

Conley Readiness Index – Summer 2016

Author: Joseph F. van Gaalen, Ph.D., Director, Academic Assessment

Florida SouthWestern State College's Quality Enhancement Plan goal is to permit first-time-in-college students to become independent learners proficient in critical thinking. Through course completion, students will be able to demonstrate their analytical and evaluation skills. The Conley Readiness Index (CRI) provides information on the attitudes and nature of students, areas of strengths and weaknesses that can be used for targeting learning strategies. The CRI also allows for the ability to track changes in student perceptions of ideas and thinking approaches over the term of the course¹. The results of the CRI are expected to statistically significantly improve over the progression of the SLS 1515 Cornerstone Experience course.

The index evaluates three key areas to college and critical thinking. One of the three, 'Key Cognitive Strategies', focuses on specific critical thinking aptitudes including 'Construct' (creating academic works), 'Organize' (idea organization), 'Analyze' (examination of information), 'Evaluate' (grouping of information), 'Confirm' (reviewing of work), 'Monitor' (accuracy and quality of work), 'Hypothesize' (solution creation), 'Strategize' (consideration of alternative solution creation), 'Collect' (information gathering), and 'Identify' (searching of information and resources) (Conley 2014). The remaining two areas focus on content knowledge (e.g. skillsets, technology knowledge) and learning strategies (e.g. note-taking, test-taking). A complete review of the aptitudes included in the CRI are shown below¹:

❖ Key Cognitive Strategies

- Communication: The ability to organize your work, support positions, and construct the work product.
 - Construct - to create work products (projects, papers, or presentations) that are supported by evidence, well organized, and developed through several drafts and revisions using feedback from others.
 - Organize - to arrange your ideas and information before creating a project, paper, or presentation.
 - Make or use outlines or pro and con lists to help organize thoughts and how to approach a task
- Interpretation – The ability to analyze competing and conflicting descriptions of an event or issue.
 - Analyze - to examine information by thinking about the facts it is based on.
 - Evaluate - to group information into useful pieces, connect ideas and evidence, make conclusions, and reflect on the quality of the conclusions.
- Precision/Accuracy - The ability to know what type of precision (level of detail) is appropriate to a task or subject area and increase accuracy (truthfulness) through successive tasks.
 - Confirm - to do a final check of all your work before turning it in.
 - Monitor - to pay attention to the accuracy and quality of all your work.
- Problem Formulation – The ability to develop and apply multiple strategies to formulate routine and non routine problems.
 - Hypothesize - to pose possible solutions to a problem that you can then research.

- Strategize - to consider different ways to solve a problem.
 - Research - The ability to identify appropriate resources to help answer a question or solve a problem.
 - Collect - to gather information from many sources.
 - Identify - to find information and resources needed to solve a problem.
- ❖ Key Content Knowledge
 - Attribution - knowing that hard work determines how well you do, not whether you are “good” or “bad” at something.
 - Value - seeing the value in coursework and understanding that what you learn in class will be useful later in life.
 - Challenge Level - how you rise to meet a difficult task and do not choose the easiest option.
 - Experience with Technology - using technology to create documents, analyze or summarize data in spreadsheets, give presentations, or communicate electronically.
 - Structure of Knowledge - understanding the “big ideas” of what you’re learning, and how what you’re learning now fits into your overall education.
 - Student Effort - being motivated to work hard and knowing that hard work produces satisfying results.
- ❖ Learning Skills
 - Collaborative Learning Strategies - working well in groups by listening to the ideas of others and staying on task.
 - General Study Strategies - different kinds of learning strategies that change based on what is being studied.
 - Information Retention Strategies - for remembering important information.
 - Note Taking Strategies - using different methods to take notes, reviewing notes before class, and using notes to prepare for tests and complete assignments.
 - Strategic Reading Strategies - changing the way you read depending on what you are reading.
 - Test Taking Strategies - using a variety of strategies to do well on a test.
 - Time Management Strategies - the process of estimating how much time it takes to finish work and then planning enough time to do so.
 - Goal Setting Strategies - setting reasonable goals for school, work, and personal life.
 - Persistence Strategies - not giving up on difficult tasks, assignments, or projects.
 - Self-Awareness Strategies - reflecting on your personal strengths and weaknesses.

Results of both pre-test and post-test are shown in Figure 1. From pre-test to post-test, all 26 aptitudes exhibit improvement ranging from 5.5% at the lowest (Key Cognitive Strategies: Precision/Accuracy – Confirm) to 23.6% at the highest (Key Cognitive Strategies: Interpretation – Analyze). Twenty of 26 aptitudes exhibit improvement greater than 10% (see Table 1).

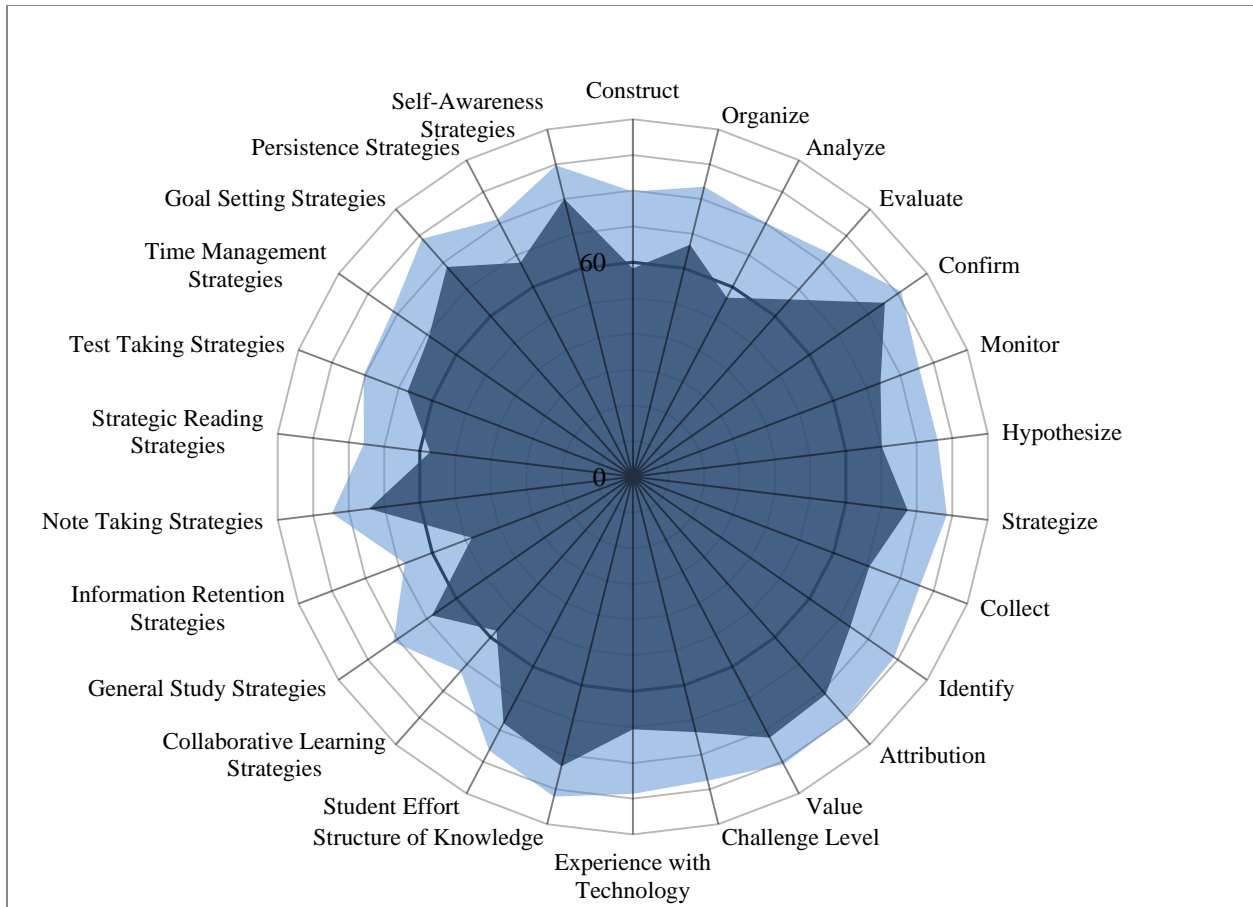


Figure 1. Percentage of respondents answering 'A lot like me' or 'Very much like me' for pre-test (black) and post-test (light blue). *60% line is delineated in figure to serve as a reference point of change from pre-test to post-test.

In a χ^2 test for independence, 26 of 26 results exhibiting improvement are statistically significant. Table 1 depicts results of χ^2 tests for each aptitude. The 'Key Cognitive Strategies' aptitudes of 'Construct', 'Organize', 'Analyze', 'Evaluate', 'Confirm', 'Monitor', 'Hypothesize', 'Strategize', 'Collect', and 'Identify' all exhibit statistically significant improvement. Additionally, the 'Key Content Knowledge' aptitudes of 'Attribution', 'Value', 'Challenge Level', 'Experience with Technology', 'Structure of Knowledge', and 'Student Effort' exhibit statistically significant improvement. And finally, from the 'Learning Skills' aptitudes, 'Collaborative Learning Strategies', 'Information Retention Strategies', and 'Strategic Reading Strategies', 'General Study Strategies', 'Information Retention Strategies', 'Note taking strategies', 'Strategic Reading Strategies', 'Test taking strategies', 'Time management strategies', 'Goal setting strategies', 'Persistence Strategies', and 'Self-Awareness Strategies' exhibit statistically significant improvement.

Aptitude	% Responding “A lot like me” or “Very much like me”		Δ	X^2 p-value
	Pre-test	Post-test		
Construct	58.3%	79.8%	21.5%	7.03×10^{-10}
Organize	66.8%	83.6%	16.7%	2.95×10^{-7}
Analyze	56.6%	80.1%	23.6%	1.75×10^{-11}
Evaluate	66.2%	83.4%	17.1%	1.75×10^{-7}
Confirm	85.6%	91.2%	5.5%	0.022
Monitor	74.1%	85.6%	11.6%	1.33×10^{-4}
Hypothesize	70.1%	85.9%	15.8%	4.98×10^{-7}
Strategize	77.4%	88.5%	11.1%	1.03×10^{-4}
Collect	70.7%	85.9%	15.2%	1.12×10^{-6}
Identify	73.9%	88.8%	15.0%	4.10×10^{-7}
Attribution	81.3%	89.8%	8.5%	0.001
Value	82.4%	90.8%	8.4%	0.001
Challenge Level	73.5%	87.5%	14.0%	3.12×10^{-6}
Experience with Technology	70.6%	88.6%	18.0%	3.83×10^{-9}
Structure of Knowledge	83.4%	92.1%	8.8%	4.36×10^{-4}
Student Effort	77.8%	86.4%	8.7%	0.003
Collaborative Learning Strategies	57.5%	72.6%	15.1%	2.39×10^{-5}
General Study Strategies	68.2%	81.4%	13.1%	5.94×10^{-5}
Information Retention Strategies	48.1%	68.2%	20.1%	5.51×10^{-8}
Note Taking Strategies	74.3%	84.7%	10.5%	5.90×10^{-4}
Strategic Reading Strategies	57.1%	75.8%	18.6%	1.46×10^{-7}
Test Taking Strategies	67.4%	80.5%	13.1%	7.19×10^{-5}
Time Management Strategies	69.2%	81.6%	12.4%	1.38×10^{-4}
Goal Setting Strategies	78.4%	88.9%	10.5%	1.65×10^{-4}
Persistence Strategies	67.6%	81.3%	13.7%	3.02×10^{-5}
Self-Awareness Strategies	80.1%	89.7%	9.7%	3.64×10^{-4}

Table 1. Percentage of respondents answering 'A lot like me' or 'Very much like me' for pre-test and post-test. Grayed cells indicate statistically significant results.

¹ Conley, David. T. 2014. Preliminary Report of Results from the Conley Readiness Index [Powerpoint Slides]. Presented at Southern Illinois University.