

PROGRAM ASSESSMENT SUMMARY

AOE- MATH AND SCIENCE
FALL 2019

185

Students

70%

Benchmark

84%

Scored 2 or
above

Percent of all students that scored a 2
or above (met minimum level of
competency or above) on PLO 1 and 2.

Students with more units
completed in the program
scored significantly
higher on the PLOs.



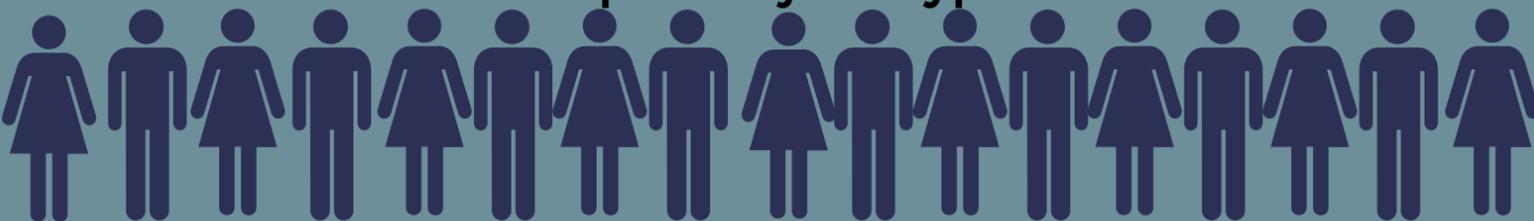
Disproportionate Impact



PLO 2- White Students



Apply the principles of the scientific method, including
the use of inductive and deductive reasoning to pose, test,
and accept or reject hypotheses.



Courses Involved
CHE-1B, MAT-25
and MAT-36.



12.2

AVERAGE
NUMBER OF
UNITS
COMPLETED
IN PROGRAM

7

SECTIONS
ASSESSED

PLO ASSESSMENT SUMMARY

PROGRAM: AOE Math and Science PLO 1

PLO(S) ASSESSED: Apply the basic operations of mathematics on the set of real and complex numbers, expressions, and equations.

COURSES INVOLVED: CHE-1B, MAT-25, MAT-36.

ASSESSMENT METHOD: Based on the rubric below, rated each student in class on an artifact (test/quiz, project, assignment, etc.) that mapped to above PLO:

0- NO EVIDENCE OF COMPETENCY

1 - VERY LIMITED EVIDENCE OF COMPETENCY, NOT PASSING

2 - EVIDENCE OF COMPETENCY IS LIMITED, BUT PASSING

3 - ADEQUATE EVIDENCE OF COMPETENCY

4 - STRONG EVIDENCE OF COMPETENCY

BENCHMARK:

- At least 70% of the advanced group in my program will score 2.0 or above

SUMMARY OF PROGRAM ASSESSMENT RESULTS

Total number of students involved in PLO assessment:	110
Average number of total units completed:	35.6
Average number of units completed in program:	10.6
Percent of all students at 2.0 or above on PLO Assessment:	83.6%

PLO Score	Frequency	Percent
0	2	1.8%
1	16	14.5%
2	21	19.1%
3	37	33.6%
4	34	30.9%

YOUR PROGRAM WAS DIVIDED INTO 2 GROUPS DEFINED AS FOLLOWS

- GROUP 1—Program Beginners: 4 or less units completed in the program at the beginning of the fall semester.
- GROUP 2—Program (almost) Completers: More than 4 units completed in the program at the beginning of the fall semester.

	% AT OR ABOVE 2 ON PLO	AVERAGE PLO SCORE	TOTAL # IN GROUP
GRP 1-PROGRAM BEGINNERS	75.4%	2.58	57
GRP 2-PROGRAM (almost) COMPLETERS	92.5%	2.98	53

Group 2 average PLO assessment score was not significantly higher than Group 1. (t=1.958, p=.053)

PLO ASSESSMENT SUMMARY

* If a group's average PLO assessment score was significantly higher than the other group, there was less than 5% probability that this occurred by chance. We are inferring that a significantly higher average PLO assessment score for a group indicates greater mastery of the PLO.

SUMMARY OF PROGRAM ASSESSMENT RESULTS DISAGGREGATED BY ETHNICITY, AGE, & GENDER

		% AT OR ABOVE 2 ON PLO	TOTAL # IN GROUP	DISPROPORTIONATE IMPACT (Not calculated if less than 20 students in group)
ETHNICITY	African-American	100%	3	
	Asian	94.7%	19	
	Hispanic	82.4%	56	1.00
	White	79.3%	29	.96
	Filipino			
	American Indian	100%	1	
	Pacific Islander	0%	1	
	Two or more	100%	1	
	Unknown			
AGE	24 and below	81.1%	90	.85
	25 and above	95.0%	20	1.00
	Unknown			
GENDER	Female	83.0%	53	.99
	Male	83.6%	55	1.00
	Unknown	100%	2	

*Disproportionately impacted group

PLO ASSESSMENT SUMMARY

PROGRAM: AOE Math and Science PLO 2

PLO(S) ASSESSED: Apply the principles of the scientific method, including the use of inductive and deductive reasoning to pose, test, and accept or reject hypotheses.

COURSES INVOLVED: CHE-1B, and MAT-36 .

ASSESSMENT METHOD: Based on the rubric below, rated each student in class on an artifact (test/quiz, project, assignment, etc.) that mapped to above PLO:

0- NO EVIDENCE OF COMPETENCY

1 - VERY LIMITED EVIDENCE OF COMPETENCY, NOT PASSING

2 - EVIDENCE OF COMPETENCY IS LIMITED, BUT PASSING

3 - ADEQUATE EVIDENCE OF COMPETENCY

4 - STRONG EVIDENCE OF COMPETENCY

BENCHMARK:

- At least 70% of the advanced group in my program will score 2.0 or above

SUMMARY OF PROGRAM ASSESSMENT RESULTS

Total number of students involved in PLO assessment:	75
Average number of total units completed:	40.1
Average number of units completed in program:	14.5
Percent of all students at 2.0 or above on PLO Assessment:	84.0%

PLO Score	Frequency	Percent
0	2	2.7%
1	10	13.3%
2	15	20%
3	22	29.3%
4	26	34.7%

YOUR PROGRAM WAS DIVIDED INTO 2 GROUPS DEFINED AS FOLLOWS

- GROUP 1—Program Beginners: 12 or less units completed in the program at the beginning of the fall semester.
- GROUP 2—Program (almost) Completers: More than 12 units completed in the program at the beginning of the fall semester.

	% AT OR ABOVE 2 ON PLO	AVERAGE PLO SCORE	TOTAL # IN GROUP
GRP 1-PROGRAM BEGINNERS	69.4%	2.64	36
GRP 2-PROGRAM (almost) COMPLETERS	97.4%	2.95	39

Group 2 average PLO assessment score was not significantly higher than Group 1. (t=1.163, p=.249)

PLO ASSESSMENT SUMMARY

* If a group's average PLO assessment score was significantly higher than the other group, there was less than 5% probability that this occurred by chance. We are inferring that a significantly higher average PLO assessment score for a group indicates greater mastery of the PLO.

PLO Score		groups		Total
		Beginner	Completer	
0		1	1	2
1		10	0	10
2		4	11	15
3		7	15	22
4		14	12	26
Total		36	39	75

SUMMARY OF PROGRAM ASSESSMENT RESULTS DISAGGREGATED BY ETHNICITY, AGE, & GENDER

		% AT OR ABOVE 2 ON PLO	TOTAL # IN GROUP	DISPROPORTIONATE IMPACT (Not calculated if less than 20 students in group)
ETHNICITY	African-American	100%	1	
	Asian	93.8%	16	
	Hispanic	88.6%	35	1.00
	White*	70.0%	20	.79
	Filipino			
	American Indian	100%	1	
	Pacific Islander	0%	1	
	Two or more	100%	1	
	Unknown			
AGE	24 and below	79.7%	59	
	25 and above	100%	16	
	Unknown			
GENDER	Female	84.8%	33	.99
	Male	85.4%	41	1.00
	Unknown	0%	1	

*Disproportionately impacted group



Participants

Ashlee Johnson, Assessment Coordinator, Associate Professor, Engineering Tech
 Greg Aycock, Dean Institutional Effectiveness
 Caitlin Welch, Acting Research and Assessment Manager

Overview

Area of Emphasize-AOE assessment is facilitated by the IE department in Fall 2019. 4 faculty participated in the assessment assignments for their courses, with a total of 5 courses and 7 sections assessed.

PowerPoint of summary of results for PLO 1 and an overall summary of PLOs 1 and 2 was presented (attached). The data summary and Infographic were emailed to participating faculty in advance of the discussion.

Discussion

- Wondering if there would be a difference if face to face course was completed compared to online or support course compared to non-support courses.
- If the course didn't have an assigned faculty when the rosters were pulled, the IE department would not have sent out an assignment for that course.
- Math-36 with support course was not assigned, need to investigate if the course is coded differently between for support and non-support courses in college.
- Do these PLOs connect to critical thinking? Yes, but the assignment was given at the end of the semester so the assignments chosen did not address critical thinking as much as earlier assignments would have.
- Trigonometry- in one chapter of the book can relate to critical thinking, although more critical thinking is done in group projects.
- When students are not grappling with something is not a clear-cut answer they struggle more often.
- We assess the critical thinking GELO directly and students don't score as high as they have scored on these PLOs. Would like to be able to map from this PLO to Critical thinking GELO if feasible.
- If we map these PLOs to the GELOs we may have higher scores.
- A request is sent to the department chairs to map courses in the AOE to the PLOs. Some do not respond or only provide mapping for their courses. If courses were mapped in Nuventive, we may have been able to send out more assignments and receive a higher response rate from faculty on the assignments.