1-1-2012

Exploring information literacy in relationship: intelligence and personality as factors

Timothy A. Cooper
George Fox University

This research is a product of the Doctor of Psychology (PsyD) program at George Fox University. Find out more about the program.

Recommended Citation
http://digitalcommons.georgefox.edu/psyd/92

This Dissertation is brought to you for free and open access by the Psychology at Digital Commons @ George Fox University. It has been accepted for inclusion in Doctor of Psychology (PsyD) by an authorized administrator of Digital Commons @ George Fox University.
Exploring Information Literacy in Relationship: Intelligence and Personality as Factors

by

Timothy A. Cooper

Presented to the Faculty of the

Graduate Department of Clinical Psychology

George Fox University

in partial fulfillment

of the requirements for the degree of

Doctor of Psychology

in Clinical Psychology

Newberg, Oregon

May 2012
Exploring Information Literacy in Relationship: Intelligence and Personality as Factors

by

Tim Cooper

has been approved

at the

Graduate Department of Clinical Psychology

George Fox University

as a Dissertation for the PsyD degree

Signatures:

Mary Peterson, PhD, ABPP/CL, Chair

Members:

Kathleen A. Gathercoal, PhD

Chris Koch, PhD

Date: 5/21/12
Exploring Information Literacy in Relationship: Intelligence and Personality as Factors

Timothy A. Cooper
Graduate Department of Clinical Psychology at
George Fox University
Newberg, Oregon

Abstract

In the last three decades, the domain of Information Literacy (IL) has caught the attention of international college educators and information professionals. The explosion of information in education, government and business requires college students to have the skills necessary to enter an information-rich digital age. These skills include the ability to acquire, organize and interpret vast amounts of information from multiple sources. The need for competency in IL is clear, however the factors contributing to this emerging construct have not been explored. This study explored the construct of IL in relationship to well-known variables that contribute to student success, specifically intelligence and personality. As hypothesized, results showed a positive relationship between intelligence and IL, however results failed to support the hypothesized relationship between IL and personality (as measured by the Big 5).
# Table of Contents

Approval Page ........................................................................................................... ii

Abstract ...................................................................................................................... iii

List of Tables .............................................................................................................. vi

Chapter 1: Information .............................................................................................. 1

  Information Literacy .............................................................................................. 1

  Origins of Information Literacy ............................................................................. 1

  Relevance of Information Literacy in Higher Education: Lifelong Learning ........... 2

  Research Gap: What Factors Comprise Information Literacy ................................. 4

  Intelligence as IQ .................................................................................................. 4

  IQ as a Formula ...................................................................................................... 5

  How IQ Tests Measure g ...................................................................................... 5

  IQ in Relationship to Other Factors ..................................................................... 6

  Personality ............................................................................................................. 7

  Big 5 in Relationship to Other Domains ............................................................... 8

  Historical Precedence and Hypothesis ................................................................. 8

Chapter 2: Methods ................................................................................................... 10

  Participants ........................................................................................................... 10

  Procedure ............................................................................................................. 10

  Instruments .......................................................................................................... 12

  Data Analysis ....................................................................................................... 13

Chapter 3: Results .................................................................................................... 15

  Supplemental Analyses ....................................................................................... 18
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 4: Discussion</td>
<td>20</td>
</tr>
<tr>
<td>Implications</td>
<td>22</td>
</tr>
<tr>
<td>Limitations</td>
<td>23</td>
</tr>
<tr>
<td>Suggestions for Future Research</td>
<td>24</td>
</tr>
<tr>
<td>References</td>
<td>25</td>
</tr>
<tr>
<td>Appendix A Demographic Survey</td>
<td>33</td>
</tr>
<tr>
<td>Appendix B Personality Survey</td>
<td>38</td>
</tr>
<tr>
<td>Appendix C Project Sails Test Items</td>
<td>42</td>
</tr>
<tr>
<td>Appendix D Curriculum Vitae</td>
<td>47</td>
</tr>
</tbody>
</table>
List of Tables

Table 1  Gender, Ethnicity, Major, University Academic Year, Age, High School
Grade Point Average, University Grade Point Average ............................................. 11

Table 2  Correlations .......................................................................................................... 14

Table 3  Personality Variables: Extraversion, Agreeableness, Conscientiousness, Emotional
Stability, and Intellect/Imagination; Scholastic Achievement Test; Cognitive Assessment
Scales, and Standards of the Student
Assessment of Information Literacy .................................................................................. 16

Table 4  Analysis of predictive relationships between variables ........................................ 17

Table 5  Regression Analysis Summary for Model Variables Predicting
Student Information Literacy Scores .................................................................................. 18

Table 6  Group Differences for Overall IL, Standards 1, 2, and 5 scores Between
Groups of First Year Experience Students and Senior Capstone Students .................... 19
Chapter 1

Introduction

Information Literacy

In 1989 the American Library Association (ALA) Presidential Committee on Information Literacy (IL) stated that “Information Literacy is a survival skill in the Information Age. Instead of drowning in the abundance of information that floods their lives, information literate people know how to find, evaluate, and use information effectively to solve a particular problem or make a decision” (American Library Association [ALA], 1989, p. 9, italics added). A brief summary of IL origins and relevancy is in order before exploring factors thought to be present in its composition, mainly Intelligence and Personality.

Origins of Information Literacy

In 1974, as President of the Information Industry Association, Paul G. Zurkowski wrote a paper for the National Commission on Libraries and Information Science in Washington D.C., National Program for Library and Information Services (Zurkowski, 1974). Unknown to its author, this landmark paper would go on to inspire over 30 years of research dedicated to refining, understanding, and disputing the nature and implications of a single concept he described and then named, Information Literacy (Galvin, 2006; Hignitte, Margavio, & Margavio, 2009; Lloyd & Williamson, 2008; Pawley, 2003; Perrault, 2006; Pinto, Cordon, & Diaz, 2010). Concerned with rapidly changing information systems, and in anticipation of groundbreaking technological advances, Zurkowski emphasized the need for a new breed of literacy. He
suggested that IL would be a necessary skill set, enabling information consumers to effectively access and manage ever-expanding and ever-emerging quantities and modes of data.

Only four years after Zurkowski coined the term IL, the dawn of Usenet, the “oldest part of the internet” (Ellis & Oldman, 2004, p. 30) emerged. This primitive form of electronic communication was birthed in North America at the hands of university students and then, in 1994, a collaboration of research centers and scientists, such as Tim Berners-Lee, gave rise to what is currently referred to as the World Wide Web (W3), thus ushering in a massive and widespread utilization of a global internet (Berners-Lee, Cailliau, Luotonen, Frystyk, & Secret, 1994). This technological revolution saw unprecedented amounts of information made available to professionals and laity alike, bringing incredible excitement and new sets of challenges. Included in this explosion of information were implications for higher educational institutions as centers for the development of lifelong learning (LLL) in students (Godwin, 2007; Swanson, 2006).

**Relevance of Information Literacy in Higher Education: Lifelong Learning**

“Developing lifelong learners is central to the mission of higher education institutions” (Association of College and Research Libraries [ACRL], 2000, p. 4) and the task of developing critical thinkers and well-informed individual members of society is recognized as a primary task of universities everywhere (Pinto et al., 2010). As a result, university faculty members are continuously faced with the challenging tasks of fostering both the immediate performance success of their students along with establishing effective patterns of learning behaviors which extend well beyond the walls of academia (Rumble & Noe, 2009; Stofle, 1998). Researchers argue that IL is the key for developing LLL in students and has thus become the target of multiple university studies (Burhanna & Jensen, 2006; Higntte et al, 2009; Holden, 2010; Mokhtar & Majid, 2006).
The original template of IL competencies were designed by the ALA (Macklin & Culp, 2008) and adapted by ACRL, a subdivision of the ALA, who developed and released the Information Literacy Competency Standards for Higher Education in 2000. These competency standards include *Five Standards and Twenty-two Performance Indicators*, which are highlighted below:

1. **Standard 1**: The information literate student determines the nature and extent of the information needed (p. 8).
2. **Standard 2**: The information literate student accesses needed information effectively and efficiently (p. 9).
3. **Standard 3**: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system (p. 11).
4. **Standard 4**: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose (p. 13).
5. **Standard 5**: The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally (p. 14).

Further illustrating the relevance of IL, many academic disciplines have integrated these standard IL competencies into their own core curricula. Some of the fields of study include health professionals (Cobus, 2008), proponents of integrated learning pedagogy (Galvin, 2006), science literacy (Holden, 2010), pharmacy sciences (Kaplan & Wheelan, 2002), and nursing (Sundin, Limberg, & Lundh, 2008). The range of academic disciplines embracing the IL
standards suggests that multiple professional fields have accepted the need to train their students in the management of information.

Research Gap: What Factors Comprise Information Literacy

The body of literature on IL highlights both its utility and importance, but there remains a lack of scholarly articles investigating both the factors which may be present in IL as well as its relationship to other robust domains (Hoyer, 2011; Lascar, 2002; Lloyd & Williamson, 2008; Swanson, 2006). In other words, is IL a newly identified, relatively unique construct or is it a construct that reflects conceptual territory previously identified? Specifically, is IL simply a function of intelligence? Or as some have suggested (Boruff & Thomas, 2011) is it just an academic skill that can be taught? Or could it be related to a personality style that seeks information and engagement with the outside world? The literature on IL would benefit from research that explores the construct of IL including its relationship to intellectual functioning, achievement and personality assessment using standardized assessment measures.

Intelligence as IQ

While there has been no shortage of debate surrounding what is commonly known as intelligence ($g$), the American Psychological Association (APA) has sought to clear the waters. In response to a recent round of controversy, the APA published a Task Force Report (Neisser et al., 1996); in this report, the APA not only outlined intelligence’s historical milestones, but included reminders of how intricate, complicated, and multi-dimensional intelligence has been found to be. However, even in the midst of impassioned debate over what intelligence actually is and how it can be measured, the APA stated that the most conventional, stable, and well-recognized measurement of $g$ is the intelligence quotient (IQ). Even in light of more current responses to the 1996 APA Task Force Report, researchers on intelligence laud the high value of
the intelligence quotient as long as it is applied in “a thoughtful and transparent manner” (Nisbett et al., 2012, p. 131).

**IQ as a Formula**

Psychologists today largely rely on David Wechsler’s formula for determining individual IQ scores. His formula modified the original and ground breaking intelligence quotient of the Stanford-Binet formula which divided mental age by chronological age, thus producing a numerical value known as the IQ. Wechsler’s formula divides one’s attained or actual score on an assessment measure by the expected average score for the person’s age. The philosophical difference in formulas lies in Wechsler’s assumption that IQ remains stable across the lifespan even amidst the age-normal decline of basic intellectual functioning (Gregory, 2007).

**How IQ Tests Measure g**

IQ assessments vary in how they choose to assess intellectual functioning en route to measuring g. For example, the Wide Range Intelligence Test (WRIT) utilizes four subtests, two of which are designed to measure Verbal ability and two to measure Visual ability. One of the Visual subtests is called Matrices. For this test, participants are asked to select one of three to six pictured choices which best fits with each specific item’s visual stimuli. As a result, this Matrices subtest has been shown to correlate strongly with other IQ test tasks known to measure fluid intelligence and non verbal competencies (Glutting, Adams, & Sheslow, 2000). In addition, the Verbal Analogies subtest on the WRIT asks test takers to say words in completion of verbal analogies. Being able to appropriately complete verbal analogies has been shown to be a powerful way of assessing one’s language skills as well as being a good measure of g “because the call for verbal abstraction and generalization of meaning” (Glutting et al., 2000, p. 59). In
general, IQ assessments and the subtest they employ all seek to measure common intellectual abilities. Perhaps the authors of the WRIT describe this best with how

The General IQ symbolizes the faculty common to all mental operations. As such, it represents a person’s global ability to: (a) profit from experience, (b) acquire structured, scholastic knowledge, (c) solve new problems, and (d) behave adaptively. (Glutting et al., 2000, p. 57)

**IQ in Relationship to Other Factors**

In 1950 David Wechler spoke clearly about the influence personality factors play in intelligence and in intelligence testing. He understood one’s IQ as being not an isolated metric, rather part of an integrated whole, understood best when in the same conversation as personality (Wechsler, 1950/1997). Indeed, intelligence as a domain does not exist alone; as perhaps the most researched psychological construct, it is believed to interact with and influence other numerous other factors (Gottfredson & Saklofske, 2009). One of the most salient examples of intelligence as a separate and powerful factor influencing other domains is in the realm of achievement, with IQ being a strong predictor of broad academic achievement (Kaufman, Reynolds, Liu, Kaufman, & McGrew, 2012) and job performance (Schmidt & Hunter, 2004). There is a seemingly endless amount of research supporting how IQ plays a role in all types of behaviors assessed such as influencing some aspects of creativity in students (Russo, 2004) and being positively correlated with certain types of substance use behaviors (Wilmoth, 2012). People are constantly affected by their own and others’ beliefs about intelligence, whether at work or in social settings (Sternberg, Conway, Ketron, & Bernstein, 1981). This makes sense because if IQ provides the underlying and pervasive mental horsepower for cognitive
functioning, then its presence should be salient to Information Literacy; which requires a student to find, evaluate and use information effectively.

**Pers**

A commonly studied model of personality is known as the Five Factor Model, often referred to as the Big5 (Reason, Terenzini, & Domingo, 2006; Ridgell & Lounsbury, 2004). Rooted in decades of research and cross-cultural examination, the Big5 is a formidable means in describing individual personality factors (Cervon & Pervin, 2010). It proposes that there are five overarching personality factors encompassing numerous other personality traits. Lewis Goldberg (1992), in his work entitled *The Development of Markers for the Big-Five Factor Structure*, described these five factors as being: Extraversion (E), Agreeableness (A), Conscientiousness (C), Emotional Stability (ES), and Intellect/Imagination (I).

Each of the Big 5 traits can be thought of as a much broader domain or factor in which lie multitudes of bipolar traits. Goldberg (1993) described each domain with Extraversion capturing an individual’s levels of assertiveness, tendency toward introversion versus seeking human interaction, and how passive or assertive patterns of behavior may be. Agreeableness measures levels of interpersonal warmth and kindness against the presence of more distrustful and hostile styles of being. If an individual were to score high on the factor of Conscientiousness, then one may assume that, in contrast to having a more scattered, unorganized, and unreliable personality type, the person probably displays patterns of thoroughness and dependability. The Emotional Stability factor reflects where an individual falls along the spectrum of being nervous, moody, and emotionally volatile versus more steady in nature. Finally, the Intellect/Imagination factor indicates the individual’s propensity toward having more creative depth and appreciation for
intellectual stimulation versus a more cognitively superficial way of engaging in the world (Goldberg, 1993).

**Big 5 in Relationship to Other Domains**

Researchers have often appreciated the utility of the Big 5 in exploration of relationships between personality factors and college student behaviors (Moses et al., 2011). For example, Emotional Stability, which is characterized by low neuroticism and the presence of coping skills, has been found to be positively correlated with academic achievement in college students. Not surprising, conscientiousness, which is described as a tendency to engage in responsible behaviors including an awareness of the needs of others and an ability to meet situational expectations and deadlines, has proven itself to be the strongest predictor of college achievement, (Chamorro-Premuzic & Furnham, 2008; Laskey & Hetzel, 2009; O’Connor & Paunonen, 2007; Ridgell & Lounsbury, 2004; ). In their review of the literature, Laskey & Hetzel (2009) also noted that Conscientiousness and Openness (often interchangeable with Intellect/Imagination) were strongly correlated with utilization of tutoring services provided to at-risk students, and therefore contributed to greater college success. Although emotional stability and conscientiousness have been identified as predictors of college achievement, the limited research in IL has underscored the relational aspect of the construct, which requires students to reach out and seek information from external sources including faculty members and identified support networks. Thus, extraversion may be a relevant variable in the understanding of IL.

**Historical Precedence and Hypothesis**

In light of the growing body of research on IL, and in consideration of how important the development of LLL among college students has become at the university level, this study
investigated the construct of IL. After all, there is no shortage of writing on *why* it is important, but there is a shortage of research on *what* it actually is and its relationships to other robust domains, especially those with strong ties to student achievement, namely, Intelligence and Personality.

It was hypothesized that IL would be positively correlated with both IQ and Extraversion. Research suggested that the underlying intellectual traits measured by IQ tests are foundational to many types of problem solving skills and reasoning abilities, necessary to manage information. Similarly, it was hypothesized that extraversion would correlate with IL because students with this personality style may be predisposed to using external resources more effectively including interpersonal networking and collaborative problem solving.
Chapter 2

Methods

Participants

The demographics of the sample are shown in Table 1. Participants included 22 male and 29 female undergraduate students who were recruited from a small private university in the Northwest and had previously participated in a study examining Information Literacy. Participants who responded were either first year students \((n = 39)\), enrolled in a First Year Experience (FYE) course, or in their senior year \((n = 12)\), enrolled in their Senior Capstone course (SC), from diverse ethnic groups with European-American students accounting for 76.5% of participants and students of other ethnic decent accounting for 23.5% of the sample. Student participants also represented a variety of academic disciplines including Nursing (31.37%), Engineering (19.61%), English (15.69%), Management (11.76%), and other disciplines (21.57%); students showed varying levels of academic achievement (see Table 1).

Procedure

Following approval by the George Fox University Human Subjects Research Committee, 106 participants were invited to participate in an “Assessment Festival” designed to provide undergraduates with information regarding their personality style and cognitive ability. All students received a mailed postcard invitation with a follow-up e-mail. Respondents included 51 students who completed a brief online demographic survey (see Appendix A). The e-mail also contained the link to the personality survey (Big Five questionnaire as found on the International Personality Item Pool [IPIP], 2012, see Appendix B) and a request to schedule their cognitive
Table 1

*Gender, Ethnicity, Major, University Academic Year, Age, High School Grade Point Average, University Grade Point Average*

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>% of Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>22</td>
<td>43.1</td>
</tr>
<tr>
<td>Female</td>
<td>29</td>
<td>56.9</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European-American</td>
<td>39</td>
<td>76.5</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>23.5</td>
</tr>
<tr>
<td>Academic Major</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>16</td>
<td>31.37</td>
</tr>
<tr>
<td>Engineering</td>
<td>10</td>
<td>19.61</td>
</tr>
<tr>
<td>English</td>
<td>8</td>
<td>15.69</td>
</tr>
<tr>
<td>Management</td>
<td>6</td>
<td>11.76</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>21.57</td>
</tr>
<tr>
<td>University Academic Year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Year</td>
<td>39</td>
<td>76.5</td>
</tr>
<tr>
<td>Senior Year</td>
<td>12</td>
<td>23.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>20.01</td>
<td>2.01</td>
<td>18 - 27</td>
</tr>
<tr>
<td>High School GPA</td>
<td>3.73</td>
<td>.36</td>
<td>2.66 - 4.0</td>
</tr>
<tr>
<td>University GPA</td>
<td>3.42</td>
<td>.58</td>
<td>1.50 - 4.0</td>
</tr>
</tbody>
</table>

assessment. From the initial pool of 106 students, 48% or 51 students completed the online demographic survey and Big Five questionnaire as well as the previously administered Standardized Assessment of Information Literacy Skills (SAILS) SAILS. However, only 40 students completed the cognitive assessment. The cognitive assessments were conducted on the George Fox University campus 10 days after the e-mail was sent. Each individual was e-mailed a
confirmation of their appointment and a reminder e-mail was sent to participants. Students were informed that aside from completing the cognitive test, they were invited to share in the free food, beverages, and entertainment (Wii console) offered in the location of the assessment. Participants were told they would receive personalized feedback regarding personality style and cognitive ability.

The cognitive assessments were administered by 15 volunteer doctoral students who had demonstrated competency in the administration, scoring and interpretation of the cognitive assessment measure used for this study (Wide Range of Assessment Intelligence). All assessments were administered individually in small classrooms and offices in the same academic building.

**Instruments**

Archival data was used to gather information about participants’ Information Literacy abilities, as measured in a psychological study in 2010. The Standardized Assessment of Information Literacy Skills (SAILS) is a 55-question multiple-choice questionnaire that measures an individual’s information literacy skill set, as based upon the Association of College and Research Libraries (ACRL) information competency standards for higher education with item reliability estimates reported at over .80 (Project SAILS, 2011; see Appendix C).

The Big Five questionnaire was created from the International Personality Item Pool (IPIP) Big Five Factor Survey, which is online database of psychometrically sound personality questions (IPIP, 2012). A 50-item personality questionnaire was adapted from IPIP for use in our study, which was designed to take participants approximately 15 minutes to complete. (Mean Item Intercorrelation, .34; Coefficient Alpha, .84).
The Wide Range Intelligence Test (WRIT) was utilized as a brief measure of intelligence. This measure, which takes approximately 30 minutes to administer, provides a general intelligence score as well as both a verbal and non-verbal scores. According to WRIT authors Glutting et al. (2000), the WRIT measures the same domains as the Wechsler Adult Intelligence Scale, Third Edition (WAIS-III) and the Wechsler Intelligence Scale for Children, Third Edition (WISC-III). The concurrent validity between the WRIT and the Wechsler Abbreviated Scale of Intelligence (WASI), similar to the longer WAIS-III and WISC-IV, is .72.

**Data Analysis**

Descriptive statistics for each of the assessed variables were calculated followed by Pearson product correlations to assess relationship between variables (see Table 2). Multiple regression analysis and analysis of variance (ANOVA) explored potential measures of association and/or predictive utility.
### Table 2

**Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Verbal IQ</th>
<th>Visual IQ</th>
<th>General IQ</th>
<th>OS</th>
<th>Stand 1</th>
<th>Stand 2</th>
<th>Stand 3</th>
<th>Stand 5</th>
<th>M</th>
<th>V</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Verbal</strong></td>
<td>Pearson Corr</td>
<td>.544**</td>
<td>.876**</td>
<td>.480***</td>
<td>.332*</td>
<td>.446***</td>
<td>.328**</td>
<td>.441***</td>
<td>.518**</td>
<td>.654***</td>
<td>.450*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.002</td>
<td>.037</td>
<td>.004</td>
<td>.039</td>
<td>.004</td>
<td>.001</td>
<td>.000</td>
<td>.013</td>
</tr>
<tr>
<td><strong>IQ</strong></td>
<td>N</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td><strong>Visual</strong></td>
<td>Pearson Corr</td>
<td>.544**</td>
<td>.881**</td>
<td>.259</td>
<td>.289</td>
<td>.216</td>
<td>.296</td>
<td>.051</td>
<td>.592**</td>
<td>.556**</td>
<td>.411*</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.107</td>
<td>.070</td>
<td>.180</td>
<td>.064</td>
<td>.753</td>
<td>.000</td>
<td>.000</td>
<td>.024</td>
</tr>
<tr>
<td><strong>General IQ</strong></td>
<td>N</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td><strong>OS</strong></td>
<td>Pearson Corr</td>
<td>.480**</td>
<td>.259</td>
<td>.422**</td>
<td>.1</td>
<td>.826**</td>
<td>.930**</td>
<td>.600**</td>
<td>.796**</td>
<td>.336</td>
<td>.576**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.002</td>
<td>.107</td>
<td>.007</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.016</td>
<td>.000</td>
<td>.006</td>
</tr>
<tr>
<td><strong>SAIL</strong></td>
<td>N</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>40</td>
</tr>
<tr>
<td><strong>Stand 1</strong></td>
<td>Pearson Corr</td>
<td>.332*</td>
<td>.289</td>
<td>.356*</td>
<td>.826**</td>
<td>.675**</td>
<td>1</td>
<td>.398**</td>
<td>.660**</td>
<td>.247</td>
<td>.503**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.037</td>
<td>.070</td>
<td>.024</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.016</td>
<td>.000</td>
<td>.112</td>
</tr>
<tr>
<td><strong>Stand 2</strong></td>
<td>N</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>40</td>
</tr>
<tr>
<td><strong>Stand 3</strong></td>
<td>Pearson Corr</td>
<td>.328*</td>
<td>.296</td>
<td>.356*</td>
<td>.600**</td>
<td>.406**</td>
<td>.398**</td>
<td>1</td>
<td>.410**</td>
<td>.356</td>
<td>.421**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.039</td>
<td>.064</td>
<td>.024</td>
<td>.000</td>
<td>.003</td>
<td>.004</td>
<td>.003</td>
<td>.010</td>
<td>.002</td>
<td>.177</td>
</tr>
<tr>
<td><strong>Stand 5</strong></td>
<td>N</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>40</td>
</tr>
<tr>
<td><strong>SAT M</strong></td>
<td>Pearson Corr</td>
<td>.441**</td>
<td>.051</td>
<td>.279</td>
<td>.796**</td>
<td>.582**</td>
<td>.660**</td>
<td>.410**</td>
<td>1</td>
<td>.254</td>
<td>.487**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.004</td>
<td>.753</td>
<td>.082</td>
<td>.000</td>
<td>.000</td>
<td>.003</td>
<td>.072</td>
<td>.000</td>
<td>.081</td>
<td>.279</td>
</tr>
<tr>
<td><strong>SAT V</strong></td>
<td>N</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>40</td>
</tr>
<tr>
<td><strong>SAT W</strong></td>
<td>Pearson Corr</td>
<td>.518**</td>
<td>.592**</td>
<td>.628**</td>
<td>.336*</td>
<td>.309*</td>
<td>.247</td>
<td>.356*</td>
<td>.254</td>
<td>1</td>
<td>.639**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.000</td>
<td>.016</td>
<td>.027</td>
<td>.081</td>
<td>.010</td>
<td>.072</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 3

Results

Participants scores on the Big 5 personality variables (Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Intellect/Imagination), the Cognitive Assessment scales (Verbal, Visual, General), Selected Standards of the Standardized Assessment of Information Literacy Skills (SAILS), and the students college entrance scores on the Scholastic Achievement Test (Verbal, Mathematics and Writing) are summarized in Table 3.

Hypothesis 1: Information Literacy is interwoven with verbal capacity and thus would be positively correlated with Verbal IQ. Previous research (Neisser et al., 1996) has noted a correlation between IQ and SAT scores; therefore, Hypotheses 1 suggested that Information Literacy (as measured by the SAILS) would also correlate with the Verbal subtest of the SAT.

A Pearson correlation coefficient was calculated for the relationship between participants’ scores Information Literacy, IQ and the verbal subtest of the SAT. As hypothesized, a moderate positive correlation was found between the Overall Score (OS) on the SAILS and the following measures: SAT Verbal \((r(40) = .576, p< .001)\), Verbal IQ, \((r(40) = .480, p = .002)\), General IQ \((r(40) = .422, p = .007)\). Although not specifically hypothesized, results showed there was a weaker, but still significant correlation between the OS on the SAILS and SAT Mathematics \((r(40) = .336, p = .016)\).

Hypothesis 2 suggested that a positive correlation would be found between Information Literacy (as measured by the SAILS) and the personality variable of Extraversion. Extraverted
Table 3

*Personality Variables* Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Intellect/Imagination; Scholastic Achievement Test; Cognitive Assessment Scales; Standards of the Student Assessment of Information Literacy

<table>
<thead>
<tr>
<th>Personality Variable</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>Possible Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>30.59</td>
<td>8.403</td>
<td>51</td>
<td>10-50</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>42.22</td>
<td>5.511</td>
<td>51</td>
<td>10-50</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>39.06</td>
<td>6.457</td>
<td>51</td>
<td>10-50</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>36.61</td>
<td>8.164</td>
<td>51</td>
<td>10-50</td>
</tr>
<tr>
<td>Intellect/Imagination</td>
<td>38.00</td>
<td>6.219</td>
<td>51</td>
<td>10-50</td>
</tr>
<tr>
<td>SAT_M</td>
<td>585.49</td>
<td>90.229</td>
<td>51</td>
<td>200-800</td>
</tr>
<tr>
<td>SAT_V</td>
<td>592.16</td>
<td>99.344</td>
<td>51</td>
<td>200-800</td>
</tr>
<tr>
<td>SAT_W</td>
<td>560.50</td>
<td>90.863</td>
<td>40</td>
<td>200-800</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Percentile Rank</th>
<th>Proficiency*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal IQ</td>
<td>115.63</td>
<td>84</td>
</tr>
<tr>
<td>Visual IQ</td>
<td>112.00</td>
<td>79</td>
</tr>
<tr>
<td>General IQ</td>
<td>115.98</td>
<td>84</td>
</tr>
<tr>
<td>OS SAILS</td>
<td>.602549</td>
<td>&lt; Proficiency</td>
</tr>
<tr>
<td>Standard 1</td>
<td>.6465</td>
<td>&lt; Proficiency</td>
</tr>
<tr>
<td>Standard 2</td>
<td>.606275</td>
<td>&lt; Proficiency</td>
</tr>
<tr>
<td>Standard 3</td>
<td>.680588</td>
<td>&lt; Proficiency</td>
</tr>
<tr>
<td>Standard 5</td>
<td>.482</td>
<td>&lt; Proficiency</td>
</tr>
</tbody>
</table>

*Note.* *Proficiency* ≥ 70%; Mastery ≥ 85%.

behaviors include assertiveness and seeking interactions with others (Goldberg, 1993) along with perceiving external support and utilizing support networks (Swickert, 2002) and are therefore thought to be candidates for effective information seeking behaviors via social means especially in light of research suggesting that social connectedness and integration is a factor correlated with overall college perseverance, commitment, and career skills post university (Allen,
Robbins, Casillas, & Oh, 2008; Chen & St. John, 2011; Pascarella & Terenzini, 2005) and the inherently relational nature of information literacy (Crawford & Irving, 2009).

In additional analysis, a Pearson correlation coefficient was calculated to explore the relationship between personality factors and participants’ scores on the Information Literacy measure (SAILS) and College Grade Point Average (GFUGPA; see Table 4). The Overall Score on the SAILS failed to correlate with the Extraversion factor on the Big 5 Survey \( (r(51) = -0.271, p = 0.054) \). Although not originally hypothesized, there was a significant positive correlation found between the personality factor of Conscientiousness and GFUGPA, \( (r(50) = 0.295, p = 0.038) \). Not surprising, data also showed a positive relationship between college GPA and past academic success as measured by High School Grade Point Average (HSGPA) \( (r(38) = 0.412, p = 0.010) \).

Table 4

<table>
<thead>
<tr>
<th></th>
<th>Extraversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS SAIL</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td>( N )</td>
<td></td>
</tr>
</tbody>
</table>

Standard multiple regression was conducted to determine the accuracy of the independent variables (composite score of General IQ \([\text{GIQ}]\); composite score of Verbal IQ \([\text{VIQ}]\); verbal subtest raw score on the SAT \([\text{SATV}]\); and mathematics subtest raw score on the SAT \([\text{SATM}]\) predicting participants’ level of Information Literacy (as measured by their percentage score on
Regression results indicated that the overall model significantly predicts Information Literacy scores, $R^2 = .354$, $R^2_{adj} = .280$, $F(4,35) = 4.786$, $p < .001$. The model accounts for 35.4% of variance in Information Literacy. The resulting regression equation is as follows: $IL = .009 + (SATV \times .001) + (VIQ \times .004) - (GIQ \times .002)$. A summary of regression coefficients is presented in Table 5 and indicates that only one (SATV) of the four variables significantly contributed to the model.

Table 5

<table>
<thead>
<tr>
<th>Model Variables</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SATV</td>
<td>.001</td>
<td>.000</td>
<td>.513</td>
<td>2.560</td>
<td>.015</td>
</tr>
<tr>
<td>SATM</td>
<td>.000</td>
<td>.000</td>
<td>-.101</td>
<td>-.547</td>
<td>.588</td>
</tr>
<tr>
<td>GIQ</td>
<td>-.002</td>
<td>.003</td>
<td>-.168</td>
<td>-.534</td>
<td>.597</td>
</tr>
<tr>
<td>VIQ</td>
<td>.004</td>
<td>.003</td>
<td>.345</td>
<td>1.199</td>
<td>.239</td>
</tr>
</tbody>
</table>

Supplemental Analyses

In light of the current body of research, which suggests that IL can be taught (Boruff & Thomas, 2011; Carr, Iredell, Newton-Smith, & Clark, 2011; Daugherty & Russo, 2011; Maughan, 2001), supplemental analyses were conducted to explore the levels of IL possessed between first year university students enrolled in an FYE course and seniors enrolled in an SC course. The assumption is that noticeable changes between these groups would be evident, namely that senior students would score higher on Overall IL and on IL Standards 1, 2, 3, and 5.
due to their more extensive practice of IL skills through class requirements, more exposure to IL instruction in course curriculums, having experienced a lecture by a librarian, and meeting library staff. An independent-samples t-test comparing the mean scores of the FYE group and SC group found a significant difference between the means of the two groups of Overall IL ($t(49) = -2.369, p < .05$) with the mean of the FYE group significantly lower ($m = .578, sd = .12$) than the mean of the SC group ($m = .683, sd = .17$); a significant difference was found between the means of the two groups of Standard 1 ($t(49) = -2.636, p < .05$) with the mean of the FYE group significantly lower ($m = .616, sd = .15$) than the mean of the SC group ($m = .744, sd = .15$); a significant difference was found between the means of the two groups of Standard 2 ($t(49) = -2.266, p < .05$) with the mean of the FYE group significantly lower ($m = .578, sd = .15$) than the mean of the SC group ($m = .697, sd = .17$); a significant difference was found between the means of the two groups of Standard 5 ($t(49) = -2.114, p < .05$) with the mean of the FYE group significantly lower ($m = .456, sd = .15$) than the mean of the SC group ($m = .567, sd = .18$); see Table 6.

Table 6

<table>
<thead>
<tr>
<th>IL Measure</th>
<th>FYE Group</th>
<th>SC Group</th>
<th>$t(49)$</th>
<th>$p$</th>
<th>Cohen’s $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS SAILS</td>
<td>$.578</td>
<td>.683</td>
<td>$-2.369$</td>
<td>.022</td>
<td>-0.68</td>
</tr>
<tr>
<td>Standard 1</td>
<td>$.616</td>
<td>.744</td>
<td>$-2.636$</td>
<td>.011</td>
<td>-0.75</td>
</tr>
<tr>
<td>Standard 2</td>
<td>$.578</td>
<td>.697</td>
<td>$-2.266$</td>
<td>.028</td>
<td>-0.65</td>
</tr>
<tr>
<td>Standard 5</td>
<td>$.456</td>
<td>.567</td>
<td>$-2.114$</td>
<td>.040</td>
<td>-0.60</td>
</tr>
</tbody>
</table>
Chapter 4

Discussion

This study sought to explore the relationship Information Literacy (IL) shares with IQ and Personality factors in an effort to increase our understanding of the construct of IL. The results of this study supported Hypothesis 1 in revealing a positive correlation between IL and both Verbal IQ and the Verbal subtest of the SAT. In addition, this study found that student General IQ scores and the Math subtest scores on the SAT were positively correlated with IL. In contrast, the results did not support Hypothesis 2 which proposed that Extraversion and IL would be positively correlated due to extraverted behaviors lending themselves to seeking out stimulating interactions with external stimuli and relationships. Furthermore, this study sought to investigate the predictive nature of correlated variables toward the variance in student scores on the SAILS. As reported, a multiple regression was conducted and the variable of SATV was found to hold predictive value toward IL.

This research confirmed previous research showing a strong positive relationship between general IQ and SAT scores as well as the expected high correlation between verbal intelligence and general IQ (Neisser et al., 1996; Sattler & Ryan, 2009). It is no surprise that this study confirmed these well-established research findings. However, this study extended previous research by revealing the correlation between Verbal abilities (as shown in both Verbal IQ and SAT Verbal) and IL. This relationship is not surprising as the IL competency includes an ability to use basic verbal knowledge and problem-solving processes. In fact, designers of the SAILS
In convergence with the body of research on assessing IL competencies and IL instruction (Boruff & Thomas, 2011; Carr et al., 2011; Daugherty & Russo, 2011; Maughan, 2001), this study found that senior capstone students performed significantly better on the SAILS measure overall as well as on test items designed to measure competencies on IL Standards 1, 2, & 5 than first year students did. These findings are significant because the higher scores attained by seniors suggest that IL scores may be responsive to training and repeated exposure.

This study also confirmed previous research that identified a statistically significant relationship between College Grade Point Average and two other variables, personality and previous academic success. Specifically, this research validated the positive correlation between the personality factor of Conscientiousness and academic success as measured by College Grade Point Average. Furthermore, this study confirmed prior research which showed High school Grade Point Average positively correlated with College Grade Point Average.

In contrast to the findings that converged with previous research, there were some unexpected results. Specifically, our results did not show the expected relationship between the personality factor of Extraversion and IL. Previous research identified positive relationships between affective factors including personality, and academic success and performance (Moses et al., 2011), thus, it was expected that there would be a relationship between Extraversion and the construct (IL) that appeared to be dependent on relational factors. This finding is surprising due to the robust body of research on personality showing its broad utility in accounting for portions of variance toward a seemingly endless number of domains assessed, begging the
question of the nature of IL in relationship to such inherent and inescapable factors as individual personality.

Contributions of this study to current research on IL include an exploration of the domain in relationship to standardized measures of intelligence via IQ scores, achievement via SAT scores, and personality via Big 5 factors. In review of the literature, the current study’s author did not find any study examining the variance in SAILS scores utilizing such independent variables. Much of the current literature on IL is theoretical in nature and this study adds a practical application to such theoretical discussions by using ecologically valid and relevant predictors of student success to understand this newly identified construct of IL. At a major Information Literacy Summit (Perrault, 2006), panel member Patrick Callan expressed concern over the fact that, while IL is universally accepted, there is virtually no “debate, no discussion, no conversation about information literacy” (p. 7), highlighting the need for studies as this one in exploration of the very nature and composition of IL.

Implications

Implications of the current findings included contribution to ongoing discussions surrounding the predictive value of SAT scores toward college success for minority students (Arbona, & Novy, 1990). As this study has shown, SAT-Verbal only accounted for approximately one third of the variance in student IL scores, leaving questions surrounding what factors are involved in predicting competencies in tasks involving IL which is believed to be a process of lifelong learning. Perhaps IL offers a lens to better understand and may predict ethnic minority student success and persistence in college, assisting in fleshing out research in hopes to “identify and examine complex models” (Arbona & Novy, 1990, p.421) of student
characteristics pre-college along with student interactions with external and institutional elements.

Results of the current study may also have implications for university admissions departments. It has long been understood that entering freshmen already possess characteristics and traits found to be predictive of overall retention rates (Astin, 2005; Pfitzner, Brat, & Lang, 2011; Singell & Waddell, 2010; Watt, Huerta, & Alkan, 2011). However, as this study suggests, often-collected data from incoming students, such as SAT score, do not account for large portions of variance in skill sets affecting lifelong learning as measured by assessments such as the SAILS. Therefore, this study confirms the fact that much is unknown about levels of IL in incoming freshmen and resultant implications for predicting student retention may still remain as blind-spots for admission departments. A case can be made that better identification of existing levels of IL in freshman can assist in responsible matching practices between universities and students as well as assisting universities in remediation efforts necessary to fulfill their obligations to graduate as many students as possible (Cragg, 2009).

Limitations

Limitations of this study include sample size. Ideally, this study would have recruited more than 51 out of the 106 student participants of the SAILS assessment. While this study is a forerunner in exploratory research on IL’s relationship with well-established domains, a larger $n$ would have allowed for a more generalizable discussion on correlational relationships and predictive values of independent variables assessed.

Also, while this study was able to examine between-group differences of FYE students and senior capstone students in their levels of IL skills, a longitudinal study would have done a more effective job at describing how students learn IL and at what stages in their education they
acquire the various skills necessary for Life Long Learning. In addition, cautious interpretation of the differences found between first year students and seniors is necessary due to a lack of controlling for IL interventions students had experienced at the time of assessment as well as how this study had a limited sample size, especially of senior students. As a result, this study can only suggest that significant differences were found between groups but it cannot make clear statements as to what was affecting those differences in student IL skills.

**Suggestions for Future Research**

The value of developing lifelong learners in the information is clear; however future research will want to continue to explore the factors that comprise the IL construct. Some of these factors might be related to specific technical skills or experience with social media. Affective factors including personality factors such as perseverance, motivation and locus of control have been suggested as predictors of college success and thus may need to be explored (Solberg Nes, Evans, & Sergerstrom, 2009; Strage, 2000; Toews & Yazedjian, 2009). It is hard to imagine that affective factors do not play a role in IL levels and this should be studied in more detail. This is particularly salient to informational processes that are not done in a vacuum and therefore are inherently relational. Future research may also want to explore the longitudinal impact of IL including its relevance to attrition and academic confidence.
References


1. Invitation
As mentioned in the email you just read and the postcard sent to your mailbox, you have been selected to participate in a unique event to help you learn more about yourself. The goal of the "Assessment Fair" is to provide you with information that might assist you as you consider different career paths (or majors) and prepare for the job market. Please complete this brief survey to get started.

2. Demographic Questions

1. What is your age?
in years

2. Approximately how many books do you own (print or electronic)?
round to nearest 5

3. Please estimate the percentage of time you spend doing the following activities during an average day.
Sleeping
Class Attendance
Homework
Organized Extra-curricular Activities (sports, theatre, music, student leadership, etc.)
Unorganized social activities (coffee with friends, talking in the hall, etc.)
Time spent with significant-other NOT doing homework, activities, etc.)
Gaming (online, game system)

4. Did you hold a position as a student leader (e.g., student government, club, etc.) in high school?
 ○ Yes
 ○ No
If yes, approximately how many positions did you hold?

5. If you held (are in) a leadership position (e.g., student government, an officer in a club, RA, etc.), how many leadership positions did (are) you hold(ing)
in high school?   

at George Fox University?   

6. Which of the following best describes your career goals after college?   
- I have no idea about what I want to do.   
- I am not sure about what I am going to do. I have a few ideas but no clear direction.   
- I have a specific career/position that I am going to pursue.   

7. What is the highest level of education attained by your

<table>
<thead>
<tr>
<th></th>
<th>Less than a high school diploma</th>
<th>High school diploma</th>
<th>Associates or Junior College degree</th>
<th>Bachelor's degree</th>
<th>Graduate degree</th>
<th>I don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>mother?</strong></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Less than a high school diploma</td>
<td>High school diploma</td>
<td>Associates or Junior College degree</td>
<td>Bachelor's degree</td>
<td>Graduate degree</td>
<td>I don't know</td>
</tr>
<tr>
<td><strong>father?</strong></td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Less than a high school diploma</td>
<td>High school diploma</td>
<td>Associates or Junior College degree</td>
<td>Bachelor's degree</td>
<td>Graduate degree</td>
<td>I don’t know</td>
</tr>
</tbody>
</table>
3. Times

1. Please rank the top three times that work best for you to participate in the "Assessment Fair" on March 2nd. You will take an intelligence (IQ) test at that time. There will also be food, other activities, and counselors available at that time to help you understand your personality, emotional intelligence, and IQ scores.

4:00
4:30
5:00
5:30
6:00
6:30
7:00
7:30
8:00
8:30

4. Next Step

After you submit your answers to this survey, you will be sent two additional emails. One email will be for a personality assessment. The other email will be for a test of emotional intelligence.

It is important that you know that your confidentiality is our utmost concern.

1. I understand that by participating, I will receive information about my personality, emotional intelligence, and overall IQ. My name will be used to combine my personality,
emotional intelligence, and IQ scores but my name and scores will not be recorded together and my name and scores will not be presented together in any form (except when I am given my information) in order to protect my confidentiality.

☐ Yes
☐ No

2. To assist in future communications, please provide your

your first name

__________

last name

__________

preferred email

__________
Appendix B

Personality Survey
How Accurately Can You Describe Yourself?

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Indicate for each statement whether it is 1. Very Inaccurate, 2. Moderately Inaccurate, 3. Neither Accurate Nor Inaccurate, 4. Moderately Accurate, or 5. Very Accurate as a description of you.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very Inaccurate</th>
<th>Moderately Inaccurate</th>
<th>Neither Accurate</th>
<th>Moderately Accurate</th>
<th>Very Accurate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Am the life of the party.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>2. Feel little concern for others.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3. Am always prepared.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>4. Get stressed out easily.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>5. Have a rich vocabulary.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>6. Don't talk a lot.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>7. Am interested in people.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>8. Leave my belongings around.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>9. Am relaxed most of the time.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10. Have difficulty understanding abstract ideas.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>11. Feel comfortable around people.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>12. Insult people.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>13. Pay attention to details.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Information Literacy Relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Worry about things.</td>
<td>O   O   O   O   O   O (4-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Have a vivid imagination.</td>
<td>O   O   O   O   O   O (5+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Keep in the background.</td>
<td>O   O   O   O   O   O (1-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Sympathize with others' feelings.</td>
<td>O   O   O   O   O   O (2+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Make a mess of things.</td>
<td>O   O   O   O   O   O (3-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Seldom feel blue.</td>
<td>O   O   O   O   O   O (4+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Am not interested in abstract ideas.</td>
<td>O   O   O   O   O   O (5-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Start conversations.</td>
<td>O   O   O   O   O   O (1+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Am not interested in other people's problems.</td>
<td>O   O   O   O   O   O (2-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Get chores done right away.</td>
<td>O   O   O   O   O   O (3+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Have excellent ideas.</td>
<td>O   O   O   O   O   O (5+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Have little to say.</td>
<td>O   O   O   O   O   O (1-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Have a soft heart.</td>
<td>O   O   O   O   O   O (2+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Often forget to put things back in their proper place.</td>
<td>O   O   O   O   O   O (3-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Get upset easily.</td>
<td>O   O   O   O   O   O (4-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Do not have a good imagination.</td>
<td>O   O   O   O   O   O (5-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Talk to a lot of different people at parties.</td>
<td>O   O   O   O   O   O (1+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Am not really interested in others.</td>
<td>O   O   O   O   O   O (2-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Like order.</td>
<td>O   O   O   O   O   O (3+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Change my mood a lot.</td>
<td>O   O   O   O   O   O (4-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>Am quick to understand things.</td>
<td>O   O   O   O   O   O (5+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>Don't like to draw attention to myself.</td>
<td>O   O   O   O   O   O (1-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Take time out for others.</td>
<td>O   O   O   O   O   O (2+)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Shirk my duties.</td>
<td>O   O   O   O   O   O (3-)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Literacy Relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. Have frequent mood swings.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>40. Use difficult words.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>41. Don't mind being the center of attention.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>42. Feel others' emotions.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>43. Follow a schedule.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>44. Get irritated easily.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>45. Spend time reflecting on things.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>46. Am quiet around strangers.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>47. Make people feel at ease.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>48. Am exacting in my work.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>49. Often feel blue.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>50. Am full of ideas.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Note. These five scales were developed to measure the Big-Five factor markers reported in the following article: Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*, 26-42.

They are *not* the IPIP scales developed to measure the five NEO-PI-R domains.

The numbers in parentheses after each item indicate the scale on which that item is scored (i.e., of the five factors: (1) Extraversion, (2) Agreeableness, (3) Conscientiousness, (4) Emotional Stability, or (5) Intellect/Imagination) and its direction of scoring (+ or -). These numbers should not be included in the actual survey questionnaire. For further information on scoring IPIP scales, click the following link: [Scoring Instructions](#).
Appendix C

Project Sails Test Items
Information Literacy Relationships

Project Sails Test Items

Sample Questions
The questions below show the format of items that a student will see. They are not actual test questions. Each test will have 45 questions ranging across the SAILS skills sets.

Sample Question One
You need to get information on an event that took place two days ago. Where are you most likely to find information about the event?

CHOOSE ONE ANSWER
☐ Book
☐ Dissertation
☐ Journal article
☐ Magazine
☐ Newspaper

Sample Question Two
Which of the following best identifies a "publication issued periodically, usually weekly or monthly, containing articles, stories, photographs and advertisements?"

CHOOSE ONE ANSWER
☐ Journal
☐ Magazine
☐ Newsletter
☐ Newspaper
☐ Trade Journal

Sample Question Three
What is a term used to describe what a book or journal article is about?
CHOOSE ONE ANSWER
- Bibliography
- Keyword
- Library catalog
- Research database
- Subject heading

Sample Question Four

If you wanted to search for a topic that has several components, such as nutrition for pregnant women, which operator would you use?

CHOOSE ONE ANSWER
- Adj
- And
- Near
- Not
- Or

Sample Question Five

Is it ethical for you to use the ideas of another person in a research paper?

CHOOSE ONE ANSWER
- Yes, but only if you ask their permission.
- Yes, but only if you give them credit.
- Yes, but only if you use their exact words.
- Yes, but only if you do not use their exact words.
- No, it is not ethical for you to use the ideas of someone else in a research paper.
Sample Question Six
You are writing a 10-page research paper. Your search on your paper topic has produced 34 articles. What is the best course of action?

**CHOOSE ONE ANSWER**
- Do not revise the search, because the number of articles is good.
- Revise the search to retrieve fewer results.
- Revise the search to retrieve more results.

Sample Question Seven
If you find a very good article on your topic, what is the most efficient source for finding related articles?

**CHOOSE ONE ANSWER**
- Bibliography from the article
- Dissertation Abstracts search
- Library catalog search
- Other volumes of the journal
- Web search

Sample Question Eight
You must write a paper on the environmental practices of Sony Corporation. Which of the following is most likely to provide balanced information?

**CHOOSE ONE ANSWER**
- Economic Development Board (www.edb.org)
- Environmental Protection Agency Web site (www.epa.gov)
Sample Question Nine

Identify the type of resource referenced in the following database record.

| Title: | Richard Nixon: Crisis in the White House. |
| Authors: | Smith, Mary |
| Publisher Info: | Chapel Hill and London: University of North Carolina Press |
| Publication Date: | 1986 |
| ISBN: | 0-8078-2414-3 |
| Accession Number: | 0482832 |

CHOOSE ONE ANSWER
- Book
- Book chapter
- Government document
- Magazine or journal article
- Newspaper article

Sample Question Ten

Which of the following concepts makes it legally wrong to reproduce a substantial portion of the works of another person without permission?

CHOOSE ONE ANSWER
- Copyright
- Fair use
- Freedom of information
○ Intellectual freedom
○ Right to privacy
Appendix D

Curriculum Vitae
Timothy A. Cooper
611 Linda Way, Newberg, Oregon, 97132
(503) 313-9773
tcooper06@georgefox.edu

Education

Present  **Doctoral Student in Clinical Psychology (PsyD) Program**: George Fox University Graduate Department of Clinical Psychology *(APA-Accredited)*, Newberg, Oregon. Advisor: Mary Peterson, PhD, ABPP/CL.

2011  Master of Arts, Clinical Psychology: George Fox University Graduate Department of Clinical Psychology *(APA-Accredited)*, Newberg, Oregon

1999 **Bachelor of Arts, Psychology**: Simpson University, Redding, CA
  **Minor**: Biblical Studies

Supervised Clinical Experience

2011 – Current **Practicum II**
  **Master’s Trained Doctoral Psychology Trainee**
  **Cedar Hills Freedom Care Unit**
  **Population**: Inpatient Active Duty Military and Civilian, Gender, Religious, Racial, Socioeconomic, and Diagnostically Diverse population.
  **Clinical Duties**:
  1. CPT focused group & individual interventions in treatment of PTSD
  2. Pain Management Curriculum group and individual interventions
  3. Chemical Dependency group and individual interventions
  4. Assessment administration & report presentation, clinical formulation, individual treatment team planning

2010 - 2011 **Practicum I**
  **Psychology Trainee**
  **Rural School District Consortium, St. Paul, OR.**
Clinical Duties:

1. Provide long-term and short-term Evidence-Based Therapy, primarily CBT in nature. Conduct system-based intake interviews with parents, staff, and students, diagnostic formulation and maintain clinical notes on weekly basis.
2. Provide Crisis Interventions through psycho-educational group meetings, individual risk-assessments, and parent/student/staff consultation.
3. Administer a variety of Behavioral, Cognitive, and Personality Assessments as part of a multi-systemic team of Individual Educational Plan team, providing screening for and support of Learning Disabled and at-risk students.
4. Conduct multiple Group Interventions based on Evidence-Based curriculum focused on Social Skills, Study Skills, and both Interpersonal and Intrapersonal Safety.
5. Supervisor: Elizabeth Hamilton, PhD; weekly group and individual supervision that includes case discussion and conceptualization and development of treatment plans.

2009 - 2010 Prepracticum

Student Therapist Trainee

George Fox University, Newberg, OR.

Populations: University Undergraduates.

Clinical Duties:

1. Clinical interview, formulation of diagnostic impressions, and individual psychotherapy.
2. Report writing, reminder contact, chart notes, and file-care.
3. Formulated treatment plans.
4. Presented two cases to Clinical Team comprised of Licensed Psychologist, Master’s Level clinicians, and peers.
5. Weekly supervision from Master’s level Pre-Intern student.

Peer Reviewed Publications

Carilyn C. Ellis, MA, Timothy A. Cooper, MA, Mary A. Peterson, PhD (2011, August). It’s Not Just the Flashbacks: Symptom Severity and Quality of Life in Inpatient Group Treatment of Combat-related PTSD. Poster accepted for presentation at the APA Annual Convention, Washington, D.C.

Carilyn C. Ellis, BA; Nicole M. Schneider, MA; Timothy Cooper, BA; and Mary A. Peterson, PhD (2011, August). Understanding the Interplay of Emotional Isolation and Therapeutic
Research Experience

2011 - Present **Intervention Evaluation for Poster:** *Assessing effectiveness of S.E.L.F group curriculum as evidenced by student scores on self-efficacy measure and BASC-2 self-report for both 8th grade males and 7th grade co-ed students.* Chair: Elizabeth Hamilton, PhD.  
**Current Status:** Data Analysis

2011 - Present **Additional Ongoing Assessment Research:** *Assessing individual undergraduate students’ scores on: SAT, Information Literacy, IQ, Personality, Emotional Intelligence measures.* Chair: Chris Koch, PhD  
**Current Status:** Data Analysis

1. An assessment designed to measure correlations between above-mentioned domains in service of university efforts to meet information-literacy competencies.

2010 - Present **Research Team Member:** George Fox University, Newberg, OR.  
Chair: Mary Peterson, PhD  
Collaborative bi-monthly meetings to plan, assess progress, and complete both individual and group research and dissertation projects.

1. Assist team-members with data-collection, research design issues, and the generation of ideas.

2. Various areas of team interest and focus: Health Psychology, Group Interventions, Forensic Psychology.

Relevant Non-Clinical Supervised Experience

Fall 2011  
Teacher’s Assistant (TA) for 1st year doctoral Ethics course at George Fox University Graduate Department of Clinical Psychology (PsyD)

2008  
**Counselor:** Northwest Behavioral Mental Health Services, Gladstone, OR  
2. Collaborated as part of a treatment team comprised of A&D counselors, Psychiatrists, Psychologists, and Group Leaders.

3. Ensured safety of both residents and staff while conducting various milieu interventions.

2001 - 2002 **Group Home Manager:** Northwest Behavioral Healthcare Services, Gladstone, OR

1. Responsible for implementation of comprehensive services to 5 residential clients, ranging from young adults to senior citizens with a wide-range of diagnoses, from developmentally delay to psychotic disorders; clients ranged from docile to extremely violent.

2. Managed behavioral plans, multi-systemic compliance guidelines, staff training, family-interactions, client satisfaction, and program effectiveness.

3. Maintained 24hr. staff, hiring, firing, and human resource management.

---

**Professional Memberships, Honor Societies, & additional training**

2009 - Present American Psychological Association, Student Affiliate

2011 - Present Society for Industrial and Organizational Psychology, Student Affiliate

**Nov 2011**  
**Cross-Cultural Psychological Assessment**  
*George Fox University, Newberg, Oregon*  
Tedd Judd, ABPP-CN

**Oct 2011**  
**Motivational Interviewing & “A work in Progress,” What it is & Why to Use it.**  
*George Fox University, Newberg, Oregon*  
Michael Fulop, PsyD. and Forster Fulop

**Mar 2011**  
**Psychological First Aid as recognized by the World Health Organization for international trauma responders, evidenced-based.**  
*George Fox University, Newberg, Oregon*  
Anna Berardi, PsyD

**Mar 2011**  
**Child Custody Assessment**  
*George Fox University, Newberg, Oregon*  
Wendy Bourg-Ransford, PhD and Todd Ransford, PhD
Feb 2011  Working with LGB Clients: Current Research and Best Practices for Treatment
George Fox University, Newberg, Oregon
Jennifer Bearse, MA

Oct 2010  Best Practices in Multicultural Assessment
George Fox University, Newberg, Oregon
Neftali Serrano, PsyD

Feb 2010  Integrative and Clinical Implications of Gratitude
George Fox University, Newberg, Oregon
Philip C. Watkins, PhD

Nov 2009  APA Writing Workshop, 2009
George Fox University, Newberg, Oregon
Jill Kelly, PhD

Relevant Graduate Coursework

Assessment Courses

  Personality Assessment
  1.  Minnesota Multiphasic Personality Inventory, Second Edition (MMPI-2)
  2.  Millon Clinical Multiaxial Inventory, Third Edition (MCMI-III)
  3.  16 Personality Factor Questionnaire, Fifth Edition (16PF Fifth Edition)
  4.  Personality Assessment Inventory (PAI)

  Intellectual and Cognitive Assessment
  1.  Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV)
  2.  Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)
  3.  Wechsler Individual Achievement Test, Third Edition (WIAT-III)
  4.  Wide Range Achievement Test, Fourth Edition (WRAT-4)
  5.  Wide Range Intelligence Test (WRIT)
  6.  Wide Range Assessment of Memory and Learning, Second Edition (WRAML2)
  7.  Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4)

  Scientific and Theoretical Foundations of Psychology Courses
  Ethics for Psychologists
Information Literacy Relationships

Psychopathology
Human Development
Theories of Personality and Psychotherapy
Learning, Cognition, and Emotion
Social Psychology
History and Systems of Psychology
Psychodynamic Psychotherapy
Health Psychology
Object Relations Psychotherapy
Biological Basis of Psychotherapy
Interpersonal Psychotherapy
Substance Abuse
Consultation, Education, & Program Evaluation
Group Psychotherapy

*Psychological Research Courses*
Psychometrics
Statistics
Advanced Statistics and Research Methods

*Diversity in Psychology Courses*
Integrative Approaches to Psychology
Bible Survey for Psychologists
Spiritual Formation I
Spiritual Diversity for Psychologists
Christian History & Theology Survey for Psychologists