



Program Assessment Report

Program: Critical Thinking

Report Year: 2018-19

Drafted by David Monroe on Aug 1, 2019

Data Files

[Spring 2018 Form 5 Item Results](#)

[Spring 2018 Form 3 Item Results](#)

Overall Introduction

In support of the mission of St. Petersburg College, faculty committees established several General Education Goals. These goals are to provide an open admission general education curriculum that results in students' achievement of several educational outcomes. This Assessment Report addresses the following educational outcome: "Students should be able to analyze, synthesize, reflect upon, and apply information to solve problems, and make decisions logically, ethically, and creatively."

It is the intent of St. Petersburg College to incorporate continuous improvement practices in all areas. Assessment reports provide comparisons of present and past results which are used to identify topics where improvement is possible. The following section illustrates how SPC has traditionally used past results as a vital tool in achieving its commitment to continuous improvement.

Program Learning Outcomes

#1: Students will: Analyze, synthesize, reflect upon, and apply information to solve problems, and make decisions logically, ethically, and creatively

I. Use of Past Results

Method 1: Critical Thinking & Application Paper

During 1998-99 students in speech classes used an essay as prompt and through an assessment instrument purchased from the Foundation for Critical Thinking wrote a paper graded by a grader trained by the Foundation. The results indicated that student scores in critical thinking improved with the number of credits earned at SPC.

During 2003-04 Critical Thinking was assessed in Speech classes using a test based on the International Critical Thinking Test which was derived from the Paul and Elder critical thinking model developed by the Foundation for Critical Thinking. Comparative analysis was conducted on students who had completed just a few courses at SPC and those students who had completed over 49 credit hours. The results showed that students' critical thinking skills do rise. However, these results also indicated that faculty need to implement new ways to help students learn the skills of thinking critically.

From 2004-05 through 2007-08 Critical Thinking was assessed in general education Applied Ethics courses by administering the Critical Thinking & Application Paper (CTAP) to all students. This instrument did not provide the information necessary to determine the correlation between student hours and critical thinking abilities. It assessed

students abilities to think logically by applying concepts and skills learned during their required Applied Ethics course.

Results of the CTAP indicated that a large percentage (80.0% to 86.4%) of SPC students in general education Applied Ethics courses were able to demonstrate the ability to utilize logical and critical thinking skills in a systematic way. This was especially encouraging in light of other findings that indicated that most students took a required Applied Ethics course in their first two semesters at the College.

As a result of these past assessments, the following actions were taken to *Improve Student Success, Enhance Curriculum and Faculty Development, and College-wide Enhancement*: Greater emphasis is now placed on critical thinking in all ethics classes. The SPC-produced *Ethics Applied* textbook series was revised to include more emphasis on critical thinking skills and demonstrations of their implementation. Applied Ethics faculty members agreed to do more assessment of Critical Thinking in their classes. The faculty-initiated change from faculty-written ethics scenarios to ethics cases from the National Ethics Bowl has improved the instrument and the quality of student papers. Finally, the grading rubric has been revised and student instructions for completing the CTAP have been revised and clarified.

Method 2: Employer Survey

Prior to 2005-06 Employers ranked former St. Petersburg College students on a scale of (1) Poor to (7) Excellent on "acquires, interprets and uses information effectively." Results of the Employers' Survey indicate that, when asked to rank graduates from (1) Poor to (7) Excellent, employers of SPC graduates rank them above 5 as shown below.

Employer Survey (years)	Mean
1997-98	5.9 out of 7
1998-99	6.0
1999-00	5.7
2000-01	6.1
2001-02	6.0
2002-03	6.2
2003-04	6.3
2004-05	6.3

The new Employer Survey uses a scale of 1-5 (with 5 being the highest), and the prior single question was replaced by five more specific questions. The results for 2005-06 exceeded the criteria for success as shown below.

Employer Survey questions	Mean 2005-06
Gathers and assesses relevant information	4.2 of 5
Inquires and interprets information	4.2
Organizes and evaluates information	4.2
Analyzes and explains information to others	4.1
Uses information to solve problems	4.2

2009-10 Assessment Report Results

Method 1: Critical Thinking & Application Paper

Fall 2008 marked the introduction of the Critical Thinking Model which replaced the previous Ethics Model. The Applied Ethics Program's goal for 2009-2010 is to have at least 80% of students demonstrate competency by passing the CTAP. Faculty and students worked together to achieve and surpass this rate with an average passage rate of 84%.

In another demonstration of faculty working to improve assessment success, guidelines for the CTAP were rewritten and widely shared by faculty in Spring 2010. Perhaps use of the new, clearer guidelines resulted in a passage rate of 87%; this assumption awaits verification with the data for Summer 2010.

The topic of the Critical Thinking and Assessment Paper (CTAP) changes each semester but the passage rate appears to be fairly consistent from semester to semester. In Spring 2010 (0420) the Applied Ethics faculty began identifying the main issue of the given dilemma. Instead of a direction to "Find the main issue," the directions now indicate, "Here's the main issue, now find other issues in the story." This was done so students would not base their entire paper on the wrong issue and fail the opportunity to demonstrate critical thinking on the assignment. The Spring 2010 (0420) passage rate for students rose several percentage points, perhaps partly because of this change in the CTAP instructions.

Method 2: Employer Survey

The Employer Survey results for 2006-07, 2007-08, and 2008-09 exceeded the criteria for success.

Method 3: Online General Education Assessment

Students met the criteria for success during the first two administrations of the assessment (Spring and Summer 2010). The Online General Education Assessment outcomes appear to be consistent with the results of the CTAP.

2012-13 Assessment Report Results

Method 1: Critical Thinking & Application Paper

The Applied Ethics department selected a target score of 70% as a demonstration of student competency on the Critical Thinking Application Paper (CTAP). The departmental goal was that 80% of students taking ethics courses for general education credit would meet that target. The data showed that the department had been largely successful in meeting that goal.

During the five terms in which data were collected and utilized for this report, the Applied Ethics Department exceeded the 80% goal. The method of data collection changed in 2012-2013, which resulted in the corruption of the more recent data. The resolution for this issue began during 2013.

Method 2: Employer Survey

The college set a score of 3 or above on a 5-point scale as the target score on employer surveys. Across three surveys, SPC graduates exceeded that target by at least 1.2 points in each of the measured areas. The results seemed to indicate that SPC students acquired the relevant critical thinking competencies during their time at the college. The results were remarkably stable in each area, showing almost no variation from year to year.

Method 3: Online General Education Assessment

SPC students taking the Online General Education Assessment also exceeded expectations. The college set a 70% average success rate for the critical thinking general education questions. Over three semesters, regardless of the three administered forms, participating students averaged scores greater than the 70% target. The mean scores showed more variation than the employer survey, but tended to demonstrate successful acquisition of critical thinking competencies.

2015-16 Assessment Report Results

Method 1: Critical Thinking & Application Paper

The critical thinking and application paper data were encouraging for face to face and blended classes; students met or approached the 70% competency goal in almost every area. The weakest area was the application of ethical concepts, at 68% competency. The results for online students are similar, save for in the application of ethical concepts. Students in online classes performed significantly worse, with only 53.8% meeting the success targets. This is obviously an area for improvement.

Method 2: Employer Survey

Employers rated 2014-15 graduates the same or slightly better in each of the 5 competencies related to critical thinking, as compared to the prior year.

Method 3: Online General Education Assessment

SPC students fared slightly better in Spring 16 compared to 2015 comparative data, but not significantly enough to draw

pedagogical conclusions.

Method 4: ETS Proficiency Profile

Comparison between SPC students' 2015-16 mean scores, and comparative students' mean scores of students assessed from July 2010 through June 2015 at domestic institutions across the nation indicated that SPC students scored higher on each of the seven skill areas assessed.

Method 5: Health Science Reasoning Test

The HSRT data depict improvement in most categories, as well as a 1 to 3 point increase in the overall scores, which seems to indicate that students' critical thinking skills are enhanced, improved, or developed as a result of the BASDH and BASVT curriculum, respectively.

II. Methodology

Means of Assessment: This Major Learning Outcome was evaluated using the following five methods. In Method 1, a Critical Thinking and Application Assignment was administered in select SPC general education Applied Ethics courses. In this assignment, students are provided with a ethics case study or scenario, and are required to apply a variety of course concepts and skills to determine and defend a best course of action. In Method 2, SPC's Employer Survey, employers were asked to rate the ability of former SPC students in five areas related to Critical Thinking. In Method 3, the results of an online general education assessment developed at SPC were used. In Method 4, the results of ETS' Proficiency Profile assessment were utilized. In Method 5, the results of a national standardized Critical Thinking assessment were utilized.

Date(s) of Administration: 2016, 2017, 2018

Method 1: Critical Thinking and Application Assignment

Students in SPC general education Applied Ethics courses were given an ethical issue and required to complete an 'Applied Ethics Critical Thinking and Application Assignment.' Students are required to apply the SPC Critical Thinking Model to the assigned ethical issue to reach, and be able to justify, a reasonable, morally appropriate, decision. Instructors are given latitude regarding the type of assignment (a diachronic assessment or single paper), but the steps in the model are tightly prescribed. The central purpose of this type of assessment is to assess students' ability to use critical thinking skills to solve a problem ethically.

Assessment Instrument: In this measure, a hypothetical ethical scenario is presented to students in SPC general education Applied Ethics courses. The Applied Ethics program utilizes cases written for the National Intercollegiate Ethics Bowl (sponsored by the Association for Practical and Professional Ethics), revising them as needed to fit the assignment. This assessment is a part of regular class activities in these courses. Students are required to utilize the model for critical thinking and ethical decision-making to do the following:

1. Identify the ethical issues involved,
2. Research the central ethical issue to gain a better understanding of the problem,
3. Analyze the problem by recognizing possible solutions and stakeholders, while considering the implications of those solutions,
4. Resolve the central ethical issue through the application of classical and contemporary ethical theories,
5. Select and defend the most ethical resolutions to the central ethical issue using all relevant data from the previous sections,
6. Identify counter arguments against the option the student selected as being ethically best,
7. Reflect on the thought process the student used and what might be done differently to improve problem solving in the future.

The critical thinking and ethical decision making model used in the assignment was designed by SPC Applied Ethics faculty and is based on major learning outcomes for the course. In lieu of developing a standardized scoring rubric, the Applied Ethics Faculty agreed to use the AAC&U Value Rubric for Ethical Reasoning as a standard competencies metric. The Value Rubric aligns seamlessly with the areas in the SPC critical thinking model, so it can be used in conjunction with that model without requiring modification. Faculty are free to grade the assignment as they see fit, but must use the Value Rubric to assess student critical thinking competencies in at least one course section per term. The Value Rubric Assessment is distinct from, and additional to, regular grading.

Gathering the data: Faculty scored the student assignments using the Ethical Reasoning Value Rubric from the Association of American Colleges and Universities.

Value Rubric Competency	SPC CT Model Area
Ethical Self-Awareness	Reflection
Understanding Different Ethical Perspectives/Concepts	Application of Ethical Theories
Ethical Issue Recognition	Identifying Moral Issues
Application of Ethical Perspectives/Concepts	Application of Ethical Theories
Evaluation of Different Ethical Perspectives/Concepts	Evaluation

Population: The sample population consisted of 290 students in general education Applied Ethics courses in Spring 2016. The students were sampled from sections taught by full time faculty members. The sampled sections were in various modalities, including face-to-face, online, and blended formats. The assessment will scale in Fall 2016 to include adjunct faculty members.

Method 2: Employer Survey Employers of students, who completed their course work at St. Petersburg College in 2014-15, 2015-16, and 2016-17 gave SPC permission to contact their employer, were surveyed. Employers ranked these former students on a scale of 1 – 5 (with 5 being the highest), in the following areas of Critical Thinking:

- Gathers and assesses relevant information
- Inquires and Interprets Information
- Organizes and Evaluates Information
- Analyzes and Explains Information to Others
- Uses Information to Solve Problems

Method 3: Online General Education Assessment

The purpose of the new online general education assessment, which was developed in 2010, is to improve the general education assessment process by establishing a model that evaluates students' general education competencies near the end of the completion of their degree. The assessment was developed as a collaborative effort between the general education deans and their faculty in each discipline, and the department of Academic Effectiveness and Assessment. The assessment is available to students in the D2L environment, and was first administered in Spring 2010.

Assessment Instrument: The online general education assessment consists of 50 multiple-choice items, and contains items from each of SPC's five general education areas. One of the five areas is Critical Thinking.

Population: Students who had completed 45-55 credits during 2017-18, were invited to complete the online assessment.

Method 4: ETS Proficiency Profile

Assessment Instrument: The Proficiency Profile is a test of college-level skills in reading, writing, critical thinking, and mathematics designed to measure the academic skills developed through general education courses. Critical thinking questions measure students' ability to distinguish between rhetoric and argumentation in a piece of nonfiction prose; recognize assumptions; recognize the best hypothesis to account for information presented; infer and interpret a relationship between variables; and draw valid conclusions based on information presented.

Population: Students who had completed 45-55 credits during 2017-18, were invited to complete the online assessment.

Method 5: Health Science Reasoning Test

The results of the Health Sciences Reasoning Test (HSRT), which measures high-stakes reasoning and decision-making processes were utilized. The HSRT is specifically calibrated for trainees in health sciences educational programs (undergraduate and graduate) and for professional health science practitioners. Scores on this instrument have been found to predict successful professional licensure and high clinical performance ratings.

Assessment Instrument: The HSRT is designed to provide both an overall score for critical thinking and a selection of scale scores to assist the trainer or instructor to focus curricula and training opportunities to address particular weaknesses in both individuals and groups. The HSRT Overall Reasoning Skills score targets the strength or weakness of one's skill in making reflective, reasoned judgments about what to believe or what to do. Scores are also reported for: Analysis, Inference, Evaluation, Induction and Deduction.

Population: BAS Veterinary Technology students enrolled in their first semester during 2017 and 2018 were

evaluated, as well as BAS Veterinary Technology 2017-18 graduating seniors.

III. Criteria for Success

Method 1: Critical Thinking & Application Assignment

The Applied Ethics Program sets achievement of milestone 3 or capstone 4 on the AACU Ethical Reasoning Value Rubric as competency targets for individual students. The Applied Ethics Program's goal is to have at least 70% of students meet this target in each rubric area.

Method 2: Employer Survey

Goal: Above average (3 out of 5) mean on the items listed below.

- Gathers and assesses relevant information
- Inquires and Interprets Information
- Organizes and Evaluates Information
- Analyzes and Explains Information to Others
- Uses Information to Solve Problems

Method 3: Online General Education Assessment

Goal: Students must score at least 70% to be successful

Method 4: ETS Proficiency Profile

Goal: Students must score above the national average

Method 5: Health Science Reasoning Test

Goal: Overall Score increase of 1 point or higher

IV. Summary of Assessment Findings

Method 1: Critical Thinking & Application Paper

A. Online Course Assessment Data (N=695)

Competency	4(Capstone)	3(Milestone)	2 (Milestone)	1 (Benchmark)	0 (does not meet bench)	Success Frequency (3 or 4)
Ethical Self-Awareness	477	87	38	24	72	81.1%
Understanding Different Ethical Concepts	369	148	92	47	57	74.3%
Ethical Issue Recognition	425	139	42	25	56	81.1%
Application of Ethical Concepts	375	163	67	33	49	77.4%
Evaluation of Different Ethical Concepts	401	121	50	52	62	75.1%

Source: Online Ethical Reasoning Value Rubric Data & Success Rate

B. Face/face and Blended Course Assessment Data (N=2599)

Competency	4(Capstone)	3(Milestone)	2 (Milestone)	1 (Benchmark)	0 (does not meet bench)	Success Frequency (3 or 4)
Ethical Self-Awareness	1479	569	227	120	175	78.7%
Understanding Different Ethical Concepts	1136	671	394	217	199	69.5%
Ethical Issue Recognition	1465	657	277	87	151	81.6%
Application of Ethical Concepts	1155	619	430	212	210	68.2%
Evaluation of Different Ethical Concepts	1381	541	356	148	190	73.9%

Source: Face to Face and Blended Ethical Reasoning Value Rubric Data & Success Rate

Method 2: Employer Survey

Employer Survey Results	2014-15	2015-16	2016-17
Gathers and assesses relevant information	4.2	4.1	4.3
Inquires and interprets information	4.2	4.1	4.2
Organizes and evaluates information	4.2	4.1	4.2
Analyzes and explains information to others	4.1	4.1	4.2
Uses information to solve problems	4.1	4.1	4.2

Method 3: Online General Education Assessment

The online general education assessment was administered for the first time in Spring 2010 using one form. Since then four additional forms have been administered each semester. The item analysis for items 1 through 6 (Critical Thinking), for Spring 2018 are included in this report, for the 2 forms administered to students during the term.

The student will demonstrate the ability to recognize, analyze, and solve a wide range of problems ethically.		
Competency	Form 3 (N=41)	Form 5 (N=38)
	Number of students who answered correctly	

The student will identify the proper steps when critically analyzing problems and making decisions.	34 (83%)	35 (92%)
The student will be able to come to logical decisions when analyzing case studies.	39 (95%)	29 (76%)
The student will demonstrate the ability to recognize assumptions.	22 (54%)	25 (66%)
The student will be able to weigh alternate options for solving problems.	34 (83%)	35 (92%)
The student will demonstrate the ability to distinguish between logic and fallacious reasoning.	33 (80%)	25 (66%)

Method 4: ETS Proficiency Profile

ETS Proficiency Profile Sub Scores	SPC Students - 2017 and 2018 (N=109)	2018 Comparative Data (N=21,343)
Skills Sub scores	Mean Score	Mean Score
Critical Thinking	110.0	109.4
Reading	116.0	114.9
Writing	113.6	112.1
Mathematics	112.8	111.1
Humanities	114.1	113.7
Social Sciences	111.9	111.5
Natural Sciences	114.4	113.1
Total Score	439.1	434.1

Method 5: Health Science Reasoning Test

Results of HSRT administered to BAS Veterinary Technology students (first semester combined 2017 & 2018)

Skill/Attribute Name	N	Mean	Median	Standard Deviation	SE Mean
OVERALL	103	21.3	22	4.2	0.4
Induction	103	7.6	8	1.4	0.1
Deduction	103	6.3	7	2.2	0.2
Analysis	103	4.1	4	1.4	0.1
Inference	103	3.9	4	1.3	0.1
Evaluation	103	4.9	5	1.2	0.1

Results of HSRT administered to BAS Veterinary Technology students (2017-18 graduating seniors)

Skill/Attribute Name	N	Mean	Median	Standard Deviation	SE Mean
OVERALL	24	22.0	24	4.5	0.9
Induction	24	7.7	8	1.2	0.2
Deduction	24	6.7	8	2.3	0.5
Analysis	24	4.2	4	1.3	0.3
Inference	24	4.4	5	1.1	0.2
Evaluation	24	4.8	5	1.1	0.2

V. Discussion and Analysis of Assessment Findings**Method 1: Critical Thinking & Application Paper**

Ethics students across modalities clearly reached the targets in ethical issue recognition, evaluation of different ethical concepts, and self-awareness. The results are less clear in their ability to understand and to apply core ethical concepts. Online students met the target in those areas, whereas face-to-face and blended students were narrowly below. One reason for the difference may be increased focus on those areas in the newest edition of SPC's ethics textbook, as well as the development of an array of online learning objects, in response to a perceived deficiency in the previous reporting cycle.

Method 2: Employer Survey

Students very clearly met the performance targets in the Employer Surveys, scoring an average of at least 4 out of 5 in all categories.

Method 3: Online General Education Assessment

There are two areas of interest in the online general education assessment results. The most obvious is that students did not meet the target for recognizing assumptions on either Form 3 or Form 5. Students taking the assessment on Form 5 also failed to achieve the 70% competency rate for distinguishing fallacious forms of argument. The samples in both cases are small, but these results suggest that increased pedagogical focus on recognizing assumptions, as well as revisiting the form questions, may be in order.

Method 4: ETS Proficiency Profile

The goal of reporting scores higher than the national average on the ETS assessment has been met.

Method 5: Health Science Reasoning Test

The aim of reaching a 1 point or higher increase in the HSRT was not met, but narrowly missed. Fourth year vet tech students showed a .7 increase. The highest jump was in the ability to make inferential judgments.

VI. Action Plan and Timetable for Implementation

Based on the analysis of the results the following Action Plan Items have been selected for implementation:

- [Work with Institutional Effectiveness to revisit the questions on the Online General Education Assessment Instrument regarding assumption recognition](#)
- Dave Monroe / Mar 2020

Budget / Planning Implications:

N/A

Action Plan

Category	Action Plan Detail / Implications	For PLO	Responsible Party / Due Date
A. Enable Greater Student Success			
A1. Identify needs and address ways to improve overall student success			
	Workshop with Applied Ethics Faculty to focus on pedagogical strategies in the areas of understanding ethical concepts and the ability to apply them. The workshop will focus on classroom techniques and developing exercises that foster the development of those skills in individual students. Collected techniques will be stored and distributed through the ethics faculty commons in MyCourses and made available to all ethics faculty. Success will be demonstrated by students in face to face and blended classes meeting the 70% success standards. Budget / Planning Implications: Hosting a special meeting to workshop these ideas has minimal budgetary requirements, if any.		Dave Monroe Feb 2020
D. Improve Assessment Methodology			
D5. Revise assessment instruments			
	Work with Institutional Effectiveness to revisit the questions on the Online General Education Assessment Instrument regarding assumption recognition Budget / Planning Implications: N/A	#1	Dave Monroe Mar 2020

Approvals

Program Administrator:

David Monroe - Faculty

Approved by David Monroe - Faculty on Aug 1, 2019

Educational Outcomes Coordinators:

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Magaly Tymms - Assessment Director

Approved by Magaly Tymms - Assessment Director on Aug 1, 2019

Dean:

Susan Demers - Dean, College of Policy Ethics and Legal Studies

Approved by Susan Demers - Dean, College of Policy Ethics and Legal Studies on Aug 1, 2019

Senior Vice President:

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Approved by Sabrina Crawford - AVP, Institutional Eff Acad Srv on Aug 13, 2019

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