

THE INTERNET AND THE STRONG INTEREST INVENTORY:  
CLIENT'S UNDERSTANDING OF RESULTS BOTH WITH AND  
WITHOUT A COUNSELOR'S INTERPRETATION

By

Jason P. O'Connor

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Professor in Charge

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Committee Members

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For the Department

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Date thesis accepted

## ABSTRACT

The Internet is a tool that enables individuals to attain valuable information about the world. This mechanism has exponentially boomed into what the Internet is today. Individuals can find practically anything they want on the Internet. Convenience and accessibility to all individuals has caught government officials unsuspecting of the rapid growth, and there are relatively few laws regulating the Internet.

Organizations are using the Internet to globally expand their business over night. Vocational testing has become an increasing field on the Internet. Individuals that need to make vocational decisions or considering changing careers are looking to the Internet for the answers. The Strong Interest Inventory is one of the thousands of inventories available online.

This research focuses on the understanding of the Strong Interest Inventory results. A mock simulation is created to compare how individuals understand their personal results on the inventory. Control group participants received their results in a typical career-counseling mode, with the individuals and a counselor reviewing the results and questions were answered about the results. The experimental participants, however, received their results and no interpretation from a counselor. The participants for the study were students at Johnson County Community College in Overland Park, KS.

The findings support the past research in that individuals do find it helpful for a counselor interpretation of their inventory results, but the findings are not significant. Various topics are considered in the discussion section to lead to a clearer understanding of the results.

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# CHAPTER I INTRODUCTION

## The Internet Boom

The Internet has become a part of daily life for many people around the world and access is available in companies, schools, and homes. This information medium has developed exponentially and it is important to understand the reasoning behind the Internet and why it was created.

The United States government funded a computer networking experiment in the late 1960s. The government wanted to create a system of computer networks that would be impervious to a nuclear war. The Pentagon enlisted computer scientists to build a system that would allow an unlimited number of computers to communicate without any one computer serving as the proverbial traffic cop. The technology they created and utilized was intended to be an unstoppable entity, the Internet has become its own entity, and today has more than 45,000 networks wired and is being accessed by more than three million computers (Caden & Lucas, 1996, [www.urich.edu](http://www.urich.edu)).

On October 24, 1995, the Federal Networking Council (FNC) passed a resolution defining the term “Internet.” “Internet” refers to the global information system that (i) is logically linked together by a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions/follow-ons; (ii) is able to support communications using the

Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; (iii) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein” ([www.fnc.gov](http://www.fnc.gov)).

The Internet has grown into a vast arena of e-commerce and business. An Internet user can read a newspaper published on the opposite side of the world at [www.london-daily.co.uk](http://www.london-daily.co.uk) and check stock values at [www.americancentury.com](http://www.americancentury.com) all from the comfort of home. Higher education has utilized the Internet by providing college credit courses over the Internet. Professors place homework and study guides on Internet based sites such as [www.coursestar.org](http://www.coursestar.org).

Another large market on the Internet is job employment and recruitment. Web based organizations provide job hunting tips and access to resume banks such as [www.kcjobhunter.com](http://www.kcjobhunter.com). Then the question arises: what if an individual need job counseling or career counseling? Those individuals might find it beneficial to visit [www.careers-by-design.com](http://www.careers-by-design.com). This site not only provides career counseling, but also provides vocational assessments to aid in the career decision process.

## Career Assessment on the Internet

As mentioned earlier, vocational assessments are available on the Internet and some are considered psychometrically sound. However, some assessments are simply created and never examined empirically. On January 12, 2000, a search for vocational assessments on the Internet found 621,165 hits ([www.excitesearch.netscape.com](http://www.excitesearch.netscape.com)).

The specific vocational assessment that this research focuses on is the Strong Interest Inventory (SII) that is produced by Consulting Psychologists Press, Inc. in Palo Alto, California. The SII is offered online for fifty US dollars. With the Strong Interest Inventory, you can receive a 16 page professional report that suggests optimum career choices that require a 4-year college education ([www.careers-by-design.com](http://www.careers-by-design.com)).

“The SII is based on the idea that individuals are more satisfied and more productive when they work in jobs or at tasks that they find interesting and when they work with people whose interests are similar to their own. The SII contains 317 items that measure your interests in a wide range of occupations, occupational activities, hobbies, leisure activities and types of people. You can take the SII immediately! Select the Interpretive Report option if you are looking for a job that requires a high school education or the

Professional Report if you are looking for a job that requires a 4 year college degree”(www.careers-by-design.com).

### Assessment on the Internet: Issues of Concern

There are three main issues of concern with the use of this assessment on the Internet. The first concern is confidentiality. Can individuals without prior knowledge obtain access to person's results? What individuals do have the right to view these results? These concerns are legitimate and need to be addressed.

Legal and ethical issues are a concern. What legal rights do the test taker possess? Do the organizations have a legal and an ethical obligation to people who utilize their materials and resources? Where does the legal liability fall? Can these organizations ethically promote their assessments when in fact some individuals may not need them? These are some questions that psychologists and counselors contend with in their daily work environment. However, these professionals have set ethical guidelines put forth by their licensing organizations. Failure to follow the guidelines in an extreme sense can result in the professional losing the ability to practice professionally.

Professional organizations such as the American Psychological Association (APA) and the American Counseling Association (ACA) do not have specific ethical guidelines for the Internet. However, the APA Ethics

Committee recommends that psychologists follow Standard 1.04c, Boundaries of Competence. The Standard 1.04c states, that “in those emerging areas in which generally recognized standards for preparatory training do not yet exist, psychologists nevertheless take reasonable steps to ensure the competence of their work and to protect patients, clients, students, research participants, and others from harm” ([www.apa.org](http://www.apa.org)).

An Advocate Specialist from the ACA stated the opinion of the ACA in regards to their view on personality assessments via the Internet. The information stated was that the “ACA has not made a policy statement in regards to personality assessment via the Internet” (Espina, 1999). The Advocate Specialist did say that the “views” of the ACA on assessment would be published the summer of 2000 in their ethical guidelines.

There may be some misconceptions about the Strong Interest Inventory. This is not a vocational assessment that will indicate what one should do for a career. It will not choose a major in college for the test taker. The SII will not indicate what one will be good at in a profession.

What the SII does indicate is that there are people employed in careers that have similar likes and dislikes to a test takers likes and dislikes in comparison on the 317 item assessment. Individual answers are compared to 211 occupations. The premise of the SII is that the more similar ones answers

are with the answers of other individuals the more satisfied that person will be working with those people, and in that particular career field.

It is important to realize that not everyone needs to take a career assessment. The SII is not a panacea. However, if an individual does decide to take the SII it is pertinent that they understand their results. The lack of knowledge can lead to misconceptions about the results and lead to poor career decisions. The reason behind career assessment is to obtain some direction in life, not to be confused and misled.

The SII is not only found on the Internet. This assessment can be taken in high school counseling offices, college career centers, and through private counselors. The question arises: is it more beneficial to take the SII online or through another means? The web site listed earlier provides the individual with a 16 page interpretative report of their results and an individual profile of their scores. In comparison, meeting with an individual counselor will obtain the individual the same information, but also the opportunity to have questions answered and a clearer understanding of the applicability of the results.

The bottom line is that the more information that an individual has the better they can make decisions. The Internet is a wonderful tool that has enabled people to do more and learn more, but lacks one important thing, empathy. Meeting with a career counselor will give a person more information and feedback than a computer terminal and a 16 page interpretive report.

Following the chapters, Review of Literature, Method, and Results, the author, a career counselor, will discuss experiences with taking the Strong Interest Inventory online in the Discussion chapter. The company that was utilized is Careers By Design at ([www.careers-by-design.com](http://www.careers-by-design.com)) the web site that was mentioned earlier.

### Purpose

The purpose of this study is to assess clients' level of understanding of the computerized Strong Interest Inventory results. Does a person who uses the Internet based vocational site understand their results as well as a person who has a career counselor interpretation? It is hoped that this study will express the importance of the role of counselors and how new technology still is not a replacement for personal interpretation of vocational assessments.

### Hypothesis

The author hypothesizes that the individuals that have a traditional counseling experience will understand their results and feel more comfortable with these results than individuals who do not receive an interpretation from a counselor. It is also predicted that all individuals in the research will have an increase in their My Vocational Situation scores due to the increase in vocational information.



## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

The Internet, being a rather new and quickly expanding source of information, has been held to few legal regulations. The ethical issues of the Internet will be compared to the guidelines that Psychologists and Counselors must follow. These guidelines are set forth by their professional organizations. The literature review will also focus on the research addressing the effectiveness of vocational test interpretation. The review will show which methods are in fact more beneficial for the test taker.

#### Legal Issues

There are limited case laws regarding the liability for on-line access providers to date. "Online access providers are in essence the 'deep pockets' of cyberspace" (The Washington Post, 1995, p. A01). There are two landmark cases involving the liability of access providers. The cases are *Cubby, Inc. v. CompuServe Inc.* and *Stratton Oakmont, Inc. v. Prodigy Servs. Co.*

The *Cubby, Inc.* case involved false and defamatory statements about the plaintiffs. CompuServe argued their defense that they were acting as a distributor, and not a publisher, of the statements. The issue at hand was the standard of liability, which should be imposed upon CompuServe. To be considered a distributor of published materials the company needed to be

compared to an electronic library of sorts. The court found that “CompuServe has no more control over such a publication than does a public library, book store, or newsstand, and it would be no more feasible for CompuServe to examine every publication it carries for potentially defamatory statements than it would be for any other distributor to do so” ([www.cpsr.org](http://www.cpsr.org)).

This decision in the *Cubby, Inc.* case was a notice to other access providers that they could avoid legal matters if they could act as a distributing agent. The market was suddenly inundated with on-line access providers and some of the companies might sound familiar, America Online, CompuServe and Prodigy. A notice went out to the access providers when the *Stratton Oakmont, Inc.* case came to trial. It was in many regards similar to the *Cubby, Inc.* case, but one difference was that “Prodigy Servs. Co held itself out as an on-line service which was family oriented” ([www.richmond.edu](http://www.richmond.edu)). The defendants had allowed defamatory statements to be published on a financial bulletin board. Since Prodigy stated they were a family oriented access provider, they edited the content of the messages posted on its bulletin boards. The courts found that Prodigy should incur liability for defamatory statements posted on its bulletin boards since they were considered a publisher”([www.richmond.edu](http://www.richmond.edu)).

Freedom of speech is an issue when dealing with the two preceding cases. The First Amendment to the U.S. Constitution states that “Congress

shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances” ([www.freedomforum.org](http://www.freedomforum.org)). The legal cases that have evolved with the Internet are typically defamation of character suites. New legal cases are sure to arise and laws will be constructed to protect the public and the providers who use the Internet. The ethical question of concern; are these on-line providers doing anything wrong when they provide vocational assessments via the Internet when these very assessments are not empirically based? To understand the implications of this question it pertinent to understand the qualifications that are necessary to administer the Strong Interest Inventory.

### The Strong Interest Inventory Online

Consulting Psychologists Press, Inc. (CPP) located in Palo Alto, California is the publisher of the Strong Interest Inventory. Web-based guidelines that serve to maintain the integrity of the measure, and insure that it is used by credentialed health care providers:

“Certain tests published by CPP are only available to users who have appropriate training and credentials, and who adhere to the principals of proper test use, including knowledge of tests and their use. The tests catalogued on this

Web Site have been classified in terms of the professional training required for their use. The American Psychological Association has set standards. The letter placed next to test titles indicates the level of the test, as follows:

(A) Tests marked with the letter "A" and all books, guides or programs are available to any licensee.

(B) To license "B" materials, you must have a degree from an accredited college or university and have satisfactorily completed a course in the interpretation of psychological tests and measurement at an accredited college or university.

(C) To license "C" materials, you must fulfill all qualifications required of "B" users, plus possess an advanced degree in a profession that provides training in the interpretation of psychological tests ([www.cpp-db.com](http://www.cpp-db.com)).

The CPP makes it very clear what credentials are needed to obtain certain level of tests. The Strong Interest Inventory is considered a Level B test. If a person has a degree from an accredited college or university and has a course in the interpretation of psychological tests and measurement then this person may order the assessment. The question then arises; how can I take the SII if I am not qualified to order? The CPP answers this in their frequently asked questions section of their web site and this is their response.

“You would need to go to a counselor or psychologist or other testing professional to take the Strong. Check with your local community college or university, or in the phone book under Careers and/or Counseling tests” ([www.cpp-db.com](http://www.cpp-db.com)).

### Understanding the SII Online

Consulting Psychologists Press publishes a manual for the Strong Interest Inventory. The manual explains various uses and guides to using the inventory. It suggests interventions for counselors and suggests different ways to interpret the SII. It also mentions some important points that should be emphasized to the counselee before the SII interpretation. These are as follow;

“First, career planning should not be done randomly.

People should take some initiative in planning their careers; in particular they should use the best data available to make their decisions.

Second, this inventory will provide some useful information, but that information should not be followed blindly; other data about abilities, experiences, and motivations also should be considered.

Third, career planning is a lifelong activity, not the work of a single afternoon. The information provided in the

inventory should be used in long-range planning, now and in the years to come; it should not be used to make one-time decisions about the immediate future” (Hansen & Campbell, 1985, p. 100).

Hansen and Campbell are the authors for the SII Manuel, and they suggest that the profile is largely self-explanatory, but it is essential that a counselor assist the client in understanding the scales and in interpreting the scores (Hansen & Campbell, 1985).

### Ethical Issues

The Joint Committee on Testing Practices (JCPT) was established in 1985 by the American Educational Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME). What this organization does is that it produces “a means by which professional organizations and test publishers can work together to improve the use of tests in assessment and appraisal” ([www.apa.org/science](http://www.apa.org/science)). An area of concentration is the creation of *The Code of Fair Testing Practices in Education*. Listed below are a few of the guidelines that the author finds to be pertinent to vocational assessment online. First, “Provide timely and easily understood score reports that describe test performance clearly and accurately. Also, explain the meaning and limitations of reported scores. Secondly, warn users to avoid specific, reasonably

anticipated misuses of test scores. Finally, interpret scores taking into account any major differences between the norms or comparison groups and the actual test takers. Also take into account any differences in test administration practices or familiarity with the specific questions in the test”

(<http://assessment.iupui.edu>).

These guidelines have been set forth to help protect test takers and to guarantee standardized use of the measure, however do these guidelines set by the professional organizations apply when there is no human contact between the parties, such as when a person takes the SII online. What if the Strong Interest Inventory report is confusing to a person? Worse, what if they interpret their results in an incorrect manor?

Some organizations have addressed this question, but have not developed comprehensive guidelines for the ethical use of online measures. The quote below, from the American Counseling Association, does address some of the pertinent ethical issues.

“An ethical issue, probably a minor one for counselors, is in regard to what might be called impersonal service in using tests. It is possible for a counselor or a psychologist to use tests in which test booklets are sent to clients, returned, scored, and interpreted through the mail. A fee is charged, but the counselor does not meet the client face to face.

Considerable money in fees could be generated by this service. Without knowing why the person is requesting the tests, the purposes for which test results are to be used, or the interpretation that clients could give to the results, such a practice would constitute a misuse of testing. Therefore this practice, along with other types of impersonal psychological services, is considered unethical.”

[www.counseling.org/enews/volume\\_1/0107c.htm](http://www.counseling.org/enews/volume_1/0107c.htm)

To summarize, professional organizations have clearly defined ethical obligations set for test use. With the amazing advancement of technology, legal and ethical conditions have fallen behind this advancement.

The primary concern in this research is the understanding of the Strong Interest Inventory results. Counselors have the educational experience to suggest one assessment opposed to another and this knowledge and experience is not replicated with the use of the Internet. The author worries that without personal interaction between a counselor and a test taker questions may arise that will not receive proper attention. These misconstrued results can lead to major career decisions that might be detrimental to the client.

Additional concerns arise in regard to taking the web-based assessment. Is the administration standardized? Taking the SII online at home may not offer an optimal testing situation, which may lead to diminished accuracy of



the SII. Incorrectly, input biographical data may lead invalid results. For instance, if a person accidentally endorsed the wrong sex on the assessment. This error could be caught by a counselor, but maybe not by a computer. These are further concerns of the author that will not be directly confronted due to a variety of constraints, but rationalize and support the significance of a career counselor.

### Vocational Research Methods

The vocational research that has been conducted has primarily spanned from the early 1960's to the late 1980's. The author has decided to give an overview of the research in regards to participants, instruments, and procedures to give a general view of the vocational research and its parts. The results section will follow using supportive data to conclude that typical counselor client interpretations aid the subject more than other methods of interpretation. The benefit analysis of vocational test interpretation will be provided then followed by a discussion.

### Participants

The participants have generally been college students, although a few studies used junior and senior high school students. The college students were located in one of two methods. The first being that they were enrolled in a psychology course and their participation was part of their course requirement. These courses were usually Introduction to Psychology or Vocational

Psychology. The other means of obtaining college students were through college counseling centers. These students voluntarily visited their counseling center and were asked to participate in the research study.

### Instruments

The focus of this research is on the use of the Strong Interest Inventory, and the understanding of the results. Therefore, the literature that was reviewed used this inventory as the primary vocational assessment tool. The pre and post test evaluations that were used by the researchers varied. Some of the pre and post tests were individually created and measured, and some were published vocational measures. Some of the measures used were the Career Decision Scale (Osipow, Carney, Winer, Koschir, & Yanico, 1976), Vocational Guidance Questionnaire (Krivatsy & Magoon, 1976), and the My Vocational Situation (Holland, Daiger, & Power, 1980), to name a couple.

### Procedures

Typically, the subjects were randomly assigned to one group, and the number of groups ranged from two to five. The actual procedures varied from study to study as one might imagine. Overall, the students received their Strong Interest Inventory results in one of five ways. Commonly, the “traditional counselor interpretation” was held to be the control group in the experiments.

1. Traditional counselor interpretation: These forms of interpretations generally involved the counselor and the subject

meeting for 1-2 one hour periods covering the results of the inventory and answering questions regarding the results. The subject was given a copy of the results and allowed to keep this copy for their own records.

2. Integrative approach to interpretation: the counselor would give the subject an interpretation of the results, but would not give them a copy of the actual results until the end of the counseling session. This method was utilized in hope that the counseling emphasis would be taken off the actual test and placed on the individual subject.
3. Group interpretation: the group interpretations were used in a variety of situations. For instance, the group may have a single counselor perform the group interpretation by using a projector and giving samples of results while the individuals are allowed to follow along and view their own personal results. Another way that groups were used were that some groups simply received their individual profiles and allowed 30 minutes to view their results without the aid of a counselor.
4. Audio tape or slide/sound presentation interpretations: these forms of presentations would allow the subjects to have their SII profile results, and they would follow along with the computer

aided devise while scanning their own results. This form of interpretation was generally used when looking at the cost effectiveness of vocational test interpretations.

5. No contact interpretation: this form of interpretation generally involved giving the subjects their individual results from the SII. The profiles were given to the subjects, they were allowed to read them over the course of 30 minutes to an hour, and this was the extent of the interpretation.

### Counselors

Surprising enough, a relatively few articles gave information about the qualifications of the counselors in their study. All of the studies mention having the counselor do various interpretations and presentations, but lack to mention their qualifications. When details were provided the counselors typically were graduate students in Counseling Psychology programs or had just recently graduated from their masters program of study. Only one study gave the age of the counselors and this was between the ages of 25-26. The study wanted to attempt to control for counselor experience. Respectively, both counselors were the same sex and had 2-3 years of counseling experience.

## Literature Results

### Traditional Counselor Interpretation

“Subjects receiving individual interpretation were significantly more certain of their career choices at the conclusion of counseling than were their counterparts” and “those who had experienced individual interpretation strongly preferred that mode” (Oliver, 1977, p. 58-59).

“The students in the counselor presentation group rated the coverage significantly higher than students in the other treatments. This suggests a possible halo effect – students believed they were getting more than what they actually received” (Miller & Cochran, 1979, p. 265).

“The counselor-contact group reported significantly more attainment than did either of the other two groups on one of their three goals and on the composite rating across all three goals. The counselor-contact group also requested significantly more occupational information than did subjects in the quasi-contact and no-contact treatments” (Hoffman, et al., 1981, p. 123).

### Integrative Approach to Interpretation

The Integrative approach primarily concentrates on client satisfaction with the counseling session, and this variable is measured by the recall of the assessment results. The client does not physically receive the results in the counseling session; however, they will attain a copy of the results after the counseling session. “The results indicated that, at least for some criteria of

counseling effectiveness, integrative test interpretation leads to significantly more favorable client ratings of their counseling experiences than do more traditional approaches to the interpretation of test scores” (Rubinstein, 1978, p. 308).

### Group Interpretation

Group interpretation is considered when time and money are critical factors. “In comparisons of the traditional-group and traditional-individual procedures, no significant differences were found on any of the dependent measures” (Rubinstein, 1978, p. 308).

### Audio Tape or Slide/Sound Presentation

“Lack of significant differences among the experimental groups suggests that the slide-sound sequence may be a desirable mode of treatment because of its time-saving properties” (Miller & Cochran, 1979, p. 265).

### No Contact Interpretation

“Method D (tests received by mail) was, in some instances, significantly less effective, and this difference became greater after one week. The students who did not meet with a counselor found the test information to be of least value” (Holmes, 1964, p. 57).

### Cost/Benefit Analysis

Individual counseling will most likely be the most expensive way of interpretation. The group interpretation is a comparable method of

interpretation as well as the audiotape method. However, “workshops, which involved the largest number of participants per counselor, proved to be the most cost-effective intervention when counselor expense was considered” (Oliver & Spokane, 1988, p. 454).

### Literature Discussion

The existing literature exhibits that any form of interpretation aids the individual to understand and benefit from the assessment results.

Researchers have attempted to determine and hypothesize why these results occur. “Perhaps individual sessions allowed the counselor to use acceptance and encouragement techniques, which may have made the student feel that he or she had learned more about the test” (Miller & Cochran, 1979, p. 265).

The individual uniqueness of the clients and the counselors coexist to assist a person who needs vocational assistance. “The fact that no clear differences were found among counselor methods of presentation gives support to the idea that no one counseling technique lends itself to all counseling situations and it is not what a counselor does as much as what he stimulates his counselee to feel, to do, and to say that is important in the relationship” (Holmes, 1964, p. 57). This interaction creates an empathetic bond between the client and a counselor and this may be the primary key to healthy career decisions made by the client.

## CHAPTER III

### METHOD

#### Design

“A major problem in all counseling research lies in the difficulty of obtaining appropriate comparison groups. Ideally, the comparison is made between an *experimental* group, that received the treatment or intervention and a *control* group that did not. But to deny treatment to individuals who want it in order to obtain a control group may not be ethically defensible” (Oliver, 1979, p. 221). For this very reason, the researcher chose to give equal amounts of information to both the control and experimental group. The primary difference between the groups was the order in which they received their results.

The experimenter wanted to create a mock computer simulation where the test taker would only receive their profile reports and the individual interpretative reports with no counselor assistance. While the control group received their results in traditional career counseling experience. The author chose to operationalize a ‘traditional career counseling experience’ by having 2-3 counseling sessions that are typically 50 minutes in length each.



## Participants

The population for this study was comprised of students at Johnson County Community College in Overland Park, Kansas. The students were enrolled in LC 135 Career and Life planning which is a three credit hour course. Of the 21 students pre-enrolled, 1 dropped the course before it started and 1 never attended class. The 19 participants consisted of 10 females and 9 males. The age ranged from 17 to 24 years. One person was 17 (5.3%), 3 were 18 (15.8%), 6 were 19 (31.6%), 4 were 20 (21.0%), 4 were 21 (21.0%), and 1 was 24 (5.3%). Fourteen students were undecided about their college major, 3 had majors, and 2 did not report either way.

## Instruments

### Strong Interest Inventory

The Strong Interest Inventory (SII) paper pencil form was used in this study as the primary vocational assessment. This assessment has been revised several times and is one of the first inventories to exist and this started in the year 1927. The SII is a 317 item assessment that inquires about a respondent's level of interest in a variety of fields on a Likert scale. The answers are then analyzed by computer to derive scores on measures of type, called scales (Harmon et al., 1994).

“The *Strong* gives the respondent five main types of information: first, scores on six General Occupational Themes, which reflect the respondent's

overall orientation to work; second, scores on 25 Basic Interest Scales, which report consistency of interests or aversions in 25 specific areas, such as art, science, and public speaking; third, scores on 211 Occupational Scales representing 109 different occupations, which indicate degree of similarity between the respondent's interests and the characteristic interests of women and men working in those occupations; fourth, scores on four Personal Style Scales, which measure aspects of the style with which an individual likes to learn, work, assume leadership, and take risks; and fifth, three types of Administrative Indexes, which help to identify invalid or unusual Profiles for special attention. Scores are arranged on the Profile in a format that encourages the respondent to note overall trends, to see how these trends are related to the world of work, and to employ these findings in a program of career exploration. The emphasis is on organizing the information in a way that best helps the respondent develop a general strategy toward approaching educational and career decisions (Harmon et al., 1994).

### My Vocational Situation

The My Vocational Situation (MVS) questionnaire was used pre and post assessment to check for an increase in vocational identity. The MVS is a quick vocational assessment developed by J. Holland, D. Daiger, and P. Power. The assessment is divided into 3 categories, Vocational Identity, Occupational Information, and Barriers and consists of 20 items. The assessment takes about

10 minutes to administer and is self-scored. The Vocational Identity scale is eighteen True-False items on the front of the assessment. The score is the total of the false responses. The researcher only used this portion of the MVS assessment for the purpose of this study. The Vocational Identity scale has a high a high degree of internal consistency for both males and females in high school and in college ranging from 0.86 to 0.89 for reliability. Normative data has been developed and for male college students the mean for the Vocational Identity scale is 11.25, SD of 4.14, and an N of 121. For female college students the mean is 10.13, SD of 4.23, and an N of 131 (Holland et al., 1980).

### Evaluation of Test Interpretation Questionnaire

The self-report measure was developed, and was titled the Evaluation of Test Interpretation Questionnaire. The measure included questions about gender, understanding of the SII results, feelings or thoughts about these results, and access to the Internet. This measure used a 5 point Likert type scale. The measure was in paper and pencil format.

### Hypothesis

The hypothesis is that all individuals will increase their scores on the My Vocational Situation questionnaire due to the fact that all will have had the assessment interpreted to them.

## Procedure

The students signed informed consents to participate in the study (see appendix B). Each student was randomly assigned to either a Control or Experimental group by using a table of random numbers. The My Vocational Situation questionnaire was completed prior to the assessment. The students were given the Strong Interest Inventory assessment to complete while in class. The students were given 55 minutes to complete the assessment. The assessment was computer scored and individual interpretative reports and profiles were generated.

### First Class Interpretation Session

The control group received their SII profile results. The counselor performed a group interpretation by using an overhead projector and an example of a mock profile. Two handouts were provided to aid in clarification of the assessment (see appendices C & D). The students followed along by looking at their results on the appropriate pages. The group interpretation was allowed 55 minutes. The counselor answered questions throughout the interpretation. Individual questions were entertained as well as general questions about the assessment. With all the questions asked and answered, the students completed the Evaluation of Test Interpretation Questionnaire (see appendix E).

The Experimental group received their SII profile report results and no interpretation from the counselor. These students were escorted to the library to read their own results. The counselor would answer no questions. This group was also allowed 55 minutes to view their profiles just as the control group. After they viewed their results, they completed the Evaluation of Test Interpretation Questionnaire.

### Second Class Interpretation Session

The following class period the Experimental group received their profile results and an interpretation from the counselor. Once again, 55 minutes were allocated to the group interpretation. Two handouts were provided to aid in clarification of the assessment. Questions were answered throughout the interpretation. They were given their 16 page interpretative report and it was suggested that they read the report. After the interpretation, the students again completed the self-report Likert questionnaire for a second time.

The Control group was taken to the library and given their 16 page interpretative report. It was suggested that they read the report and then complete the self-report Likert scale for a second time.

## CHAPTER IV

### RESULTS

#### Questionnaire Statistics

The participants were randomly assigned to the control or experimental group. Table 1 illustrates that the control group had 9 individuals where the experimental group had 10. The control group as a whole had 2 males and 7 females. While the experimental group had a more symmetric spread with 6 males and 4 females.

Table 1

#### Gender of Participants Per Group (N=19)

Group	N	Male	Female
control	9	2	7
experimental	10	6	4

For Interpretation # 1 question # 2, the control group received a 50 minute counselor interpretation that included two handouts (Appendices C & D) to aid in clarification of the Strong Interest Inventory. Questions that arose from the individuals were answered by the counselor. Table 2 illustrates that the mean score was 3.89 with a standard deviation of 0.93.

For Interpretation # 1 question # 2, the experimental group received their profile results and no interpretation from a counselor. If these individuals had questions about their results, they were not answered at this time. The mean score was 3.50 with a standard deviation of 0.85.

It is important to notice that the control group that did receive an interpretation from a counselor understood their results more so than experimental individuals.

For Interpretation # 2 question # 2, the control group received their 16 page interpretive report and escorted to the library to read the results. The control group had a mean score of 4.33 and a standard deviation of 0.71.

For Interpretation # 2 question # 2, the experimental group received a 50 minute counselor interpretation that included two handouts to aid in clarification of the Strong Interest Inventory. Questions that arose from the individuals were answered by the counselor. They received their 16 page interpretive report and were suggested to read the results.

It is interesting to notice that with the interpretation the experimental group surpassed the control group although they had less time to review their 16-page interpretive due to receiving their profile interpretation from the counselor.

Table 2

Understanding the SII Results Per Group Per Interpretation

	Group	N	Mean	Std. Deviation
Interpretation # 1	control	9	3.89	0.93
	experimental	10	3.50	0.85
Interpretation # 2	control	9	4.33	0.71
	experimental	9	4.44	0.73

For Interpretation # 1 question # 3, the control group had a mean of 2.78 with a standard deviation of 0.97 as shown with table 3. The experimental group had a mean of 2.80 and a standard deviation of 0.92. With acknowledgement of the statistical data, it was realized that this is a vague question that might have been more effective if better composed.

For Interpretation # 2 question # 3, the control group had a mean of 2.33 with a standard deviation of 0.71. The experimental group had a mean of 1.78 with a standard deviation of 0.97.

It is interesting to note that the mean score of the control group dropped by 0.45 points, and the experimental group had their mean score drop 1.02 points between interpretation 1 and 2.



Table 3

Questions about my SII Results Per Group Per Interpretation

	Group	N	Mean	Std. Deviation
Interpretation # 1	control	9	2.78	.97
	experimental	10	2.80	.92
Interpretation # 2	control	9	2.33	.71
	experimental	9	1.78	.97

For Interpretation # 2 question # 4, the control group had a mean of 4.67 with a standard deviation of 0.50 as shown with table 4. The experimental group had a mean of 4.33 and a standard deviation of 1.00.

The results from both the first interpretation and the second interpretation are very similar in comparison. This question was designed to see if individuals did in fact have questions, and if they did need an answer, they would feel comfortable asking the counselor for the information.

Table 4

Client Would Ask Questions Per Group Per Interpretation

	Group	N	Mean	Std. Deviation
Interpretation # 1	control	9	4.44	1.01
	experimental	10	4.30	0.67
Interpretation # 2	control	9	4.67	0.50
	experimental	9	4.33	1.00

For Interpretation # 1 question # 5, the control group had a mean of 3.44 with a standard deviation of 0.88 as shown with table 5. The experimental group had a mean of 3.90 and a standard deviation of 0.74.

For Interpretation # 2 question # 5, the control group had a mean of 3.78 with a standard deviation of 1.09. The experimental group had a mean of 4.56 and a standard deviation of 0.53.

A Independent Samples T test was conducted and found that on question # 5 Interpretation # 2 there is a 93% chance that these are independent samples. However, there remains a 7 percent chance that the experimenter will make a type I error. Therefore, there is no difference between the group and this difference is not significant.

The control group had a lower mean score for the first interpretation than expected. One justification for this score is that the individuals made judgments about the assessment when they noticed the occupational categories that they scored the highest. The top ten highest occupations are listed on the cover sheet of the SII profile. If occupations were listed that did not involve a college education or degree the individuals may have lost faith in the validity of the inventory and were less satisfied.

Table 5

Satisfaction With SII Results Per Group Per Interpretation

	Group	N	Mean	Std. Deviation
Interpretation # 1	control	9	3.44	.88
	experimental	10	3.90	.74
Interpretation # 2	control	9	3.78	1.09
	experimental	9	4.56	.53

For Interpretation # 1 question # 6, the control group had a mean of 3.44 with a standard deviation of 1.01 as shown with table 6. The experimental group had a mean of 4.00 and a standard deviation of 0.47.

For Interpretation # 2 question # 6, the control group had a mean of

3.89 with a standard deviation of 0.78. The experimental group had a mean of 4.11 and a standard deviation of 0.60.

Table 6

SII Results Make Me Feel Good Per Group Per Interpretation

	Group	N	Mean	Std. Deviation
Interpretation # 1	control	9	3.44	1.01
	experimental	10	4.00	.47
Interpretation # 2	control	9	3.89	.78
	experimental	9	4.11	.60

For question # 7, the control group had a mean of 4.39 with a standard deviation of 1.01 as shown with table 7. The experimental group had a mean of 4.17 and a standard deviation of 0.91.

Table 7

Access to the Internet Per Group

Group	N	Mean	Std. Deviation
control	9	4.39	1.01
experimental	10	4.17	0.91

For question # 8, the control group had a mean of 3.72 with a standard deviation of 1.20 as shown with table 8. The experimental group had a mean of 3.53 and a standard deviation of 0.96. The author had anticipated that these values might have been in the 4.00 range, but due to the large spread and deviation of the scores the value was less than expected. It appeared that most individuals would be comfortable by taking the SII online, but a few strongly disagreed to completing the online version.

Table 8

Individuals Who Would Take the SII Online Version Per Group

Group	N	Mean	Std. Deviation
Control	9	3.72	1.20
Experimental	10	3.53	0.96

My Vocational Situation Statistics

The My Vocational Situation (MVS) was used pre and posttest. The Vocational Identity scale was the single scale that was utilized from the MVS. Table 9 illustrates that the control group had a mean increase from 6.22 to 7.78. While the experimental group had a mean increase from 7.20 to 10.44. Independent sample T tests were calculated and the increase from

7.20 to 10.44 with the experimental group was found not significant. There is a 11.6 % chance that the experimenter would commit a type I error, however, this is the smallest statistical value in regards to all the collected data.

Table 9

My Vocational Situation Pre and Post Assessment Per Group

Group	MVS	N	Mean	Std. Deviation
control	Pretest	9	6.22	2.86
	Posttest	9	7.78	3.53
experimental	Pretest	10	7.20	3.05
	Posttest	9	10.44	3.28

Statistical Summary

Descriptive statistics were calculated on all the test variables to observe the basic statistics. Independent T tests were calculated on all the variables to verify any differences between groups. As mentioned, Question # 5 Interpretation # 2 had the largest calculated difference at 93%. There is a 89% chance that there is a difference between the pre and posttest scores on the MVS for the experimental group. These are large differences, but the critical values were not attained and not found statistically significant.

There were two items that were highly correlated, and these items were data from the control group. There was a significant correlation at the 0.01 level with question # 2, I completely understand my Strong Interest Inventory results and question # 6, My results make me feel good about myself. Individuals who received a typical counselor interpretation understood their results better on the Strong Interest Inventory and these results made them feel better about themselves than individuals in the experimental group.

## CHAPTER V

### DISCUSSION

The literature base for vocational assessment via the Internet is rather miniscule. The Internet is growing exponentially and providers of assessments are utilizing this growth and are prospering at enormous rates. Governmental officials are unable to stay abreast of the new technology because of this quick advancement and lack the ability to create laws that could regulate the Internet.

The provision of this type of online assessment service is alarming to a counselor. Providing a service to an individual when there is no physical interaction is a dangerous combination. The responsibility and liability should fall on the shoulders of the assessment provider.

The most important piece of information to remember is that the Strong Interest Inventory can not tell you what to do. The author believes that individuals may place too much emphasis on the results of the inventory and let the results control their career decisions. The Strong Interest Inventory is a vocational tool. This tool may aid some individuals and may impede others. The counselor decides who can benefit and why this tool will help this individual. The Internet is not capable of making comparable decisions and this is why counselors should interpret the results. “The most important of these is that clients who receive test interpretations – regardless of format or of the



particular outcome criteria employed – do experience greater gains than those in control conditions” (Goodyear, 1990, p. 242).

### Research Implications

The results of this research are similar to the research that has been conducted in the past. The use of a counselor enables the client to better understand the results and have a better grasp on the possible outcomes for vocational decisions. Research has focused on a variety of methods to interpret assessments such as an Integrative Approach, Group Interpretation, Audio tape or Slide/Sound Presentation, and the No Contact Interpretation.

The past research is dated and should be carefully critiqued to determine what method is most beneficial for the client. The past research has shown that the No Contact Interpretation “in some instances, was significantly less effective, and this difference became greater after one week”(Holmes, 1964). This particular form of interpretation is identical to what happens when an individual takes the SII online. The results are mailed to the individual and the tool either is not utilized or is inappropriately interpreted which further diminishes any vocational decision.

### Limitations

This study was subject to a number of limitations. The first and primary limitation is the assumption that the experimental group who received their results with no initial interpretation would react similarly to

individuals who completed the SII online and received their results in the mail.

The second limitation to this study was that the researcher played three separate roles with these students. The primary role was as a instructor for the LC 135 Career and Life Planning course. The second role was that of a career counselor who aided in the interpretation of their interest inventory. The third and final role was that of a researcher who repeatedly administered the Evaluation of Test Interpretation Questionnaire. Because these roles were performed by one individual, the students may have 'faked good' to make themselves appear better. If this is the case, the results may be skewed.

The subjects were randomly assigned to either a control group or a experimental group, but the sample population was a convenient sample because the students enrolled in the class and were not randomly chosen from the whole population. The sample included 19 individuals and this small sample size decreases the statistical power of the results.

#### Account of the SII Online

The author chose to take the Strong Interest Inventory online. The web site provided the necessary information about cost and various methods of payment. Upon completing the request to take the SII online a email was received from a counselor at the company directing attention to the testing web site. Completing the inventory took about 30 minutes and then the

decision to have the results emailed or postal mailed was an option. The author chose to have the results sent through the post office. Ten days after the administration of the inventory the results were received in the mail. The profile of the SII, the 16 page interpretative report, and a business card from a career counselor were all included in the package.

### Summary

The Internet boom has made small businesses into multi-million dollar franchises over night. Congress does not have the capability to quickly pass laws to regulate and protect individuals from harm. The Internet is a valuable tool and if used appropriately can benefit millions of users. Unfortunately, this very tool for one person may be a weapon for another. Individuals who have access to the Internet and can take a vocational assessment online “that will tell them what to do” can lead to quick and poor decisions. When this poor decision is made who holds the liability? The online access provider who has the billion-dollar corporation, or is it the individuals' fault because he made the wrong choice? The assumption is that this very question will be answered again someday. Unfortunately, a individual must suffer before the answer will be provided in a court of law.

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Coursestar2

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CUBBY, INC., a Corporation d/b/a Skuttlebut, and Robert G. Blanchard,  
Plaintiffs, v. COMPUSERVE INC., d/b/a Rumorville, and Don Fitzpatrick,  
individually,

[www.excitesearch.netscape.com](http://www.excitesearch.netscape.com)

Home > Net Search Page > Excite

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APPENDIX A  
DEFINITION OF TERMS



Access providers: A host computer on a network that holds information and responds to requests for information from it (e.g., links to another Web page.)

Career counseling: A counselor meeting individually with a client or with a group of clients typically 2-3 sessions that are 50 minutes in length each to discuss vocational issues (author's operationalization).

Cyberspace: Cyberspace is currently used to refer to the digital world constructed by computer networks, in particular the Internet.

E-commerce: Simply it means conducting business online.

E-mail (Electronic Mail): A process on the computer in which text and/or images may be transferred between one or more parties

Internet: A global information system that is linked together and provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure ([www.fnc.gov](http://www.fnc.gov)).

Online: Being connected to the Internet via an ISP or OSP Used as an adjective to describe a variety of activities that one can do on the Internet, for example: online chat, online shopping, and online games.

World Wide Web (WWW): A global hypertext system that uses the Internet as its transport mechanism.

(Definitions available online at [www.netlingo.com](http://www.netlingo.com))

APPENDIX B  
INFORMED CONSENT

## Informed Consent

The Department of Psychology and Research in Education at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

The purpose of this project is to see if an interpretation by a counselor will aid in the understanding of the subject's results on the Strong Interest Inventory and the Myers Briggs-Type Indicator.

You will be asked to fill out a short questionnaire after your results are presented.

Your participation is solicited although strictly voluntary. I assure you that your name will not be associated in any way with the research findings. The information will be identified only by a code number.

If you would like additional information concerning this study before or after it is complete, please feel free to contact me by phone or email.

Sincerely,

Jason O'Connor  
joconnor@falcon.cc.ukans.edu  
(785) 842-8679

Research Supervisor  
Dr. Diane McDermott  
(785) 864-3502

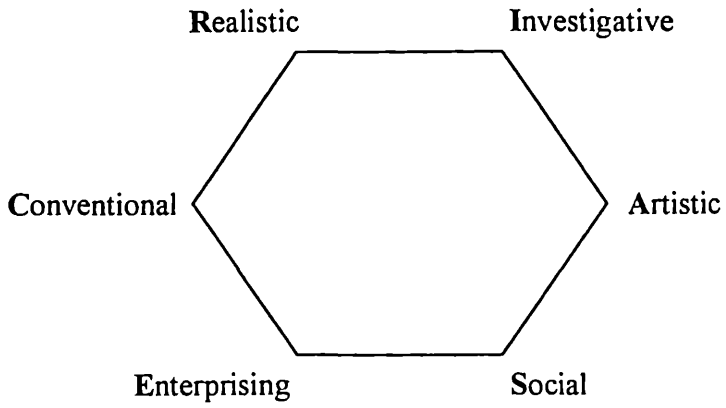
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Signature of subject agreeing to participate

With my signature I affirm that I am at least 18 years of age and have received a copy of the consent form to keep.

## APPENDIX C

### HANDOUT # 1 HOLLAND'S HEXAGON



## APPENDIX D

### HANDOUT # 2 CHARACTERISTICS OF THE SIX THEMES

<b>THEME</b>	<b>INTERESTS</b>	<b>WORK ACTIVITIES</b>	<b>POTENTIAL SKILLS</b>	<b>VALUES</b>
<i>Realistic</i> <b>(R)</b>	Machines, tools, outdoors	Operating equipment, using tools, building, repairing	Mechanical ingenuity and dexterity, physical coordination	Tradition, practicality, common sense
<i>Investigative</i> <b>(I)</b>	Science theories, ideas, data	Performing lab work, solving abstract problems, researching	Math, writing, analysis	Independence, curiosity, learning
<i>Artistic</i> <b>(A)</b>	Self-expression, art appreciation	Composing music, writing, creating visual art	Creativity, musical talent, artistic expression	Beauty, originality, independence, imagination
<i>Social</i> <b>(S)</b>	People, team work, human welfare, community service	Teaching, explaining, helping	People skills, verbal ability, listening, showing understanding	Cooperation, generosity, service to others
<i>Enterprising</i> <b>(E)</b>	Business, politics, leadership, influence	Selling, managing, persuading	Verbal ability, ability to motivate and direct others	Risk taking, status, competition
<i>Conventional</i> <b>(C)</b>	Organization, data, finance	Setting up procedures, organizing, operating computers	Math, data analysis, record keeping, attention to detail	Accuracy, stability, efficiency

## APPENDIX E

### TEST INTERPRETATION QUESTIONNAIRE



## Test Interpretation Questionnaire

### Questions about the Strong Interest Inventory:

1. What is your gender? Male or Female
2. I completely understand my Strong Interest Inventory results.  
Strongly Disagree      Disagree      Undecided      Agree      Strongly Agree  
1                              2                              3                              4                              5
3. I have some unanswered questions about my Strong Interest Inventory results.  
Strongly Disagree      Disagree      Undecided      Agree      Strongly Agree  
1                              2                              3                              4                              5
4. If I had questions about my Strong Interest Inventory results, I would ask my instructor for answers.  
Strongly Disagree      Disagree      Undecided      Agree      Strongly Agree  
1                              2                              3                              4                              5
5. I am satisfied with my results on the Strong Interest Inventory.  
Strongly Disagree      Disagree      Undecided      Agree      Strongly Agree  
1                              2                              3                              4                              5
6. My results make me feel good about myself.  
Strongly Disagree      Disagree      Undecided      Agree      Strongly Agree  
1                              2                              3                              4                              5
7. I have access to a computer and the internet.  
Strongly Disagree      Disagree      Undecided      Agree      Strongly Agree  
1                              2                              3                              4                              5
8. The Strong Interest Inventory is available to take on the internet. If you had to take the inventory again would you take the computer based version?  
Strongly Disagree      Disagree      Undecided      Agree      Strongly Agree  
1                              2                              3                              4                              5