EVIDENCE TEAM REPORT
ILO 4 INFORMATION AND TECHNOLOGY LITERACY
ASSESSMENT AND REVIEW
Spring 2017

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Institutional Learning Outcome Statement

Institutional Learning Outcome (ILO) 2 Critical Thinking and Problem Solving is: Explore issues through various information sources; evaluate the credibility and significance of both the information and the source to arrive at a reasoned conclusion. Examples of when students have demonstrated mastery of this ILO include, but is not limited to

- Applying a variety of critical and creative strategies for solving complex problems or tasks.
- Generating and exploring questions and arriving at reasoned conclusions.
- Synthesizing ideas and information from various sources and media.
- Evaluating the credibility and significance of sources and materials used as support or evidence.
- Identifying assumptions, discerning bias, and analyzing reasoning and methods.

Previous Review

In spring 2012, an evidence team reviewed Critical Thinking and Problem Solving (ILO 2). The team reported that 84% of the students meet or exceed the expectations for critical thinking & problem solving institutional learning outcome."

Table 1. 2012 Evidence Team Report

	Exceeds Expectations	Meets Expectations	Fails to Meet Expectations	No Evidence
Explore and define issues, problems, or questions	55%	35%	4%	6%
Identify and evaluate credibility or significance of sources or information	51%	41%	16%	2%
Apply critical thinking strategies for solving issues, problems, or questions	65%	35%	16%	4%
Arrive at reasoned conclusions or solutions	48%	31%	19%	2%

*Percent totals may not equal 100 due to rounding.

The committee used the ILO 2 rubric to rate student artifacts from 12 courses to support their statement that the AHC students represented scored well above the 70% benchmark and made these recommendations:

Recommendation #1: Rubric Development

The previous evidence team recommended the creation of two separate rubrics, one for problem solving and one for critical thinking. They believed that these two components have different areas of emphasis. In addition, they also suggested that the Learning Outcomes & Assessment Committee Academic Affairs (LOAC-AA) develop a policy and standardized procedure on rubric development as well as "Best Practice" guide for future ILO assessments.

Recommendation #2: Choose Artifacts Mapped to the ILO

The previous evidence team reported challenges in collecting artifacts. There were issues regarding access to student work and faculty buy-in to the process (i.e. student confidentiality concerns). Inter-rater reliability and other ranking errors among committee members raised issues regarding the ranking process, subject expertise, definitions, and applications of the specific ILO. Not all course student learning outcomes (CSLOs) were mapped to the different ILOs at the start of the evidence team study.

Recommendation #3: Develop Procedures that Integrate Qualitative Data

The team found that there was unclear use of quantitative and qualitative methods.

Recommendation #4: Involve More Faculty with Subject Expertise

When ranking the student artifacts, the evidence team members realized that there is a need for subject

expertise to addresses nuances in the artifacts that warrant further considerations.

Intentional Actions for the Current Evidence Study

Recommendation #1: Rubric Development

The 2017 evidence team reviewed the rubric and made modifications to maintain the standard format, consistency in dimension wording, and align the scoring system to eLumen (assessment management system).

Recommendation #2: Choose Artifacts Mapped to the ILO

Instead of collecting student artifacts, the evidence team gathered eLumen data from fall 2010 to fall 2016. The data was based on assessment measures reported by discipline faculty during the inclusive semesters.

Recommendation #3: Develop Procedures That Integrate Qualitative Data

The evidence team used both direct and indirect evidence. eLumen reports (both aggregated and disaggregated by demographic) served as direct evidence while a student survey related to ILO 2 was the indirect evidence.

Recommendation #4: Involve More Faculty with Subject Expertise

The evidence team used various ways to promote discipline faculty involvement. During the study, the team solicited input on revising the institutional learning outcome language, developing the rubric, and drafting the student survey. The team encouraged faculty to review alignment of their course student learning outcomes to the critical thinking and problem solving institutional learning outcome.

Purpose

The 2017 evidence team undertook step C (assess outcomes per assessment plan, evaluate assessment results, and decide if outcomes met established goals) and step D (discuss areas of instruction or processes that could be changed to improve outcomes and implement changes). (Refer: Figure 1).

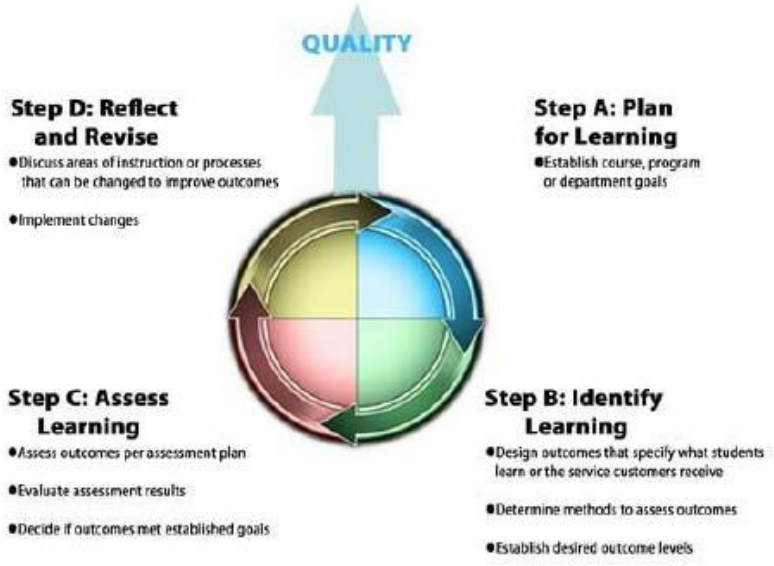

Figure 1. Diagram of the Student Learning Outcomes and Assessment Cycle

Development of Rubrics

The rubric was based on the current definition of ILO 2. It reflects a 3-point rubric (exceeds standards (3), meets standards (2), and does not standards (1)) consistent with the college's rating system in assessment

management software, eLumen.

Rubric 1. ILO 2: Critical Thinking and Problem Solving

"Explore issues through various information sources; evaluate credibility and significance of both the information and the source to arrive at a reasoned conclusion. "

	Exceeds (3)	Meets (2)	Does Not Meet (1)	N/A
Applying a variety of critical and creative strategies for solving complex problems or tasks.	Accurately applies critical and creative strategies for solving complex problems or tasks.	Adequately applies critical and creative strategies for solving complex problems or tasks with minor inaccuracies.	Poorly applies strategies for solving complex problems or tasks.	
Generating and exploring questions and arriving at reasoned conclusions or solutions.	Clearly and thoroughly defines the issues, problems, or questions. Thoroughly and accurately describes conclusions or solutions.	Adequately defines the issues, problems, or questions. Adequately describes conclusions or solutions with minor inaccuracies.	Poorly identifies the components of the issues, problems, or questions. Poorly describes conclusions or solutions.	
Synthesizing ideas and information from various sources and media.	Thoroughly integrates ideas and information from various sources and media.	Adequately integrates ideas and information from various sources and media with some inaccuracies.	Poorly integrates ideas and information from few sources and media.	
Evaluating the credibility and significance of sources of material used as support or evidence.	Thoroughly evaluates the credibility or significance of a variety of sources or information.	Adequately evaluates the credibility or significance of a variety of sources or information.	Poorly evaluates the credibility or significance of a variety of sources or information.	
Identifying assumptions, discerning bias, and analyzing reasoning and methods.	Thoroughly discerns assumptions and/or biases.	Adequately discerns assumptions and/or biases with minor inaccuracies.	Poorly discerns assumptions and/or biases.	

Course Re-mapping and Related Activities

In spring 2017, the evidence team communicated with the faculty through various such as electronic mail, face-to-face meetings, or a department meeting. Each evidence team member followed through with the discipline faculty and departments (Figure 2).

Figure 2. Email Template

Dear _____,

This year, we are reviewing and reassessing ILO # 2 (Critical Thinking and Problem Solving).

Currently your course/s: _____ have SLOs mapped to this ILO. I have attached an Excel file for your reference.

The team has worked to edit some on the language for the ILO and update the rubric.

The team is also working on a set of questions to ask students.

Please take a few minutes to do the following:

1. Review the ILO. No changes are proposed to the language.
2. Review the rubric and comment.
3. Review the set of questions and provide feedback.
4. Review your SLOs that map to this ILO. Mark the correct column.
    - Maintain my map. Put an X in this column if you got it correct the first time and wish to move on with the day.
    - Change my map. Put the number of the ILO you wish to switch to in this column if somehow a mistake in mapping was made.

Please respond with your Excel file by _____ so I can provide your input to the team.

On behalf of the ILO Team
Thank you

Methodology

The assessment management software, e-Lumen, provided course student learning outcomes (CSLOs) data from fall 2010 to fall 2016, including disaggregated data by a variety of demographics. These demographics included age, gender, and ethnicity. Special populations considered were first generation, foster youth (Cooperating Agencies Foster Youth Educational Support – CAFYES), veteran (Free Application for Federal Student Aid – FAFSA), California Board of Governors fee waiver, California Work Opportunity and Responsibility to Kids (CalWORKs), Cooperative Agencies Resources for Education (CARE), Extended Opportunity Programs and Services (EOPS), Mathematics Engineering Science Achievement (MESA), and Disabled Student Programs and Services (DSPS).

Direct Evidence

eLumen provided 61,694 data points for critical thinking and problem solving ILO from fall 2010 to spring 2016. Table 2 below shows the college reached the establish benchmark of 70 percent or higher exceeding/meeting the standard overall.

Table 2: ILO 2 Summary: All data points since the last cycle

	Exceeds Standards		Meets Standards		Below Standards	
All Categories	26755	43.4%	27286	44.2%	7653	12.4%

Table 3: ILO2 and Student Self-Reported Categories (Age, Ethnicity, Gender, and First Generation Students)

	Exceeds Standards		Meets Standards		Below Standards	
Category: Age (Fall 2010-Fall 2016)						
Unknown	0	0%	0	0%	0	0%
Under 20	1,855	85.17%	323	14.83%	2,178	14.08%
20-24	5,999	86.34%	949	13.66%	6,948	44.91%
25-34	3,683	91.59%	338	8.41%	4,021	25.99%
35-54	1,623	93.12%	120	6.88%	1,743	11.27%
55 - over	554	95.19%	28	4.81%	582	3.76%
Overall	13,714	88.64%	1,758	11.36%	15,472	100.00%
Category: Ethnicity (Fall 2010-Fall 2016)						
Asian	437	90.10%	48	9.90%	485	3.14%
Black Non-Hispanic	306	84.76%	55	15.24%	361	2.33%
Filipino	624	91.23%	60	8.77%	684	4.42%
Hispanic	7216	86.59%	1118	13.41%	8,334	53.89%
White Non-Hispanic	4812	91.74%	433	8.26%	5,245	33.91%
Other Non-White	4	100%	0	0%	4	0.03%
Pacific Islander	71	76.34%	22	23.66%	93	0.60%
American Indian/Alaskan Native	236	91.47%	22	8.53%	258	1.67%
Unknown / Undeclared	2	100%	0	0%	2	0.01%
Overall	13,708	88.63%	1,758	11.37%	15,466	100.00%

Category: Gender (Fall 2010-Fall 2016)						
Male	6,092	87.37%	881	12.63%	6,973	45.07%
Female	7,613	89.67%	877	10.33%	8,490	54.87%
Other	9	100.0%	0	0%	9	0.06%
Unknown	0	0%	0	0%	0	0%
Overall	13,714	88.64%	1758	11.36%	15,472	100.00%

Students self-reported age, ethnicity, gender, and first generation. Standard demographic intervals defined age intervals and ethnicity. Gender reporting included “male”, “female”, “unknown” as missing responses, and “other” as pertaining to identification with neither or both genders.

Table 4: ILO2: First Generation College Students, Foster Youth, and Veterans

	Exceeds/Meets Standards		Below Standards		Below Standards	
Category: First Generation College Students and College Achievement Now (CAN) (Fall 2010-Fall 2016)						
Yes	403	86.85%	61	13.15%	464	3.0%
No	13,311	88.69%	1,697	11.31%	15,008	97%
Overall	13,714	88.64%	1,758	11.36%	15,472	100.00%
Category: Foster Youth and Cooperating Agencies Foster Youth Educational Support (CAFYES) (Fall 2010-Fall 2016)						
Yes	187	80.60%	45	19.40%	232	1.50%
No	13,526	88.76%	1,712	11.24%	15,238	98.50%
Overall	13,713	88.64%	1,757	11.36%	15,470	100.00%
Category: Veterans (Fall 2010-Fall 2016)						
Yes	368	89.98%	41	10.02%	409	2.64%
No	13,347	88.60%	1,717	11.40%	15,064	97.36%
Overall	13,715	88.64%	1,758	11.36%	15,473	100.00%

Students self-reported the first-generation, foster youth, and veteran status. The College Achievement Now (CAN) staff, based on the student’s eligibility for various services, also verified the first generation status. First generation students were the first in their immediate family to attend college. The CAN-eligible student received individualized assistance through intense monitoring and support for educational and career goals.

The Cooperating Agencies Foster Youth Educational Support (CAFYES) program verified the foster youth status. The program provides “over and above” support services for current and former foster youth attending the college. It works in conjunction with other programs to provide intake and assessment, academic counseling, peer mentoring, tutoring services, and computer lab access for homework, study time, and printing needs. It also assists in transportation, food court vouchers, and textbook purchase. The student eligibility includes:

1) Current or former foster youth in California whose dependency was established or continued by the court on or after the sixteenth birthday;
2) No older than 25 years of age at the commencement of any academic year in which s/he participated in CAFYES; and
3) Eligible Extended Opportunity Programs and Services (EOPS) student who enrolled in at least nine units.

The Veterans Center serves as a resource for the veterans. It provides a multi-faceted assistance to prospective and current student-veterans and prospective and enrolled student-veteran-dependents. It

aids the transition to college, access to GI benefits, and completion of admission application process. It helps veterans in getting involved in leadership activities and transitions to civilian work world.

Table 5: ILO2: Mathematics Engineering Science Achievement (MESA) Program and Disabled Students Programs and Services (DSPS)

	Exceeds/Meets Standards		Below Standards		Below Standards	
Category: Mathematics Engineering Science Achievement (MESA) Program (Fall 2010-Fall 2016)						
Yes	20	80.0%	5	20.00%	25	0.16%
No	13,694	88.65%	1,753	11.35%	15,447	99.84%
Overall	13,714	88.64%	1,758	11.36%	15,472	100.00%
Category: Disabled Students Programs and Services (DSPS) (Fall 2010-Fall 2016)						
Yes	890	85.00%	157	15.00%	1,047	6.77%
No	12,825	88.90%	1601	11.10%	14,426	93.23%
Overall	13,715	88.64%	1758	11.36%	15,473	100.00%

The Mathematics, Engineering, Science Achievement (MESA) program provides a wide range of support services and activities that are aimed at fostering student achievement and increasing the success and participation in pursuit of a mathematics, engineering, computer science, biology, architecture, kinesiology, or other science-based programs. It enables students to prepare for and graduate from a four-year university with a math-based degree. It seeks to increase the diverse pool of transfer-ready community college students. Through the program, the students develop academic and leadership skills, improve academic performance, and gain confidence in their abilities to compete academically and professionally.

The Disabled Students Programs and Services, or Allan Hancock College's Learning Assistance Program, verifies and documents students with learning disabilities. The program identifies the educational limitations that reduced the student's ability to participate in academic endeavors without additional specialized services. It provides reasonable accommodations, instruction, assessment, counseling, and advocacy.

Table 6: ILO2: Eligibility for Board of Governors, California Work Opportunity and Responsibility to Kids (CalWORKS), Cooperative Agencies Resources for Education (CARE), Extended Opportunity Programs and Services (EOPS)

	Exceeds/Meets Standards		Below Standards		Below Standards	
Category: Board of Governors (BOG) Fee Waiver Eligibility (Fall 2010-Fall 2016)						
Yes	9,199	87.44%	1,321	12.56%	10,520	67.99%
No	4,517	91.18%	437	8.82%	4,954	32.01%
Overall	13,716	88.64%	1758	11.36%	15,474	100.00%
Category: California Work Opportunity and Responsibility to Kids (CalWORKs) Eligibility (Fall 2010-Fall 2016)						
Yes	150	90.91%	15	9.09%	165	1.07%
No	13,561	88.61%	1,743	11.39%	15,304	98.93%
Overall	13,711	88.64%	1758	11.36%	15,469	100.00%
Category: Cooperative Agencies Resources for Education (CARE) Eligibility (Fall 2010-Fall 2016)						
Yes	142	94.04%	9	5.96%	151	0.98%
No	13,561	88.58%	1,749	11.42%	15,320	99.02%
Overall	13,711	88.64%	1,758	11.36%	15,471	100.00%
Category: Extended Opportunity Programs and Services (EOPS) Eligibility (Fall 2010-Fall 2016)						

Yes	931	86.85%	141	13.15%	1,072	6.93%
No	12,784	88.77%	1,617	11.23%	14,401	93.07%
Overall	13,715	88.64%	1,758	11.36%	15,473	100.00%

The California Board of Governors (BOG) Fee Waiver waived tuition fees to eligible students. The students were responsible for paying the college general fees (all materials costs, health fee, and other fees). The California Work Opportunity and Responsibility to Kids (CalWORKS), a partnership between the college and the Department of Social Services, served "Welfare to Work" recipients. It offers supportive services designed to assist students in obtaining education that helped transition from financial assistance to long-term self-sufficiency. The Cooperative Agencies Resources for Education (CARE), a state-funded program, assists single parents. In conjunction with Extended Opportunity Programs and Services (EOPS), it provides assistance to low-income eligible students. The CARE center provides tutoring sessions, computer and printing access, academic counselling, and child care. These programs encourage enrollment, retention, and transfer opportunities.

Indirect Evidence

The Allan Hancock College Student Equity Study (2015-18) reported equity gaps on completion of specific courses, English as a second language (ESL) and basic skills, degrees and certificates, and transfer courses. The study identified the top student groups.

Table 7: Top Four Student Groups with the Largest Equity Gap on Course Completion - The ratio of the number of credit courses that students, by population groups, complete compared to the number of courses in which students in that group are enrolled on the census day of the term.

Student Group	Gaps in Comparison to the Average (%)	Number of Courses the Student Enrolled in and Were Present on Census Day in Base Year	Number of Students (Enrollments) Lost
Foster Youth	13.6 %	1,122	153
African American	8.6%	1,649	143
Hispanic/Latino	3.2%	31,803	1,081
Economically Disadvantaged	2%	40,674	945

Table 8: Top Four Student Groups with the Largest Equity Gap on ESL and Basic Skills Completion - The ratio of the number of students by population groups who completed the final ESL or basic skills course compared to the number of students who complete such a final ESL or basic skills course.

Student Group	Gaps in Comparison to the Average (%)	Number of Student Who Complete a Final ESL or Basic Skills Course with an A, B, C, or Credit	Number of Students (Enrollments) Lost
Students with Disabilities	19%	697	132
Hispanic/Latino	3.3%	1544	51
Males	2.2%	1083	24
Economically Disadvantaged	102%	1815	22

Table 9: Top Three Student Groups with the Largest Equity Gap on Degree and Certificate Completion - The ratio of the number of students by population groups who receive a degree or certificate to the number of students in that group with the same informed matriculation goal as documented in the Student Education Plan (SEP) developed with a counselor/advisor.

Student Group	Gaps in Comparison to the Average (%)	Number of First-time Students Who Enrolled in 2008-2009 and Named Certificates and degrees as Their Matriculation Goal	Number of Students (Enrollments) Lost
African Americans	15%	51	8
Males	9%	817	74
Students with Disabilities	9%	75	9

Table 10: Top Three Student Groups with the Largest Equity Gap on Transfer - The ratio of the number of students by population groups who complete a minimum of 12 units and have attempted a transfer level course in math or English to the number of students in that group who actually transfer after one or more (up to six) years.

Student Group	Gaps in Comparison to the Average (%)	Number of First-time Students Who Enrolled in 2008-2009 and Named Transfer as Their Matriculation Goal	Number of Students (Enrollments) Lost
Economically Disadvantaged	4%	1233	54
Hispanic / Latino	6%	775	50

Students with Disabilities	12%	75	9

The evidence team drafted a student self-report survey in collaboration with the institutional effectiveness office. The survey was disseminated through a RAVE email and posted as a message on Canvas (the district's learning management system). The survey was conducted for two weeks (April 13 – April 27, 2017). The questions are shown in the table 11. Please see Appendix A for the results.

Table 11: Student Survey.

	Strongly Agree		Agree		Disagree		Strongly Disagree	
DIMENSION 1: Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to apply a variety of critical and creative strategies for solving complex problems.								
a. I am able to apply a variety of strategies for solving complex problems.								
b. My strategies work when applied to complex problems.								
DIMENSION 2: Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to generate and explore questions and arrive at reasoned conclusions.								
a. I am able to define issues, problems or questions.								
b. I am able to arrive at reasoned conclusions from various sources.								
DIMENSION 3: Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to synthesize ideas and information from various sources and media.								
a. I am able to search and select different unbiased sources and media.								
b. I am able to choose relevant information for my research.								
DIMENSION 4: Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to evaluate the credibility and significance of sources and material used as support or evidence.								
a. I am able to determine the credibility of materials.								
b. I am able to determine the appropriate use of these materials.								
c. I am able to recognize the importance support materials used as evidence.								
DIMENSION 5: Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to identify assumptions, discern bias, and analyze reasoning and methods.								
a. I am able to identify assumptions in an argument.								
b. I am able to recognize the bias in various materials.								
c. I am able to examine the reasons and methods taken to get to a specific conclusion.								

Findings

The eLumen data sets showed attainment of the benchmark of greater than 70 percent exceeds or meets standards for the institutional learning outcome on critical thinking and problem solving. Compared to the student equity study, the data did not refute nor support the equity gaps in the different student population groups.

Based on data points, it is inaccurate to draw conclusions regarding specific student populations. There were inherent redundancies. There were students who have taken a number of courses mapped to the ILO. There are a number of course student learning outcomes that were mapped, and continued to be mapped, to the same ILO.

There were some parallels of the "below standard" percentages among the different categories with the findings of the student equity study.

- The student groups with the largest equity gap in course completion (foster youth, African American, Hispanic Latino, and economically disadvantaged) had higher "below standards" percentages for critical thinking ILO than the other groups within the respective categories but upon talking to Institutional Effectiveness, no group was singled out has having a big enough gap to cause concern.

Table 12: SLO and Equity Gap Categories

	Foster Youth	Non-Foster Youth	Overall
"Below Standard" Total	45	1,712	1,757
"Below Standard" Percentage	19.40%	11.24%	11.36%

	Black non-Hispanic	Hispanic	Overall
"Below Standard" Total	55	1,118	1,758
"Below Standard" Percentage	15.24%	13.41%	11.37%

	Financial Eligibility Categories				
	BOG Fee Waiver	CalWORKs	CARE	EOPS	Overall
"Below Standard" Total	1,321	15	9	141	1,758
"Below Standard" Percentage	12.56%	9.09%	5.96%	13.15%	13.51%

- The student groups with the largest equity gap in English as a Second Language and basic skills (disabled students, Hispanic/Latino, males and economically disadvantaged) had higher "below standards" percentages for critical thinking ILO than the other groups within the respective categories.

Table 13: SLO and Equity Gap Categories: Disabled Students Programs and Services (DSPS)

	DSPS	Non-DSPS	Overall
"Below Standard" Total	157	1,601	1,758
"Below Standard" Percentage	15.00%	11.10%	11.36%

- The student groups with the largest equity gap in degree/certificate completion (African American, males, and disabled students) had notable "below standards" percentages for critical thinking ILO than the other groups within the respective categories.

Table 14: SLO and Equity Gap Categories: Gender

	Male	Female	Overall
"Below Standard" Total	881	877	1,758
"Below Standard" Percentage	12.63%	10.33%	11.36%

- The student groups with the largest equity gap in transfer (economically disadvantaged, Hispanic Latino, and disabled students) had notable "below standards" percentages for critical thinking ILO than the other groups within the respective categories.

Recommendations and Subsequent Actions

The current evidence study broke ground on the use of available college institutional effectiveness staff and technologies to augment assessment management system (eLumen). Through disaggregated data points and data loading from the enrollment management system (Banner), the data hinted on parallels to other college studies. Also, the student self-report survey provided valuable perspectives on this specific institutional learning outcome.

The faculty continued to be involved in the evidence study. They reviewed the new rubrics, provided input on the student survey, and revisited mapping of the course student learning outcomes. The faculty responded well with multiple forms of communication and collaboration: electronic mail, face-to-face conversations, department meetings, and one-on-one interactions.

The current study sought data that can be used to make institutional decisions. The findings loosely paralleled the student equity conclusions. Data can be further refined to reduce redundancies. Students had taken a number of courses that were mapped to the same ILO. Certain courses had a number of learning outcomes that were mapped to the same ILO.

The subsequent actions would include: (1) continued periodic review of the institutional learning outcomes; (2) inclusion of other data categories like distance education, academic preparation, employment that are meaningful to faculty; (3) further integration of ILO rubrics in the design of assessment measures; and (4) use of student surveys and other sources of indirect evidence.

Acknowledgement

The evidence team expressed their deepest gratitude to

- Jennie Robertson, learning outcomes analyst, for her diligence and dedication in generating eLumen reports and other related resources.
- Paul Murphy, vice-president, institutional effectiveness, for providing input regarding the conduct of the student survey and potential applications of the learning outcomes evidence.
- Erica Biely, senior research analyst, for facilitating the design and launch of the student survey.
- Armando Cortez, senior institutional research analyst, for collecting and collating information and commenting on how to analyze the gaps in the data.

References

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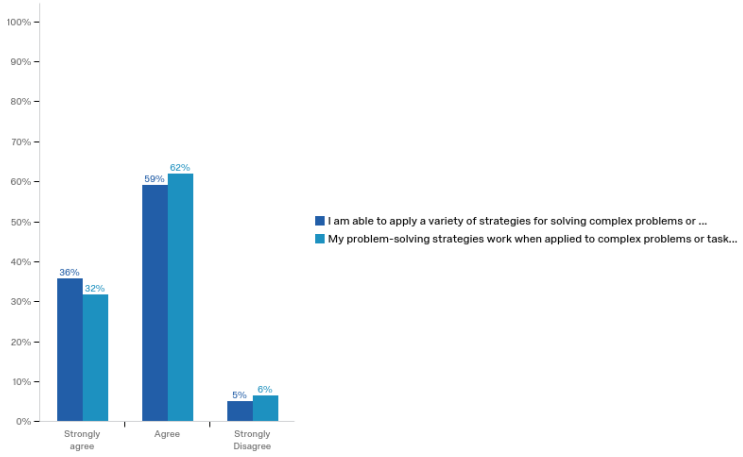
Appendix A

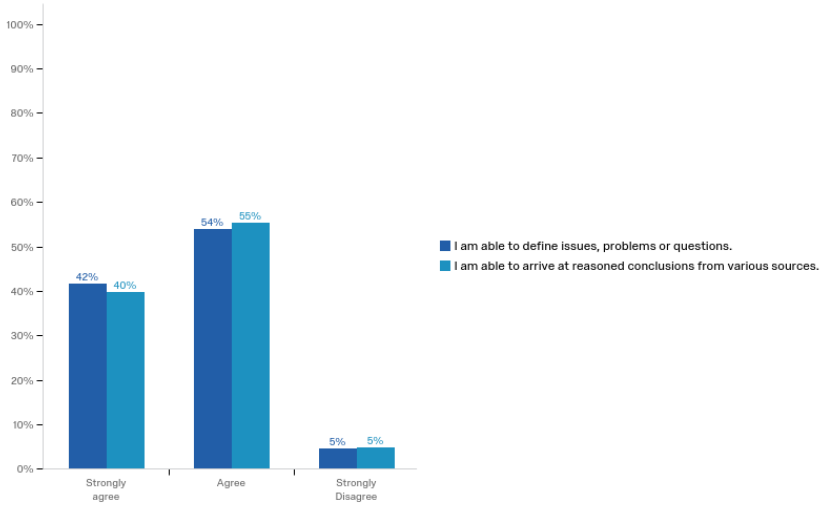
Q2 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to apply a variety of critical and creative strategies for solving complex problems or tasks.



Q2 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to apply a variety of critical and creative strategies for solving complex problems or tasks.

#	Question	Strongly agree	Agree	Strongly Disagree	Total
1	I am able to apply a variety of strategies for solving complex problems or tasks.	36%	59%	5%	1176
2	My problem-solving strategies work when applied to complex problems or tasks.	32%	62%	6%	1151

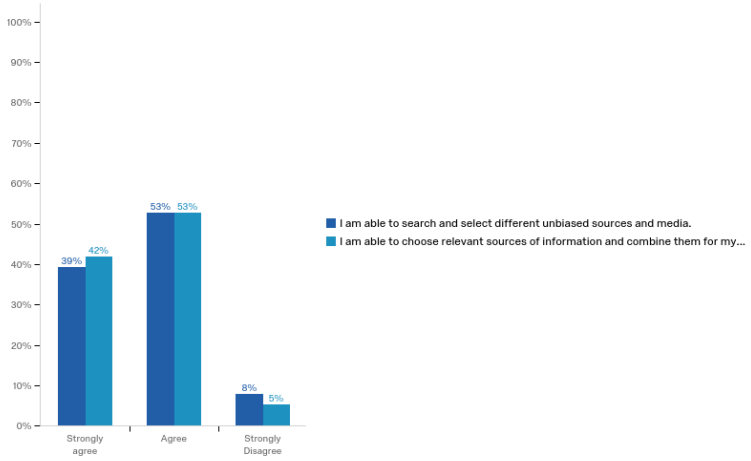
Q3 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to generate and explore questions and arrive at reasoned conclusions.



Q3 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to generate and explore questions and arrive at reasoned conclusions.

#	Question	Strongly agree	Agree	Strongly Disagree	Total
1	I am able to define issues, problems or questions.	42%	54%	5%	1132
2	I am able to arrive at reasoned conclusions from various sources.	40%	55%	5%	1121

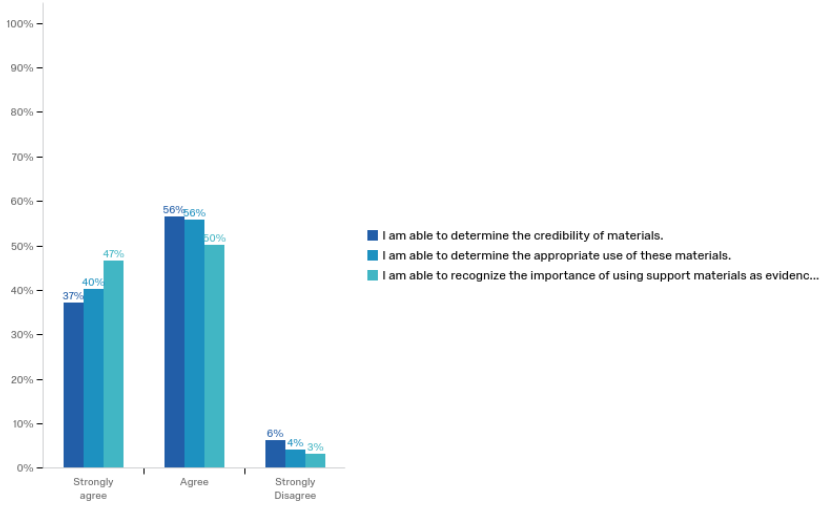
Q4 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to synthesize ideas and information from various sources and media.



Q4 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to synthesize ideas and information from various sources and media.

#	Question	Strongly agree	Agree	Strongly Disagree	Total
1	I am able to search and select different unbiased sources and media.	39%	53%	8%	1107
2	I am able to choose relevant sources of information and combine them for my research or tasks.	42%	53%	5%	1107

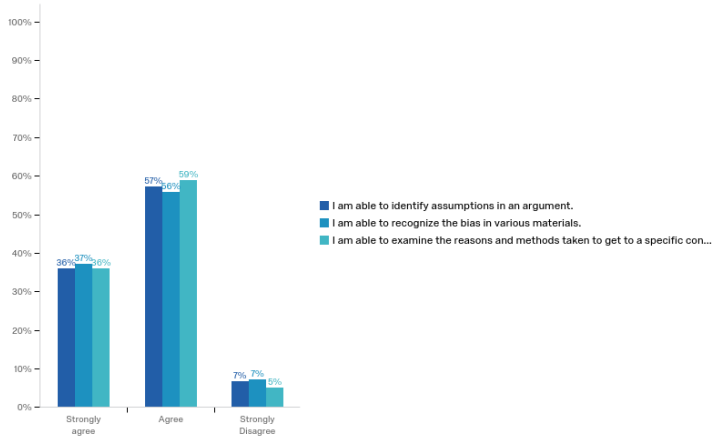
Q5 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to evaluate the credibility and significance of sources and material used as support or evidence.



Q5 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to evaluate the credibility and significance of sources and material used as support or evidence.

#	Question	Strongly agree	Agree	Strongly Disagree	Total
1	I am able to determine the credibility of materials.	37%	56%	6%	1087
2	I am able to determine the appropriate use of these materials.	40%	56%	4%	1082
3	I am able to recognize the importance of using support materials as evidence.	47%	50%	3%	1078

Q6 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to identify assumptions, discern bias, and analyze reasoning and methods.



Q6 - Considering your educational experience at Allan Hancock College, please respond to these statements about your ability to identify assumptions, discern bias, and analyze reasoning and methods.

#	Question	Strongly agree	Agree	Strongly Disagree	Total
1	I am able to identify assumptions in an argument.	36%	57%	7%	1061
2	I am able to recognize the bias in various materials.	37%	56%	7%	1063
3	I am able to examine the reasons and methods taken to get to a specific conclusion.	36%	59%	5%	1057