
Technical Brief for the

LEARNING STYLES INDEX

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Introduction

The literature and research that is available for professionals and learn on learning and study strategies is plentiful, indicating the importance that is placed on helping learners to become aware of their own as well as adopt more effective approaches to learning and studying.

The underlying assumption in the literature appears to be that the ideal is to teach students to become exceptional learners and enjoy learning for the sake of learning. While instructors stress the importance of not teaching in ways that over-emphasize test results, an analysis of the study skills and learning styles literature indicates that professionals also focus primarily on helping students to develop daily learning and study strategies while de-emphasizing studying for the test.

In the last 30 years six inventories have had significant journal citations and reviews in a *Mental Measurements Yearbook* (Survey of Study Habits and Attitudes (SSHA), Brown & Holtzman, 1965-1984; CAI Study Skills Test (CAI), Brown & Gadzella, 1981-1983; Learning and Study Skills Inventory (LASSI), Weinstein, et al. 1987; Study Skills Assessment (SSA) & Study Skills Inventory (SSI), ACT, 1988-1989; Motivated Strategies for Learning Questionnaire (MSLQ), Pintrich, et al. 1991; Study Attitudes and Methods Survey (SAMS), Michael, et al. 1978).

Many inventories have been developed to measure learning styles (Jensen, 1987). Six of these inventories have significant journal citations and/or reviews in a *Mental Measurements Yearbook*: 1) Inventory of Learning Processes (ILP-R), Schmeck and Geisler-Bernstein, 1977-1992, 2) Learning Style Inventory (LSI), Kolb, 1976-1985, 3) Learning Styles Inventory (LSI), Canfield, 1976-1988, 4) Gregorc Style Delineator (GSD), Gregorc, 1982-1990, 5) Approaches to Studying Inventory (ASI), Ramsden and Entwistle, 1981, 6) Study Process Questionnaire (SPQ), Biggs, 1985-1987. Reviews in the *Mental Measurements Yearbooks* identify four of these inventories to be promising research tools, (LSI-Kolb, LSI-Canfield, SPQ, and ILP-R). However, the reviews also warn that their use as a guidance tool for clinical intervention is contraindicated, given that these inventories lack manuals

and/or statistical evidence to support such use (Greg, 1989; Benton, 1992; Hall, 1992; Singh & Stone, 1995). Two of these inventories (GSD, Gregorc, 1982-90; LSI-2, Kolb, 1985) are based on Jungian theory of personality. Of the two personality inventories that are also based on Jungian theory, the Singer Loomis Type Deployment Indicator (SL-TDI), (Singer & Loomis, 1984-1997) and the Myers Briggs Type Indicator® (MBTI®) (Myers & McCaulley, 1986), the extensive research with the MBTI in the area of LSs makes it an invaluable tool to identify most of the traits identified by other LS instruments (Jensen, 1987). DeVito's (1985) review of the MBTI in a *Mental Measurements Yearbook* supports the use of this inventory for counseling and organizational work. Study skills inventories identify and measure numerous factors that contribute to success, e.g. attitude, motivation, study strategies, time management, test taking and preparation.

Cross validation studies, too numerous to mention, have been done using a study skills inventory, a learning styles inventory and/or a test anxiety inventory. Assuming that the SSHA and the MBTI are appropriate measures of SSs & LSs, respectively, a statistical analysis of the two indicates that only the MBTI Judging preference is significantly correlated with the SSHA (Myers & McCaulley, 1986). This is not surprising given that each SSHA subscale appears to contain items that reflect more than one of the eight MBTI preferences.

The Learning Styles Index (LSI) was designed as a standardized measure of a broad range of learning style behaviours, categorized into scales that parallel the 8 MBTI preferences (Extraverted, Introverted, Sensing, Intuition, Thinking, Feeling, Judging, Perceiving). It was theorized that: learners would use strategies that correspond with their 4 MBTI preferences; successful learners would use a wider range of preparation behaviors; and some strategies would be predictive of success. It was also hypothesized that if learner's preferences were validated and learners understood what was necessary to succeed, they would more likely adopt strategies contrary to their own preferences. The instrument was to serve both as an assessment and teaching tool for professionals and as a measure of change following intervention.

Recommended Uses

The Learning Styles Index is different and unique because it is theory based, incorporates personality and learning styles, and has been subjected to rigorous statistical analysis. The LSI appears to be both a good teaching and counseling tool and is applicable for use in a wide variety of programs and learning situations such as:

- Teaching aid in learning and study skills programs
- For use in introducing individuals to different learning styles
- Counselling and basic planning tool to help individual learners improve their learning.
- Training instrument for trainers and educators.

Development of the LSI

The Learning Styles Index is a – 56 item self-report instrument designed to measure the frequency with which a learner engages in a variety of preparatory behaviors. A sample item is: “I find it easier to learn material that arises out of practical experience.” The response options include a five-point Likert format (1-5) ranging from Rarely to Almost Always. The accurateness of a score depends on the frank self-reporting of each individual.

The Learning Style Index is based on the Exam Preparation Inventory(EPI) by Williams, S.B., Rudyk, B.P. and Staley, D, 2004.. The authors initially developed items from their assessment of test preparation chapters in ten study skills textbooks and from exam preparation questionnaires that students completed. The LSI isolates those aspects of the EPI that look directly at learning as opposed to aspects directly related to preparing for exams. The final version of the LSI contains 56 items. A study comparing the LSI and the EPI showed them to be highly correlated (see Table 1), with indices between 0.79 and 0.93 and an average correlation of 0.90.

Table 1 - Correlations between the Exam Preparation Inventory and LSI Scales (n=450)

Environment-Open	0.94
Environment-Restricted	0.79
Factual	0.81
Theoretical	0.91
Analytical	0.93
Personally-Valued	0.93
Planful	0.93
Open-Ended	0.92

Conceptualization of the LSI

The behavioral preferences that the LSI attempts to assess are based on the learning styles that correlate with psychological type preferences as measured by the MBTI. The eight EPI scales identify categories of behavior that correspond to the eight MBTI preferences. While the MBTI preferences describe inherent tendencies toward behaving in a given way, the LSI items describe behaviours, i.e. strategies, that are either recommended by study skills professionals or that have been used by learners and categorized according to the eight preferences. The eight four LSI areas and eight LSI scales are shown in Table 2 below.

Table 2 – 8 scales in the LSI Model

Energizing Environments	Environmentally Interactive	Environmentally Reflective
Gathering and Using Information	Factual Practical	Abstract Theoretical
Making Decisions	Analytical Logical	Personally Valued
Organization and Time Management	Organized Planful	Open-ended Spontaneous

Energizing Environment

The first attitude identifies the type of environment that an individual finds energizing. An Extravert is energized when he/she is involved in and interacting with the external world of experience. On the other hand Introverts are energized by the process of reflecting on ideas in their inner world. When either an Introvert or an Extravert has to function for an extended period of time in the opposite domain, they will most likely feel drained of energy and wish to recoup by retreating to their preferred realm.

Environmentally Interactive

Items in the EI scale reflect a person's need to be energized by environmental stimuli. Communicating and discussing learning material with peers, background noises from stereo music, television, family activity, and learner activity in the surrounding areas all qualify as environmental stimuli.

Environmentally Reflective

Items in the ER scale reflect a person's need to minimize any external stimuli that might distract and interfere with their concentration and ability to focus internally on the learning material.

Gathering and Using Information

The 2nd set of paired scales identifies the type of information that you focus on and how you approach learning and understanding the information. The two scales are important in that they reflect whether you focus on learning factual, practical information (FP) or theoretical, abstract information (AT).

Factual Practical

The items in this scale indicate that an individual focuses on learning the facts and details and on how they can be practically applied.

Abstract Theoretical

The items in the AT scale indicate that a person focuses on course content that is abstract and theoretical and attempts to identify the underlying pattern of relationship.

Making Decisions

The third set of paired scales, Analytical Logical (AL) and Personally Valued (PV), identifies two groups of strategies, which reflect two different processes for deciding how to order and organize the learning material. The strategies in the AL scale indicate that you analyze and logically organize the material. The PV strategies indicate that you use your personal values and likes and dislikes as a basis for deciding what to learn.

Analytical Logical

This scale consists of items which indicate that you approach learning material in an objective manner and attempt to make logical sense out of it.

Personally Valued

The items in the PV scale indicate that an individual decides what material to learn on the basis of what he/she personally values and on what he/she likes or dislikes. An individual may allow his/her concern for and valuing of a relationship to have a higher priority than learning.

Organization and Time Management

The fourth set of paired scales, Organized Planful (OP) and Open-Ended Spontaneous (OE), identify the approach to organizing and managing your learning time. The strategies in the first scale, OP, describe an approach that is structured, organized and planned, while the OE scale describes one that is more spontaneous, unstructured and open-ended.

Organized Planful

Individuals who report the frequent use of these strategies could be said to be highly organized and use their time very efficiently.

Open-ended Spontaneous

People who score high on this scale say that they rely on the urgency of the test date to motivate them to study.

Administration & Scoring

The LSI is largely self-administered online through a web application, and can be completed individually or in groups. The administrator should ensure that the assessment environment is relatively free from distractions, is quiet, and well lit. It is important to create an environment that makes the individuals taking the LSI as comfortable as possible. A reading comprehension level at the eighth grade level is sufficient. The test is 56 questions long and, while it is not timed, most responses are completed in less than 15 minutes. Those who take longer may be encouraged to work more rapidly and not study the items at length. Responses are downloaded on the secure web server and scored. An example LSI Profile is shown at the end of this report.

Norming of the Learning Styles Index

The LSI was standardized on a large sample of 1463 people, 467 males and 996 females. They represent all age levels, educational levels, and employment and occupational status. Tables 3 to 6 illustrate the basic demographic background of the participants in the norm sample.

Table 3 – Age Distribution of Norming Sample

Age Group	Frequency	Percentage
15-20	431	29.5
21-26	233	15.9
26-30	180	12.3
31-40	248	17.0
41-50	198	13.5
51+	66	4.5
none	107	7.3
Total	1463	100.0

Table 4 – Highest Education Level Achieved by Subjects in Norming Sample

Education Level	Frequency	Percent
Some high school	257	17.6
High school	139	9.5
Some college	277	18.9
Community college	35	2.4
Associate Degree	62	4.2
BA	350	23.9
Masters	133	9.1
PhD	15	1.0
Professional	39	2.7
Trade	34	2.3
None Given	122	.2
Total	1463	100.0

Table 5 – Employment Status of Subjects in Norming Sample

Employment Status	Frequency	Percent
College	224	15.3
Employed	523	35.7
Homemaker	30	2.1
High School	244	16.7
Junior High	19	1.3
Unemployed	263	18.0
Self employed	60	4.1
Not given	100	6.8
Total	1463	100.0

Table 6 – Occupational Area of Subjects in Norming Sample

Occupational Area	Frequency	Percent
Architecture	5	.3
Arts or Design	28	1.9
Business	107	7.3
Community and Social Services	53	3.6
Computing	82	5.6
Education	194	13.3
Engineering	52	3.6
Entertainment	19	1.3
Farming Fishing and Forestry	9	.6
Food Preparation and Serving	15	1.0
Healthcare Professional	59	4.0
Healthcare Support	23	1.6
Industrial Production	14	.9
Journalism or Media	15	1.0
Legal Occupations	23	1.6
Library Sciences	3	.2
Life or Physical Science	28	1.9
Management	127	8.7
Mathematics	10	.7
Office and Administrative	98	6.7
Personal Care	12	.8
Protective Services	11	.8
Sales	64	4.4
Social Science	46	3.1
Sports	11	.8
Transportation	11	.8
Not Given	344	23.5
Total	1463	100.0

Means and Standard Deviations

Table 7 provides a detailed description of the LSI raw scale scores for the sample. The means and standard deviations shown provide the norms which individuals who complete the LSI are compared against. The mean raw score for each scale represents the “average” score of people in the Norming group. The standard deviation indicates the spread of scores found among people in the normative sample. Approximately 68% of the population will obtain scores within one standard deviation above and below the mean, while 95% of the population will score within two standard deviations of the mean.

Table 7 – Descriptive Statistics for the Norming Sample

Scale	Range	Mean	SD	KR-20
Environmentally-Open	7-33	14.19	5.18	0.82
Environmentally Reflective	7-35	19.21	5.58	0.70
Factual-Practical	7-35	22.08	5.43	0.71
Theoretical-Abstract	7-35	21.59	5.70	0.77
Analytical-Logical	7-35	20.80	5.53	0.70
Personally-Valued	7-35	16.41	5.20	0.73
Planful-Organized	7-35	18.52	6.05	0.81
Open-Ended	7-35	18.22	5.50	0.71

Gender Differences

It is important to have an understanding of the gender differences found on the 8 scales. A number of minor gender effects were discovered when comparing the mean scores of males and females. While most of the differences are quite small in magnitude, some are statistically significant. In general, females tended to receive higher scores on Theoretical-Abstract. Males tended to receive higher scores on Factual-Practical. Since the differences between the scales were minimal they should not influence test interpretation.

Table 8 – Mean Scores on LSI Scales for Females and Males

	Female (n=996)		Male (n=467)	
	Mean	SD	Mean	SD
Environmentally-Open	14.01	5.14	14.58	5.23
Environmentally Reflective	19.18	5.73	19.28	5.25
Factual-Practical	22.56	5.40	21.06	5.37
Theoretical-Abstract	21.33	5.76	22.15	5.52
Analytical-Logical	20.71	5.66	20.98	5.23
Personally-Valued	16.43	5.20	16.38	5.18
Planful-Organized	18.70	6.04	18.15	6.06
Open-Ended	18.21	5.58	18.15	6.06

Reliability

Reliability is concerned with the consistency of test scores, and how free test results are from external, confounding influences. The higher the reliability of a test, the more likely it is consistently measuring differences between people. More reliable tests provide results that remain unaffected by irrelevant variations, or what is commonly called random errors. Reliability is measured using correlation coefficients. A reliability coefficient is denoted by the letter “r”, and is expressed as a number ranging between 0 and 1.00 with r=0 indicating no reliability, and r=1.00 indicating perfect reliability. Table 9 shows the KR-20s for the 8 LSI scales as well as for the combined scales. All scales show acceptable levels of reliability.

Table 9 – Internal Consistency of LSI Scales

Scale	KR-20	Combined Scale
Environmentally-Open	0.82	0.80
Environmentally Reflective	0.70	
Factual-Practical	0.71	0.79
Theoretical-Abstract	0.77	
Analytical-Logical	0.70	0.70
Personally-Valued	0.73	
Planful-Organized	0.81	0.80
Open-Ended	0.71	

Sten Scores

A person’s results on the LSI are reported in a standard score format known as Sten Scores. Scores were created by combining the scores for each scale on each dimension:

- **Energizing Environments** combines the scores for Environmentally Interactive and Environmentally Reflective
- **Gathering and Using Information** combines the scores for Factual Practical and Abstract Theoretical
- **Making Decisions** combines the scores for Analytical Logical and Personally Valued
- **Organizing and Time Management** combines the scores for Organized Planful and Open-ended Spontaneous

The combined raw scores were converted into standard scores. Standard scores help with the interpretation test results by allowing the comparison of an individual’s results with the norm group. There are many different types of standard scores. Sten scores are one of the most popular types of standard scores when reporting personality assessment results. Sten scores range from 1 to 10, have a Mean of 5.5, and a Standard Deviation of 2. This means, that an individual with a Sten score of 5.5 falls exactly on the average score of the norm population.

Correlations

The correlations in Table 10 show the relationships between the 8 LSI scales. Reviewing the table shows there are significant relationships among the scales.

Table 10 Inter-correlations of LSI Scales

	Environmentally Open	Environmentally Reflective	Factual Practical	Theoretical Abstract	Analytical Logical	Personally Valued	Planful Organized	Open Ended
Environmentally-Open	1.00	-0.31	0.15	0.13	0.19	0.17	0.23	0.08
Environmentally Reflective		1.00	0.16	0.12	0.14	0.33	0.15	0.29
Factual-Practical			1.00	0.35	0.55	-0.04	0.59	-0.14
Theoretical-Abstract				1.00	0.70	0.02	0.38	0.01
Analytical-Logical					1.00	-0.04	0.62	-0.17
Personally-Valued						1.00	-0.05	0.55
Planful-Organized							1.00	-0.34
Open-Ended								1.00

Correlations with Other Personality Assessments

To demonstrate convergent and divergent validity of the LSI dichotomies, the LSI combined scales were correlated with scales of several other assessments, namely the Work Personality Index, the MBTI Form Q, the Career Values Scale and the Career Interest Profiler. Descriptions of the relationships between the LSI assessment and the other assessments follow.

The Work Personality Index® (WPI)

The Work Personality Index (Macnab and Bakker, 2001) contains 17 primary scales that are categorized into 5 global constructs. The 5 global constructs are labeled Energy and Drive, Work Style, working with Others, Problem Solving Style and Dealing with Pressure and

Stress. These groups closely mirror the global traits identified in the Five-Factor Model of Personality. The 5 constructs and the primary scale components are described below. Table 11 shows the correlations between the assessments.

Energy and Drive

Energy and Drive involves working hard and wanting to get ahead, persisting in the face of obstacles, and striving for career success. This construct has been an important component of personality theory for many years. In the Five-Factor Model, Energy and Drive falls under the Conscientiousness factor. However, the WPI separates the achievement striving from the dependable and disciplined behaviours that are grouped in the Conscientiousness factor of the Five-Factor Model. This construct is commonly called Achievement Striving, Assertiveness, and Ambition. The Energy and Drive composite contains

the following primary scales: Ambition, Initiative, Flexibility, Energy and Leadership. High scores on Energy and Drive are particularly related to the Making Decisions composite; particularly individuals with tendencies towards Analytical Logical having higher scores on Ambition, Initiative and Energy. Preferences for Organized-Planful also show higher scores for Ambition, Energy and Initiative. High scores on Energy are shown for Environmentally Interactive individuals.

Work Style

Work Style involves being planful, careful, dependable and disciplined. Research has shown that Work Style is consistently related to work performance in a wide variety of occupations. The four primary scales that reflect the Work Style composite are: Persistence, Attention to Detail, Rule-Following, and Dependability. High scores on Persistence, Attention to Detail, Rule Following and Dependability are related to Organized Planful and Analytical Logical.

Working with Others

Working with Others is represented by sensitivity to the needs of others, a willingness to work cooperatively rather than independently, and a preference for working with others and establishing personal relationships. This composite closely resembles the Extraversion factor of the Five-Factor Model. The elements of Working with Others are found in the following primary scales: Teamwork, Concern for Others, Outgoing, and Democratic. High scores on Teamwork and Outgoing are related to Environmentally Interactive.

Problem Solving Style

Problem Solving Style involves characteristics such as insight, imagination, originality, being open to new ideas, and maintaining a thoughtful approach to work. This construct is commonly found in many personality taxonomies and has been labeled Openness to Experience, Openness, Culture, Intellect, and Intellectance. The Problem Solving Style composite found in the WPI is composed of two primary scales; Innovation and Analytical Thinking. High scores on Analytic Thinking and Innovation are related to Abstract Theoretical. High scores on Innovation and Analytical Thinking are related to Analytical-Logical. High scores on Analytical Thinking are related to Organized Planful.

Dealing with Pressure and Stress

The Dealing with Pressure and Stress composite found in the WPI closely resembles the Neuroticism composite found in the Five-Factor Model. Representing the tendency to remain calm, composed and free from worry in stressful situations, other common labels for this construct include Emotional Stability, Negative Emotionality, and Worrying. The two primary scales that reflect the key aspects of Dealing with Pressure and Stress are Self-Control and Stress Tolerance. High scores on both scales are related to Analytical Logical and Organized-Planful. High scores on Stress Tolerance are related to Environmentally Interactive.

Relationships between LSI Combined Scales and MBTI® Form Facet Scores

The relationship between the MBTI assessment and the LSI assessment was examined using a sample of 151 individuals who completed both assessments. The correlations between the LSI dichotomies and the MBTI scales are shown in Table 12. The first stage of the analysis examined the correlations between the 4 combined LSI scales and MBTI preference scores. The relationships between the 4 combined LSI scales and the MBTI are as expected with the highest correlations being with the equivalent dimensions.

The Form Q facet scales are organized by the four major dichotomies of personality type theory. Table 13 shows the correlations between the 20 MBTI Form Q facet scores and the 4 combined LSI scores. Correlations are as expected. For example, all Extraverted facets correlate most highly with the Energizing Environments composite. The one exception is the Questioning-Accommodating scale which correlates low with Gathering Information.

Learning Styles Index and the Career Values Scale

The Career Values Scale is an assessment of career values that identify the importance of the following variables in a person's life and work:

- Service Orientation - providing direct service and benefit to others
- Team Orientation - team work, good co-worker relations
- Influence - influencing people and events
- Creativity - creativity and originality
- Independence - being free from the influence of others
- Excitement - variety, risk and fast-paced work
- Career Development - personal and professional development
- Financial Rewards - high salary and financial security
- Security - security, stability and predictability

The relationship between the CVS assessment and the LSI assessment was examined using a sample of 791 individuals who completed both assessments. The

correlations between the LSI dichotomies and the CVS scales are shown in Table 14. Those with a preference for Environmentally-Open score higher on Teamwork, Service and Excitement. Those with a preference for Theoretical Abstract score higher on Creativity. Those with a preference for Factual-Practical score higher on Security. Those with a preference for Personally Valued score higher on Development and Creativity. Those with a preference for Open-Ended scored higher on Service Orientation.

Learning Styles Index and the Career Interest Profiler

Table 15 shows the correlations between the LSI and Career Interest Profiler. The *Career Interest Profiler* is a measure of occupational interests that uses John Holland's theory of vocational personality. This theory, which has become one of the most widely accepted approaches for helping people make occupation choices, is based on six vocational personality types. Holland believed that people could be described by one of the six types:

- Realistic - These people like active jobs that produce tangible results, and enjoy fixing, building, and repairing things.
- Investigative - These people enjoy work that involves gathering information, developing theories, and analyzing data.
- Artistic - These people have a great need for self-expression, and enjoy creative work.
- Social - These individuals like to work with people. They enjoy team work and tend to be nurturing and caring.
- Enterprising - These people like selling, managing, and persuading others, and pursue organizational goals and economic success.
- Conventional - These people like activities that require attention to detail, organization and accuracy.

The relationship between the CIP assessment and the LSI assessment was examined using a sample of 461 individuals who completed both assessments. The correlations between the LSI dichotomies and the CIP scales are shown in Table 15. In general correlations are low.

Table 11 WPI and LSI Correlations (n=983)

MBTI Preference Scores	Environments	Decisions	Information	Organization
<i>Energy and Drive</i>	0.14	-0.05	0.34	0.23
Ambition	0.03	-0.03	0.39	0.32
Initiative	0.10	-0.08	0.34	0.21
Energy	0.16	0.04	0.30	0.25
Leadership	0.13	0.00	0.17	0.12
Flexibility	0.13	-0.18	0.16	0.01
<i>Work Style</i>	0.00	0.18	0.38	0.45
Persistence	0.07	0.05	0.40	0.37
Attention to Detail	-0.06	0.21	0.36	0.45
Rule-Following	-0.01	0.22	0.18	0.27
Dependability	0.03	0.11	0.37	0.41
<i>Working with Others</i>	0.32	0.13	0.01	0.10
Teamwork	0.33	0.09	0.07	0.15
Concern for Others	0.08	0.03	0.01	0.02
Outgoing	0.37	0.11	0.06	0.11
Democratic	0.07	0.15	-0.13	0.04
<i>Pressure and Stress</i>	0.16	-0.14	0.33	0.19
Self-Control	0.11	-0.12	0.29	0.16
Stress Tolerance	0.18	-0.13	0.33	0.17
<i>Problem Solving Style</i>	0.00	-0.29	0.33	0.11
Analytical Thinking	-0.06	-0.23	0.38	0.20
Innovation	0.07	-0.24	0.16	0.00

Table 12 Correlations MBTI Preferences and LSI combined scales (n=151)

MBTI Preference Scores	Environments	Decisions	Information	Organization
Extraversion-Introversion	0.54	-0.09	0.03	-0.14
Sensing-Judging	-0.09	0.52	0.11	0.37
Thinking-Feeling	-0.05	0.02	0.35	0.21
Judging-Perceiving	-0.10	0.34	0.26	0.58

Table 13 Correlations MBTI Form Q and LSI combined scales (n=151)

MBTI Form Q Facets	Environments	Decisions	Information	Organization
Initiating-Receiving	0.48	-0.17	0.02	-0.21
Expressive-Contained	0.37	-0.10	-0.05	-0.24
Gregarious-Intimate	0.39	-0.02	-0.01	-0.12
Active-Reflective	0.47	-0.08	-0.04	-0.22
Enthusiastic-Quiet	0.35	-0.01	-0.01	-0.10
Concrete-Abstract	-0.09	0.46	0.08	0.30
Realistic-Imaginative	0.00	0.33	0.12	0.29
Practical-Conceptual	-0.01	0.43	-0.11	0.14
Experiential-Theoretical	-0.15	0.50	0.11	0.35
Traditional-Original	-0.15	0.51	-0.10	0.30
Logical-Empathetic	0.02	-0.03	0.36	0.30
Reasonable-Compassionate	0.06	0.00	0.29	0.22
Questioning-Accommodating	0.22	-0.25	0.05	-0.11
Critical-Accepting	-0.02	0.07	0.23	0.09
Tough-Tender	0.05	-0.02	0.29	0.21
Systematic-Casual	-0.02	0.28	0.19	0.44
Planful-Open-Ended	-0.06	0.28	0.18	0.51
Early Starting-Pressure-Prompted	-0.16	0.27	0.20	0.64
Scheduled-Spontaneous	-0.08	0.33	0.21	0.51
Methodical-Emergent	-0.13	0.23	0.27	0.50

Table 14 – Correlations of LSI Scales and Career Values Scale (n = 791)

CVS Scales	Environments	Decisions	Information	Organization
Career	-0.03	-0.11	0.25	0.10
Creativity	0.05	-0.25	0.13	0.02
Excitement	0.13	-0.10	0.04	0.02
Financial	-0.01	0.08	0.02	0.10
Independence	-0.16	-0.13	0.00	-0.04
Influence	-0.01	-0.01	0.00	0.03
Prestige	0.05	0.04	-0.02	0.11
Security	-0.06	0.25	-0.08	0.09
Service	0.14	0.10	0.09	0.14
Team	0.25	0.08	-0.03	0.06

Table 15 – Correlations of LSI Scales and Career Interest Profiler (n = 461)

CIP Scales	Environments	Decisions	Information	Organization
Artistic	0.10	-0.14	0.06	0.00
Conventional	0.08	0.10	0.13	0.17
Enterprising	0.16	-0.04	0.10	0.10
Investigative	0.00	-0.06	0.17	0.03
Realistic	0.07	-0.09	0.04	0.03
Social	0.18	0.02	0.02	0.04

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LEARNING STYLES INDEX

■ R E P O R T

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Understanding Your Learning Style

The Learning Styles Index summarizes how you learn. By becoming aware of how you now learn, you can become a more effective learner. The inventory sorts your responses into four pairs of preferences, summarizing the learning environment that energizes you, how you gather and use information, your approach to receiving feedback and making decisions, and how you organize and manage your time.

Most individuals develop a preference for some of these styles and avoid using others in their learning. To engage in effective learning, you must become aware of the strengths and weaknesses, and when it may be more effective to use an alternative style to reach your objectives. This report will help you describe your preferred learning style. Using your preferred style will usually help you achieve the best results. However, it is appropriate to expose yourself to different methods and to develop your non-preferred styles.

Your learning style preferences will interact. For example, if interactive environments energize you, and you prefer to gather and use abstract-theoretical information, you will likely enjoy discussions that provide opportunities to brainstorm about ideas and theories.

It is important to remember that the Learning Styles Index only measures your preferences for each learning style. It is not a measure of your ability to learn.

Learning Styles Index Profile



Environments that Energize

This section of the report considers how, when, and with whom you prefer to carry out your learning activities. Your preferred style is **Environmentally-Reflective**. Learners who prefer Reflective environments find it helpful to explore in-depth and reflect when learning. The chart below highlights your preferences and will help you better understand your learning style as well as appreciate how your style might differ from that of others.

Environmentally-Interactive	Environmentally Reflective
<ul style="list-style-type: none"> ● Discussing facts or ideas with others ● Building understanding about something by talking ● Thinking out loud ● Changing tasks frequently ● Working on more than one thing at a time ● Asking or answering questions ● Acting immediately on what is being learned ● Carrying out group work ● Having a learning partner, coach or mentor ● Researching by contacting people ● Focusing on breadth over depth of information ● Learning by trying things out and making mistakes 	<ul style="list-style-type: none"> ● Getting information as far ahead of time as possible ● Listening carefully ● Building understanding by thinking about information ● Taking time to reflect on information before responding ● Working on one thing at a time ● Focusing on depth over breadth of information ● Researching information by reading, listening and observing ● Uninterrupted, quiet study time ● Working on individual projects ● Interacting in one-to-one or small group situations ● Concentrating for extended periods of time ● Listening and observing before acting or interacting
<h3>Tips and strategies for your Reflective Style</h3>	
<ul style="list-style-type: none"> ● Find a quiet study spot. You will assimilate information best if you can work on one topic for an extended period of uninterrupted time. Find opportunities to work by yourself. Learn by listening, observing, reading and then reflecting. ● If you have the possibility to choose, consider a lecture style where you can listen and assimilate information or learning settings that provide opportunities for one-to-one or small group interactions. ● Discussions may sometimes help you deepen your understanding of information, but this style of learning will not be as helpful unless you have had a chance to think about the information before the discussion. ● When possible, learn about a topic in depth. If the course does not provide enough detail you may want to find alternative sources of information. However, there will be times when going too deep into one topic will create a situation where you don't have enough time or energy to study other topics or courses. In these cases you need to balance your desire to understand something in depth with the practical demands of the situation. ● Take time alone to clarify and consolidate what has been learned. Avoid moving forward and learning new information until previous information is completely understood. This may require talking to your instructor or another subject area expert. If you find it difficult to formulate questions on the spot, write down what you need to know and then arrange a time to ask your questions. ● Group projects and highly interactive classes can be a challenge. Prepare for these by studying ahead of time and by being prepared to discuss the topic. Write down and rehearse key points. Be aware of your preference to think before speaking and use fillers such as "Let me think about that for a moment". This will cue others to the fact that you are interested in and thinking about the topic, since others can mistakenly interpret your pause as a lack of interest or expertise. 	

Gathering and Using Information

This section of the report considers how you prefer to take in information when studying or learning. Your preferred style is **Factual-Practical**. Learners who prefer gathering and using factual-practical information find it helpful to learn relevant data and details. The chart below highlights your preferences and will help you better understand your learning style as well as appreciate how your style might differ from that of others.

Factual-Practical	Abstract-Theoretical
<ul style="list-style-type: none"> ● Engaging in hands-on activities ● Relating information to realities and past experiences ● Finding practical applications for learning ● Organizing information sequentially ● Understanding processes using a step-by-step approach ● Setting short-term practical learning goals ● Building on existing knowledge ● Finding concrete examples and illustrations ● Using senses when learning; seeing, hearing and touching materials ● Dealing with real data and facts rather than abstract concepts or ideas ● Memorizing known facts and relevant details ● Taking information at face value rather than seeking abstract interpretations 	<ul style="list-style-type: none"> ● Grasping new ideas and possibilities ● Generalizing and summarizing information ● Learning about theories and models ● Organizing information conceptually ● Setting broad long-term learning goals ● Focusing on abstract ideas rather than real data and facts ● Seeing trends and patterns in facts and data ● Integrating information from a variety of sources ● Looking for a general overview before understanding specifics ● Moving between ideas and thoughts in a non-sequential manner ● Enjoying metaphors, analogies and other symbolic representations of ideas ● Originating and innovating new ways to think about topics
<h2>Tips and strategies for your Factual-Practical Style</h2>	
<ul style="list-style-type: none"> ● Link what you are learning to practical applications. Find out how, when and where you will use what is being learned. Seek relevant concrete examples of what you are learning and arrange to do "real world" projects. ● Engage your senses when learning. This might include working with hands-on materials, applying a process in your work or home, using color coding or highlighting, watching, using or creating visual materials, hearing information and other ways of interacting with learning materials. ● Take a realistic focus and set short-term practical goals. Continue to build on what you already know by relating new information to your knowledge, competencies, experiences and skills. This link to what you know to be true and verifiable will make the learning more relevant and real. ● Focus on facts and details. Memorization is often a good strategy for learning these. Organize the facts and details sequentially. If you depend too much on memorization as a learning strategy, you may become overwhelmed. In situations where there are simply too many details or when instructors are expecting general answers, look for themes and patterns so you can integrate details. ● When studying, consciously look for themes and make comparisons. For example, if you are learning two theories, compare and contrast them. This will give you a starting point for answering questions requiring you to demonstrate integration of information. ● Theoretical and abstract information will be of less interest than practical information. You will need to find ways to ground theory to realities by finding practical applications or concrete illustrations. Use your experience and background knowledge as a starting point to link the theory to specific examples. This will make the theory more real and useful. ● In some situations you will be required to make symbolic, abstract interpretations of information or interpret various metaphors and analogies. Practice using metaphors and read others' interpretations of symbols to build this ability. 	

Making Decisions

This part of your report examines how you prefer to evaluate information and make decisions. Your preferred style is **Personally-Valued**. Learners who evaluate information and make decisions using a personally-valued approach will demonstrate a subjective and situational learning style. The chart below highlights your preferences and will help you better understand your learning style as well as appreciate how your style might differ from that of others.

Analytical-Logical	Personally-Valued
<ul style="list-style-type: none"> ● Working with highly competent cohorts and teachers ● Spotting flaws and inaccuracies in materials and ideas ● Examining and evaluating data and/or data trends ● Looking for cause and effect relationships ● Finding logical reasons for learning ● Debating and critiquing what is learned ● Appraising the source and credibility of information given ● Considering logical consequences and implications ● Asking questions; especially "why" ● Judging information rather than simply accepting it ● Placing information into a logical framework to increase understanding ● Receiving clear, objective, corrective feedback 	<ul style="list-style-type: none"> ● Linking to others within learning situations ● Identifying personal reasons for learning the material ● Hearing and reading about personal stories and examples ● Ensuring the learning will benefit or meet the needs of others ● Receiving and giving positive supportive feedback ● Developing rapport, nurturing and coaching other learners ● Being treated with respect and consideration ● Using unique talents, characteristics or abilities ● Relating what is being learned to personal situations and needs ● Accepting and affirming other viewpoints and perspectives ● Building a positive relationship with instructors ● Allowing personal likes and dislikes to influence the learning process
<h3>Tips and strategies for your Personally-Valued Style</h3>	
<ul style="list-style-type: none"> ● When choosing courses and instructors, look for a link to your personal interests and values. Connect learning to what is important to you personally and to the values you hold. Find instructors who respect you as an individual. ● Connect with someone who can provide support and encouragement while you are learning. This person can be inside or outside of the learning setting. Focus on rewarding yourself when you have accomplished a goal or met a learning challenge. ● Interact with other people who are collaborative rather than competitive in their approach to learning. Even if you are in a highly competitive learning setting, focus on meeting your own learning objectives rather than comparing yourself to others. ● When choosing learning activities, focus on those that will be most influential in helping you to learn and develop. ● Challenge yourself gently and give yourself positive feedback for trying and learning new things. Find ongoing ways to reinforce and reward your learning efforts. ● Identify how the material you are learning could have a positive affect on people. Find case studies and examples or research the personal stories behind the people involved in creating or researching the subject material. Seek to understand their passions and motivators. ● You will seek personal and positive feedback during your learning. Recognize that others may have a style of giving feedback that is objective and corrective. Try not to take this type of feedback personally, rather look at it as an opportunity to learn and grow. ● If you do not like or respect an instructor or the material, you may dislike a course. Although this is a natural link for you, it will not be helpful to be affected personally by other people or subject material. Strive to remain objective. Even if you disagree with a person or the material, be open to completing the learning to the best of your ability. If the discord is too much, perhaps find an alternative instructor or course. 	

Organization and Time Management

This part of your report examines how you prefer to structure and organize your learning environment. our preferred style is **Open-Ended**. Learners using an open-ended approach will prefer flexibility and less structured learning activities. The chart below highlights your preferences and will help you better understand your learning style as well as appreciate how your style might differ from that of others.

Organized-Planful	Open-Ended
<ul style="list-style-type: none"> • Making and following plans and schedules • Taking charge, coordinating actions and achieving results • Organizing and structuring both learning materials and course content • Defining manageable, achievable results • Seeking clear learning objectives and timelines • Clarifying and defining assignments and instructor expectations • Completing one task before starting on another • Using study time efficiently • Defining the scope and time required for studying a specific topic • Starting early on projects and completing work before deadlines when possible • Seeking order and being methodical • Deciding and moving forward in the pursuit of getting things done 	<ul style="list-style-type: none"> • Exploring ideas and generating options and possibilities • Being curious and interested in gathering more information • Finding information from a variety of sources • Taking in additional new information without needing to come to closure • Planning as little as possible so as not to miss spontaneous opportunities • Using a last minute burst of energy to get things done "just in time" • Adapting easily to changing learning situations • Having variety and flexibility in activities and deadlines • Engaging in non-routine and novel learning activities • Modifying and changing projects as they evolve • Enjoying the moment and deferring less interesting tasks • Looking for fun and wanting to be playful and casual in a learning situation
<h3>Tips and strategies for your Open-Ended Style</h3>	
<ul style="list-style-type: none"> • Variety and flexibility will be comfortable for you. Do a variety of activities and, when possible, keep your options open when choosing projects. Multiple sources of information and a variety of perspectives will be more interesting than a single one. Work on what is most interesting whenever possible (without avoiding tasks you will never have any interest for). • Avoid situations where you will be forced to follow a highly rigid or routine schedule. Keep your options open and be spontaneous in your approach. At the same time, ensure you are aware of and prepared for specific course requirements and deadlines. • Look for opportunities to explore new information or ideas. You will enjoy seeking new information, but be careful not to divert too far from what you need to study. Tangential pieces of information can distract you from studying the required material. • You will likely find yourself most energized to complete projects just before they are due. Allow yourself time to accommodate this style. At the same time be careful not to start too late so that your performance is negatively affected. • Watch out for possible conflicts in deadlines and surges in workload. Adjust your work accordingly rather than becoming overwhelmed by multiple deadlines. • Make your study time as playful as possible. Be spontaneous, active, practical as well as insightful in coming up with unique and effective ways to study a topic. 	