**COLL 400 ASSESSMENT RESULTS[1]**
**Problem Solving Rubric Scores**

## I. INTRODUCTION

These results of the COLL 400 Assessment summarize the problem solving rubric scoring of COLL 400 and Honors student work artifacts collected in fall 2019 and spring 2020. The figures and tables display the results overall and by rubric dimension and broad academic area/program.

Reviewers scored 82 student work artifacts using a rubric adapted from the AAC&U Problem Solving VALUE Rubric (see Appendix), assigning a point value per rubric dimension (0=No Evidence, 1=Beginning, 2=Developing, 3=Proficient, 4=Excelling). Reviewers scored a dimension 0 (No Evidence) if they could not find evidence of behaviors described in the "Beginning" cell; those scores were included in this analysis. They selected "Not Applicable" if they could clearly ascertain that the assignment did not require students to address that dimension; those scores were excluded from this analysis.

## II. COVID-19 IMPACTS ON THE ASSESSMENT OF PROBLEM SOLVING

Summarized below are adjustments made to the student work sampling plan, scoring process, and results reporting in response to the COVID-19 disruption. The full description of COVID-19 impacts is found in PIEs plan item "COVID-19 Notes for Expectations 1-3."

### A. Assessment Sampling Plan

Fall 2019 COLL 400 student work artifacts were collected, sampled as planned, and scored in January 2020. Because of the shift to remote instruction after Spring Break due to COVID-19, spring 2020 artifacts were not collected. Instead, additional fall 2019 COLL 400 work received after the January assessment and Honors theses from spring 2019 and 2020 were used for the July 2020 assessment.

### B. Artifact Scoring Process

January assessments were conducted by reviewers during a four-day session of in-person group discussion, calibration exercises, and independent (on- and/or off-site) artifact scoring, and required discussion to arrive at consensus scores. Due to the pandemic and budget restrictions, summer assessments were conducted independently and on a voluntary basis by the same reviewers. They did not meet to arrive at consensus; thus, summer assessment scores represent two reviewers' average scores rounded up to the nearest whole number.

### C. Results Reporting

Fifty-five (55) artifacts were scored in January, representing 21 Arts & Sciences (A&S) major programs. Twenty-seven (27) artifacts were scored in July, representing 5 additional A&S major programs and Business that submitted student work. For those departments/programs, representing 13 majors that did not or could not submit fall 2019 student work (because their COLL 400 experiences culminate in spring, as is the case for many Area III programs), spring 2019 and 2020 Honors theses were included in the sample of artifacts, representing 22% of scored artifacts. The table below shows that 30.4% of student work artifacts scored for Area 1, 61.5% scored for Area III, and 16.7% scored for Interdisciplinary programs were Honors theses.

Scores for three group projects from the School of Business' COLL 400 course sections are included in the assessment and results. Because there were not a sufficient number of artifacts from each major program to provide information at the program level, results are provided by broad academic area/program.

Despite the modifications to the sampling strategy, scoring process, and reporting, this assessment may reveal patterns of strengths and weaknesses that can inform improvements within the department, program, or academic area.

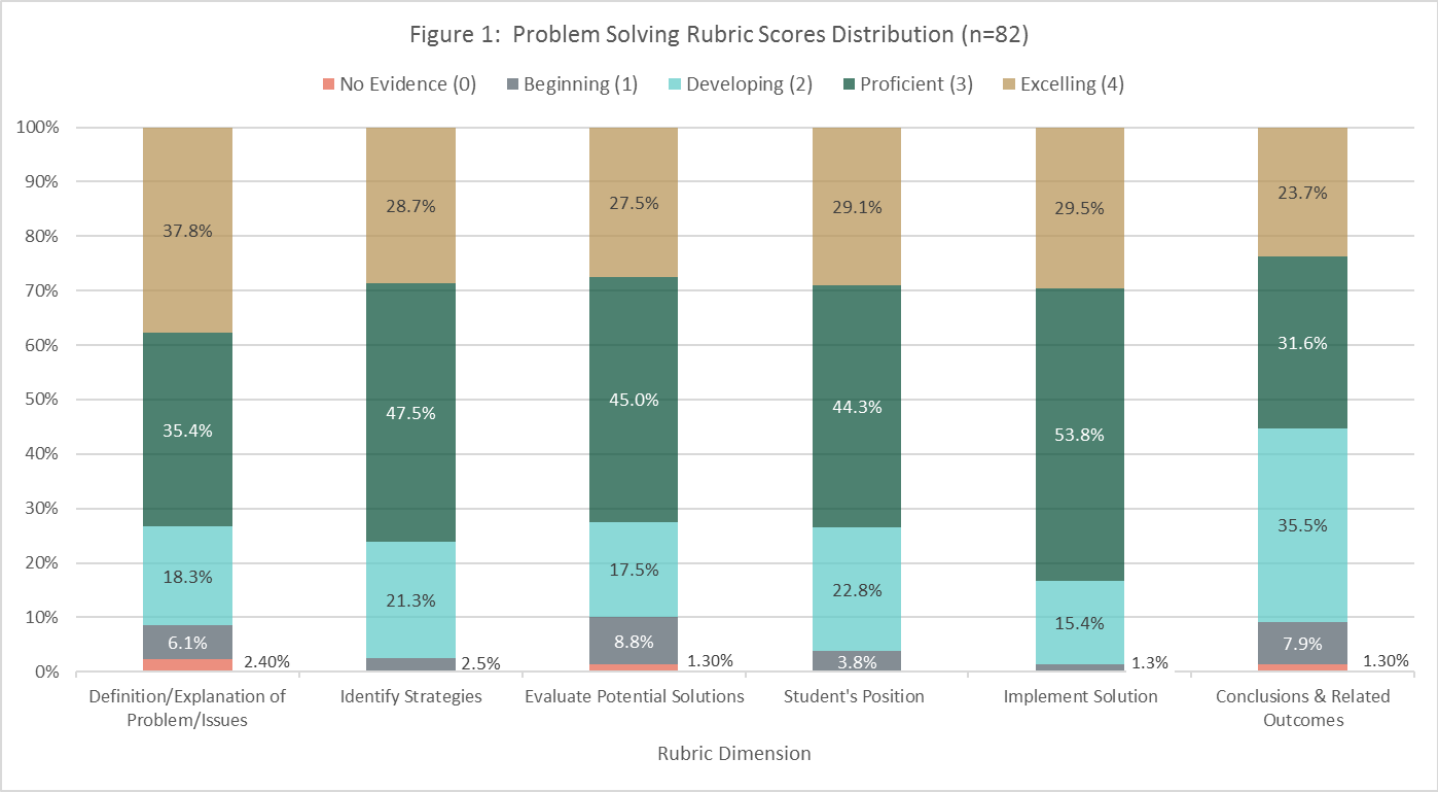
[1] The Office of Institutional Accreditation & Effectiveness prepared text, charts, tables, and appendix for this report.

| Type of Student Work Artifact Scored by Academic Area/Program | | | | | | |
|---|---|---|---|---|---|---|
| Academic Area/Program | Type of Artifact COLL 400 | | Honors | | Total Artifacts | |
| | % | # | % | # | % | # |
| Area I | 69.6% | 16 | 30.4% | 7 | 100.0% | 23 |
| Area II | 100.0% | 25 | 0.0% | 0 | 100.0% | 25 |
| Area III | 38.5% | 5 | 61.5% | 8 | 100.0% | 13 |
| Interdisciplinary Programs | 83.3% | 15 | 16.7% | 3 | 100.0% | 18 |
| Business | 100.0% | 3 | 0.0% | 0 | 100.0% | 3 |
| TOTAL | 78.0% | 64 | 22.0% | 18 | 100.0% | 82 |

## III. RUBRIC SCORING RESULTS FIGURES AND TABLES

### A. Problem Solving Rubric Scores Frequency Distributions and Statistics

The following figure and tables present the overall results of the problem solving rubric scores.



| Table 1: Problem Solving Rubric Scores Distribution (n=82) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rubric Dimension** | **No Evidence (0)** | | **Beginning (1)** | | **Developing (2)** | | **Proficient (3)** | | **Excelling (4)** | | **Total** |
| | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **#** |
| Definition/Explanation of Problem/Issues | 2.4% | 2 | 6.1% | 5 | 18.3% | 15 | 35.4% | 29 | 37.8% | 31 | 82 |
| Identify Strategies | 0.0% | 0 | 2.5% | 2 | 21.3% | 17 | 47.5% | 38 | 28.7% | 23 | 80 |
| Evaluate Potential Solutions | 1.3% | 1 | 8.8% | 7 | 17.5% | 14 | 45.0% | 36 | 27.5% | 22 | 80 |
| Student's Position | 0.0% | 0 | 3.8% | 3 | 22.8% | 18 | 44.3% | 35 | 29.1% | 23 | 79 |
| Implement Solution | 0.0% | 0 | 1.3% | 1 | 15.4% | 12 | 53.8% | 42 | 29.5% | 23 | 78 |
| Conclusions and Related Outcomes | 1.3% | 1 | 7.9% | 6 | 35.5% | 27 | 31.6% | 24 | 23.7% | 18 | 76 |

| Table 2: Problem Solving Rubric Scores Statistics (n=82) | | | | | | |
|---|---|---|---|---|---|---|
| **Rubric Dimension** | **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Variance** | **Count** |
| Definition/Explanation of Problem/Issues | 0 | 4 | 3 | 1 | 1 | 82 |
| Identify Strategies | 1 | 4 | 3 | 0.8 | 0.6 | 80 |
| Evaluate Potential Solutions | 0 | 4 | 2.9 | 0.9 | 0.9 | 80 |
| Student's Position | 1 | 4 | 3 | 0.8 | 0.7 | 79 |
| Implement Solution | 1 | 4 | 3.1 | 0.7 | 0.5 | 78 |
| Conclusions and Related Outcomes | 0 | 4 | 2.7 | 1 | 0.9 | 76 |

**Problem Solving Scorers' General Comments**

Since this was a proposal to do research to answer the question, a conclusion wasn't applicable.

As this was an .mp3 mostly comprised of recorded interviews, it was not a very good fit for assessment with this rubric.

This was a poster based on an internship. Most categories were not applicable.

Student did not perform proposed study as part of assignment.

Assignment did not call for a conclusion

Assignment limited - wasn't applicable for student to have a position, or make a conclusion.

In consensus determined that since this is a grant proposal, the assignment doesn't call for a solution or conclusion.

This assignment seems to be a good fit for assessing Critical Thinking and Problem Solving as defined in the rubric.

Three rows/dimensions (Identify Strategies, Evaluate Potential Solutions, and Implement Solution) do not seem to be required in the assignment. This assignment may not be a good fit for assessing Problem Solving as defined by the rubric . . .

**B. Problem Solving Rubric Scores Dimensions Frequency Distributions and Statistics by Academic Area/Program**

The following pages present figures and tables for each problem solving rubric dimension's scoring results overall and by academic area/program.

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**Dimension 1: Definition/Explanation of Problem/Issues**

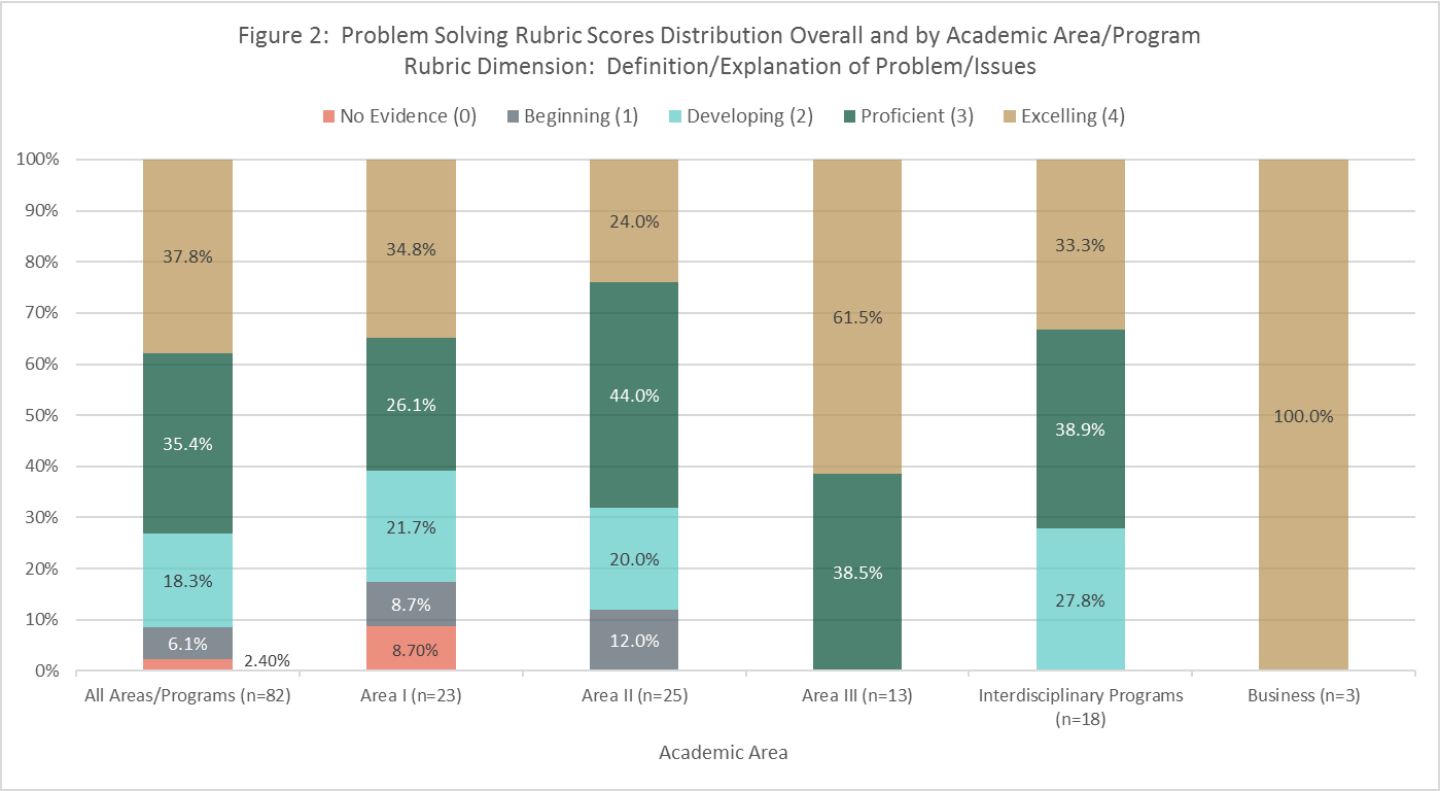


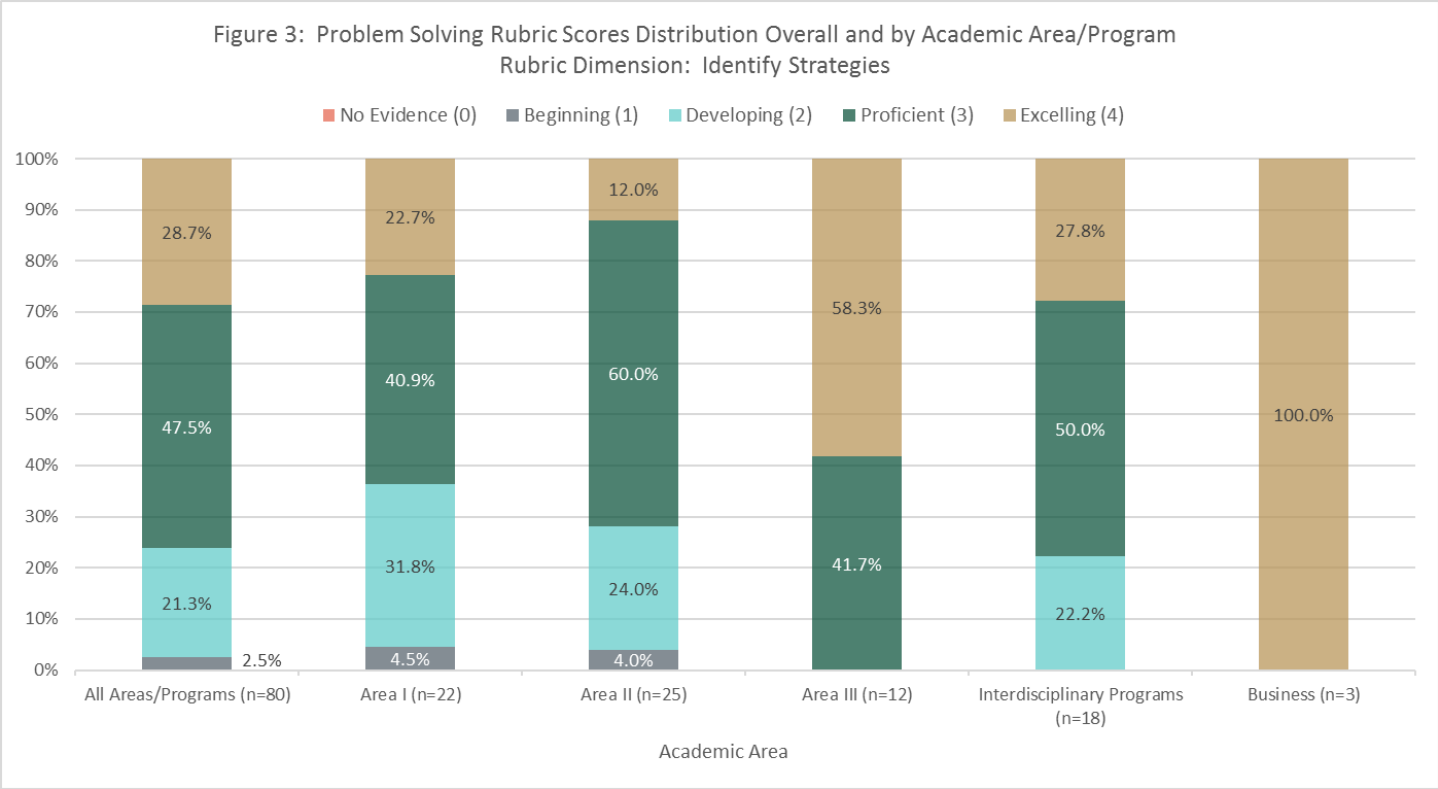

**Table 3: Problem Solving Rubric Scores Overall and by Academic Area/Program**
**Rubric Dimension: Definition/Explanation of Problem/Issues**

| Academic Area/Program | No Evidence (0) | | Beginning (1) | | Developing (2) | | Proficient (3) | | Excelling (4) | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | % | # | % | # | % | # | % | # | % | # | # |
| All Areas/Programs | 2.4% | 2 | 6.1% | 5 | 18.3% | 15 | 35.4% | 29 | 37.8% | 31 | 82 |
| Area I | 8.7% | 2 | 8.7% | 2 | 21.7% | 5 | 26.1% | 6 | 34.8% | 8 | 23 |
| Area II | 0.0% | 0 | 12.0% | 3 | 20.0% | 5 | 44.0% | 11 | 24.0% | 6 | 25 |
| Area III | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 38.5% | 5 | 61.5% | 8 | 13 |
| Interdisciplinary Programs | 0.0% | 0 | 0.0% | 0 | 27.8% | 5 | 38.9% | 7 | 33.3% | 6 | 18 |
| Business | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 100.0% | 3 | 3 |

**Table 4: Problem Solving Rubric Scores Statistics Overall and by Academic Area/Program**
**Rubric Dimension: Definition/Explanation of Problem/Issues**

| Academic Area/Program | Minimum | Maximum | Mean | Standard Deviation | Variance | Count |
|---|---|---|---|---|---|---|
| All Areas/Programs | 0 | 4 | 3 | 1 | 1 | 82 |
| Area I | 0 | 4 | 2.7 | 1.3 | 1.6 | 23 |
| Area II | 1 | 4 | 2.8 | 0.9 | 0.9 | 25 |
| Area III | 3 | 4 | 3.6 | 0.5 | 0.2 | 13 |
| Interdisciplinary Programs | 2 | 4 | 3.1 | 0.8 | 0.6 | 18 |
| Business | 4 | 4 | 4 | 0 | 0 | 3 |

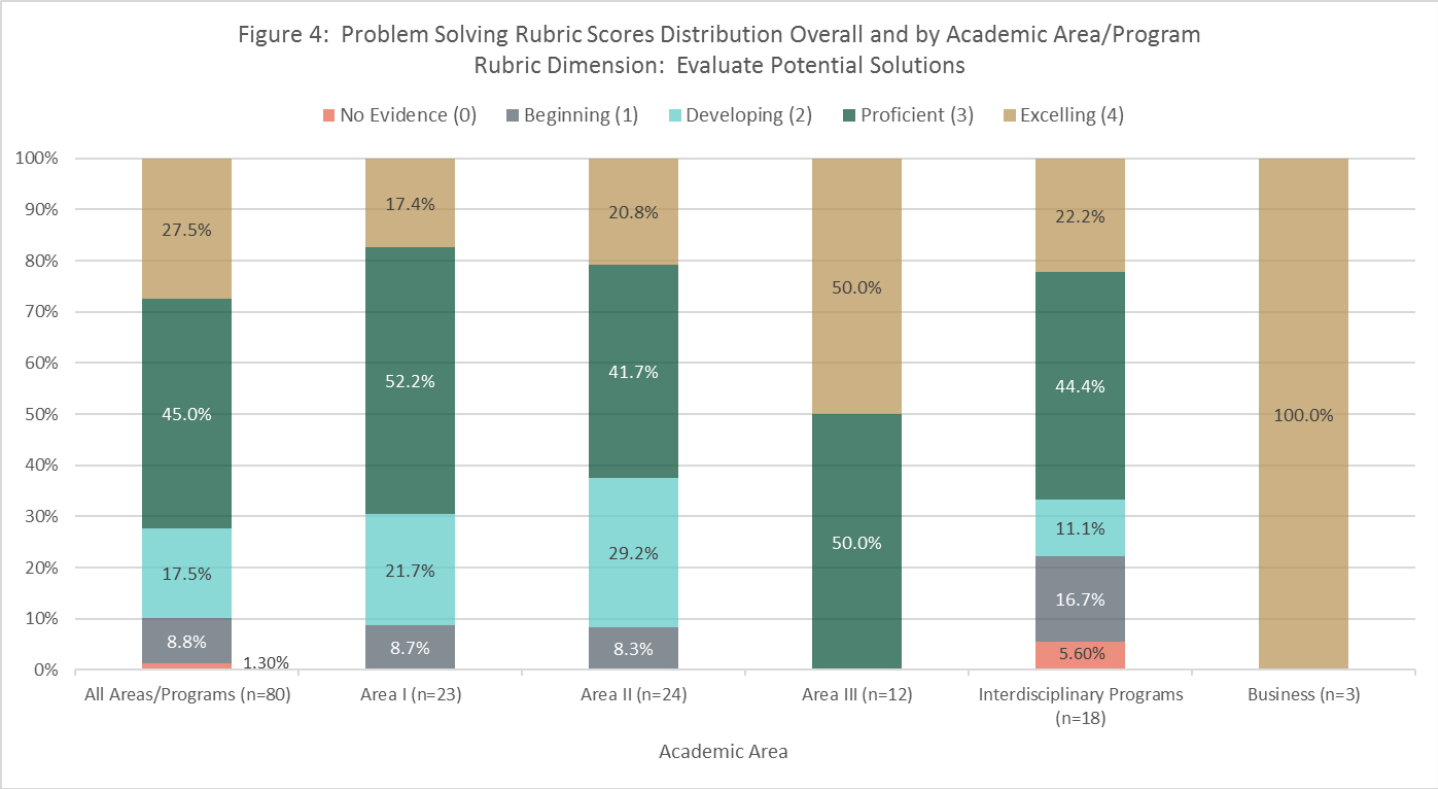
**Dimension 2: Identify Strategies**




| Table 5: Problem Solving Rubric Scores Overall and by Academic Area/Program<br>Rubric Dimension: Identify Strategies | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Academic Area/Program** | **No Evidence (0)** | | **Beginning (1)** | | **Developing (2)** | | **Proficient (3)** | | **Excelling (4)** | | **Total** |
| | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **#** |
| All Areas/Programs | 0.0% | 0 | 2.5% | 2 | 21.3% | 17 | 47.5% | 38 | 28.7% | 23 | 80 |
| Area I | 0.0% | 0 | 4.5% | 1 | 31.8% | 7 | 40.9% | 9 | 22.7% | 5 | 22 |
| Area II | 0.0% | 0 | 4.0% | 1 | 24.0% | 6 | 60.0% | 15 | 12.0% | 3 | 25 |
| Area III | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 41.7% | 5 | 58.3% | 7 | 12 |
| Interdisciplinary Programs | 0.0% | 0 | 0.0% | 0 | 22.2% | 4 | 50.0% | 9 | 27.8% | 5 | 18 |
| Business | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 100.0% | 3 | 3 |

| Table 6: Problem Solving Rubric Scores Statistics Overall and by Academic Area/Program<br>Rubric Dimension: Identify Strategies | | | | | | |
|---|---|---|---|---|---|---|
| **Academic Area/Program** | **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Variance** | **Count** |
| All Areas/Programs | 1 | 4 | 3 | 0.8 | 0.6 | 80 |
| Area I | 1 | 4 | 2.8 | 0.8 | 0.7 | 22 |
| Area II | 1 | 4 | 2.8 | 0.7 | 0.5 | 25 |
| Area III | 3 | 4 | 3.6 | 0.5 | 0.2 | 12 |
| Interdisciplinary Programs | 2 | 4 | 3.1 | 0.7 | 0.5 | 18 |
| Business | 4 | 4 | 4 | 0 | 0 | 3 |

**Dimension 3: Evaluate Potential Solutions**




| Table 7: Problem Solving Rubric Scores Overall and by Academic Area/Program<br>Rubric Dimension: Evaluate Potential Solutions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Academic Area/Program** | **No Evidence (0)** | | **Beginning (1)** | | **Developing (2)** | | **Proficient (3)** | | **Excelling (4)** | | **Total** |
| | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **#** |
| All Areas/Programs | 1.3% | 1 | 8.8% | 7 | 17.5% | 14 | 45.0% | 36 | 27.5% | 22 | 80 |
| Area I | 0.0% | 0 | 8.7% | 2 | 21.7% | 5 | 52.2% | 12 | 17.4% | 4 | 23 |
| Area II | 0.0% | 0 | 8.3% | 2 | 29.2% | 7 | 41.7% | 10 | 20.8% | 5 | 24 |
| Area III | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 50.0% | 6 | 50.0% | 6 | 12 |
| Interdisciplinary Programs | 5.6% | 1 | 16.7% | 3 | 11.1% | 2 | 44.4% | 8 | 22.2% | 4 | 18 |
| Business | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 100.0% | 3 | 3 |

| Table 8: Problem Solving Rubric Scores Statistics Overall and by Academic Area/Program<br>Rubric Dimension: Evaluate Potential Solutions | | | | | | |
|---|---|---|---|---|---|---|
| **Academic Area/Program** | **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Variance** | **Count** |
| All Areas/Programs | 0 | 4 | 2.9 | 0.9 | 0.9 | 80 |
| Area I | 1 | 4 | 2.8 | 0.8 | 0.7 | 23 |
| Area II | 1 | 4 | 2.8 | 0.9 | 0.8 | 24 |
| Area III | 3 | 4 | 3.5 | 0.5 | 0.3 | 12 |
| Interdisciplinary Programs | 0 | 4 | 2.6 | 1.2 | 1.3 | 18 |
| Business | 4 | 4 | 4 | 0 | 0 | 3 |

**Dimension 4: Student's Position (Perspective, Thesis/Hypothesis)**

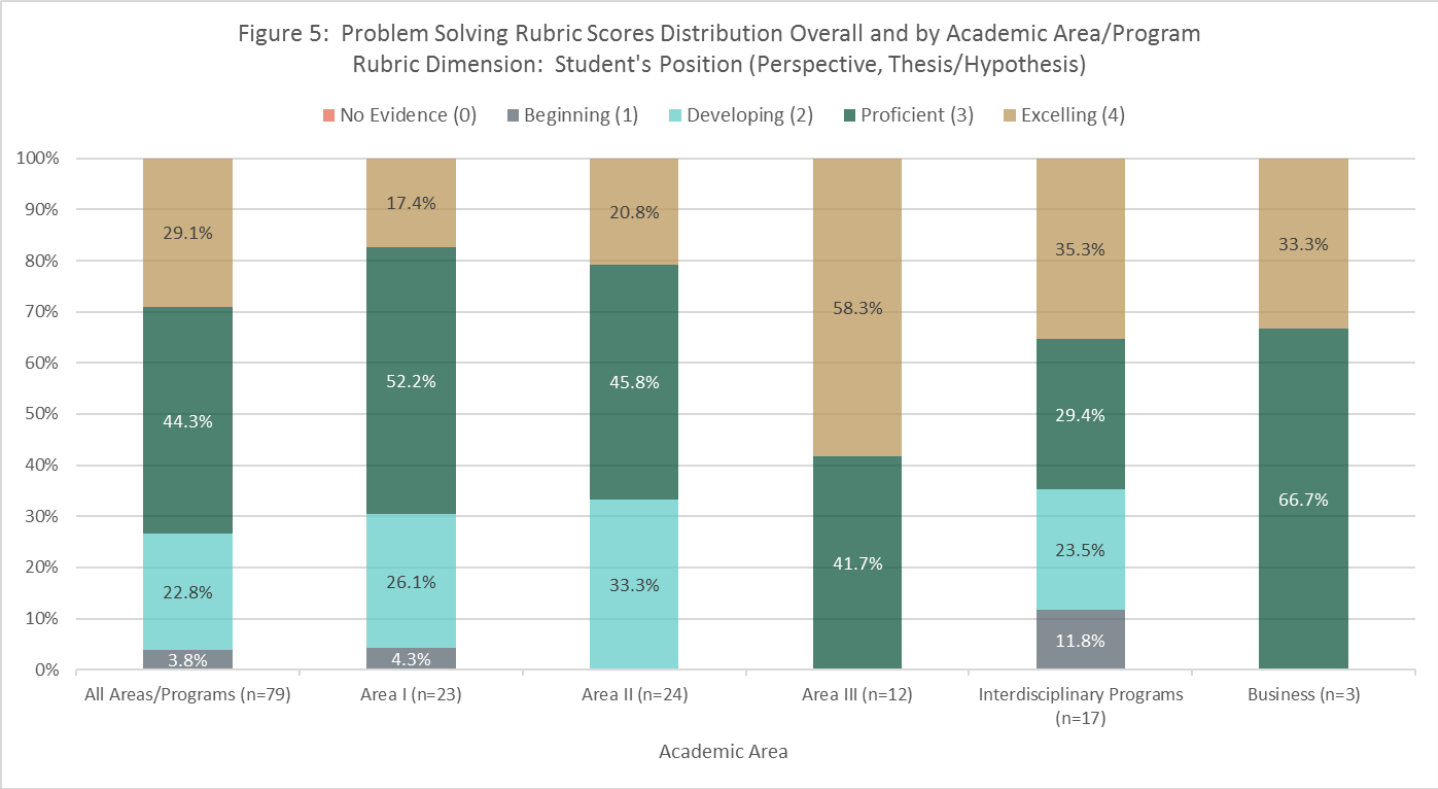


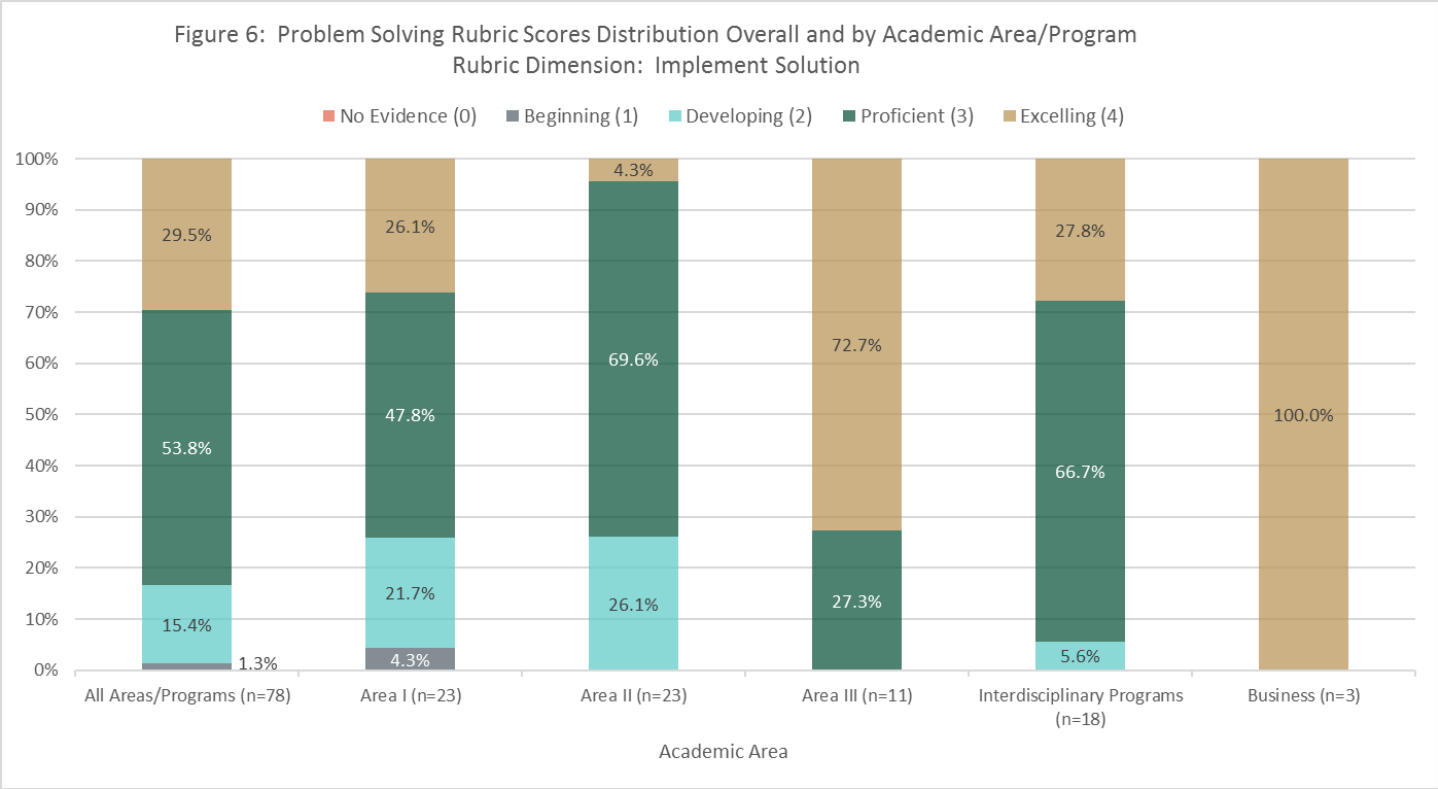

**Table 9: Problem Solving Rubric Scores Overall and by Academic Area/Program**
**Rubric Dimension: Student's Position (Perspective, Thesis/Hypothesis)**

| Academic Area/Program | No Evidence (0) | | Beginning (1) | | Developing (2) | | Proficient (3) | | Excelling (4) | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | % | # | % | # | % | # | % | # | % | # | # |
| All Areas/Programs | 0.0% | 0 | 3.8% | 3 | 22.8% | 18 | 44.3% | 35 | 29.1% | 23 | 79 |
| Area I | 0.0% | 0 | 4.3% | 1 | 26.1% | 6 | 52.2% | 12 | 17.4% | 4 | 23 |
| Area II | 0.0% | 0 | 0.0% | 0 | 33.3% | 8 | 45.8% | 11 | 20.8% | 5 | 24 |
| Area III | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 41.7% | 5 | 58.3% | 7 | 12 |
| Interdisciplinary Programs | 0.0% | 0 | 11.8% | 2 | 23.5% | 4 | 29.4% | 5 | 35.3% | 6 | 17 |
| Business | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 66.7% | 2 | 33.3% | 1 | 3 |

**Table 10: Problem Solving Rubric Scores Statistics Overall and by Academic Area/Program**
**Rubric Dimension: Student's Position (Perspective, Thesis/Hypothesis)**

| Academic Area/Program | Minimum | Maximum | Mean | Standard Deviation | Variance | Count |
|---|---|---|---|---|---|---|
| All Areas/Programs | 1 | 4 | 3 | 0.8 | 0.7 | 79 |
| Area I | 1 | 4 | 2.8 | 0.8 | 0.6 | 23 |
| Area II | 2 | 4 | 2.9 | 0.7 | 0.5 | 24 |
| Area III | 3 | 4 | 3.6 | 0.5 | 0.2 | 12 |
| Interdisciplinary Programs | 1 | 4 | 2.9 | 1 | 1 | 17 |
| Business | 3 | 4 | 3.3 | 0.5 | 0.2 | 3 |

**Dimension 5: Implement Solution**

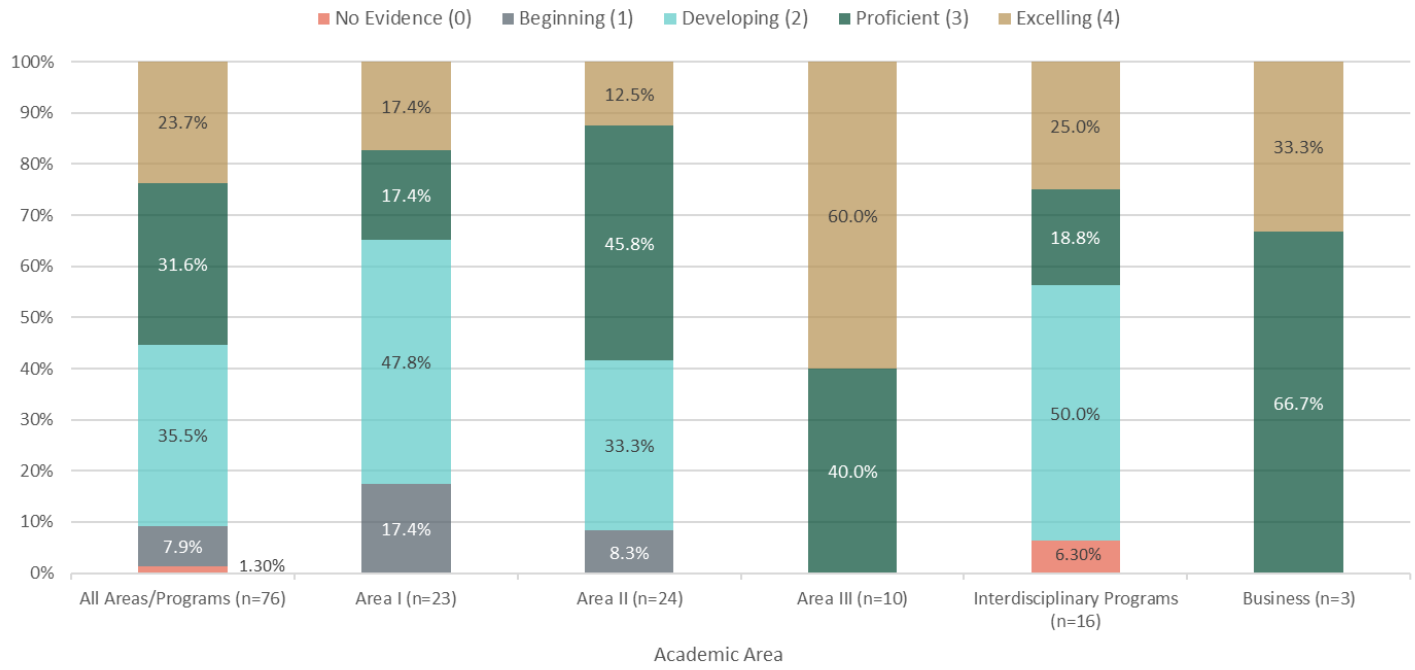



| Table 11: Problem Solving Rubric Scores Overall and by Academic Area/Program<br>Rubric Dimension: Implement Solution | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Academic Area/Program** | **No Evidence (0)** | | **Beginning (1)** | | **Developing (2)** | | **Proficient (3)** | | **Excelling (4)** | | **Total** |
| | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **#** |
| All Areas/Programs | 0.0% | 0 | 1.3% | 1 | 15.4% | 12 | 53.8% | 42 | 29.5% | 23 | 78 |
| Area I | 0.0% | 0 | 4.3% | 1 | 21.7% | 5 | 47.8% | 11 | 26.1% | 6 | 23 |
| Area II | 0.0% | 0 | 0.0% | 0 | 26.1% | 6 | 69.6% | 16 | 4.3% | 1 | 23 |
| Area III | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 27.3% | 3 | 72.7% | 8 | 11 |
| Interdisciplinary Programs | 0.0% | 0 | 0.0% | 0 | 5.6% | 1 | 66.7% | 12 | 27.8% | 5 | 18 |
| Business | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 100.0% | 3 | 3 |

| Table 12: Problem Solving Rubric Scores Statistics Overall and by Academic Area/Program<br>Rubric Dimension: Implement Solution | | | | | | |
|---|---|---|---|---|---|---|
| **Academic Area/Program** | **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Variance** | **Count** |
| All Areas/Programs | 1 | 4 | 3.1 | 0.7 | 0.5 | 78 |
| Area I | 1 | 4 | 3 | 0.8 | 0.7 | 23 |
| Area II | 2 | 4 | 2.8 | 0.5 | 0.3 | 23 |
| Area III | 3 | 4 | 3.7 | 0.4 | 0.2 | 11 |
| Interdisciplinary Programs | 2 | 4 | 3.2 | 0.5 | 0.3 | 18 |
| Business | 4 | 4 | 4 | 0 | 0 | 3 |

## Dimension 6: Conclusions and Related Outcomes (Implications and Consequences)

Figure 7: Problem Solving Rubric Scores Distribution Overall and by Academic Area/Program
Rubric Dimension: Conclusions and Related Outcomes (Implications and Consequences)




| Table 13: Problem Solving Rubric Scores Overall and by Academic Area/Program<br>Rubric Dimension: Conclusions and Related Outcomes (Implications and Consequences) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Academic Area/Program** | **No Evidence (0)** | | **Beginning (1)** | | **Developing (2)** | | **Proficient (3)** | | **Excelling (4)** | | **Total** |
| | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **%** | **#** | **#** |
| All Areas/Programs | 1.3% | 1 | 7.9% | 6 | 35.5% | 27 | 31.6% | 24 | 23.7% | 18 | 76 |
| Area I | 0.0% | 0 | 17.4% | 4 | 47.8% | 11 | 17.4% | 4 | 17.4% | 4 | 23 |
| Area II | 0.0% | 0 | 8.3% | 2 | 33.3% | 8 | 45.8% | 11 | 12.5% | 3 | 24 |
| Area III | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 40.0% | 4 | 60.0% | 6 | 10 |
| Interdisciplinary Programs | 6.3% | 1 | 0.0% | 0 | 50.0% | 8 | 18.8% | 3 | 25.0% | 4 | 16 |
| Business | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 66.7% | 2 | 33.3% | 1 | 3 |

| Table 14: Problem Solving Rubric Scores Statistics Overall and by Academic Area/Program<br>Rubric Dimension: Conclusions and Related Outcomes (Implications and Consequences) | | | | | | |
|---|---|---|---|---|---|---|
| **Academic Area/Program** | **Minimum** | **Maximum** | **Mean** | **Standard Deviation** | **Variance** | **Count** |
| All Areas/Programs | 0 | 4 | 2.7 | 1 | 0.9 | 76 |
| Area I | 1 | 4 | 2.3 | 1 | 0.9 | 23 |
| Area II | 1 | 4 | 2.6 | 0.8 | 0.7 | 24 |
| Area III | 3 | 4 | 3.6 | 0.5 | 0.2 | 10 |
| Interdisciplinary Programs | 0 | 4 | 2.6 | 1.1 | 1.1 | 16 |
| Business | 3 | 4 | 3.3 | 0.5 | 0.2 | 3 |

APPENDIX

PROBLEM SOLVING RUBRIC

**Definition**

**Problem solving** is the process of designing, evaluating, and implementing a strategy to answer an open-ended question or achieve a desired goal.

| Dimension | Excelling<br>4 | Proficient<br>3 | Developing<br>2 | Beginning<br>1 |
|---|---|---|---|---|
| **Definition/Explanation of Problem/Issues**<br>Students will define the scope of the research topic (issue/problem), determining and describing key concepts. | Defines the scope of the research topic completely. Determines and clearly describes key concepts, delivering all relevant information for full understanding. | Defines the scope of the research topic completely. Determines and describes most key concepts so that understanding is not impeded by omissions. | Defines the scope of the research topic, but incompletely (parts are missing, remains too broad or too narrow, etc.). Determines some key concepts. | Begins to define the scope of the research topic. Has difficulty determining key concepts. |
| **Identify Strategies**<br>Students will identify a novel approach for solving the problem that applies within a specific context. | Identifies multiple novel approaches for solving the problem that apply within a specific context. | Identifies one or more novel approaches for solving the problem, some of which apply within a specific context. | Identifies one or more "off-the-shelf" approaches for solving the problem, one of which applies within a specific context. | Identifies only "off-the-shelf" approaches for solving the problem or approaches that do not apply within a specific context. |
| **Evaluate Potential Solutions**<br>Students will select a solution and develop a logical, consistent plan to solve the problem. | Not only develops a logical, consistent plan to solve problem, but also recognizes consequences of solution and can articulate reason for choosing solution. | Having selected from among alternatives, develops a logical, consistent plan to solve the problem. | Considers and rejects less acceptable approaches to solving problem. | Considers and uses only a single approach to solve the problem. |
| **Student's position (perspective, thesis/hypothesis)**<br>Students will develop a specific position (perspective, thesis/hypothesis), taking into account the complexities of an issue and acknowledging others' points of view within the position (perspective, thesis/hypothesis). | Specific position (perspective, thesis/hypothesis) is imaginative, taking into account the complexities of an issue. Acknowledges limits of position (perspective, thesis/hypothesis). Synthesizes others' points of view within position (perspective, thesis/hypothesis). | Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Acknowledges others' points of view within position (perspective, thesis/hypothesis). | Specific position (perspective, thesis/hypothesis) acknowledges different sides of an issue. | Specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious. |
| **Implement Solution**<br>Students will implement the strategy to solve the problem in an applied and/or academic setting in a manner that addresses the problem statement and contextual factors. | Implements the strategy to solve the problem in an applied and/or academic setting in a manner that thoroughly and deeply addresses multiple contextual factors of the problem. | Implements the strategy to solve the problem in an applied and/or academic setting in a manner that addresses multiple contextual factors of the problem. | Implements the strategy to solve the problem in an applied and/or academic setting in a manner that addresses the problem statement but ignores relevant contextual factors. | Implements the strategy to solve the problem in an applied and/or academic setting in a manner that does not directly address the problem statement. |
| **Conclusions and related outcomes (implications and consequences)**<br>Students will draw logical conclusion(s) from a range of information, including opposing viewpoints, and identify related outcomes (consequences and implications) and area(s) for further work. | Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to synthesize evidence. Identifies specific directions for further work. | Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly. Identifies one or more areas for further work. | Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly. | Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified. |

*This rubric was created using the Association of American Colleges and Universities (AAC&U) Critical Thinking and Problem Solving VALUE Rubrics. Retrieved from https://www.aacu.org/value-rubrics

APPENDIX

**Glossary**

*The definitions that follow were developed to clarify terms and concepts used in this rubric only.*

**Analysis:** A detailed examination of anything complex in order to understand its nature or to determine its essential features.

**Assumptions:** Ideas, conditions, or beliefs (often implicit or unstated) that are "taken for granted or accepted as true without proof." (quoted from www.dictionary.reference.com/browse/assumptions)

**Awareness:** Knowledge and understanding that something is happening or exists.

**Conclusion:** A reasoned judgment.

**Context:** The historical, ethical, political, cultural, environmental, or circumstantial settings or conditions that influence and complicate the consideration of any issues, ideas, artifacts, and events.

**Contextual Factors:** Constraints (such as limits on cost), resources, attitudes (such as biases) and desired additional knowledge which affect how the problem can be best solved in the real world or simulated setting.

**Evaluation:** To determine or fix the value of or to determine the significance, worth, or condition of usually by careful appraisal and study.

**Hypothesis:** A tentative assumption made in order to draw out and test its logical or empirical consequences.

**Interpret:** To explain or tell the meaning of; present in understandable terms.

**"Off the shelf" solution:** A simplistic option that is familiar from everyday experience but not tailored to the problem at hand (e.g. holding a bake sale to "save" an underfunded public library).

**Omissions:** Something neglected or left undone.

**Outcome:** Something that follows as a result or consequence.

**Perspective:** A mental view or prospect.

**Position:** A point of view adopted and held to.

**Relevant:** Having significant and demonstrable bearing on the matter at hand.

**Solution:** An appropriate response to a challenge or a problem.

**Stated:** Set down explicitly.

**Strategy:** A plan of action or an approach designed to arrive at a solution. [e.g., If the problem is a river that needs to be crossed, there could be a construction-oriented, cooperative (build a bridge with your community) approach and a personally oriented, physical (swim across alone) approach. An approach that partially applies would be a personal, physical approach for someone who doesn't know how to swim.]

**Support:** Specific rationale, evidence, etc. for solution or selection of solution.

**Synthesis:** The composition or combination of parts or elements so as to form a whole.

**Thesis:** A proposition to be proved or one advanced without proof.