

Institutional Student Learning Outcomes – Baseline Results - 2014

Background

In Spring 2014 the Student Learning Outcomes (SLO) Committee agreed to conduct assessments of our Institutional SLOs using locally developed assessments for each of the seven ISLOs. Faculty agreed to participate in a stratified random sample of face to face class meetings (sections) mid-semester. The research office randomly selected 173 sections to participate in one of the seven ISLO assessments.

Most of the selected classes (157 out of 173 sections, 90.7%) participated. Faculty that were unable to participate requested a substitution for the section being assessed, or returned them blank. Table I below illustrates the total number of sections and students participating for each ISLO assessment.

Results

Table I Count of Students Assessed by ISLO

ISLO #	ISLO Name	Section count	Number sent	Total responses	Valid responses	Response rate
1	Critical Thinking	22	602	398	355	59.0%
2	Effective Communication	23	640	411	364	56.9%
3	Self-Efficacy	25	592	481	406	68.6%
4	Information Competency	22	575	371	339	59.0%
5	Quantitative Reasoning	20	635	410	377	59.4%
6	Workplace Skills	25	721	474	379	52.6%
7	Community & Global Awareness	20	575	409	359	62.4%
SPR'14	Student Body (undup headcount)		10,088		2,204	21.8%

Each assessment required a student ID to allow the research office to match student characteristics to the SLO results. Valid responses are those with a valid student ID. There are 2,204 unduplicated students with valid assessments from a total of 2,816 responses. Overall, 22% of students were assessed on at least one ISLO.

The response rate for each assessment is based on the ratio of valid responses to the number sent. Because assessments were given in class for face-to-face instructional settings, we find a high response rate across the seven assessments. Workplace Skills has the lowest response rate (53%) compared to Self-Efficacy (69%).

Note: 461 students completed more than one assessment. Of those students, 84 took the same assessment in two different classes. These cases allow research to check the **reliability** of our assessments; however only one score per student is included in the final results. Each ISLO has high reliability as shown by the identical or nearly identical scores from students that took the same assessment during the same week.

- Critical Thinking has seven duplicate assessments and all students received the same score, or were within 1 point of their first assessment.
- Effective Communication has nine duplicate assessments with eight students receiving identical grades on the assessment.
- Self-Efficacy has 26 duplicate assessments with 20 students receiving identical grades and the remaining six students earning one grade difference in two separate assessments.
- Information Competency has ten duplicates with nine students receiving identical grades and one student receiving a difference of one grade over two assessments.
- Quantitative Reasoning has eleven duplicates with ten receiving identical grades and one student receiving scores within a one grade difference.

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- Workplace Skills has eleven duplicates with ten receiving identical grades and one student receiving scores within a one grade difference.
- The Community and Global Awareness SLO has ten duplicates with seven students receiving identical grades and three earning a one grade difference between two assessments.

There are 151 assessments without a valid ID. The results from unknown students can be scored, but will be excluded from the analysis based on student characteristics (cohorts described later).

The entire spring 2014 student body (enrolled at census) is the denominator, N = 10,088.

The student body characteristics are: average age 28.2, with 54.5% under age 25, 56.5% female, and 69.8% Caucasian. There are 1,764 'first time' students without earned units or GPA. The remaining 8,324 are divided into four cohorts as shown below in Table 2.

Table 2 Spring 2014 Student Cohorts

Cohort	Students	Avg Age	% Female	% Caucasian	Avg Units Completed	Avg CUM GPA
#3 – 75 or more units	794	33.2	64.5	77.1	95.1	3.11
#2 – 45 to 74.5 units	1,704	29.6	59.9	73.6	58.0	3.02
#1 – 15 to 44.5 units	2,858	27.5	57.3	71.6	27.7	2.81
#0 - 0.5 to 14.5 units	2,968	26.2	53.7	70.0	7.2	2.62
First time students	1,764	29.2	53.1	59.5	0.0	0.00
Spring 2014 student body	10,088	28.2	56.5	69.8	27.6	2.81*

*Average GPA calculated without first time students.

Readers will notice cohort #3 has students with more than five full-time semesters at Shasta College. This is the most experienced cohort and the oldest by age. This cohort has a higher percentage of females (77%) compared to other cohorts. Readers may also notice that as units earned decreases, the more racially diverse each cohort becomes (percent Caucasian declines). Our most diverse cohort is the first time student cohort with 59.5% Caucasian.

Notice that cohort #0 is younger on average compared to first time students. There is a wider distribution of students by age in the first time cohort, compared to those who have earned a few units and remain enrolled (including our dual enrolled high school students). Other than noted above, the five cohorts are similar by gender and ethnicity as shown in Tables 3 and 4.

Table 3 Spring 2014 Student Cohorts by Age Group and Gender (N = 10,088)

COHORT	Age 24 & Under	Age 25 & Up	Female	Male
3	21.9%	78.1%	64.5%	35.0%
2	43.8%	56.2%	59.9%	39.7%
1	56.9%	43.1%	57.3%	42.4%
0	66.2%	33.8%	53.7%	45.4%
First time	56.2%	43.8%	53.1%	44.7%
Total Students	54.5%	45.5%	56.5%	42.6%

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Table 4 Spring 2014 Student Cohorts by Race/Ethnicity (N = 10,088)

COHORT	American Indian	Asian	Black or African Am	Hispanic	Caucasian	Other
3	2.8%	3.3%	--	9.2%	77.1%	7.1%
2	2.9%	2.9%	1.1%	10.1%	73.6%	9.4%
1	2.8%	3.0%	1.7%	11.5%	71.6%	9.4%
0	2.5%	2.3%	1.2%	13.1%	70.0%	10.9%
First time	2.3%	3.7%	2.1%	18.4%	59.5%	14.0%
Total Students	2.6%	2.9%	1.4%	12.7%	69.8%	10.5%

Table 4 shows the Spring 2014 student body by race/ethnicity and cohort. There are less than 10 African American students in cohort 3 as denoted with '--'.

Table 5 below compares the demographic characteristics of students that responded (took an ISLO assessment).

Table 5 Response Cohorts (n = 2703)

Response Cohort	Valid Students	% of S'14 cohort	Avg AGE	% Female	% Caucasian	CUM GPA
3	228	28.7%	31.2	65.2%	75.2%	3.19
2	567	33.3%	27.3	56.0%	71.0%	3.14
1	917	32.1%	25.0	56.2%	72.0%	2.92
0	639	21.5%	24.2	53.7%	69.3%	2.56
First time	228	12.9%	26.1	54.3%	61.5%	0.00
Total	2,579	25.6%	25.9	56.2%	70.5%	2.90

As stated earlier the spring student body characteristics are: average age 28.2, with 54.5% under age 25, 56.5% female, and 69.8% Caucasian (see Table 2). As shown in Table 5, student respondents are: average age 25.9, with 60% under age 25, 56.2% female, and 70.5% Caucasian. Tables 1 to 5 demonstrate the random sample of student respondents is representative; each assessment has a strong response rate and the above cohorts are useful for this analysis.

Scoring Criteria

Each ISLO assessment was developed locally by Shasta College faculty. There are two types of questions using multiple choice or agreement scales. Some items are skills-based (with a correct answer) and others are the student's self-report. The total number of items on each assessment differs as well. To compare results across seven different assessments, the research office adopted the following criteria:

- I. All scaled assessments used four-point agreement scales of 0 to 3. An example from the Effective Communication assessment is below:
 - I have no idea how to do this (0)
 - I have some idea but little confidence (1)
 - I know how to do this (2)
 - I am experienced and could teach others (3)

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2. A count of all items that students report a 2 or 3 on the above scale is used for the Score.
3. The average (mean) rating is also calculated for scaled responses.
4. All skills-based assessments count the number of items with a correct response.
5. The total number correct is used for the Score.
6. Information Competency uses a combined Score of both the scaled items (rated 2 or 3) plus the number correct on the skills-based assessments.
7. Each Score is used to compute a percent value based on the score divided by the total number of items on the assessment.
8. For each assessment, percent values are calculated:
 - a. 100% represents mastery
 - b. 75 to 99% represents an acceptable proficiency
 - c. 25 to 74% indicates developing abilities
 - d. 0 to 24% indicates limited or emerging abilities
9. The use of 100% for mastery was challenged, however SLO faculty agreed to use 75% and higher as the baseline for proficiency on all seven ISLOs.

Summary of Results

The following table shows the aggregated results for all seven ISLOs by level and cohort.

Table 6 ISLO Aggregate Results by Student Cohort (all seven ISLOs combined)

Cohort	Proficient 75% to 100%		Developing 74% to 25%		Emerging < 25%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	84	36.8%	97	42.5%	47	20.6%	228	100%
2	236	41.6%	201	35.4%	130	22.9%	567	100%
1	369	40.2%	347	37.8%	201	21.9%	917	100%
0	191	29.9%	288	45.1%	160	25.0%	639	100%
First time	74	32.5%	91	39.9%	63	27.6%	228	100%
Total	954	37.0%	1,024	39.7%	601	23.3%	2,579	100%

The above table illustrates the results for all seven ISLOs overall for each cohort. Readers will see that 37% are proficient. This indicates students have abilities and/or strong self-confidence on items related to ISLOs in general. Forty percent have some skills but clearly need development to achieve at least 75% proficiency on ISLOs as measured by these assessments. Finally, 23% have little confidence or ability on these measures.

The next seven tables show the results for each ISLO by cohort. Readers may see a trend that the more experienced cohorts have higher proficiency in general, but not in all cases.

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Table 7 ISLO Summary Results by Student Cohort – Critical Thinking 10 items

Cohort	Proficient 70% to 100%		Developing 69% to 30%		Emerging < 30%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	27	84.4%	4	12.5%	1	3.1%	32	100%
2	76	89.4%	8	9.4%	1	1.2%	85	100%
1	99	79.2%	20	16.0%	6	4.8%	125	100%
0	64	69.6%	23	25.0%	5	5.4%	92	100%
First time	15	71.4%	5	23.8%	1	4.8%	21	100%
Total	281	79.2%	60	16.9%	14	3.9%	355	100%

The Critical Thinking assessment consists of ten multiple-choice scenarios testing students' ability to think critically. On this sample of students, the high score is 10 out of 10 possible points. More than three-fourths (79%) of students are proficient on Critical Thinking.

Table 8 ISLO Summary Results by Student Cohort – Effective Communication 23 items

Cohort	Proficient 75% to 100%		Developing 74% to 25%		Emerging < 25%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	18	90.0%	2	10.0%			20	100%
2	58	84.1%	10	14.5%	1	1.4%	69	100%
1	110	83.3%	21	15.9%	1	0.8%	132	100%
0	67	73.6%	18	19.8%	6	6.6%	91	100%
First time	23	44.2%	23	44.2%	6	11.5%	52	100%
Total	276	75.8%	74	20.3%	14	3.8%	364	100%

The assessment for Effective Communication consists of 23 statements students self report their level of confidence using a four-point agreement scale, as shown in the example on page 3. Using 0 to 3 for the scale, the mean for all assessments is 2.16 (n = 411). This translates to “We know how to do this.”

Table 8 illustrates that students with more units completed have higher results. Proficient students have 17 to 23 items rated 2 (I know how) or 3 (I am experienced). Developing students have 7 to 16 items with a 2 or 3; and emerging students are the rest (with 0 to 6 items rated 2 or 3). The table above shows Effective Communication has the highest outcomes compared to the other six ISLOs with 75% to 90% of students scoring proficient on the assessment. Only first time students have a lower percent proficient (44%). Chi-square tests show statistically significant differences by cohort ($p < .05$), by gender ($p < .057$), and by ethnicity ($p < .05$).

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Table 9 ISLO Summary Results by Student Cohort – Self-Efficacy 25 items

Cohort	Proficient 75% to 100%		Developing 74% to 25%		Emerging < 25%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	21	60.0%	13	37.1%	1	2.9%	35	100%
2	49	57.0%	37	43.0%			86	100%
1	91	53.2%	78	45.6%	2	1.2%	171	100%
0	37	43.0%	46	53.5%	3	3.5%	86	100%
First time	14	50.0%	12	42.9%	2	7.1%	28	100%
Total	212	52.2%	186	45.8%	8	2.0%	406	100%

The Self-Efficacy assessment has been used extensively at Shasta College in Foundational Skills courses. Students respond to 25 items on their level of confidence using the same scale shown on page 3. The overall mean is 1.89 (n = 481). This translates to “We have some ideas but need more confidence.”

The more experienced students have higher outcomes; however 40% of students with 75+ units (cohort #3) are below the proficiency mark on this assessment. Half of first time students are proficient on this assessment. Chi-square tests show significant differences for passing the ISLO by age group (p <.05) and by gender (p <.05).

Table 10 ISLO Summary Results by Student Cohort –Information Competency 27 items

Cohort	Proficient 75% to 100%		Developing 74% to 25%		Emerging < 25%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	16	48.5%	16	48.5%	1	3.0%	33	100%
2	55	64.0%	30	34.9%	1	1.2%	86	100%
1	51	42.1%	66	54.5%	4	3.3%	121	100%
0	27	32.5%	54	65.1%	2	2.4%	83	100%
First time	5	31.3%	11	68.8%		0.0%	16	100%
Total	154	45.4%	177	52.2%	8	2.4%	339	100%

The assessment for Information Competency combined 17 items that students self-report their levels of confidence with ten skills-based multiple-choice questions. No student scored 100% on both types of questions; however a few students scored 100% on the scaled responses and a few scored 100% on the multiple-choice. Using the same scale as other assessments, the overall mean is 1.84 (n = 371). This translates to “We have some ideas but need more confidence.”

The percent of proficient students ranges from 31% to 64% by cohort. The more experienced students have higher outcomes; however more than half of each cohort (except #2) scores below the 75% mark on this assessment. Chi-square tests show statistically significant differences by cohort and gender (p<.05).

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Table 11 ISLO Summary Results by Student Cohort –Quantitative Reasoning 16 items

Cohort	Proficient 75% to 100%		Developing 74% to 25%		Emerging < 25%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	3	7.1%	31	73.8%	8	19.0%	42	100%
2	8	9.8%	50	61.0%	24	29.3%	82	100%
1	12	9.2%	72	55.4%	46	35.4%	130	100%
0	3	3.6%	46	54.8%	35	41.7%	84	100%
First time	1	2.6%	17	43.6%	21	53.8%	39	100%
Total	27	7.2%	216	57.3%	134	35.5%	377	100%

The assessment for Quantitative Reasoning consists of 16 math problems with multiple-choice answers. Based on percent values: proficient students have 12 to 16 items correct; developing students have 5 to 11 items correct; and emerging students are the rest (0 to 4 items correct). The table above shows Quantitative Reasoning has low outcomes compared to the other six ISLOs with 3% to 10% of students earning a proficient score on the assessment. There are no statistically significant differences in success by age group, gender, or ethnicity.

Table 12 ISLO Summary Results by Student Cohort –Workplace Skills 25 items

Cohort	Proficient 75% to 100%		Developing 74% to 25%		Emerging < 25%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	8	61.5%	4	30.8%	1	7.7%	13	100%
2	42	55.3%	27	35.5%	7	9.2%	76	100%
1	79	53.7%	59	40.1%	9	6.1%	147	100%
0	39	36.1%	64	59.3%	5	4.6%	108	100%
First time	17	48.6%	17	48.6%	1	2.9%	35	100%
Total	185	48.8%	171	45.1%	23	6.1%	379	100%

The Workplace Skills assessment consists of 25 True-False statements. Students are given a choice of Unsure, which is always incorrect. The high score was 23 (one student). Another 11 scored 22. The research office has all of the data and can support an item analysis to determine if some questions are problematic. Between 36% and 62% of students are proficient on this measure, depending on the cohort. Chi-square tests show significant differences for this ISLO by age group and by gender ($p < .05$).

Table 13 ISLO Summary Results by Student Cohort –Community & Global Awareness 30 items

Cohort	Proficient 75% to 100%		Developing 74% to 25%		Emerging < 25%		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3	18	34.0%	31	58.5%	4	7.5%	53	100%
2	24	28.9%	45	54.2%	14	16.9%	83	100%
1	26	28.6%	47	51.6%	18	19.8%	91	100%
0	18	18.9%	56	58.9%	21	22.1%	95	100%
First time	14	37.8%	11	29.7%	12	32.4%	37	100%
Total	100	27.9%	190	52.9%	69	19.2%	359	100%

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The assessment for Community & Global Awareness consists of 30 statements that students respond to using the following four-point scale: I was not aware of this before today (0). I was aware but would not participate (1). I would participate to learn more (2). I have participated and support others (3). Based on the scaled response the overall mean is 1.61 (n = 409). This translates to “We are aware but would not participate.

Based on percent values: proficient students have 22 to 30 items rated 2 (I would participate) or 3 (I have participated); developing students have 9 to 21 items rated 2 or 3; and emerging students are the rest (with 0 to 8 items rated 2 or 3). The table above shows Community & Global Awareness has low outcomes compared to the other six ISLOs with 19% to 38% of students scoring proficient on the assessment. Chi-square tests show significant differences for this ISLO by gender ($p < .053$).

Early Conclusions

1. All seven assessments have good validity. Content faculty developed each assessment. Student pilot tested each assessment.
 - a. Item analysis could improve some assessments.
 - b. Further review could add skills-based items in place of scaled items.
2. The sample is representative; the response rates give high confidence levels; and the data collection worked well overall.
 - a. We would like to see all student IDs captured.
 - b. We would like all faculty to participate.
 - c. We need to include online classes.
3. Students taking the same assessment twice show consistent and highly reliable results.
4. SLO Committee discussions led to consensus.
 - a. Faculty agree with the cohort selection based on units earned.
 - b. Faculty agree with the grading criteria: proficient is 75% and above.
 - c. Results suggest baseline measures for each Institutional SLO.

Baseline Results

- Critical Thinking outcomes are the lowest of the seven ISLOs. Less than 10% are proficient.
- Quantitative Reasoning outcomes are very low. Less than 10% are proficient.
- Community & Global Awareness outcomes are low with 19-34% proficient.
- Information Competency outcomes are low with 31-64% proficient.
- Workplace Skills outcomes are low with 36-62% proficient.
- Self-Efficacy outcomes are modest with 43-60% proficient.
- Effective Communication outcomes are the highest with 44-90% proficient.

These results were prepared by Marc Beam, Director Research and Planning, at Shasta College on May 20, 2014. For further information contact the office of Research and Planning at (530) 242-7670.

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