

AN ANALYSIS OF THREE LEISURE  
INTEREST ASSESSMENTS

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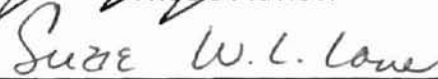
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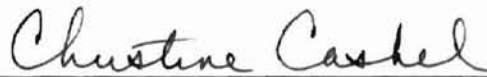
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## CHAPTER I

### INTRODUCTION

"Assessment is the process of identifying client behavioral areas where change, improvement or enhancement of behavioral functioning is desirable. The discovery of areas needing change is then used as a guide in the development of program services directed at the amelioration of the identified behavior change areas" (Witt, Connolly, & Compton, 1980, p. 6). Gunn and Peterson (1984) define assessment as "a systematic procedure for gathering select information about an individual for the purpose of making decisions regarding that individual's program or treatment plan" (p. 268). As cited in Thorndike and Hagen (1977) the information gathered, permits decisions to be made regarding an individual to be informed and appropriate.

One role of assessment is the establishment of initial baseline data related to the functional ability of an individual with which one would work. Witt, *et al.* (1980) allude to the fact that sometimes assessment is perceived as a required intake procedure, simply conducting a service responsibility without clearly understanding or effectively utilizing assessment results as an integral part of the total programming process. When this occurs, the chance that an assessment tool is being utilized for its designed purpose is small. The misguided use of an assessment tool may be detrimental in the comprehensive look at an individual and the programming decisions that follow.

According to Witt, *et al.* (1980) there are several questions one should consider when selecting an assessment tool. The first being the purpose of the



assessment procedure or why the assessment is being conducted; the second reason is, how and by whom will the generated data gathered from the assessment be utilized; and third, what techniques will be utilized to complete the process of assessment. Howe (1984) states that to some extent an assessment instrument is selected based on one's philosophy, education, and past experience. Other selection decisions might be based on the ease of administration and re-administration, whether or not the assessment was norm-referenced, or if the assessment was specifically designed for the population to be utilized. No matter the selection process, assessment aids in the provision of effective services to clients. The assessment process should be viewed as an integral part of the delivery of service to clients and how it interrelates to the overall programming outcome.

Leisure assessment is the particular focus of this study. The measuring of leisure interests is one important aspect of leisure assessment, which usually occurs at intake or very early in the process of programming. Howe (1984) says that leisure interest assessments are useful in determining activities about which an individual may be aware, interested, already engaged, or wanting to pursue in the future. Ragheb and Beard (1992) state that "the results from leisure interest assessments can be utilized to develop awareness of, and to provide guidance in, leisure choices, in leisure counseling and rehabilitative settings" (p. 1). Also, such information can contribute to program planning, policy-making, and facility design.

## The Purpose of the Study

The purpose of this study is to analyze three leisure interest assessment tools related to the following questions:

1. What do the *State Technical Institute's Leisure Assessment Project (STILAP)*, *Leisure Interest Measure (LIM)*, and the *Leisure Scope (LS)* measure?
2. What is the inter-rater reliability of each of the three tools for measuring interests on common factors identified through a factor analysis process?

The results from this study will assist practitioners in the selection of a leisure interest assessment, based upon what these tools measure, and what published criteria describes as necessary related to validity, reliability, and test administration. Test administration relates to the ease of administration, length of time to compute, and type of responses required. These items may influence the appropriateness of certain tests with specific populations.

## Definition of Terms

For the purpose of this study the following definitions were used:

Assessment: a systematic procedure for gathering select information about an individual for the purpose of making decisions regarding that individual's program or treatment plan (Gunn & Peterson, 1984).

Certified Therapeutic Recreation Specialist: a professional in the Therapeutic Recreation field who is currently certified as a C.T.R.S. by the National Council for Therapeutic Recreation Certification (excluding provisional certification).

Category: the term will be used to represent an area of leisure interest.

Construct Validity: the degree to which an instrument measures some abstract concept that is generally hard to define (Cicciarella, 1997).

Face Validity: validity that is obvious or self evident, also may rest on the truth of assumptions upon which the instrument is based (Cicciarella, 1997).

Factor: the term will be used in describing the results of the factor analytic procedure.

Factor Analysis: "it reduces the multiplicity of tests and measures to greater simplicity." It tells what tests or measures belong together, which ones virtually measure the same thing, and how much they do so (Kerlinger, 1986).

Inter-rater Reliability: the results of one rater are compared with those of another rater who observed the same event or situation; high reliability indicates the observers agree about the description of what they see (Gunn & Peterson, 1984).

### Assumptions

The following assumptions were made:

1. The three leisure interest inventories utilized in this study were validated on a normal population, as reported in the literature.
2. The factor analysis process utilized to analyze data, discriminated between unique variables within a set of data.
3. C.T.R.S.'s utilized to rate responses were competent to use the assessment instruments in the way intended by the authors of each tool.

### Delimitations

The delimitation for this study was that the population studied was two hundred fifty college age students attending a southwestern university.

## Limitations

The limitations for this study are:

1. Subjects for this study represented a "normal" population, and findings may not be generalized to "special" populations or individuals with special needs.
2. The results from this study may be different (skewed) in another region of the country.
3. These assessments were all designed to assess the leisure interest of a client but not necessarily with the same programming intents.
4. The three instruments require different types of responses to demonstrate leisure interest which could make comparison difficult.
5. The test used for inter-rater reliability represented categories across domains that are commonly utilized on leisure interest assessments. An independent test for inter-rater reliability on each tool could produce higher, more reliable results.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### Introduction

This chapter reports on the review of related literature pertinent to this study. The topics considered were leisure assessment, validity, reliability, historical overview, *State Technical Institute's Leisure Assessment Project (STILAP)*, *Leisure Interest Measure (LIM)*, and the *Leisure Scope (LS)*. As stated in chapter one, the purpose of this study is to analyze three specific leisure interest assessments; *STILAP*, *LIM*, and *LS*.

The questions to be addressed are:

1. What do the *State Technical Institute's Leisure Assessment Project (STILAP)*, *Leisure Interest Measure (LIM)*, and the *Leisure Scope (LS)* measure?
2. What is the inter-rater reliability of each of the three tools for measuring interests on common factors identified through a factor analysis process?

#### Leisure Assessment

Assessment instrumentation should be viewed as a tool to provide quality services through the acquisition, interpretation and use of relevant and reliable information on client leisure needs. (Witt, *et al.*, 1980) Gunn and Peterson (1978) state that it is important when conducting systematic, objective assessments to

use the best available leisure assessment instrumentation. Howe (1984) also supports the need for standardized assessments when she stated "leisure assessment instruments need to demonstrate validity, reliability, and practical utility." She goes on to say that, "an instrument has practical utility if the results derived from its use give the user insight into the leisure life of the respondent and can help the user to make informed decisions with or about the client and his or her leisure" (p. 15).

Despite the premise that assessment is a critical first step, many professionals have concerns about current instruments. Witt, *et al.* (1980) talk about the low quality of reliability, validity and sophistication of leisure assessment instrumentation. They believe that several of the available assessments are underdeveloped, or lacking a theoretical base. Kloseck and Crilly (1997) stress the need for uniformity and standardization in assessment procedures for the field to establish program delivery and outcome effectiveness for the individual. The authors (Kloseck & Crilly, 1997) of the *Leisure Competence Measure* go on to say that the profession continues to struggle with: 1) which core domains of functioning to assess; 2) a standardized approach to assess client abilities, needs, and interests; and, 3) which instruments or tools to assess leisure functioning in specific domains. There is a lack of uniformity of assessment procedures resulting in inconsistencies in domains measured, inconsistencies in definition of terms and use of inadequately tested measures. "When selecting instruments for assessment purposes, the selected instruments and their support material should provide evidence of vigorous testing and at the

very minimum provide the validity and reliability evidence. Without this basic and very important information, viable, and dependable inferences regarding client functioning cannot be made" (p. 7). Dunn (1987) refers to evaluation procedures as giving the professional confidence in investing in results obtained from the procedures used. To determine the validity and reliability of an assessment tool demonstrates a specific level of confidence which can be placed in a specific tool. "Validity and reliability refer to the different aspects of a measure's credibility". (Morris & Fitz-Gibbon, 1978, p. 130)

### Validity

Validity is defined as, "the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration" (Babbie, 1995 p. 127). Foster and Cone (1995) agree with Cronbach and Meehl's (1955) broader view that validity describes the meaning of scores produced by an assessment procedure. Cronbach (1971) agrees that what needs to be valid is the meaning or interpretation of the score; as well as any implications for action that the meaning entails. Messick (1995) states that validity is nothing less than an evaluative summary of both the evidence for and the actual consequences of score interpretation and use (p. 742). This study addressed the specific area of construct validity. Cicciarella (1997) explains a construct as an attitude or a characteristic, value, or other abstract concept that is generally hard to define. Construct validity is the degree to which an instrument measures one such construct.



## Reliability

The reliability of an assessment is "a matter of whether a particular technique applied repeatedly to the same object, would yield the same result each time". (Babbie, 1995, p. 124) Dunn (1987) states that reliability can be thought of as consistency in measurement. Morris and Fitz-Gibbon (1978) explain that if something is reliable it "will behave the same way time and time again" (p.130). Reliability can represent information regarding consistency over time or stability. The correlation coefficient is represented by a decimal between zero and one, with the better reliability being closer to one. Carmines and Zeller (1979) state that reliability should not be lower than .80 in widely used measures. Loesch and Wheeler (as cited in Howe, 1984) warn of the danger of relying on the scores of such instrumentation as the sole basis of decision-making with clients. This study addressed the specific area of inter-rater reliability. Cicciarella (1997) describes inter-rater reliability as the degree to which different observers produce the same results.

## Historical Overview

Melamed, Meir, and Samson (1995) refer to several authors who indicate that it is widely recognized that leisure participation has a beneficial effect on satisfaction, physical well-being, and health (Coleman, 1993; Coleman and Iso-Ahola, 1993; Schreyer and Driver, 1989; Tinsley and Tinsley, 1986). The authors state that there have been insufficient attempts to identify the optimal choice of leisure activities for a particular individual for producing positive outcomes. There are many arenas for which it is important to explore leisure interests and to

correctly identify indicated activity patterns for specific individuals. For example, Holland's (1973) theory of vocational choice has been studied related to an individual's congruency at work and their avocational choices. One underlying assumption of this theory, found through a study by Melamed and Meir (1981), is that people in incongruent occupations are vocationally dissatisfied and will compensate for this by selecting compensatory leisure activities.

Many personality studies related to leisure interests have been conducted to compare specific personality typologies to different leisure activities (Melamed, Meir, and Samson, 1995; Lawton, 1994; Howard, 1976, Ibrahim, 1969; and Havinghurst, 1957). Also studies of leisure interests have been performed with the development of gerontology studies (Lawton, 1994; Havinghurst, 1957).

Over time, leisure interest assessments have developed different characteristics addressing different underlying topics. For example, there are leisure activity checklists, forced choice responses, and cluster statements that encompass an array of similar activities into one representative statement. All of the above assess a client's desired or future leisure activity interests.

Walshe's chapter on "Leisure Counseling Instrumentation" (as cited in Compton & Goldstein, 1977), give examples of earlier published leisure interest assessments. The *Leisure Interest Inventory* (1969) by Hubert, the *Avocational Activity Inventory* (1971) written by Overs, and the *Leisure Activities Blank* (1975) by McKechnie. The *Leisure Interest Inventory* determined leisure interests based on five of six of Kaplan's (1960) typologies: sociability, games, art, mobility, and immobility. The respondent selects from groups of activities that are liked "most"

and "least". The *Avocational Activity Inventory* also utilized name fields to classify activities such as games, sports, nature, volunteer, collection, craft, art and music, educational, cultural, and organizational. The *Leisure Activities Blank* was an assessment based on one hundred twenty recreation activities that respondents would indicate past involvement in or expected future involvement for each.

An earlier study completed by Leary, Wheeler, and Jenkins (1986), utilized a leisure interest survey that the authors themselves designed. The study assumed that people with social-identities of themselves participate in team oriented sports such as basketball, soccer, etc. And those individuals with a personal-identity participate in individual oriented activities, such as golf, fishing, etc. The questionnaire consisted of twelve recreation activities where the respondent ranked the activities on a likert scale from one to five (never to almost everyday).

Kircaldy, Shephard, and Cooper (1993) utilized the *revised Interest Inventory* that contained a series of twenty-four leisure items chosen from a preliminary assessment of popular interests in Germany. The original version of this assessment was developed in 1990 by Kircaldy and Furnham. The respondent rated each of the twenty-four items on a five point likert scale for personal appeal. A study on personality and recreational preference by Ibrahim (1969) utilized Zeigler's (1959) "How do you rate yourself recreationally" assessment tool that was used to determine recreational tendencies. The assessment tool determined there are five recreational clusters in which people are active:

physical, social, communicative, aesthetic, and learning. This information was compared with a personality inventory.

Witt and Groom (1979) looked at the usefulness of leisure interest assessments and determined that the term "interest" is a loosely defined term. These authors feel that it is hard to make a distinction between interest, needs, and wants. The failure to distinguish between these terms leads to confusion of interpretation of leisure interest assessment results. The term "need" is defined by Webster's Dictionary (1975) as a necessity or obligation, poverty or extreme want. "Wants" are defined "to have a strong desire for or to suffer from the lack of". Witt and Groom (1979) state that the middle ground between needs and wants is "interests". This is the target area of most leisure interest assessments.

Within this same article, the authors warn of the danger of the different types of "interests". Some will report activities that they pursue or are active in (*manifest interest*), things they are attracted to (*expressed interest*), or those that they are told they should be interested in. Similarly, the validity of a leisure interest assessment is questionable when the assessment is unable to differentiate between specific categories of interests and motivations for responses to activity interests. For example, Kuder (1977), states that after conducting a study of *expressed interest*, many people responded to activities because they were more "socially acceptable" and not an actual behavior or interest to that individual.

### *State Technical Institute's Leisure Assessment Project (STILAP)*

The original authors of this assessment are Navar and Peterson. Navar has been the primary author for the *STILAP* from 1974 to the present (burlingame, 1991). The authors, as written in the *Red Book* (1991) state that professionals need assessments that are easy to administer and score. Along with this, they also need to produce meaningful results. The *STILAP* prides itself in being an assessment to be used in actual practice, rather than other assessments that are used for research and then modified for a clinical setting (Navar, 1980).

Navar & Clancy (1979) states that the *STILAP*'s main purpose is to help the client achieve a balanced leisure lifestyle. The assessment does this by: 1) assessing the client's leisure skill participation patterns; 2) categorizing these patterns (and thus, assumed skills) into leisure competency areas; and, 3) providing guidelines for further leisure decision-making and future program involvement. There are fourteen leisure competency areas that are assessed, which include, in addition to others, physical, mental, and social (see Appendix G). The author states that the leisure competency statements that are included in *STILAP* are based on an adult population considered "normal" or non-disabled. She believes that this helps with mainstreaming efforts. The *STILAP* was also developed as a site-specific assessment used on clients for thirteen years at the State Technical Institute and Rehabilitation Center. The author assumes that other facilities may need to modify the activity checklist to better suit the needs of their clients. Navar & Clancy's (1979) main interest is in the fourth component of leisure education; leisure skill acquisition. The *STILAP* allows leisure

professionals to: 1) obtain objective data which both staff and clients can mutually engage in responsible leisure decision-making; 2) tap into the client's leisure competency areas; 3) utilize the tool in program planning; 4) increase accountability in leisure counseling/education; and, 5) have a client-centered program evaluation tool.

This assessment requires the client to mark an activity checklist comprised of one hundred twenty-three activities, which fall into one of the fourteen competency areas. The client indicates whether the activity is something they participate in "much" (on a daily basis), "sometimes" (not on a regular basis), and "interested" (the client has not participated in the activity but is interested in learning).

The fourteen competencies with the *STILAP* are:

1. physical skill done alone;
2. physical skill that s/he can participate in with others regardless of skill level;
3. physical skill that requires the participation of one or more others;
4. activity dependent on some aspect of the outdoor environment;
5. physical skills not considered seasonal;
6. physical skill with carry over opportunity for later years;
7. physical skill with carry over opportunity that is vigorous enough for cardiovascular fitness;
8. mental skill participated in alone;
9. mental skill requiring one or more others;

10. appreciation skill or interest area which allows for emotional or mental stimulation through observation or passive response;
11. skill which enables the creative construction or self-expression through objective manipulation, sound or visual media;
12. skill which enables the enjoyment or improvement of the home environment;
13. physical or mental skill which enables participation in a predominantly social situation; and
14. leadership or interpersonal skill which enables community service.

The author states that the competency is inherent to the specific activity. The purpose is not to rigidly categorize or stereotype the activities but to better inform the client of: 1) the different areas incorporated in the client's leisure; 2) the vast leisure alternatives available; and, 3) the possibilities of different leisure needs the client may confront in the future (Navar, 1980).

On a final note, the author does warn that the *STILAP* should not be used as a sole assessment tool. The leisure professional may need to select and utilize other tools to measure areas that the *STILAP* does not measure. There are no reported reliability and validity studies based on the *STILAP*. According to Navar, validity on the *STILAP* is, "basically face validity" and has been used for over twenty years. Also, in her opinion, the competencies are weighted on the physical side and the activities are biased toward men, due to three hundred ninety out of four hundred of the clients used in the study were men (N. Navar, personal communication, January 29, 1998).

### *Leisure Interest Measure (LIM)*

The authors of the *Leisure Interest Measure* (1990) are Mounir G. Ragheb and Jacob G. Beard. The authors explain that through the production of the *LIM*, the focus of leisure interest assessment has gone from an early emphasis directed towards specific activities to an emphasis on constructs representing families of activities sharing common characteristics (Ragheb & Beard, 1992). The purpose of the *LIM* is to measure how much interest the client has in each of the eight categories listed of leisure interest. The eight categories are: 1) physical; 2) outdoor; 3) mechanical; 4) artistic; 5) service; 6) social; 7) cultural; and, 8) reading. It is recommended that the *LIM* be given to a client with an IQ of 80 or above, with a mental age of twelve years or above, *Ranchos Los Amigos* level of seven or above, *Reality Orientation* level of "mild to no orientation disability".

The *LIM* presents twenty-nine statements to the client regarding leisure activities (see Appendix H). The client will indicate to the side of each statement a number ranging from one to five:

1. the statement is "almost never true"
2. the statement is "seldom true"
3. the statement is "sometimes true"
4. the statement is "often true"
5. the statement is "almost always true"

The client should understand that there are no wrong or right answers, rather it is a subjective feeling of how the client views the statement. The leisure



professional should note how long it takes for a client to answer a specific question and document it. This type of information will be useful in interpreting the results. The leisure professional will provide a summary of the scores from the numbers listed, and along with the representative scores, a summary of the client's mannerisms while taking the test (Burlingame, 1991).

The *LIM* is recommended by the authors to be used in recreation with employees, church, campus, or public groups. Also, the scale can assist respondents in identifying areas of leisure interest options that are available. Reliability tests showed that out of the eight categories tested on two hundred fifty-two individuals, the only category that demonstrated lower reliability was the "artistic" domain. The author's used an alpha internal consistency reliability coefficient for all twenty-nine items. The coefficient showed a .87 significance level (Ragheb & Beard, 1992).

#### *Leisure Scope (LS)*

The author of the original version is Schenk. This assessment was developed in 1984. An extensive look at the *LS* has been taken by the author of the *Red Book of Assessment in Therapeutic Recreation*, Burlingame. While not the only source of information regarding this assessment presents the most comprehensive overview with permission by the original author. Schenk developed this assessment for client's that became disinterested and bored with other basic leisure activity checklists. Schenk tapped into the fact that, in her opinion, "the majority of people tend to be "visual" learners, meaning they best

access information from visual stimuli" (C. Schenk, personal communication, December 7, 1998). Through this knowledge and personal belief, she designed an assessment tool that would be more enjoyable for clients to participate. The *LS* is used to determine a client's leisure preferences. The purpose of the *LS* is threefold: 1) to have a means to determine a client's leisure preferences without limiting him/her to a predetermined checklist; 2) to have a means to determine how a client feels about the activities that the client likes best and how extensive their vocabulary is as it relates to feelings and leisure; and, 3) to promote and to stimulate the desire for healthy leisure habits.

There are nine different categories or domains that are assessed through the *LS* (see Appendix I). They are: 1) games; 2) sports; 3) nature; 4) collection; 5) crafts; 6) music and art; 7) education; 8) entertainment and culture; and, 9) organizations (e.g. scouts). The client is shown nine different picture collages of each area provided above. There are eight pictures on each collage which depict what the category of leisure represents. An example of what the "nature" collage includes: outdoor magazines, a seagull, a sandy coastline, a barbecue, a fishing pole with fish, a pair of bridled horses, a gardener, and a group of people camping.

To administer the assessment, the leisure professional places #1 collage and #2 collage in front of the client and asks them to choose which one they like best and how much more; one square (slightly), two squares (moderately), or three squares (extremely) more. The client, for example would choose #1 collage (games) over #2 collage (sports) and would mark on the score sheet, one square

more (the client liked the category slightly more), two squares more (the client liked the category moderately more), or three squares more (the client likes the category extremely more). The professional will then proceed to compare each collage against the other. There are thirty-six ways to combine all of the categories. The score sheet shows a line for each category. At the end of the exercise, the length of the line represents how much the client enjoys the activity. If the line is long, this means the activity is extremely preferred. If the line is very short, the client is not inclined to participate in this area. The *LS* can be given in two different ways, through picture (5X7 cards), or on a slide projector shown on a large screen.

The *LS* has had both validity and reliability studies performed. The results conclude that: 1) content validity was demonstrated by a jury of recreation experts agreeing that 90.4% of the full color visuals correctly represented their categories; 2) using test/retest methods for reliability, all comparisons were 80% or higher; and, 3) follow-up with respondents to determine user perception of the assessment's performance yielded a 99% accuracy rating (burlingame, 1991).

### Summary

In summary the various authors of three leisure interest assessments describe how each of the individual assessments are administered and scored. Each assessment has specific information regarding validity and reliability. This detailed look into each inventory gives the reader information regarding different ways to collect data on a client related to leisure interests.

In review, the *STILAP* is administered by an activity checklist. Each activity is part of an overall domain or descriptive category. The *LIM* is a rating system for activity participation patterns, which are grouped into individual domains or descriptive categories. And the *LS* is a visual collage of a variety of activities which selection is based upon if the activity represented by that collage is liked slightly, moderately, or extremely more than another compared activity.

The validity reported for the *STILAP* is basically face validity with no formal tests reported. The *LIM* reports the lowest reliability in only one of the eight categories, artistic. The reliability coefficient for all of the twenty-nine questions asked was .87 significance level. No formal validity tests were reported within the literature. The *LS* demonstrates content validity with a jury of experts agreeing on 90.4% of the color collages actually represent their named categories or domains. Test/re-test methods for reliability were 80% or higher. Also, the *LS* determined user perception of its performance with a 99% accuracy rating.

## CHAPTER III

### METHODOLOGY

The purpose of this study is to analyze three leisure interest assessment tools. The results from this study will assist practitioners in the selection of a leisure interest assessment based upon what these tools measure and what published criteria describes as necessary related to validity, reliability, and test administration. This chapter is a description of the protocol employed in the selection of the sample, collection of the data and analysis of the data. The following sections describe:

1. Research Questions
2. Description of Subjects
3. Description of Test Instruments
4. Design of Experiment/Statistical Analysis Applied

#### Research Questions

This study addressed the following research questions related to the above purpose:

1. What do the *State Technical Institute's Leisure Assessment Project (STILAP)*, *Leisure Interest Measure (LIM)*, and the *Leisure Scope (LS)* independently measure?
2. What is the inter-rater reliability of each of the three tools for measuring interests on common factors identified through the factor analysis process?

### Description of Subjects

The subjects were two hundred fifty college age students attending a south-west public university. These subjects ranged in age from eighteen to fifty years and were selected as they attended classes or participated in a major public university recreation center. The two hundred fifty subjects represented one hundred fifty-two females and ninety-eight males. There were seventeen Native Americans, eleven Hispanic Americans, five African Americans, two Asian Americans, two hundred thirteen European Americans, and two subjects selected "other" for ethnicity.

### Description of the Instruments

The three activity preference inventories are: 1) *State Technical Institute's Leisure Assessment Project (STILAP)*; 2) *Leisure Interest Measure (LIM)*; and, 3) *Leisure Scope (LS)*. The *STILAP* (Navar, 1974) is an activity checklist of one hundred twenty-three pre-determined leisure choices. This assessment requires the individual to indicate on each activity if they participate (M) Most of the time, (S) Some of the time, or (I) Interested in the activity. This assesses the individual's leisure skill participation patterns. The author has the one hundred twenty-three activities categorized into fourteen competency areas. Some examples are: physical, mental, social, etc. The scores from this activity preference inventory will be a representation of the individual's leisure preference patterns.

The *LS* (Schenk, 1984) is also a leisure interest assessment. The *LS* is a visual display of nine competency areas or categories. The individual is shown nine different picture collages of each competency area, i.e. games, sports, nature, hobbies, etc. The individual is asked to choose between the two collages, which one they like better and how much more. They are required to utilize squares on a grid that gives a visual description of their choices upon completion of the assessment. If they like one collage "extremely" better than the other, they shade in three squares, if they like one collage "moderately" better than the other, they shade in two squares, and if they like one collage only "slightly" better than the other, they shade in one square. Upon completion of this assessment there is a visual picture of where the individual's leisure interest lies.

The *LIM* (Ragheb & Beard, 1990) is another leisure interest assessment that requires the individual to rank statements regarding leisure activities on a scale from one to five. A "1" means that the statement is never true, and a "5" means that the statement is always true. The twenty-nine statements regarding leisure activities are clustered into eight categories like physical, social, outdoor, etc. The scores from each statement are added to the other statement scores representing specific categories. Upon completion there are representative scores ranging from one to five. If the domain has a low score, the individual never participates in that domain. If the domain has a high score, the individual does participate in that domain. The final score of the assessment will give a numerical value in certain categories that interest the individual.

## Method

The subjects were asked to sign a consent form (see Appendix A) and complete a demographic information form (see Appendix B) prior to participating in the study. All two hundred fifty subjects were given three leisure interest assessments, *State Technical Institute's Leisure Assessment Project (STILAP)*, *Leisure Interest Measure (LIM)*, and the *Leisure Scope (LS)*. The assessments were then scored and entered into a database for further statistical analyses. To test the first research question asking, "What does each leisure interest assessment independently measure?" An overall factor analysis, as well as an independent factor analysis were conducted by entering the raw scores from all two hundred fifty participants on all three leisure interest assessments. The varimax rotation ("R" technique) was used to create the output of scores.

Next, the data were utilized to test for inter-rater reliability. An evaluation form was created by taking the top five factors (physical, artistic/creative, mental, service, and education) found from the factor analysis. Thirty leisure professionals, all Certified Therapeutic Recreation Specialists, rated the raw scores from twenty-four cases. This group of professionals were chosen due to the fact that they do utilize leisure interest assessments within their field, and they are educated on how similar tools are used. Only twenty-four cases were evaluated due to time constraints.

For each of the three inventories, the professional was asked to evaluate the raw scores on a likert scale from zero to three. A score of "1" represented a "strong" relationship to the given factor, a score of "2" represented a "moderate"



relationship to the given factor, a score of "3" represented a "weak" relationship to the given factor, and a score of "0" represented no information regarding the given factor. To test for inter-rater reliability each case was examined by two professionals. The findings were compared with a percentage of agreement reported for each category.

## CHAPTER IV

### RESULTS AND DISCUSSION

The purpose of this study was to analyze three leisure interest assessment tools. The results from this study will assist practitioners in the selection of a leisure interest assessment based upon what three of these tools measure and what published criteria describes as necessary related to validity, reliability, and test administration. This was accomplished by administering three leisure interest assessments, the *State Technical Institute's Leisure Assessment Project (STILAP)*, *Leisure Interest Measure (LIM)*, and the *Leisure Scope (LS)*, and running different statistical analyses.

This study utilized two hundred fifty college age students as subjects to address two research questions related to the selection of a leisure interest measure. The first research question asked specifically what each inventory measured. The second question examined the inter-rater reliability of each of the five factors, identified through the factor analysis, for each assessment.

A factor analysis, varimax rotation (R technique), was used on the data to address the first research question. The raw scores of the *STILAP*, *LIM*, and the *LS* were entered into a database to determine which activity categories would load together as having common characteristics. Anastasi (1988), reports that when utilizing a factor analysis to analyze data, to learn the nature of a particular factor, one needs to examine the high loadings on that factor and try to identify processes they have in common. The more tests with high loadings on a given factor, the more clearly the nature of the factor can be defined. The data

suggests that the activity categories from the *STILAP*, *LIM*, and the *LS* did load similar characteristics together, but some categories that one would expect to load together, as similar, did not. For example, the questions related to the physical activity category on the *STILAP* (A-G) and *LIM* 1 loaded together but the physical category from the *LS* loaded with other categories. (see Table I)

There were a total of five factors that loaded at the .35 level, or above. A "loading" of .35 level or above demonstrates a correlation coefficient that is statistically important. At a .35 level or above, 10% of the variability within the named factor can be accounted for. This is how an item from one assessment relates to items of similar domains from other assessments. The higher the correlation coefficient (closer to 1) the better the relationship that score has to the named factor. The five factors were identified as clusters of common characteristics and named as physical, artistic/creative, service, mental, and education. The summary of these analyses are reported in Tables I and II.

For example, the loadings of variance for the physical factor range from .35, which represents 10% of the variance accounted for in the physical factor, to .97 which represents 94% of the variance. The percentage of variance is a comparison of the score and factor. It explains how much of that score can be accounted for within the named factor.

TABLE I  
 FACTOR ANALYSIS VARIMAX ROTATION FOR PHYSICAL,  
 ARTISTIC/CREATIVE, and SERVICE FACTORS

Physical		Artistic/ Creative		Service	
STILAP B	.97298	LIM 4	.80009	LS 8	.83821
STILAP A	.96541	LS 5	.76146	LIM 5	.72516
STILAP F	.96114	STILAP K	.63623	LS 9	.69012
STILAP D	.91133	LIM 3	.63416		
STILAP G	.87672	STILAP L	.50387		
STILAP E	.70438	LIM 7	.47876		
STILAP C	.60385				
LIM 1	.35360				

The loadings of variance range from .35 (10%) to .86 (73%) for the mental factor. The loadings of variance range from .46 (21%) to .73 (53%) for the education factor.

TABLE II  
 FACTOR ANALYSIS VARIMAX ROTATION FOR THE MENTAL and  
 EDUCATION FACTORS

Mental		Education	
STILAP H	.86521	LS 7	.73445
STILAP J	.86276	LIM 8	.69650
STILAP I	.53932	LS 1	.49848
STILAP L	.50107	LIM 1	.48989
STILAP K	.40258	LIM 7	.46285
LS 1	.35517		

The factors that did not load at a .35 or 10% variance level for the *STILAP* were *STILAP* M (13) and N (14), which were social and service categories. The factors that did not load for the *LIM* were *LIM* B (2) and F (6), which were outdoor and social categories. The factors that did not load for the *LS* were *LS* 2, 3, 4, and 6, which were sports, nature, collection, art and music.

## FACTOR ANALYSIS

### Physical

More specifically, each of the assessment tools were factor analyzed against each other as well as factor analyzed against themselves. The results are as follows. For the named physical factor, the *STILAP* loaded all of the questions addressing the word "physical" in the question; *STILAP* A-G. Also, the *LIM* 1 category loaded on the physical factor (see Table I). The *LS* does have a similar category within the assessment that addresses sports"; *LS* 2. The collage for that particular category depicts such pictures as physically active team and individual sports. This category did not load in the overall solution for the similar related domain.

This information demonstrates that there is not a perfectly defined category that each assessment tool identifies similarly as "physical". It appears that the *STILAP* and the *LIM* are close in the overall solution, but it could be assumed that the only reason these two loaded together would simply be that the actual word "physical" was within the title.

An individual factor analysis was run on each separate tool. The analysis of the *STILAP* demonstrates that there was no vital information that loaded at .35 or higher on any of the “physical” questions. The *LIM*'s individual factor analysis did load the “physical” question (*LIM* 1) with the correlation coefficient reporting at a level of .47890. The *LS* data on an individual factor analysis was inconclusive, meaning that there was no reduction in number of original categories through the analysis process. This may suggest that all variables are unique related to earlier test construction, i.e. Overs (1975) *Avocational Activity Inventory*, which utilized factor analysis for its development. (\*See notation below)

#### Artistic/Creative

For the named artistic/creative factor all three of the assessment tools loaded at .35 or higher on the overall solution (see Table I). The *STILAP*'s categories 11 and 12 both loaded as part of the identified factor. These category titles are: 11) skill which enables the creative construction or self-expression through object manipulation, sound or visual media, and 12) skill which enables the enjoyment or improvement of the home environment. The *LIM* categories 3,4, and 7 also loaded on this identified factor. The *LIM* 3 stands for mechanical, *LIM* 4 stands for artistic, and *LIM* 7 stands for cultural. The *LS* 5; crafts, loaded on this identified factor also. All of the above loadings were .35 or higher. It should be noted that this is the only identified factor that all three assessments load on.

\*This will not be discussed for independent solution for remaining factors.

This is stable information to assume that all three assessment tools are valid predictors of this named artistic/creative factor.

This information is varied in the overall loading solution. The wide range of descriptors seem to indicate that all of these have some similar underlying value allowing them to load on the same factor at a level of .35 or above. With this case, the only actual use of the title descriptors are in the *STILAP* 11 and *LIM* 4. It should be noted that the *LS* 6 (music and art) did not load on this named artistic/creative factor at all. Even with the actual word "art" in the title. It is apparent that there is something different being measured within the *LS* that cannot be identified or compared with the other two assessments in the artistic/creative realm.

After the initial factor analysis analyzing all three assessments together, an individual factor analysis was run for each separate tool. The analysis of the *STILAP* demonstrates that both *STILAP* 11 and 12 reported at a .35 level or higher. *STILAP* 11 reports at .57407 and the *STILAP* 12 reports at .57738. Also, *LIM* 3 and 4 loaded individually. *LIM* 3 loaded at .57403 and *LIM* 4 at .48805. For the *STILAP*, and the *LIM* to load the same questions independently as in the overall solution, this is stable information to assume that they are valid predictors of this artistic/creative identified factor.

## Service

For the named service factor the *LIM 5* (service) and the *LS 8* (entertainment and culture) and 9 (organizations) loaded in the overall solution (see Table I). The *LIM 5* loaded at .72518. *LS 8* loaded at .83821 and the *LS 9* at .69012. The *STILAP* did not load on the service factor in the overall solution. It should be noted that even though the *STILAP* did not load overall, there is an actual category within the *STILAP* titled "leadership or personal skill which enables community service".

Again, the information provided is not perfectly defined. These data provide support for the notion that "service" oriented similarities lie within the *LS 8* (entertainment and culture) domain. After the overall solution, the independent factor analysis solutions were run. Independently, the *LIM 5* loaded at the .47040 level. Interestingly enough the *STILAP* does load the service domain within an independent solution. *STILAP 14* reports a correlation coefficient at a .68901 level. These data support that there is enough information within the *STILAP* itself to be noted in the "service" factor.

## Mental

For the overall solution the *STILAP* and the *LS* loaded on the named factor of mental. The *STILAP* loaded questions 8,9,10, 11, and 12. *STILAP 8* is a mental skill participated in alone, 9 is mental skill requiring one or more others, 10 is appreciation skill or interest area which allows for emotional or mental stimulation through observation or passive response, 11 is skill which enables the creative



construction or self-expression through object manipulation, sound or visual media, and 12 is skill which enables the enjoyment or improvement of the home environment. All of these *STILAP* questions load on this one factor (see Table II). This would indicate that all of these are comparing similar types of things together. Also, the *LS 1* loaded. This category represents "games".

In each separate solution, the *STILAP 8* and *10* loaded independently as an identified "mental" factor. The actual wording in these two questions contains the specific word "mental" in the statement. It should be noted that *STILAP 11* and *12* also loaded independently on the separate factor analysis, but in a completely different factor, named and identified as artistic/creative. This information indicates that the variance is shared between factors across different factor analyses, and that when separated, the questions are grouped into more specific categories.

The identified domain for this study called "mental" has been found to be very similar in nature to another named and identified domain called "education". They are similar as far as how they are used on each assessment, but when the raw data are used in the factor analysis, the information appears to be very different, appearing in two separate factors. Therefore, this indicates there is a comparable difference in what the two are actually measuring.

## Education

The overall solution reveals that the *LIM* and the *LS* load similar information regarding "education". The *LIM* 7 which stands for "cultural" is represented by a -.46285 significance level. Also, *LIM* 1 which stands for "physical" loads on the "education" factor at a .48989. It is shared with the first named and identified factor of "physical". *LIM* 8 which is called "reading" also reports at a level of -.69650. *LS* 1 called "games" reports at .49848 and *LS* 7 actually named "education" loads at a level of -.73445 (see Table II). *LS* 1 is also shared with the named and identified factor of "mental".

In the independent factor analysis, *LIM* 1 loaded but it loaded on a separate factor (physical) than *LIM* 8. *LIM* 1 has shared variance in the overall solution, but remains in the physical factor in the independent solution. From this information it is evident that these two when compared separately do not have similar information that they are measuring. *LIM* 7 "cultural" did not load on the independent analysis at all. The *STILAP* did not load in the overall solution or an independent solution. It does appear though that when looking at these two separate factors, mental and education, they are quite similar in what each assessment is trying to measure.

## INTER-RATER RELIABILITY

The second research question addressed inter-rater reliability. This was tested by allowing thirty leisure professionals, all Certified Therapeutic Recreation Specialists (C.T.R.S.), to evaluate twenty-four completed assessments. Each case was evaluated by two separate professionals to test for consistencies or inter-rater reliability when interpreting scores of the *STILAP*, *LIM*, and the *LS*. The evaluation form was developed by taking the top five factors from the overall factor analysis. The factors were identified as: physical, artistic/creative, service, mental, and education. The factors were derived by a loading of .35 (10% variance) or higher for each factor. The evaluation form was composed of a likert scale ranging from zero to three. A score of "0" represented "no information", a score of "1" represented a "strong" relationship, a score of "2" represented a "moderate" relationship, and a score of "3" represented a "weak" relationship (see Appendixes C, D, and E).

Carmines and Zeller (1979) do report that reliability should not be lower than 80% to be determined reliable. When inter-rater reliability is at 80% or higher, it is considered an acceptable amount of reliability. When examining the physical factor for the *STILAP*, inter-rater reliability was 75% consistent or eighteen out of twenty-four cases reported identical evaluations from two professionals. Inter-rater reliability for the *LIM* was 96% consistent or twenty-three out of twenty-four cases. Inter-rater reliability for the *LS* was 50% consistent or twelve out of twenty-four cases. The summary of this analysis is reported in Table III.

TABLE III  
INTER-RATER RELIABILITY ANALYSIS FOR PHYSICAL FACTOR

Physical	Cases	Percentage
STILAP	18/24	75%
LIM	23/24	96%
LS	12/24	50%

When examining the artistic/creative factor, the *STILAP* inter-rater reliability was 54% consistent or thirteen out of twenty-four cases. Inter-rater reliability for the *LIM* was 75% consistent or eighteen out of twenty-four cases. Inter-rater reliability for the *LS* was 67% consistent or sixteen out of twenty-four cases. The summary of the analysis is reported in Table IV.

TABLE IV  
INTER-RATER RELIABILITY ANALYSIS FOR ARTISTIC/CREATIVE FACTOR

Artistic/Creative	Cases	Percentage
STILAP	13/24	54%
LIM	18/24	75%
LS	16/24	67%

When examining the service factor for the *STILAP*, inter-rater reliability was 42% consistent or ten out of twenty-four cases. Inter-rater reliability for the *LIM* was 67% consistent or sixteen out of twenty-four cases. Inter-rater reliability for the *LS* was 58% consistent or fourteen out of twenty-four cases. The summary of the analysis is reported in Table V.

TABLE V  
INTER-RATER RELIABILITY ANALYSIS FOR SERVICE FACTOR

Service	Cases	Percentage
STILAP	10/24	42%
LIM	16/24	67%
LS	14/24	58%

When examining the mental factor for the *STILAP*, inter-rater reliability was 46% consistent or eleven out of twenty-four cases. Inter-rater reliability for the *LIM* was 92% consistent or twenty-two out of twenty-four cases. Inter-rater reliability for the *LS* was 42% consistent or ten out of twenty-four cases. The summary of this analysis is reported in Table VI.

TABLE VI  
INTER-RATER RELIABILITY ANALYSIS FOR MENTAL FACTOR

Mental	Cases	Percentage
STILAP	11/24	46%
LIM	22/24	92%
LS	10/24	42%

When examining the education factor for the *STILAP*, inter-rater reliability was 33% consistent or eight out of twenty-four cases. Inter-rater reliability for the *LIM* was 83% consistent or twenty out of twenty-four cases. Inter-rater reliability for the *LS* was 42% consistent or ten out of twenty-four cases. The summary for this analysis is reported in Table VII.

TABLE VII  
INTER-RATER RELIABILITY ANALYSIS EDUCATION FACTOR

Education	Cases	Percentage
STILAP	8/24	33%
LIM	20/24	83%
LS	10/24	42%

## DISCUSSION

The results from the factor analysis suggest that there is a difference in what each of the activity interest inventories are measuring. The factor analysis reported loadings of variance from the raw scores entered from two hundred fifty college age students. The data suggest that each inventory's similar categories did not consistently load together. For example, the mental factor found from the factor analysis only reported questions from the *STILAP*, when each of the inventories has questions on them that are, reported by their authors as being directly related to the mental domain. Also, the service factor identified by the factor analysis only loaded questions from the *LIM* and *LS*. There is a category on the *STILAP* that directly addresses, "leadership and/or interpersonal skill enabling community service". The data seem to suggest that not all of the activity interest inventories are measuring the same attributes relative to each factor. The only factor reported from the factor analysis that captures all three of the inventories at once is the artistic/creative factor.

The results from the analysis of inter-rater reliability suggest that from the five factors identified, physical, artistic/creative, service, mental, and educational, the *LIM* reports the most consistent results from raters. It is also evident that the physical and mental categories from the *LIM* are the only areas reporting at least 90% inter-rater reliability. It should be noted that the test for inter-rater reliability represented categories across domains that common leisure interest assessments measure. The results from independent inter-rater reliability tests for each tool could be higher.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

##### Purpose

The purpose of this study was to analyze three leisure interest assessments; *STILAP*, *LIM*, and the *LS*, to assist practitioners in the selection based upon what these measure and what published criteria describes as necessary related to validity, reliability, and test administration. The research questions addressed in this study were:

- 1) What do the *STILAP*, *LIM*, and the *LS* measure?
- 2) What is the inter-rater reliability of each of the three tools for measuring interests on common factors identified through a factor analysis process?

##### Process

The sample was composed of two hundred fifty college age students (one hundred fifty-two females and ninety-eight males) enrolled in classes or involved in a major university recreation center. Each subject utilized was asked to sign a consent form (see Appendix A) and to complete a demographic sheet (see Appendix B) prior to participation in the study. The subjects then filled out three activity interest inventories, *STILAP*, *LIM*, and the *LS*. The findings of this study were based on three separate analyses of the raw scores of the three leisure interest assessments, an overall factor analysis, an individual factor analysis for each tool, and a test for inter-rater reliability for all instruments.



## Factor Analysis

The factor analysis reduced the total of thirty-one factors down to only five factors by eliminating any variable with a Pearson  $r$  less than .35 or 10% of the shared variance. The five factors identified were, physical, artistic/creative, service, mental, and educational.

The analyses revealed differences among similar domains represented by the separate activity interest inventories. Specifically, on the overall factor analysis, the physical factor strongly loaded all of the categories related to physical from the *STILAP* and the *LIM*. This appears to indicate that the *STILAP* and *LIM*'s physical categories greatly differ from the *LS*. From this writer's viewpoint, it would be important to take all of the information reported into consideration, keeping in mind the purpose of the assessment. If the assessment needs to address a "physical" nature then one would suggest that the *STILAP* and the *LIM* both represent some sort of "physical" domain within the overall solution. But, the *LIM* is the only assessment that supports the "physical" domain independent of any other tools. The service and education factors loaded categories only addressed on the *LIM* and the *LS*, not addressing any of the *STILAP* categories. The only factor that included all three inventories was the artistic/creative factor. This indicates a stronger relationship among categories of the *STILAP*, *LIM*, and the *LS* related to artistic/creative.

For the named artistic/creative factor, this writer would suggest confidence in using the *STILAP* or the *LIM* to assess some sort of "artistic/creative" information both in the overall solution and within the independent solutions. Regarding the

named service factor, this writer suggests the information in the *STILAP*, *LIM*, or *LS* is supported. The most supportive information lies within the *LIM* due to the fact that it is reported in both the overall solution as well as the independent factor analysis. Once again, if service is of primary interest to a test giver, then the *LIM* is suggested.

It is in the opinion of this writer that to assess any type of "mental" capacity, from this study, the *STILAP* would be the assessment of choice. Again, it should be noted that even though these specific questions loaded in both the overall solution and in the independent solution, it could be that the only reason they loaded is due to the fact that the actual word "mental" fell within the heading or title of the question. It also should be noted that all three of the assessments address some type of "mental" or "cognitive" domain. For the *LIM*, the category similar would be *LIM* 1 identified as "reading". The identified domain for this study called "mental" has been found to be very similar in nature to another named and identified domain called "education". They are similar in nature as far as how they are used on each assessment, but when the raw data are used in the factor analysis, the information appears to be very different, appearing in two separate factors.

Finally, when assessing the "education" factor it might be necessary to identify more specifically what type of information is needed. The two factors of "mental" and "education" seem to be so similar in the *LIM* or the *LS* and their use would be sufficient in assessing this domain. Again, the *LIM* did report on the overall solution as well as the independent solution. The *LS* might be a good choice for

"education", simply due to the fact that there is an actual category identified as "education" within the assessment.

#### Inter-rater reliability

The test for inter-rater reliability was created to demonstrate consistency among raters. Thirty leisure professionals, all Certified Therapeutic Recreation Specialists, evaluated the raw scores from twenty-four randomly selected completed assessments. It was found that among the five factors produced by the factor analysis, the only factors that ranked higher than 90% inter-rater reliability were the physical and the mental domains for the *LIM*.

#### "User-ability" by instrument

The "user-ability" of these assessments are as follows. The *STILAP* is an assessment that utilizes a checklist. The author, Navar (1974), suggests that it be used on an adult population considered "normal" or "non-disabled". The user must be able to read and have an attention span of approximately ten minutes; identifying from a checklist if the activities are ones that are participated in: on a daily basis, not on a regular basis, or is interested in participating. To score the *STILAP* takes approximately twenty minutes if the test giver is proficient with the scoring procedure.

The "user-ability" of the *LIM* is as follows. The authors, Ragheb and Beard (1992), suggest that the test taker needs to be literate and have an IQ of 80 or above, with a mental age of twelve years or above, *Ranchos Los Amigos* level of seven or above, and a *Reality Orientation* of mild to no orientation disability. After conducting the research, the information suggests that the test taker need

to have an attention span of at least fifteen minutes. To score the *LIM* takes approximately five minutes, if the test giver is proficient with the scoring procedure.

The *LS* is a series of picture collages. It requires no reading. This assessment can easily be given to an individual or a group of individuals. The *LS* takes approximately twenty minutes to administer, but the results are visual to the scorer and instantaneous. A grid is formulated to see where the interests lie.

#### Recommendation by Instrument

##### *STATE TECHNICAL INSTITUTE'S LEISURE ASSESSMENT PROJECT*

The *STILAP* is a checklist of 123 leisure activities that measures leisure participation patterns based on current involvement and interest in specific activities. The assessment takes approximately fifteen minutes to administer which is comparable to the two other assessments reviewed in this study. But, the scoring of the *STILAP* is one of the assessment's draw backs. To score the assessment takes approximately twenty minutes per test. It would not be easily administered to a large group for this reason. An activity checklist is an effective way for an individual who might have limited leisure resources or lacks the ability to identify future interests to see an actual list of many activities that are available. Within the activity checklist the categories where the activities fall are very detailed. This is helpful when using the tool, to make more informed programming decisions about the arenas for which an individual's leisure interests lie. The *STILAP*'s competency statements were also based on a

"normal" or non-disabled adult population. Individual's with special needs might need the assessment adapted for them. This also reduces the validity and reliability of the assessment.

As reported by the author, this assessment does not have any published information regarding formal validity or reliability testing so it would be difficult to place confidence in the results of this leisure interest assessment tool. The author of this tool, suggests that the *STILAP* should not be used as a sole assessment tool (N. Navar, personal communication, January 29, 1998). As a professional, this researcher feels that time constraints are an issue many professions battle. This researcher, based on this study, would not recommend using this tool and then having to follow-up with another leisure interest assessment.

#### *LEISURE INTEREST MEASURE*

The *LIM* is a leisure interest assessment that utilizes twenty-nine cluster statements that describe particular categories of interests. The authors, Ragheb and Beard (1992), feel that this eliminates the restrictions from pre-determined activity checklists where the interests that could be expressed are limited by the activities included within the list. The *LIM* takes the highest scores recorded in the reported categories to measure where an individual's interest lies. This assessment tool had initial reliability tests performed. Consistency and reliability was also found from this study. The results from this study demonstrate reliability in the ability to receive the same results time after time.

The *LIM* takes approximately fifteen minutes to administer and another five minutes to score. The individual taking the assessment must be literate and have an IQ of 80 or above, as reported in the literature. This researcher believes that this is the only down fall of the assessment.

### *LEISURE SCOPE*

The *LS* is a leisure interest assessment that utilizes visual collages that represent groupings of interest categories. An individual must choose, when the collages of interests are compared to one another, which one they like more; one square, two squares, or three squares more. The test taker is asked to make these comparisons thirty-six times. A representative scoring line reflects where the interest lies for an individual. The visual collages make this assessment unique in that the test taker is not required to know how to read. That could be a down fall. This test could not be given to a group of individuals with visual impairments.

The *LS* can be given to a group utilizing a slide projector and screen, or can be administered to an individual utilizing 5X7 cards. One drawback of the tool is that it takes approximately twenty minutes to administer. But, the results of the assessment are instantaneous. The tool has reported content validity studies reporting a jury of experts agreeing that 90.4% of the full color visual collages correctly represented their categories. Also, reliability studies demonstrated at least 80% test/re-test reliability. This assessment was designed from information and activities based on an adult population considered "normal" or non-disabled.

The information obtained from this assessment tool can not be generalized to a separate population or the results are no longer valid.

### Conclusions

The results of this study suggest:

1. The activity interest inventories, represented by this study, are not interchangeable and in many cases do not measure the same leisure constructs.
2. The *Leisure Interest Measure* was the only activity interest inventory, represented by this study, that had acceptable inter-rater reliability for the five independent factors identified through the combined factor analysis process.

### Overall Recommendations

In retrospect, the researcher would recommend that when selecting a leisure interest assessment, one would decide based on recent research, such as reliability and validity research, performed on such inventories. The development of all three of the leisure interest assessments were sampled and developed on a population considered "normal" or non-disabled. It is the recommendation of the researcher that the next study take a "special" population or individuals with special needs, i.e. stroke survivors of the left side, and compare activity interest results. There is a need to norm-reference materials and assessment tools on particular populations and have those tools demonstrate rigorous testing

regarding validity and reliability. This is a must within any profession but, especially within the field of leisure, where criticism is so rampant regarding the lack of sophistication within its assessment procedures.

Based on the review of literature and the findings of this study, this researcher recommends the utilization of the *Leisure Interest Measure* when assessing leisure interests. The *LIM* was the only tool that loaded on the overall factor analysis as well as the independent factor analysis on four out of the five factors identified; physical, artistic/creative, service, and education. The one factor that it did not load on, mental, the inter-rater reliability was extremely high at 92%. This occurred despite no specifically named category called "mental" within the actual tool, only an implied category titled "reading". The inter-rater reliability scores for the *LIM* were at least 67% or higher on all categories.



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## Appendix

Appendix A  
Consent form

## CONSENT TO PARTICIPATE IN RESEARCH

Title of Project: The analysis of Myers-Briggs Type Indicator and Leisure Activity Preferences

Name and Procedures:

I, \_\_\_\_\_, hereby consent to participate in this research project.

I understand that the following procedures will be followed:

- 1) Completion of demographic information
- 2) Completion of Myers-Briggs Type Indicator
- 3) Completion of three leisure preference inventories, all of which should take no more than 90 minutes to complete.

Expected Benefits and Possible Risks:

- 1) Expected Benefits: The researcher will do everything possible to make this a positive and educational experience for you. A possible benefit of participation in this study is the knowledge that you will contribute to better programming for individuals participating in recreational activities.
- 2) Possible Risks: There are no anticipated risks in participating in this study.

Additional Information:

I understand that all information will be kept confidential by the researchers. All efforts will be made to preserve my anonymity whenever data regarding me is used.

I understand that I am free to withdraw this consent and can discontinue my participation in this research project at any time.

I have been informed that if I have questions regarding the research procedures, I can contact Dr. Suzie Lane, 108 Colvin Center, Oklahoma State University, at 405-744-9328.

I affirm that I have read this entire statement and that I have been given the opportunity to ask any questions.

**DATE:** \_\_\_\_\_ **PARTICIPANT:** \_\_\_\_\_

Appendix B  
Demographic Form



## DEMOGRAPHIC INFORMATION

### AGE:

17-20       41-45  
 21-24       46-50  
 25-30       51-55  
 31-35       56-60  
 36-40       61-65

### GENDER:

Female  
 Male

### MAJOR:

Health  
 Leisure  
 Physical Education  
 Other-Specify  
\_\_\_\_\_

### ETHNICITY:

Native American  
 Hispanic  
 African American  
 European American  
 Other-Specify  
\_\_\_\_\_

Appendix C  
STILAP Evaluation Form

## STILAP

- A = Physical skill done alone
- B = Physical skill done with others regardless of skill level
- C = Physical skill requiring one or more others
- D = Activity dependent on some aspect of outdoor environment
- E = Physical skill not considered seasonal
- F = Physical skill with carryover opportunity for later years
- G = Physical skill with carryover opportunity and vigorous enough for cardiovascular fitness
- H = Mental skill done alone
- I = Mental skill requiring one or more others
- J = Appreciation skill or interest that allows emotional or mental stimulation through observation
- K = Skill enabling creative construction or self-expression
- L = Skill which enables enjoyment/improvement in home environment
- M = Physical or mental skill enabling participation in social situations
- N = Leadership and/or interpersonal skill enabling community service

	"3" Strong	"2" Moderate	"1" Weak	No Information
1. Physical				
2. Artistic/ Creative				
3. Service				
4. Mental				
5. Educational				

Appendix D  
LIM Evaluation Form

LEISURE INTEREST MEASURE

- A = Physical
- B = Outdoor
- C = Mechanical
- D = Artistic
- E = Service
- F = Social
- G = Cultural
- H = Reading

	"3" Strong	"2" Moderate	"1" Weak	No Information
1. Physical				
2. Artistic/ Creative				
3. Service				
4. Mental				
5. Educational				

Appendix E  
LS Evaluation Form

## LEISURE SCOPE

- 1 = Games
- 2 = Sports
- 3 = Nature
- 4 = Collection
- 5 = Crafts
- 6 = Art & Music
- 7 = Entertainment
- 8 = Volunteerism
- 9 = Social Affiliation

	"3" Strong	"2" Moderate	"1" Weak	No Information
1. Physical				
2. Artistic/ Creative				
3. Service				
4. Mental				
5. Educational				

Appendix F  
Factor Analysis



	Physical Factor 1	Artistic/ Creativity Factor 2	Service Factor 3	Mental Factor 4	Education Factor 5
STILAP 2	.97928				
STILAP 1	.96541				
STILAP 6	.96114				
STILAP 4	.91133				
STILAP 7	.87672				
STILAP 5	.70438				
STILAP 3	.60385				
LIM 4		.80009			
LS 5		.76146			
STILAP 11		.63623		.40258	
LIM 3		.63416			
STILAP 12		.50387		.50107	
LIM 7		.47876			-.46285
LS 8			.83821		
LIM 5			.72516		
LS 9			.69012		
STILAP 8				.86521	
STILAP 10				.86276	
STILAP 9				.53932	
LS 7					-.73445
LIM 8					-.69650
LS 1				.35517	.49848
LIM 1	.35360				.48989

Appendix G

State Technical Institute's Leisure Assessment Project

## STILAP (1990) COMPETENCY SUMMARY

Enter color codes here:	M	S	Interest Areas	Prescription Choice
A. Physical Skill That Can Be Done Alone				
B. Physical Skill That S/he Can Participate with Others, Regardless of Skill Level				
C. Physical Skill That Requires the Participation of One or More Others				
D. Activity Dependent on Some Aspect of the Outdoor Environment				
E. Physical Skill Not Considered Seasonal				
F. Physical Skill With Carryover Opportunity for Later Years				
G. Physical Skill With Carryover Opportunity and Vigorous Enough for Cardiovascular Fitness				
H. Mental Skill Participated in Alone				
I. Mental Skill Requiring One or More Others				
J. Appreciation Skill or Interest Area Which Allows for Emotional or Mental Stimulation Through Observation or Passive Response				
K. Skill Which Enables Creative Construction or Self-expression Through Object Manipulation, Sound, or Visual Media				
L. Skill Which Enables Enjoyment/Improvement of the Home Environment				
M. Physical or Mental Skill Which Enables Participation in a Predominantly Social Situation				
N. Leadership and/or Interpersonal Skill Which Enables Community Service				
O. Other				

ASSESSMENT SUMMARY STATEMENT

RECOMMENDATIONS:

**SAMPLE**  
**DO NOT DUPLICATE**

Client's Name	Admit #	Room/Bed
Physician		

Appendix H  
Leisure Interest Measure

## LEISURE INTEREST MEASUREMENT (LIM)

**Purpose:** The purpose of this assessment is to find out what kind of leisure activities individuals want or prefer to do.

**Directions:** Listed below are 29 statements. To the left of each statement is a line to indicate how true that statement is. A '1' means that the statement is never true, '2' means that it is seldom true, '3' means that it is sometimes true, '4' means that it is often true, and '5' means that it is always true. Write down the number that best fits your situation.

**Definition:** 'Leisure Activities' are those things that you do that are not part of our work and are not part of your basic grooming needs.

1 NEVER TRUE	2 SELDOM TRUE	3 SOMEWHAT TRUE	4 OFTEN TRUE	5 ALWAYS TRUE
-----------------	------------------	--------------------	-----------------	------------------

- |   |  |
|---|--|
| <p>_____ 1. I like to read in my free time.</p> <p>_____ 2. I prefer being outdoors.</p> <p>_____ 3. I like to work with materials such as metal or wood in my leisure time.</p> <p>_____ 4. I like to be original in my leisure activities.</p> <p>_____ 5. I appreciate the cultural arts.</p> <p>_____ 6. I am committed to serve as a volunteer worker in one or more service organizations or activities.</p> <p>_____ 7. I prefer competitive physical activities.</p> <p>_____ 8. I use my leisure as a chance to meet new and different people.</p> <p>_____ 9. I like the fresh air of outdoor settings.</p> <p>_____ 10. I often use tools in my leisure activities.</p> <p>_____ 11. I like to create artistic designs in my leisure time.</p> <p>_____ 12. I prefer to engage in cultural activities such as going to plays, lectures, or visiting museums.</p> <p>_____ 13. I often participate in service activities in my leisure time.</p> <p>_____ 14. I prefer activities which require a high degree of physical activity.</p> <p>_____ 15. I use my leisure to develop close relationships with others.</p> | <p>_____ 16. I prefer leisure activities which take place in outdoor environments.</p> <p>_____ 17. I like repairing or building things in my leisure time.</p> <p>_____ 18. I prefer leisure activities which require creativity.</p> <p>_____ 19. I like to observe local and national cultural events.</p> <p>_____ 20. I regularly contribute time to service organizations or activities.</p> <p>_____ 21. I prefer physically oriented activities such as sports.</p> <p>_____ 22. I prefer to engage in leisure activities which require social interaction.</p> <p>_____ 23. I prefer to engage in leisure activities which take place in outdoor environments.</p> <p>_____ 24. I like to work with mechanical devices in my leisure time.</p> <p>_____ 25. I like leisure activities which help me to explore new ideas.</p> <p>_____ 26. I have a strong attraction to the cultural arts.</p> <p>_____ 27. I prefer to be of service to others in my leisure time.</p> <p>_____ 28. I like leisure activities which require physical challenge.</p> <p>_____ 29. I prefer leisure activities which help to develop friendships.</p> |
|---|--|

Patient's Name	Physician	Admit #	Room/Bed
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Appendix I  
Leisure Scope



VITA

Amy Lynn Whitmarsh

Candidate for the Degree of

Master of Science

Thesis: AN ANALYSIS OF THREE LEISURE INTEREST  
ASSESSMENTS

Major Field: Health, Physical Education, and Leisure

Biographical:

Personal Data: Born in Tulsa, Oklahoma, June 2, 1973, the daughter of Jack and Mary Jane Hill. The wife of Carl Whitmarsh.

Education: Graduated from East Central High School in Tulsa, Oklahoma, 1991; received the Bachelor of Science degree in Speech Pathology, from Oklahoma State University, Stillwater, Oklahoma, May, 1995; completed requirements for the Master of Science degree at Oklahoma State University, May, 1999.

Professional Experience: Research Assistant, Oklahoma State University, 1995-1997; Director of Member Services, The Center for the Physically Limited, Tulsa, Oklahoma, 1997 to present.

Professional Organizations: Therapeutic Recreation Association of Oklahoma; American Therapeutic Recreation Association; National Recreation and Parks Administration; National Therapeutic Recreation Society.