



## Rappahannock Community College

### 2018-19 Report on Critical Thinking

#### What does Critical Thinking mean at RCC?

**Critical Thinking** is the ability to use information, ideas, and arguments from relevant perspectives to make sense of complex issues and solve problems.

RCC Degree graduates will locate, evaluate, interpret, and combine information to reach well-reasoned conclusions or solutions.

#### How are RCC degree graduates expected to use Critical Thinking skills?

*Student Learning Outcomes (SLOs)* are defined to guide the instruction of Critical Thinking skills.

RCC degree graduates will:

- a. discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data;
- b. recognize parallels, assumptions, or presuppositions in any given source of information;
- c. evaluate the strengths and relevance of arguments on a particular question or issue;
- d. weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
- e. determine whether certain conclusions or consequences are supported by the information provided;
- f. use problem-solving skills.

#### How are RCC students doing?

##### *RCC General Education Assessment*

In Spring 2019, a sample of 120 degree graduates took an *RCC General Education Assessment* that included five Critical Thinking items. All items were multiple choice and three of the items had high success rates of 81%, 89%, and 95%. A fourth item had a success rate of 74%, but the fifth item had only 19% of the students choose the correct answer. This item assessed SLO b: RCC degree graduates will recognize parallels, assumptions, or presuppositions in any given source of information. This item assessed **assumptions**.

The most successful item had ninety-five percent of the students choose the correct answer. The item assessed SLO b: RCC degree graduates will recognize parallels, assumptions, or presuppositions in any given source of information, assessing **presuppositions**. The item also assessed SLO c: RCC degree graduates will evaluate the strengths and relevance of arguments on a particular question or issue. The correct results of the assessment of the other SLOs were:

- SLO a and d: RCC degree graduates will discriminate among degrees of credibility, accuracy, and reliability of inferences drawn from given data and will weigh evidence and decide if generalizations or conclusions based on the given data are warranted . – 74%
- SLO e: RCC degree graduates will determine whether certain conclusions or consequences are supported by the information provided. -- 81%
- SLO f: RCC degree graduates will use problem-solving skills. – 89%

##### *Common Course Assessment*

English 111 is the required English course in all RCC degree programs. Some English 111 students are assigned to read several arguments about the issue of immigration and respond to the texts by weighing the

merits of each argument and taking a stand. The success benchmark for this assignment is that 80% of students will earn at least a grade of C (70% or higher) on this assignment. In 2018-19, 90% of English 111 students whose assignments were scored received a C with 50% of the students scoring an A or B.

All mathematics courses require students to analyze problems and determine a strategy for solving that problem. At the end of each semester, there are common final exam questions that all sections of mathematics courses use to assess the performance of students. These questions are mapped to the general education Critical Thinking objectives. In all courses a benchmark of 60% has been set. The assessments for six math courses were analyzed in Fall 2018. Overall, five of the classes met the 60% benchmark. Math 162, PreCalculus II, had an overall success rate of 54.1%. In addition to the overall assessment, individual items are analyzed on each test to identify areas of improvement by class.

Critical Thinking Skills are crucial for success in all RCC science courses including the behavioral science psychology. Biology instructors incorporate mini-assessments that allow students to summarize the core concepts that they learn and use case studies and other teaching methods to help students see the relevance of what they learn and apply content knowledge. Assessments show that students have difficulty with vocabulary and relating content knowledge in context.

Problem solving is an essential component of physics courses. A particular type of problem, labeled "Conceptual Exercise: Think and Explain" requires students to support conclusions or consequences with physical principles. In Fall 2018, the average for the 213 PHY 201 problems was 75.62% correct. In Spring 2019, the average for the 50 PHY 202 "Conceptual Exercise: Think and Explain" problems was 84.45% correct.

In fact, critical thinking skills are necessary for success in all RCC courses and it is hard to separate them from overall course success.

### *RCC Graduating Student Survey*

Students' confidence in their critical thinking skills is measured each spring on the *RCC Graduating Student Survey*. Students are asked to rate their ability when they entered RCC and now that they are graduating. One item assesses their critical thinking confidence. When asked to rate their ability "To read, evaluate, interpret, and combine information to reach conclusions or solutions," 46% marked excellent when they entered and 71% when they graduated. Fourteen percent marked "fair" or "poor" at entry but only 1% at graduation.

### **How are assessment results used?**

All RCC faculty are responsible for teaching and assessing critical thinking skills. Faculty in all disciplines meet regularly, discuss the assessment results, and look for improved success of students. The entire Arts and Sciences for Transfer Degree faculty meet and review all general education assessments. Some 2018-19 recommendations for improvement were:

- Continue requiring English 111 students (as well as students in other English classes) to read, synthesize, evaluate, and respond to arguments on a specific issue. Selecting a topic that is current, such as immigration, seems to increase student engagement and improvement writing.
- Allow the use of technology in complex problem solving.
- Biology instructors collaborate with nursing faculty to use case studies and other teaching methods to help nursing students see the relevance of what they learn and apply content knowledge.
- Continue to model problem solving and deductive logic strategies in physics classes, and increase the number of opportunities for students to demonstrate these skills in a setting in which they can receive constructive, formative feedback.