Richardson formula. The reliability coefficient given for the total test was .81.

Conclusion

Wide support is offered in the literature for the necessity of having knowledge of leisure opportunities as a prerequisite to or facilitator for increasing one's leisure functioning. The rationale for this relationship is based on the fact that an individual who knows several alternatives to participation heightens his or her perceived freedom. This component has been discussed by Bregha (1), Neulinger (3) and Iso-Ahola (2) as a major determinant to experiencing a leisure state.

The result of this investigation was the development of a reliable Leisure Knowledge Test to be used as an assessment tool and a remediation device. The classroom teacher can administer the test to a child within five to eight minutes. The analysis of the results will show the extent of knowledge the child has of leisure opportunities. Because the child's knowledge may be high in one area and low in another, the child's knowledge can be assessed in the four activity areas incorporated into the test. In addition, the teacher can also make an assessment of the level of knowledge the child has of what is available, where activities are, when they are offered, who can participate and how much they cost. In summary, an assessment of knowledge can be made in nine areas concerning leisure opportunities.

After an assessment has been made of the child's level of knowledge, a remediation process can take place. The classroom teacher can initiate an education process to remediate the weak areas that might have been assessed. For example, if a child has been assessed as weak in the area of knowledge of arts and crafts, the teacher may begin by assigning a different art project once a week. This education process may include field trips to art galleries and art shows.

Recommendations

Based on this study the following recommendations are made:

1.0 To expand the knowledge test to include:

- a. Does the child know how to get to leisure activities.
- b. Does the child know the rules of different games.
- c. Does the child know the difference between competitive, recreational, and social play.

2.0 To investigate if the developed test is culturally biased to white middle-class children. If the test is to be used for other races, or lower income level children, there may be a need to revise questions for that population.

3.0 To compare the results of the testing done on orthopedically impaired children to other populations. This may show differences of knowledge in particular categories due to disabilities. For example, an orthopedically impaired child may be knowledgeable in the area of entertainment, whereas a normal child may be knowledgeable in the area of sports. This procedure can be used to expand the general use and interpretation of the instrument.

4.0 To investigate the predictive validity of the instrument by comparing high achievers or children with high I.Q.'s to children with less motivation and/or lower I.Q. levels. Also comparisons of those individuals who are highly involved versus those who are uninvolved in

recreation can be made.

5.0 To compare knowledge to preference and actual participation.

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APPENDIX A
VERSION TWO OF THE
LEISURE KNOWLEDGE TEST

APPENDIX A

VERSION TWO OF THE
LEISURE KNOWLEDGE TEST

Version "Two"

Leisure Diagnostic Battery

Leisure Knowledge Test

General Instructions

Below is a list of several questions about your knowledge of leisure opportunities. The questions are all multiple-choice. Please read each question and place the letter of the best answer in the space provided.

_____ Example: Babe Ruth was famous for a) baseball
b) singing c) football d) painting

- _____ 1. A movie at a theater usually costs children under 12 years old about a) \$0.50 to \$0.75 b) \$3.50 - \$4.00 c) \$1.50 - \$2.00 d) \$2.50 - \$3.00
- _____ 2. Professional football is usually played at a a) college campus b) stadium c) high school d) coliseum
- _____ 3. Scrabble and Spill 'N Spell are a) card games b) tag games c) computer games d) word games
- _____ 4. A greenhouse is a building for a) growing plants b) repairing furniture c) growing vegetables d) raising animals
- _____ 5. Where are you most likely to find arts and crafts classes offered? a) at a movie theater b) at a recreation center c) at a playground d) at a roller skating rink
- _____ 6. Macrame can be learned a) in a writing class b) in a woodwork room c) in a ceramics class d) in a handicraft class

- _____ 7. Which of the games listed below costs the most money to participate in? a) playing putter golf
b) playing pinball c) sketching a picture
d) playing two games of bowling
- _____ 8. Which activity do you need paper in order to make? a) felt-decorating b) nature painting c) collage making
d) pottery making
- _____ 9. Which activity do need a license to participate in? a) hunting b) dancing c) horseback riding
d) skiing
- _____ 10. Helmets are used by players when they participate in a) flag football b) bicycle racing c) pole vaulting
d) swim meets
- _____ 11. Visiting art galleries and museums are limited a) to persons 18 and over b) to persons under 16
c) to students during field trips d) to persons who are interested
- _____ 12. What is the best way to find out what time a finger painting class is offered at a recreation center? a) look at a recreation center schedule of events
b) look in a magazine c) ask a worker at a recreation center d) guess
- _____ 13. The best and quickest way to find out what movies are showing in your community is a) to read the Sports section of your local newspaper
b) to look on the school bulletin board c) to read the Entertainment section of your local newspaper d) to listen to the radio
- _____ 14. Where is the best place to play games like pick up sticks or jacks? a) the dirt b) on a hard floor
c) on a chair d) on the grass
- _____ 15. Which of the following is a brass instrument a) clarinet b) guitar c) drum d) trumpet
- _____ 16. When a group of people play a game against another group of people they are called a) a team b) a party
c) an exercise d) classmates
- _____ 17. A large selection of books for use by the public can be found at a) a doctor's office b) a grocery store
c) a library d) a roller skating rink

- _____ 18. Participation in games offered at a community recreation center are limited to a) children
b) senior citizens c) adults d) people who are interested
- _____ 19. Which activity takes the least amount of space to play it a) puzzle b) checkers c) ping pong
d) darts
- _____ 20. Which sport is played on a court a) golf b) boxing
c) basketball d) hockey
- _____ 21. Which one of the following games is played by tossing something? a) horseshoes b) ping pong
c) croquet d) shuffleboard
- _____ 22. A box of material used to make a miniature car is called a) a racing kit b) a decoupage kit c) a model kit d) a display kit
- _____ 23. Which sport costs the most to participate in? a) attending a professional football game b) running track c) ice skating d) playing in a soccer league
- _____ 24. Which one of the materials used in an arts and crafts class cost the most to buy? a) watercolors b) clay c) paintbrush d) paste
- _____ 25. An arts class taught in wood cutting and cabinet building is usually limited to a) boys b) persons between 8-10 years old c) persons between 11-12 years old d) persons over 14 years old
- _____ 26. A playing board for a game is needed when involved in a) bridge b) charades c) Monopoly d) Old Maid
- _____ 27. Camping is an outdoor sport that is limited to a) people who have campers b) people who are 18 years old and over c) people who have lots of money to spend d) people who enjoy being outdoors
- _____ 28. Making believe you are a different person and wearing a costume is usually done when a) watching television b) listening to a teacher c) acting in a play d) reading poetry

APPENDIX B
VERSION THREE:
KNOWLEDGE OF LEISURE OPPORTUNITIES

APPENDIX B

VERSION THREE:
KNOWLEDGE OF LEISURE OPPORTUNITIES

Version "Three"

Leisure Diagnostic Battery

Knowledge of Leisure Opportunities

GENERAL INSTRUCTIONS

BELOW IS A LIST OF SEVERAL QUESTIONS ABOUT YOUR KNOWLEDGE OF LEISURE OPPORTUNITIES. THE QUESTIONS ARE ALL MULTIPLE-CHOICE. PLEASE READ EACH QUESTION AND PLACE THE LETTER OF THE BEST ANSWER IN THE SPACE PROVIDED.

_____ EXAMPLE: BABE RUTH WAS FAMOUS FOR A) BASEBALL
B) SINGING C) FOOTBALL D) PAINTING

- _____ 1. A movie at a theater usually costs children under 12 years old about a) \$0.50 to \$0.75 b) \$3.50-\$4.00 c) \$1.50 - \$2.00 d) \$2.50 - \$3.00
- _____ 2. Professional football is usually played at a) a college campus b) a stadium c) a high school d) an outdoor field
- _____ 3. Scrabble and Spill 'N Spell are a) card games b) tag games c) computer games d) word games
- _____ 4. A greenhouse is a building for a) growing plants b) repairing furniture c) growing vegetables d) raising animals
- _____ 5. Where are you most likely to find arts and crafts classes offered? a) at a movie theater b) at a recreation center c) at a playground d) at a roller skating rink
- _____ 6. Macrame can be learned a) in a writing class b) in a wood shop room c) in a ceramics class d) in a handicraft class

- _____ 7. Which of the games listed below costs the most money to participate in? a) playing putter golf b) playing pinball c) playing chess d) bowling two games
- _____ 8. For which art project do you need paper? a) felt-decorating b) nature painting c) collage-making d) pottery making
- _____ 9. Which activity do you need a license to participate in? a) hunting b) dancing c) horseback riding d) skiing
- _____ 10. Helmets are used by players when they participate in a) flag football b) bicycle racing c) pole vaulting d) boxing
- _____ 11. Visiting art galleries and museums are limited to a) persons 18 and over b) to persons under 16 c) to students during field trips d) to persons who interested
- _____ 12. What is the best way to find out what time a finger painting class is offered at a recreation center? a) look at a recreation center schedule of events b) look at a magazine c) ask a worker at a recreation center d) guess
- _____ 13. The best and quickest way to find out what movies are showing in your town is a) to read the Sports section of your local newspaper b) to look on the school bulletin board c) to read the Entertainment section of your local newspaper d) to listen to the radio
- _____ 14. Where is the best place to play games like pick up sticks or jacks? a) on a table b) on a hard floor c) on a chair d) on the grass
- _____ 15. Which of the following is a brass instrument a) clarinet b) guitar c) drum d) trumpet
- _____ 16. When a group of people play a game against another group of people they are called a) a team b) a party c) a club d) classmates
- _____ 17. A large selection of books for use by the public can be found at a) a doctor's office b) a grocery store c) a library d) a bank

- _____ 18. Participation in games offered at a community recreation center are limited to a) children
b) senior citizens c) adults d) people who are interested
- _____ 19. Which activity takes the least amount of space to play it a) 100 piece puzzle b) checkers c) ping pong d) darts
- _____ 20. Which sport is played on a court a) golf b) boxing c) basketball d) hockey
- _____ 21. Which one of the following games is played by tossing something? a) horseshoes b) ping pong c) croquet d) shuffleboard
- _____ 22. A box of material used to make a miniature car is called a) a racing kit b) a decoupage kit c) a model kit d) a display kit
- _____ 23. Which sport costs the most to participate in? a) attending a professional football game b) running track c) ice skating d) roller skating
- _____ 24. Which one of the materials used in an arts and crafts class cost the most to buy? a) watercolors b) clay c) paintbrush d) paste
- _____ 25. An art class taught in wood cutting and cabinet building is usually limited to a) boys b) persons between 8-10 years old c) persons between 11-12 years old d) persons over 14 years old
- _____ 26. A playing board for a game is needed for a) bridge b) charades c) monopoly d) old maid
- _____ 27. Camping is an outdoor sport that is limited to a) people who have a camping van b) people who are 18 years old and over c) people who have lots of money to spend d) people who enjoy being outside
- _____ 28. Making believe you are a different person and wearing a costume is usually done when a) watching television b) listening to a teacher c) acting in a play d) reading poetry

APPENDIX C
FINAL VERSION:
KNOWLEDGE OF LEISURE OPPORTUNITIES
QUESTION PLACEMENT TABLE

APPENDIX C

FINAL VERSION:
KNOWLEDGE OF LEISURE OPPORTUNITIES

Final Version

Leisure Diagnostic Battery

Knowledge of Leisure Opportunities

GENERAL INSTRUCTIONS

BELOW IS A LIST OF SEVERAL QUESTIONS ABOUT YOUR KNOWLEDGE OF LEISURE OPPORTUNITIES. THE QUESTIONS ARE ALL MULTIPLE-CHOICE. PLEASE READ EACH QUESTION AND PLACE THE LETTER OF THE BEST ANSWER IN THE SPACE PROVIDED.

_____ EXAMPLE: BABE RUTH WAS FAMOUS FOR: A) BASEBALL
B) SINGING C) FOOTBALL D) PAINTING

- _____ 1. A movie at a theater usually costs children under 12 years old about a) \$0.50 to \$0.75 b) \$3.50 - \$4.00 c) \$1.50 - \$2.00 d) \$2.50 - \$3.00
- _____ 2. Professional football is usually played at a) a college campus b) a stadium c) a high school d) an outdoor field
- _____ 3. Scrabble and Spill 'N Spell are c) card games b) guessing games c) computer games d) word games
- _____ 4. An amusement park is for a) riding horses b) picnics c) making arts and crafts projects d) going on thrill rides
- _____ 5. Where are you most likely to find arts and crafts classes offered? a) at a movie theater b) at a recreation center c) at a library d) at a hospital

- _____ 6. Macrame can be learned a) in a writing class
b) in a wood shop room c) in a ceramics class
d) in a handicraft class
- _____ 7. Which of the games listed below costs the most money to participate in? a) playing putter golf
b) playing pinball c) playing chess d) bowling two games
- _____ 8. For which art project do you need paper? a) felt-decorating
b) painting on ceramics c) collage-making
d) pottery making
- _____ 9. Which activity do you need a license to participate in? a) hunting
b) bicycle racing c) horseback riding
d) skiing
- _____ 10. Helmets are used by players when they participate in a) flag football
b) bicycle racing c) pole vaulting
d) boxing
- _____ 11. Visiting art galleries and museums are limited a) to persons 18 and over
b) to persons under 16
c) to students during field trips d) to persons who are interested
- _____ 12. What is the best way to find out what time a finger painting class is offered at a recreation center? a) look at a recreation center schedule of events
b) look in a magazine c) ask a worker at a recreation center
d) guess
- _____ 13. The best and quickest way to find out what movies are showing in your town is to a) read the Sports section of your local newspaper
b) listen to the news c) read the Entertainment section of your local newspaper
d) listen to the radio
- _____ 14. Where is the best place to play games like pick up sticks or jacks? a) on a table
b) on a hard floor c) on a chair
d) on the grass
- _____ 15. Which of the following is a brass instrument a) clarinet
b) guitar c) drum d) trumpet
- _____ 16. When a group of people play a game against another group of people they are called a) a team
b) a party c) a club d) a class

- _____ 17. A large selection of books for use by the public can be found at a) a doctor's office b) a reading room c) a library d) a check-out counter in a store
- _____ 18. Participation in games offered at a community recreation center are limited to a) children b) senior citizens c) adults d) people who are interested
- _____ 19. Which activity takes the least amount of space to play it a) 100 piece puzzle b) checkers c) ping pong d) darts
- _____ 20. Which sport is played on a court a) golf b) boxing c) badminton d) hockey
- _____ 21. Which one of the following games is played by tossing something? a) horseshoes b) ping pong c) archery d) shuffleboard
- _____ 22. A box of material used to make a miniature car is called a) a racing kit b) a hobby kit c) a model kit d) a display kit
- _____ 23. Which sport costs the most to participate in? a) attending a professional football game b) running track c) ice skating d) roller skating
- _____ 24. Which one of the materials used in an arts and crafts class cost the most to buy? a) watercolors b) clay c) paintbrush d) paste
- _____ 25. An art class taught in wood cutting and cabinet building is usually limited to a) boys between 7-9 years old b) persons between 8-10 years old c) persons between 11-12 years old d) persons over 14 years old
- _____ 26. A playing board for a game is needed for a) bridge b) charades c) Parchesi d) old maid
- _____ 27. Who makes the most decisions about rules during a football game? a) coaches b) linesman c) score-keeper d) referee
- _____ 28. Making believe you are a different person and wearing a costume is usually done when a) singing to an audience b) listening to a teacher c) acting in a play d) telling a story

QUESTION PLACEMENT FOR LEISURE KNOWLEDGE TEST

	What	Where	When	Who	Cost
Entertainment	#15, #4	#13, #17	#28	#11	#1
Sports	#9, #16	#2, #20	#10	#27	#23
Games	#3, #21	#14, #19	#26	#18	#7
Arts and Crafts	#8, #22	#5, #6	#12	#25	#24

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