

Conley Readiness Index – Fall 2016

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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 increases in positive responses (“A lot like me” or “Very much like me”) ranging from 1.4% at the lowest (Learning Skills: Note taking) to 23.6% at the highest (Key Cognitive Strategies: Communication – Construct). Thirteen of 26 aptitudes exhibit improvement greater than 10% (see Table 1).

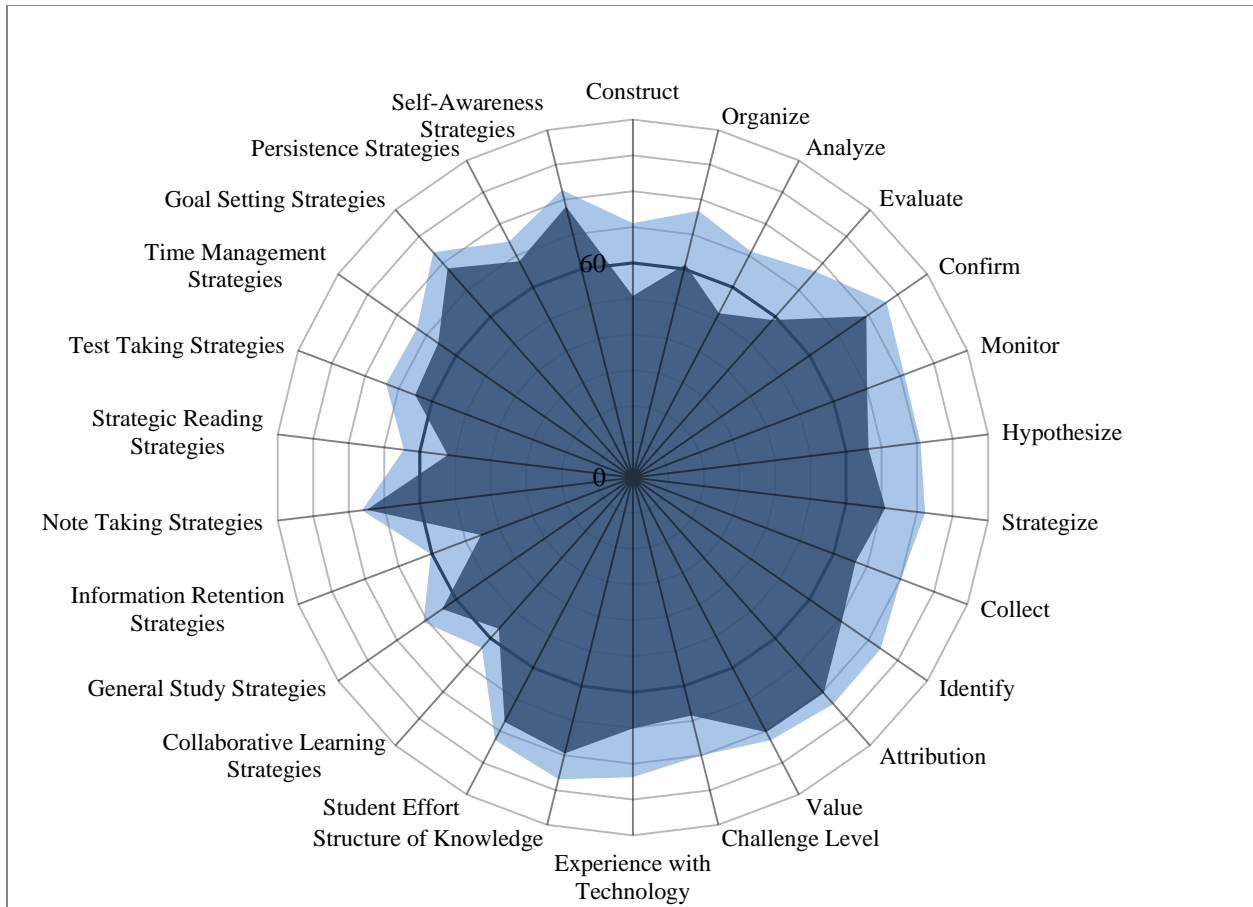


Figure 1. Percentage of respondents answering 'A lot like me' or 'Very much like me' for pre-test (black) and post-test (light blue). *60% line is delineated in figure to serve as a reference point of change from pre-test to post-test.

In a χ^2 test for independence, 24 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', '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', 'General Study Strategies', 'Information Retention 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	50.7%	71.1%	20.3%	6.10x10 ⁻²²	
Organize	61.4%	76.8%	15.4%	2.46x10 ⁻¹⁴	
Analyze	51.8%	71.3%	19.4%	2.68 x10 ⁻²⁰	
Evaluate	58.8%	76.9%	18.1%	6.36x10 ⁻¹⁹	
Confirm	79.3%	86.2%	6.8%	3.66x10 ⁻⁵	
Monitor	70.0%	81.1%	11.1%	3.58x10 ⁻⁹	
Hypothesize	66.4%	81.0%	14.7%	3.94x10 ⁻¹⁴	
Strategize	71.1%	82.3%	11.2%	1.79x10 ⁻⁹	
Collect	66.6%	80.1%	13.6%	2.76x10 ⁻¹²	
Identify	71.0%	84.2%	13.3%	7.20x10 ⁻¹³	
Attribution	80.5%	84.5%	4.1%	0.013	
Value	80.4%	82.9%	2.6%	0.125	
Challenge Level	68.5%	80.0%	11.4%	2.32x10 ⁻⁹	
Experience with Technology	70.1%	83.8%	13.6%	2.57 x10 ⁻¹³	
Structure of Knowledge	79.4%	86.9%	7.4%	6.48x10 ⁻⁶	
Student Effort	77.1%	82.9%	5.7%	9.64x10 ⁻⁴	
Collaborative Learning Strategies	56.5%	63.6%	7.2%	6.38x10 ⁻⁴	
General Study Strategies	64.7%	71.1%	6.4%	0.001	
Information Retention Strategies	45.3%	60.4%	15.0%	1.67 x10 ⁻¹²	
Note Taking Strategies	74.9%	76.2%	1.4%	0.456	
Strategic Reading Strategies	52.1%	64.5%	12.3%	5.31x10 ⁻⁹	
Test Taking Strategies	65.1%	73.8%	8.7%	1.27x10 ⁻⁵	
Time Management Strategies	66.1%	73.3%	7.2%	2.71x10 ⁻⁴	
Goal Setting Strategies	78.1%	84.1%	6.0%	4.24x10 ⁻⁴	
Persistence Strategies	68.2%	74.5%	6.2%	0.001	
Self-Awareness Strategies	78.0%	82.7%	4.8%	0.006	

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.

A comparison of results over time is shown in Table 2 and Figure 2. The ‘Key Cognitive Strategies’ aptitudes of ‘Construct’, ‘Organize’, ‘Analyze’, ‘Evaluate’ consistently exhibit the strongest increases in positive responses. The ‘Key Content Knowledge’ aptitude of ‘Value’ along with the ‘Learning Skills’ aptitude of ‘Note Taking Strategies’ consistently exhibits the weakest increases in positive response.

Aptitude	Spring 2016 Δ	Summer 2016 Δ	Fall 2016 Δ
Construct	17.7%	21.5%	20.3%
Organize	12.9%	16.7%	15.4%
Analyze	13.7%	23.6%	19.4%
Evaluate	13.6%	17.1%	18.1%
Confirm	4.6%	5.5%	6.8%
Monitor	7.1%	11.6%	11.1%
Hypothesize	14.0%	15.8%	14.7%
Strategize	8.4%	11.1%	11.2%
Collect	9.3%	15.2%	13.6%
Identify	12.2%	15.0%	13.3%
Attribution	3.3%	8.5%	4.1%
Value	2.8%	8.4%	2.6%
Challenge Level	8.5%	14.0%	11.4%
Experience with Technology	14.7%	18.0%	13.6%
Structure of Knowledge	6.9%	8.8%	7.4%
Student Effort	5.0%	8.7%	5.7%
Collaborative Learning Strategies	9.4%	15.1%	7.2%
General Study Strategies	5.7%	13.1%	6.4%
Information Retention Strategies	11.6%	20.1%	15.0%
Note Taking Strategies	0.3%	10.5%	1.4%
Strategic Reading Strategies	8.9%	18.6%	12.3%
Test Taking Strategies	7.1%	13.1%	8.7%
Time Management Strategies	3.1%	12.4%	7.2%
Goal Setting Strategies	4.3%	10.5%	6.0%
Persistence Strategies	5.3%	13.7%	6.2%
Self-Awareness Strategies	5.1%	9.7%	4.8%

Table 2. Increase in percentage of respondents answering 'A lot like me' or 'Very much like me' since spring 2016.

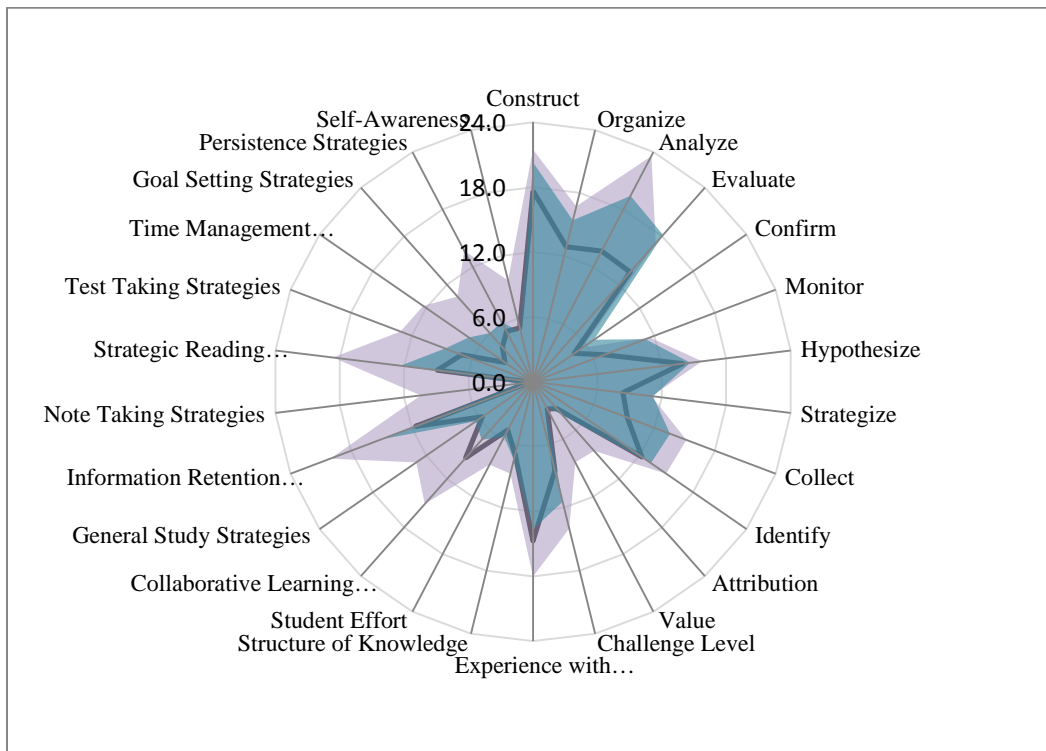


Figure 2. Increase in percentage of respondents answering 'A lot like me' or 'Very much like me' for spring 2016 (black line), summer 2016 (purple), and fall 2016 (teal).

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