



## Rappahannock Community College

### 2019-22 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 2020 and Spring 2021, the *RCC General Education Assessment* was not administered as the college testing centers were closed during the COVID 19 pandemic. In Spring 2022, testing resumed. A sample of 33-degree graduates took the assessment that included five Critical Thinking items. All items were multiple choice and two of the items had high success rates of 85% and 91%. Two others had a success rates of 73% and 67%, but the fifth item had only 12% of the students choose the correct answer. This item assessed **assumptions** in SLO b: RCC degree graduates will recognize parallels, assumptions, or presuppositions in any given source of information.

The item that had a 91% success rate assessed **presuppositions** in SLO b. This same 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 – 67%.
- SLO e: RCC degree graduates will determine whether certain conclusions or consequences are supported by the information provided -- 85%.
- SLO f: RCC degree graduates will use problem-solving skills – 73%.

## Common Course Assessment

Throughout the pandemic years 2019-20 and 2020-21, common course assessments continued in all courses. Critical thinking skills are necessary for success in all RCC courses and it is hard to separate them from overall course success. Some specific assessments will be summarized here.

### English

All ENG 112 students are required to write a final research-based argument essay that is assessed using a common rubric. Criteria for success include proficiency in Critical Thinking SLOs a-e. The success benchmark is for at least 75% of students to earn a grade of C (75%) or higher on the profile essay. In Spring 2022, the benchmark was met. Across 31 sections of ENG 112, 75% of students who submitted a final essay scored 75% or higher. A review of the rubrics indicates that students struggle with synthesizing sources and integrating relevant material into their arguments. To improve student success, instructors are encouraged to:

- reach out to students in the final stages of the research paper to ensure they are on track to complete and submit the final paper;
- provide more time to work on the final paper, starting early in the semester;
- provide training on and encourage the use of online tutorials for the ENG 112 textbook, *They Say, I Say*, which provide hands-on practice engaging critically with a variety of texts and incorporating source materials into their writing.

### Mathematics

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 SLOs e and f. The benchmark is 60% of students should be successful on the mapped test items. In 2022, 139 out of 182 students (76%) were successful on the assessment mapped to SLO e, and 687 out of 910 students (75%) were successful on the assessment mapped to SLO f. The benchmark was met, but the test questions were analyzed to look for ways to improve the success rates. It is recommended that all math teachers:

- have students show how they get to their conclusion in at least a third of the assignments;
- target specific students who struggle with exponents and the compound interest formula;
- give individualized help, as needed.

### Psychology

In PSY 200 and PSY 230, SLO's a, d, and e are assessed. Students participate in a group activity of formulating a research proposal. They then become the subjects of the research and complete surveys to assess the research questions. Data is then compiled and analyzed, and results are discussed in class. A grade of 70% or better is the success benchmark on the assignment. In Fall 2021, 94% of PSY 200 students received a grade of 70% or better on the assignment, and 100% of PSY 230 students received a grade of 70% or better on the assignment. In Spring 2022, 100% of PSY 230 students received a grade of 70% or better on the assignment. Assessment results for PSY 200 students was not included for this semester.

### History

In HIS 111, HIS 112, HIS 121, and HIS 122 students complete primary source document activities. These activities involve reviewing documents and images and answering questions about them. These activities address SLOs a, b, c, d, and e. The benchmark of success is that students will receive an average grade of 70% or higher on these activities. In the 2021-2022 academic year, students' results were:

- HIS 111 averaged a grade of 73.5% with 73.67% of students receiving a grade above 70%;
- HIS 112 students averaged a grade of 68.52% with 65.0% of students receiving a grade of 70% and above;

- HIS 121 students averaged a grade 69.33% on primary source activities during week one of the semester and averaged a grade of 96.33% in the last week of the semester. Averaging these beginning and ending figures yields a course average of 82.83%
- HIS 122 students averaged a grade of 96.25% at the beginning of the semester and an average grade of 80.0% at the end of the semester.

Analysis of results in both HIS 112 and HIS 122 show drops in the scores of primary source work in the semester. This may occur because the length and complexity of the primary sources increases over the course of the semester. Traditionally second semester courses, such as HIS 112 and HIS 122, show drops in the scores of primary source work. It is recommended that there be more emphasis on primary source activities in HIS 112 and HIS 122 with the objective of improving student understanding and analysis.

### *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. In Spring 2022, there were 202 responses. When asked to rate their ability "To read, evaluate, interpret, and combine information to reach conclusions or solutions," 33% marked excellent when they entered and 62% when they graduated. Thirteen percent (13%) 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. The Arts and Sciences faculty review of 2022 communication assessments lead to the following analysis and recommendation:

- The results of the general education assessment indicate that students struggle with drawing conclusions and inferences from scenarios. It is recommended that the use of library instruction be included in classes, and students be encouraged to identify patterns and make connections to real-life situations.