

Institutional Core Learning Outcomes Report: Critical Thinking and Problem Solving

Institutional Core Learning Outcome #2: Through their respective disciplines, CGCC students who earn a degree can:								
Critical Thinking: Total Number of students enrolled 298 Total # of students who completed scored assignment: 262	Mastery	Accomplished	Developing	Beginning	Not Demonstrated	Not Applicable	Total numbers for Accomplished or better	Total Percentage for Accomplished or better
Critical Thinking Rubric: Explanation of Issues: TOTALS	97	92	61	10	0	2	189	73%
Critical Thinking Rubric:Evidence: TOTALS	77	98	67	19	1	0	175	67%
Critical Thinking Rubric: Influence of Context and Assumptions: TOTALS	61	94	67	19	3	18	155	64%
Critical Thinking Rubric: Student's Position: TOTALS	76	76	54	19	3	31	152	67%
Critical Thinking Rubric: Conclusions and Related Outcomes: TOTALS	87	89	67	14	1	4	176	68%
Total Number of Students Scoring with Critical	398	449	316	81	8	55		
Total Percentage of Students Scoring with Critical Thinking Rubric	32%	36%	25%	6%	1%	4%		
Total Percentage of Students who Scored Accomplished or Better with Critical Thinking Rubric	68%							
Problem Solving: Total Number of students enrolled: 140 Total # of students who completed scored assignment: 123	Mastery	Accomplished	Developing	Beginning	Not Demonstrated	Not Applicable	Total numbers for Accomplished or better	Total Percentage for Accomplished or better
Problem Solving Rubric: Define Problem: TOTALS	58	25	26	11	3	0	83	67%
Problem Solving Rubric: Identify Strategies: TOTALS	58	22	30	7	6	0	80	65%
Problem Solving Rubric: Propose Solutions/Hypothesis: TOTALS	57	29	23	11	3	0	86	70%

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Problem Solving Rubric: Evaluate Potential Solutions: TOTALS	52	29	19	17	6	0	81	66%
Problem Solving Rubric: Implement Solutions: TOTALS	42	32	21	9	9	10	74	65%
Problem Solving Rubric: Evaluate Outcomes: TOTALS	45	25	24	11	8	10	70	62%
Total Number of Students Scoring with Problem Solving Rubric	312	162	143	66	35	20	474	
Total Percentage of Students Scoring with Problem Solving Rubric	43%	23%	20%	9%	5%	3%		
Total Percentage of Students who Scored Accomplished or Better with Problem Solving Rubric	66%							
Total Number of students enrolled in assessed courses: 438 Total # of students who completed scored assignment: 385	Mastery	Accomplished	Developing	Beginning	Not Demonstrated	Not Applicable		
Total Numbers (Combined Scored Written and Problem Solving Rubric)	710	611	459	147	43	75		
Totals (Combined Scored Written and Problem Solving Rubric)	36%	31%	23%	7%	2%	4%		
Total Percentage of Students Scored as Accomplished or Better for Critical Thinking and Problem Solving:	67%							

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ANALYSIS OF CORE LEARNING OUTCOMES

A. Overview

i. Academic Year:

2016-17

ii. Core Learning Outcome (CLO) Assessed:

Creatively solve problems by using relevant methods of research, personal reflection, reasoning, and evaluation of information. (*Critical thinking and Problem-Solving*)

iii. Level at which the competency is assessed:

200-level courses were chosen to reflect assessment of work students would be completing towards the end of their degree.

B. Recommendations, Action, and Analysis from Previous Year

i. List recommendations from previous reviews

The results of the 2015-16 CLO assessment for Communication indicated that CGCC students scored lowest in the areas of “Sources and Evidence” and/or “Organization and Presentation” for written communication and “Delivery” for oral communication. The CLO Assessment Committee recommended that faculty focus on two of those areas in supporting student improvement for 2017-2018: “Sources and Evidence” and/or “Organization and Presentation”

The committee recommended that actions be taken by all faculty in their classes, since accountability for student achievement of Core Learning Outcomes is the responsibility of all faculty as indicated by their CCOGs when they specify that they address the CLO, Communication, in depth and/or list communication as a course outcome.

ii. Summarize actions taken in response to recommendations.

During spring in-service of 2017, faculty from all departments enthusiastically worked together to create a list of resources that could be used to support students in improving in the two areas of “Sources and Evidence” and “Organization and Presentation”. The writing department further worked to create a comprehensive list of resources that were added to the in-service list. “[Ideas & Resources for Teaching to the CLO: Communication](#)” has been posted to [the Institutional Core Learning Outcomes Assessment webpage](#) and the [Teacher Support Center webpage](#). Faculty will include what they have done in their classes to support student achievement of CLO#1 on their Course Outcomes Assessment Results (Part B). The Academic Assessment Coordinator (AAC) will track these interventions on a spreadsheet and CLO#1 will be assessed again in 2018-19 to determine the impact of these interventions.

iii. Please describe other actions taken that were not based on previous review recommendations. What assessment, evidence, or need prompted these actions?

Last year several limitations of the process were noted:

1. The CLO Assessment team questioned whether the previous year's samplings from 19 courses and 325 students was sufficient enough to get a broad picture of CGCC student ability, given a total enrollment of 4,657 students with an FTE of 1,063. To address this concern a larger student sampling was of 385 students from 29 courses for the 2016-17 assessment of CLO#2: "Critical Thinking and Problem Solving".
2. 2015-16 was the first time CGCC faculty scored student work using the assessment instruments, as adapted from the highly regarded AACU LEAP rubrics. The CLO Assessment Committee had concerns that faculty at CGCC as of yet, do not share a common language with respect to the descriptors used for each category of the rubrics. The committee also acknowledged that students may not know that these are the expectations, language and objectives for communication; although the rubric is available on the web, students have not been formally informed or educated about CLO assessment. We might begin to consider that if we all (CGCC faculty, staff and students) have common language there may be less confusion. To address this concern, a conversation was begun regarding norming the rubric with faculty who are going to use it to score student artifacts. While no formal norming sessions occurred, the AAC was available to discuss descriptors and one member of the CLO Assessment team (Curriculum and Assessment Department (CAD) director) became involved in training for the AACU LEAP Multi-State Collaborative, becoming familiar with the AACU's norming process. The Curriculum and Assessment Department (CAD) is also planning on educating students more thoroughly about the CLO assessment and rubrics by purchasing banners for each CLO for promotion purposes on campus, and including a page in the New Student Orientation Online that describes CLO assessment at CGCC.
3. The committee felt concern that students who were scored on an assignment at the beginning of the course would have significantly different scores than those who were scored towards the end of the term, as a result of receiving more instruction. For the assessment of the second CLO in 2016-17 students were only scored on assignments that were given at the end of the term.
4. Comments/Analysis boxes were not included on the first roll out of the CLO in 2015-16. Without comments/analysis/insight provided by the faculty scoring the student work, the committee speculates that it may be missing some valuable information to consider when analyzing the results. Comments/Analysis boxes were included on the web form, and once scoring was completed faculty were sent to an online evaluation form to provide input about the process and assessment.
5. The CLO Assessment team noted that it cannot be ignored that faculty scoring of their own student artifacts leads to a certain amount of subjectivity in determining the results. The committee is aware of how this subjectivity may distort results, however at this time, as CGCC is only at the beginning of the process of assessing CLOs, the committee has agreed to table this concern until a later date, instead focusing on creating a culture of CLO assessment, and slowly improving the process with each year. During the spring of 2017, the Curriculum and Assessment Department (CAD) contacted AACU to determine if CGCC would like to be a part of the AACU LEAP Multi-State Collaborative, thus allowing other faculty from across the US who have been trained on scoring with the LEAP Rubrics to assess CGCC student work. As a result of the CAD director's participation using a rubric to score student artifacts for the AACU LEAP Multi-State Collaborative and careful deliberation by the CAD,

the CAD decided that CGCC faculty should continue to assess their own student work for the remaining CLOs in order to form a baseline. Consideration regarding CLO assessment as a worthy faculty development opportunity was also factored into the decision.

C. Overview of Process (es) used to Evaluate Competency:

i) Overview of methodology used for assessment:

During the 2016-17 academic year, the second Core Learning Outcome (CLO) was assessed: Creatively solve problems by using relevant methods of research, personal reflection, reasoning, and evaluation of information. (*Critical thinking and Problem-Solving*). An interdisciplinary team, the Core Learning Outcome Assessment Committee, met at the beginning of the academic year to review the process from the previous year and make suggestions for improvement. The CLO Assessment team also adapted two rubrics from AACU's ([Association of American Colleges and Universities](http://www.aacu.org/)) LEAP ([Liberal Education and America's Promise](http://www.aacu.org/)) Value ([Valid Assessment of Learning in Undergraduate Education](http://www.aacu.org/)) Rubrics (<http://www.aacu.org/>): one for the assessment of [critical thinking](http://www.aacu.org/) and one for the assessment [problem solving](http://www.aacu.org/).

Instructors who taught courses that students would be taking towards the end of their degree (sophomore or 200-level courses) were asked to assess student achievement of the Institutional Core Learning Outcome: Critical Thinking and Problem Solving. These upper level courses were chosen with the understanding that students, in theory, would have had multiple freshman level courses that included critical thinking and problem solving as a course outcome, allowing CGCC to assess students who were closer to graduation and who had had more instruction and practice in building problem solving and critical thinking skills.

The process of choosing the courses used to assess the CLO differed from the previous year in that any course being taught that aligned with this CLO in-depth, or that listed critical thinking/problem solving as a course outcome was considered. Previously only courses that were also up for course outcomes assessment were selected, however to address the limitation of sample size indicated in the 2015-16 analysis, the CLO Assessment team recommended choosing from any appropriate course offered each term. As a result of this change in methodology, there was an 18% increase in student work assessed for this new CLO.

Instructors were responsible for scoring the student artifacts using the appropriate rubric, and submitting the results to a web form. Per the recommendation from the CLO Assessment Committee, instructors also had the option to include a rationale or analysis to help explain student scores.

In looking at the methodology, it's important to remember that assessment of Institutional Core Learning Outcomes is different than Course Assessment or Instructor Evaluations: CGCC is compiling information on student achievement of CLOs in order to be analyzed by the Core Learning Outcomes Assessment Committee and shared with CGCC faculty to determine where adjustments and improvements need to be made. Assessment of Institutional Core Learning Outcomes is **not** about an individual instructor or an individual course: the purpose is to obtain a snap-shot on a more global perspective of student ability in formal college-level critical thinking and problem-solving.

ii) Summary of timeline and steps in assessment process:

1) Week prior to start of term: The Academic Assessment Coordinator (AAC) looked at the CCOGs of courses and selected those courses that either listed critical thinking or problem solving as a course outcome or indicated that CLO #2 was addressed in depth. A list of suggested courses was sent by the AAC to each Department Chair (DC) for consideration. DC's responded either confirming the selection or recommending revisions.

2) 2nd to 3rd week of term: Once a course was confirmed by the DC, instructors were contacted via email by the AAC informing them that their course had been selected for assessment of the second CLO. Information about the process of assessing CLOs was provided, as were directions and links to the two rubrics.

3) 3rd to 4th week of term: the AAC contacted the instructor again to determine whether they had an appropriate assignment that could be scored with either the [problem solving](#) or [critical thinking](#) rubric. It should be noted that instructors were not required to create new assessments/assignments/projects for their courses, but were instructed to score student assignment/projects that were already used in the course to measure course level outcomes. The list of courses that would assess this CLO was revised if it was determined that instructors did not have an appropriate assignment for this purpose.

4) 6th week of term: packets were created by the AAC and Curriculum and Assessment Administrative Assistant (CAAA) and distributed to the instructors. Within the packets were paper copies of either the problem solving or critical thinking rubric to be used to score each individual student's assignment, and instructions for submitting the scores on the web form.

5) End of term to week after end of term: Instructors scored student assignments using the rubric and input the totals for each category of the rubric in the web form. Adjunct faculty submitted time cards for up to 3 hours to be paid at the Special Project Rate. The AAC compiled the results at the end of each term into spreadsheet.

6) Beginning of summer term: the AAC compiled the results for all terms into two tables: one for Problem Solving and one for Critical Thinking. The scores from the two tables were then combined to create a meta-number for analysis by the CLO Assessment Committee.

7) Week before fall term 2017: The CLO Assessment Committee met to review and analyze results, provide recommendations based on the results to improve student achievement of CLO#2, review the CLO assessment process and make recommendations for improvement to the process.

8) Fall In-service: Results were shared with faculty, as well as the committee's recommendations to help improve student achievement of Critical Thinking-Problem Solving. Faculty used time during in-service to develop strategies for instruction, curriculum and/or assessment based on the committee's recommendations.

9) Fall term Instructional Council (IC) meeting: results, analysis and recommendations will be shared with the IC.

10) Faculty will be reminded of their commitment to implementing strategies to support students in achievement of CLO#1 and #2 when they complete Part A of Course Outcomes Assessment.

11) Faculty will list the strategies they implemented to support student achievement of CLO#1 and #2 when they complete Part B of Course Outcomes Assessment.

iii) Sampling information:

438 students were enrolled in the 29 200-level courses from 19 disciplines. A total of 385 student artifacts were scored by the instructors of those courses.

298 of those students were enrolled in courses that scored work using the [critical thinking rubric](#), with 262 of those students completing the assignments. 140 students were enrolled in courses that scored work using the [problem solving rubric](#), with 123 students completing those assignments.

iv) Assessment Instrument(s):

[Problem Solving](#) and [Critical Thinking](#) Rubrics were adapted from LEAP Value Rubrics (<http://www.aacu.org/>). The original VALUE initiative in 2007-09 involved teams of faculty and other educational professionals from over 100 higher education institutions engaged over many months to develop 16 VALUE rubrics for the LEAP Essential Learning Outcomes. Each rubric was developed from the most frequently identified characteristics or criteria of learning for each of the 16 learning outcomes. Drafts of each rubric were then tested by faculty with their own students' work on over 100 college campuses.

The CLO Assessment Committee's adaptations to the LEAP Rubrics included changes to some of the descriptors and a renaming of the student achievement categories from Capstone (4); Milestones (3 and 2); and Benchmark (1) (LEAP VALUE Rubrics) to Mastery; Accomplished; Developing; Beginning; Not Demonstrated; and Not Applicable (CGCC Critical Thinking and Problem Solving Rubrics). The CLO Assessment Committee considered the adapted student achievement categories to be more applicable to the standards CGCC currently uses for students.

v) Data Analysis Procedures:

Once instructors scored the student artifacts using the adapted LEAP Value Rubric for Critical Thinking and Problem Solving, results were gathered by the AAC and presented to the CLO Assessment Committee. The CLO Assessment Committee analyzed both the results and the process. The analysis was recorded during the meeting and captured in this analysis template.

B. Results

1. Describe results of assessment work related to competency:

Provide detailed results of assessment, including charts, graphs or other visuals

Overall Results for Critical Thinking/Problem Solving:

A total of 438 students were enrolled in the courses that participated in the assessment of the CLO Critical Thinking/Problem Solving. Of those students, 385 students completed the assignments and were scored using either the Critical Thinking or Problem Solving scoring rubric. A total of 67% of those

students scored as accomplished or better when the scores of the Critical Thinking and Problem Solving Rubrics were combined. 23% were scored into the Developing category and 7% were scored into Beginning.

Total Number of students enrolled in assessed courses: 438	Mastery	Accomplished	Developing	Beginning	Not Demonstrated	Not Applicable
Total # of students who completed scored assignment: 385						
Totals (Combined Scored Written and Problem Solving Rubric)	36%	31%	23%	7%	2%	4%
Total Percentage of Students Scored as Accomplished or Better for Critical Thinking and Problem Solving:	67%					

Critical Thinking:

298 students were enrolled in the courses that participated in the assessment of Critical Thinking. Of those students, 262 students completed the Critical Thinking Assignments and were scored using the Critical Thinking Rubric. A total of 68% of those students scored as accomplished or better in Critical Thinking. 25% were scored into the Developing category and 6% were scored into Beginning.

More than 67% of students scored as Accomplished or better in the categories: Explanation of Issues, Evidence and Conclusions and Related Outcomes.

64% scored into accomplished or better for Influence of Context and Assumptions and the 67% scored into accomplished or better in the category of Student’s Position, which means that more than 33% of students at CGCC are still at the beginning or developing stages for these two categories.

Institutional Core Learning Outcome #2:	Through their respective disciplines, CGCC students who earn a degree can:							Total numbers for Accomplished or better	Total Percentage for Accomplished or better
Critical Thinking: Total Number of students enrolled 298 Total # of students who completed	Mastery	Accomplished	Developing	Beginning	Not Demonstrated	Not Applicable			

scored assignment: 262								
Critical Thinking Rubric: Explanation of Issues: TOTALS	97	92	61	10	0	2	189	73%
Critical Thinking Rubric: Evidence: TOTALS	77	98	67	19	1	0	175	66%
Critical Thinking Rubric: Influence of Context and Assumptions TOTALS	61	94	67	19	3	18	155	64%
Critical Thinking Rubric: Student's Position: TOTALS	76	76	54	19	3	31	152	67%
Critical Thinking Rubric: Conclusions and Related Outcomes: TOTALS	87	89	67	14	1	4	176	68%
Total Percentage of Students Scoring with Critical Thinking Rubric	32%	36%	25%	6%	1%	4%		
Total Percentage of Students who Scored Accomplished or Better with Critical Thinking Rubric	68%							

Problem Solving:

140 students were enrolled in the courses that participated in the assessment of the CLO Problem Solving. Of those students, 123 students completed the Problem Solving assignments and were scored using the Problem Solving Rubric. A total of 66% of those students scored as accomplished or better in Problem Solving. 20% were scored into the Developing category and 9% were scored into Beginning.

More than 66% of students scored as Accomplished or better in the categories: Define Problem, Identifying Strategies, Propose Solutions/Hypothesis, Evaluate Potential Solutions. It should be noted that only 65% of students scored at accomplished or better in the category of Implement Solutions and 62% scored into accomplished or better in the category of Evaluate Outcomes.

Problem Solving: Total Number of students enrolled: 140 Total # of students who completed scored assignment: 123	Master y	Accomplish ed	Developin g	Beginnin g	Not Demonstrate d	Not Applicabl e	Total numbers for Accomplish ed or better	Total Percentage for Accomplish ed or better
Problem Solving Rubric: Define Problem: TOTALS	58	25	26	11	3	0	83	67%
Problem Solving Rubric: Identify Strategies: TOTALS	58	22	30	7	6	0	80	65%
Problem Solving Rubric: Propose Solutions/Hypothesi s: TOTALS	57	29	23	11	3	0	86	70%
Problem Solving Rubric: Evaluate Potential Solutions: TOTALS	52	29	19	17	6	0	81	66%
Problem Solving Rubric: Implement Solutions: TOTALS	42	32	21	9	9	10	74	65%
Problem Solving Rubric: Evaluate Outcomes: TOTALS	45	25	24	11	8	10	70	62%
Total Percentage of Students Scoring with Problem Solving Rubric	43%	23%	20%	9%	5%	3%		
Total Percentage of Students who Scored Accomplished or Better with Problem Solving Rubric	66%							

2. Limitations

What were the limitations of the assessment?

- 1) As noted in the analysis of CLO#1 in 2015-16, it cannot be ignored that faculty scoring of their own student artifacts leads to a certain amount of subjectivity in determining results. When looking at the results of CLO#2, the committee acknowledged that results may be somewhat distorted as a result of faculty assuming that their work is being scrutinized or evaluated and consequently inflating the scores that they give students. Although the following language is included in an explanation of CLO assessment (both on the website and in faculty emails): *“Assessment of Institutional Core Learning Outcomes is **not** about an individual instructor or an individual course: the purpose is to obtain a snap-shot on a more global perspective of student ability in formal college-level communications”*, instructors may not read the entirety of their emails or may continue to believe that their student scores could impact their teaching assignments. Further the committee felt it was reasonable to assume that the categories named “Beginning”, “Developing”, “Accomplished” and “Mastery” may further influence faculty scoring, more than the associated number system of 1, 2, 3 and 4.
- 2) The committee was concerned that many instructors scored student work as “not applicable” in the categories of “Influence of Context and Assumptions” and “Student's Position” (Critical Thinking) and “Implement Solutions” and “Evaluate Outcomes” (Problem Solving). A few instructors noted in the post-assessment survey that they were concerned that the rubric may not “fit” to their assignments (see Appendices 7. Summary of Instructor Evaluations of CLO#2 Process). The layout of the web form made it difficult to determine whether other instructors’ comments/analysis addressed why a student artifact might be considered “not applicable” in these categories. Without this information, the committee is forced to speculate when interpreting the results and what they mean to teaching and learning.
- 3) Norming continues to be a limitation of this assessment work. A few instructor responses on the post-assessment survey addressed their confusion regarding the differences between the categories. Other instructors noted confusion about whether to score student work at the community college level or the university level (see Appendices 7. Summary of Instructor Evaluations of CLO#2 Process).

In summary, it should be noted that the process of CLO assessment and the adapted AACU rubrics are still fairly new to faculty. 2016-17 was the second time a CLO has been assessed at CGCC, and faculty and the CLO Assessment Committee know that there is still work to be done to improve the process to provide more accurate results and analysis. As more faculty participate in the process, awareness of Core Learning Outcomes and the process of assessment continues to improve.

C. Analysis of Results

Assessment and analysis at this level measures whether degree-seeking students leave with some level of proficiency of the Institutional Core Learning Outcomes (Core Theme B: Transforming Lives – Education; Objective B3)

1. Discussion and Implications

Reflect on what was learned and what the impacts might be (not a repeat of findings). Reflection should include the implications of the findings to the General Education Program.

The percentage of students scored as accomplished or better in critical thinking (68%) and problem solving (66%) initially appears to be relatively low, especially when compared with expectations for CGCC's Core Theme B3.3 "Achievement of student learning outcome at the institutional level (Core Learning Outcomes)". Even with the possibility of inflated scoring, CGCC degree-seeking students score "Below Mission Expectation" (Level 1 is 69% or fewer). The CLO Assessment Committee spent considerable time discussing the "norm" for community college students with regards to the AACU rubrics used to assess Critical Thinking and Problem Solving and determined that perhaps, for community college students, mastery or even accomplished levels are beyond what should be expected for students who are at sophomore level in their undergraduate education. "Developing" may be a more appropriate expectation for our students when it comes to critical thinking and problem solving, skills that may require much more time, education and/or practice to mature beyond the developing level.

Unlike 2015-16, when the committee chose to focus on the categories with the lowest scores in accomplished or better, the committee this year chose to focus on the categories that had the highest numbers of students scored into "Beginning" and "Not Applicable": Student's Position (Critical Thinking) and "Evaluate Potential Solutions" (Problem Solving). The committee felt that these two categories from the rubrics were a good fit since each required students to use similar skills in evaluating the complexity of an issue or the feasibility of multiple solutions.

The AACU rubrics are used not only to assess student achievement of the CLO's, but also to inform CGCC where faculty can work together to focus instruction in one or two areas. The implications of this focus, as recommended by the committee, is to 1) move more students from the beginning level to the developing level in developing a position (Critical Thinking) and evaluating potential solutions (Problem Solving) and 2) create a common goal for instruction that all faculty can contribute to. The number of student artifacts that were scored as "not applicable", leads the committee to assume that there may be some instruction in critical thinking that does not involve evaluating one's assumptions or positions. Similarly, some instruction in problem solving may not involve evaluating the feasibility of potential solutions.

With regards to the General Education program, it is interesting to compare results from this Core Learning Outcomes assessment of Critical Thinking/Problem Solving to that of the results of degree outcomes assessment. Results from the assessment of degree outcomes for the Associate of General Studies, Associate of Science and Associate of Science Transfer-Business all show student achievement of Critical Thinking/Problem Solving (Outcome 2 for all 3 degrees) to consistently be around 88% (students achieving a C or better in those courses that align with the outcome). This result is much higher than the result of the CLO assessment which indicates that 66-68% of students are accomplished or better. While the committee did not analyze the implications of the discrepancy in student achievement of this outcome, it should be noted that different methods of measuring student achievement of outcomes is used for the assessment of the three transfer degrees (end of course grades) as opposed to measuring student achievement of Core Learning Outcomes (scoring student artifacts).

2. Recommendations and Action Items

Assessment of Institutional Core Learning Outcomes assesses whether students, regardless of which degree they earn at CGCC, achieve the skills and knowledge that are at the foundation of CGCC's General Education program. Recommendations and Action items should be related to recommendations made in the current General Education Program Review and can include a progress report or revisions on the Gen Ed Program Review recommendations.

i) What actions will be taken as a result of the assessment?

1. It is recommended by the CLO Assessment Committee that actions be taken by all faculty in their classes, since accountability for student achievement of Core Learning Outcomes is the responsibility of all faculty as indicated by their CCOGs when they specify that they address the CLO, Critical Thinking and Problem Solving, in depth and/or list some kind of critical thinking or problem solving course outcome.

As stated in Section C.1., the committee recommends that faculty at CGCC focus on 2 objectives for the next year and a half: "Student's Position" (Critical Thinking) and "Evaluate Potential Solutions" (Problem Solving). Faculty will continue the process that they started during Spring In-service 2016, and work together to develop strategies that they can integrate into their instruction and assessment that help students to develop a position when working on critical thinking, and evaluate potential solutions when working on problem solving. A list of resources to support faculty instruction in these two areas has been compiled and posted to the Institutional Core Learning Outcomes website. Faculty will be reminded of their commitment to increase instruction or integrate an assessment for these two areas when they complete Part A of course outcomes assessment, and will then describe what they did to support students in achieving this CLO at a higher level when completing Part B. The AAC will track these interventions on a spreadsheet and CLO#2 will be assessed again in 2019-20 to determine the impact of these interventions.

2. To address the concerns of the limitations of the assessment methods, it is recommended that the terms "Beginning", "Developing", "Accomplished" and "Mastery" be removed from the adapted rubric. The rubric for the 2017-18 CLO Assessment of CLO #4 (Cultural Awareness), will have the levels numbered 1-4, so that faculty may be less influenced to inflate their scoring (Limitation 1). The web form will also be updated to include a comments area for the level "Not Applicable", so that faculty can explain why they scored a particular student artifact from a category as "Not Applicable". (Limitation 2).

3. The committee will review and determine at what level CGCC expects student achievement of each Core Learning Outcome, noting that there may be a discrepancy between expected levels depending on the skills, knowledge and/or attitude that each CLO requires.

ii) Describe how these action items are related to recommendations from the current General Education Program Review? Include how will these changes affect the General Education program.

The 2015-16 General Education Program Review does recognize that a different method of measuring student achievement of outcomes is used by some CGCC degrees and certificates than that used by the transfer degrees and recommended that "the disparity between the General Education department and

other programs at some point be resolved.” The next General Education Program review may also want to consider comparing the results of the assessment of the Core Learning Outcomes when resolving the disparity, as all 5 Core Learning Outcomes will have gone through at least one assessment cycle.

3. Evaluate the assessment strategy

Were the assessment methods accurate indicators of student achievement of the core learning outcome? Why or why not? Suggestions for changes.

Given that the assessment methods and LEAP rubrics developed by the AACU, have been tested and widely adopted by post-secondary institutions across the US, it is probably safe to say that the assessment methods were accurate indicators of student achievement. As noted in the limitations (Section B2) the committee is concerned, however, about the accuracy and subjectivity of faculty scoring their own student artifacts. The committee agrees that CGCC will continue to have faculty score their own student artifacts while a baseline for each CLO is established, however it is recognized that the process, can be improved by educating faculty regarding the descriptors, reminding faculty that student achievement of a CLO is **not** about an individual instructor or an individual course and thus encouraging faculty to accurately score student work.

4. Faculty involvement

Describe faculty involvement in the assessment and analysis process.

25 faculty from 19 disciplines were involved in the assessment of the CLO (compared to 18 faculty in the previous year):

Fall Term: Elizabeth Anderson (ART 284), Luise Langheinrich (BA 223), Tom Lieurance (EET 221), Emilie Miller (BI 211), Dan Ropek (BI 231), Laura McMullen (BI 234), David Wagenblast (EC 200), Stephen Shwiff (HST 201), John Copp (PS 201), Kristen Kane (PSY 201A), Zip Krummel (PSY 215), Dan Hall (SOC 205), Leigh Hancock (ENG 237)

Winter Term: Patrick Hawke (CAS 213), Siri Olson (CAS 216), Robert Surton (CS 250), Lorie Saito (NUR 211), Gretchen Gebhardt (G 202), Tess Fegel (PSY 215), Mandy Webster (WS 210), Jennifer Hanlon-Wilde (ENG 253), Silvia Huszar (SPA 202)

Spring Term: Stephen Shwiff (BA 208, BA 226), John Evans (MTH 253), Kristin Alligood (BI 213), Jack Brook (FN 225), David Wagenblast (EC 202), Chauna Ramsey (WR 227)

3 faculty and the instructional coordinator were involved in analysis process: Dan Hall, Dan Ropek, Zip Krummel, Kristen Kane and Susan Lewis.

5. Additional comments

While assessment of the CLOs is in part, to comply with the requirements for NWCCU and accreditation, it's important to state that CGCC's commitment to the assessment of CLOs is the result of our promise to students that: Through their respective disciplines, CGCC students who earn a degree can:

1. Communicate effectively using appropriate reading, writing, listening, and speaking skills. *(Communication)*
2. Creatively solve problems by using relevant methods of research, personal reflection, reasoning, and evaluation of information. *(Critical thinking and Problem-Solving)*
3. Extract, interpret, evaluate, communicate, and apply quantitative information and methods to solve problems, evaluate claims, and support decisions in their academic, professional and private lives. *(Quantitative Literacy)*
4. Appreciate cultural diversity and constructively address issues that arise out of cultural differences in the workplace and community. *(Cultural Awareness)*
5. Recognize the consequences of human activity upon our social and natural world. *(Community and Environmental Responsibility)*

Assessment of CLOs also furthers our attainment of Core Theme B: Transforming Lives – Education and aligns with CGCC’s Value of Excellence.

Results, analysis and committee recommendations will be shared with faculty during the fall 2017 in-service. The results and analysis documents will also be shared with faculty through a faculty-wide email and be posted on the Academic Assessment/Institutional Core Learning Outcomes webpage in an effort towards transparency for our students and community.

D. Appendices

Include any assessment method (i.e. rubric), table of results, comments from instructors

[1. AACU LEAP VALUE Rubrics](#)

[2. AACU LEAP VALUE Rubric: Critical Thinking](#)

[3. AACU LEAP VALUE Rubric: Problem Solving](#)

[4. Institutional Core Learning Outcome Assessment Schedule](#)

5. Comments from Analysis Portion of Critical Thinking Rubric

Explanation of Issues	Evidence	Influence of Context and Assumptions	Student's Position	Conclusions and Related Outcomes
This was a very good class in which all students who completed the assignment showed at least some ability to think critically and use sources to develop a comprehensive synthesis.	All but one student met the minimum standard for sources of the assignment. Most sources used were of reasonable quality. As a whole the class did very well.		Students were less accomplished in this aspect of their assignment.	See previous.
Assignment varied in how students could write, thus the not applicable.			Requirements allowed varied writing. In these five papers, students did not clearly come out on a position, although	

			positions were inferred in writing, there was no clear indication of direct position taken.	
May be a little bit of second language influence in this one.	They impressed me a little bit here, just started getting a more thoughtful interpretation/evaluation.	Find them trying to take the easy way out, or the simplest and obvious perspectives.	Still thinking too simplistic and not global enough, or about others'.	"By this point they were ""getting it,"" and the thinking really kicked in.
Next time I will do this again, keep track, and then re-do it a few weeks later and see if I get any regression to the mean."				
	I don't think this category is as accurately assessed as it could be. Some students were able to interpret/evaluate the information they took from their sources, however they may not have been able to question the viewpoints of the experts. In the future, I would encourage this descriptor to be dived into two separate ones, separating questioning viewpoints from interpreting/evaluating sources.	"Students demonstrated this, but it was not necessarily a requirement for this paper, as a result, scoring appears to be all over the place for this category.		
A question I have is what if this isn't required for the paper, but students demonstrate it anyway. Can we have students score into a category that is not required for the paper?"				
				This result sample is small, so may not be as helpful as a larger sample. One student has taken an Incomplete, so will not complete this assignment until mid-January.
50% of students were accomplished in explanation of issues in completing assignment	50% of students were accomplished in using evidence and information to investigate their conclusion in answering the assignment	50 % of students were developing an influence of context and assumptions in answering the assignment	at least 75% of students were able to develop a perspective or opinion in answering the assignment	All students were able to at least develop a conclusion in answering the assignment
Complex thought was achieved by a few, most were in the middle areas on all categories.	Two students were able to use of evidence with enough evaluation and interpretation as a option, most accepted and used evidence from the sources without questioning its viewpoint, etc. was achieved by a few, most did not evaluate the sources at all.	Mostly placed their own interpretation of the information as the core of their answers, with majority reaching the developing level of their putting thoughts into context.	In this area students did much better than in other areas surveyed. The majority of class' discussion and focus on writing were in the area of scholarly thesis supported by evidence bringing the paper to a strong supported conclusion.	Areas of focus were better than ones we didn't focus on. Students didn't necessary have the preparation for the writing level expected at the WR 121.

Relatively weak, lowest score.	Evidence use was strong.	Most evenly spread across proficiency levels.		"Relatively strong, showed ability to reach reasoned conclusions.
Note - a place to overview the actual topic in this form might have provided more context for the data provided."				
Many students achieved mastery in this area due to their preparation and long hours of in-class research and discussions. They created power points, interviews and videos regarding their subject matter. Their teamwork on presentations created an avenue for dedicated information processing and group and individual evaluations of their work.	The students were able to analyze and discuss data in a group modality- individual research techniques and weekly group discussion meetings. They gathered information from journals/books/web sites/personal interviews and case studies.	Many of the student's received high levels in this area due to weekly analysis groups-research groups and individual and group in-class evaluations. After data collection students were required to present both personal and academic positions in regards to their subject matter. I provided weekly guidance and evaluations on their progress.	The student research groups were required to synthesize complex issues and to explore issues with imagination and reflections based on data and peer reviewed articles. They were also required to test theories with direct discussion- data review and community interviews. All of the students produced power points-art and creative question and answer sessions in order to educate other class members.	Students provided evaluations and evidence of their findings via academic research- weekly group discussions and peer review evaluations. The held screening sessions of their reports in order to provide evidence based data. Open discussions were provided during their presentations in order for all students a chance to discuss viewpoints and their related outcomes.
"I think the large amount of snow days really impacted the overall quality of papers submitted this term. I had a few students (3) not submit final drafts, so some of these ratings are based on rough drafts. I also noticed the writing ability was lacking in a few papers. (NOTE: This applies to all portions of the rubric).				
I also found many students struggled with writing abstracts - which is where this rubric item would have been found in my assignment."	Many students focused papers more on research and reporting information they found. Only a few spend more time on comparing the information and questioned what was found. Again, I think the snow days impacted this a great deal - two weeks at the start of the term really cut into research and writing time.	I did not feel as though this aspect applied to my assignment.	Again, students struggled with formulating an abstract and clearly stating the point/purpose/thesis of their paper. I definitely notice a difference in the quality of papers this term vs. fall term. (many students were overlapping) I think all the snow days impacted the overall quality. I have students submit rough drafts, giving them feedback and areas to improve on - many were incomplete and did not have abstracts to comment on!	"All statements made in previous comments also apply here. The conclusion is the last thing they write and therefore is always the item that needs the most improvement.

6. Comments from Analysis Portion of Problem Solving Rubric

Define Problem	Identify Strategies	Propose Solutions/Hypothesis	Evaluate Potential Solutions	Implement Solutions	Evaluate Outcomes
			I should have been more clear on the requirement of the student fully explaining their solutions. Some were quite brief on their writing.	This is not applicable since their implementations will happen either after they graduate or at some other time. They did have an implementation plan.	This is not applicable since the students did not implement their solution. But I did require an evaluation plan for when they implement. They had to have a measurable, time defined objective that they could then evaluate against. This they did have in their project.
Wasn't required since the 'problems' were stated in the assignment.	Overall good use of multiple strategies.	Hypothesis were limited due to structure of the assignment.	Many more in 'developing', perhaps a problem with the project fit to category.		Many able to evaluate reasoned outcome assessment.
				some students showed a flaw in lab procedure, or writing report, not in understanding	
Students were able to define the problem presented to them and use the tools they had been learning and apply them to create an original document. The student that is at the Beginning level did not participate in class discussions nor followed through with weekly assignments to develop the critical thinking skills used to define a problem.	Students were able to determine which tools were applicable to the problem and utilize a multitude of strategies to address the problem in creating original documents. It was very clear students were strong in this area and the tools used were impressive. The two students in at the developing level has shown growth throughout the term.	Students used a variety of solutions to address the problem. It is clear students had developed the knowledge and skill to apply to the problem.	Students are accomplished in this area. The solutions presented in original documents were creative and multi-dimensional. There is not only one correct answer to the problem. Students demonstrated they were knowledgeable and comfortable with the solutions they presented.	The majority of students are at the mastery level in this category, even though there are 4 in Accomplished, it will not take much more for them to reach the Mastery level. Again, the students in the Beginning and below are students who struggled on a weekly basis to complete the minimum amount of work or chose not to complete any assignments prior to the final.	Clearly, students chose to go over and beyond the bare minimum of the assignment in order to demonstrate the skills they have gained.
"4 students did not complete assignment.					
45% in developing stage 2					
23% in stages 3-4"	"4 students did not complete				

	assignment.				
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7. Summary of Instructor Evaluations of CLO#2 Process:

Q2: How long did it take you to complete the scoring using the rubric?

30 minutes to 5 hours dependent on. Instructors reported that those hours included:

- Familiarization with the rubric and determine how to apply it to the particular assignment to be assessed
- Folded scoring with rubric and the grading of assignment
- Collecting of data

Q3: What questions or concerns do you have about using the rubric to score your students' assignments?

- None
- Questions of rubric fit with assignment (i.e.: some assignments did not have multiple solutions)
- level of evaluating students (4 year college level vs 2 year college level)
- "subjective and open to interpretation, but thought provoking"
- Many felt the rubric was well-thought out: "I did like the rubric to score the assignment because it was applicable to the assignment, due to there not being only one answer to the problem (creating original documents with the tools and skills covered throughout the term). Students are encouraged to demonstrate what they've learned and think outside of the box, rather than in a specific step-by-step process."
- Difficulty with distinguishing levels: "I found it a bit hard to distinguish between levels on some items. For example, when a student is writing a paper about his interpretation of how insects function metaphorically in Grapes of Wrath, it's a little bit hard to judge how thoroughly and systemically he has analyzed his and others' assumptions. Not impossible--but I wouldn't call the results I've submitted "hard data."

Q4: What other questions or concerns do you have about the rubric or assessment of Institutional Core Learning Outcomes?

- No concerns, but it makes me realize that I need to include more information in my course about opposing viewpoints and how to present them in an essay.
- Gives me great feedback about motivating students and to continue providing supervised research and peer review and in-class discussions.
- Assignments need to be carefully crafted to rubrics. Complex to do since critical thinking and problem solving overlap partially and have gaps where they may not relate well.
- I understand that we need to do this. And I'm committed to promoting and deepening critical thinking skills in all my classes. It seems essential to our democracy to do so.

Q5: Further Comments

- This assessment aside, the most glaring issue with students' work was a failure across the board to properly cite and give credit to other sources used, especially in this case where big chunks were taken from their book or from what I did in class on the board (part of what they were told to do)
- The rubric is very helpful for assessing work. I found the rubric to be more intuitive than assigning traditional grades. I think I will try to incorporate the rubric more to help facilitate grading.

- What a great way for a teacher to evaluate their students. Assists me in the importance of holding high standards and the amazing potential of students when provided guidance and enthusiasm in the classroom is demonstrated.
- Takes too much thinking.

Assessment completed by: Kristen Kane with the help of the CLO Assessment Committee (Susan Lewis, Zip Krummel, Dan, Ropek and Dan Hall)

Date: 9.20.17

Analysis to be submitted by the Academic Assessment Coordinator (kkane@cgcc.edu) by October 15 the following academic year being assessed.