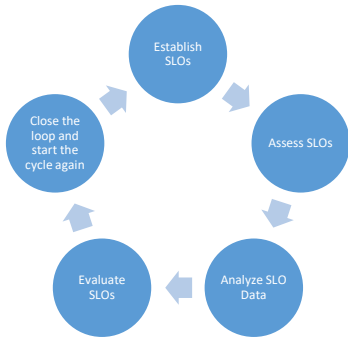


2.9.1 Closing the Loop-SLOs



Data collection, disaggregation, analysis and evaluation of SLO identified a gap between face-to-face and online instruction in ECON 201. The discussion that follows outlines departmental dialogue on how to remedy the gap and ends by noting how SLOs analysis can be used to improve instructional practices.

“Another concern raised in the SLO process has underscored differences in the type of assessments given in the tradition setting vs. the online assessment environment. It is not clear whether the SLOs for Econ 201 will need to change the specific way that some SLOs call for pencil and paper graphing. Such assessments are easy to complete in the traditional classroom environment. One reason for the low “meets criterion” percentage on an SLO concerns the need for students to transmit hand-drawn graphs electronically (see SLO2 for Econ 201 in cloud table summary above). We have experimented with various means of transmission, from having students scan graphs as image files to taking pictures with their cell phones. If the SLO is mediated by means of images being transmitted and attached image files, there could be accessibility issues and other technical requirements that are not adequately spelled out for students taking the online Econ 201. These issues have surfaced because of lower than normal performance on SLOs which involve the electronic transmission of hand-drawn graphs in online classes vs. higher achievement rates for the same SLO in the traditional classroom sections. This Spring 2017 semester the department is meeting to discuss new plans for how we handle the deficit in SLO2 performance in the online sections of Econ 201. The easiest fix may be an alternative method of assessment. On the other hand, some faculty feel that hand-drawn graphing is a skill that needs to be developed for students who plan to major in Economics at a four-year institution. SLO 2 for the Econ 201 class is the specific SLO in question as we consider uncharacteristically low performance in the table above for the 3-year summary. Disaggregation by section would further demonstrate the problem with this SLO involving graphing. We plan to resolve this issue and look forward to marked improvement for this specific SLO. The positive take-away here is that the SLO cloud process allows faculty to perceive problems and improve instructional practices for improvement.”

4.34 Economics Department Program Efficacy 2016-2017

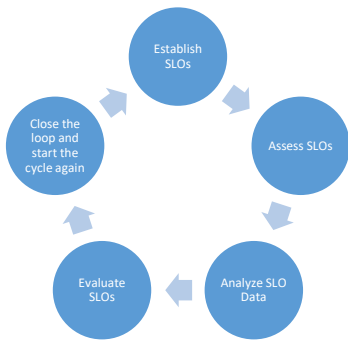
Economics faculty took two actions to improve teaching and learning. The math prerequisite for ECON201 was increased to ensure that students have a better concept of graphing. A series of instructional videos were made to teach the content and instruct students on uploading hand-drawn graphics. A quick comparison of SLO data from 2016-2017 and SLO data from 2019-2020 for the SLO shows that Economics has closed the gap between face-to-face and online instruction.

SLO#2“Given information about the demand schedule of a Monopolistic firm and a simple cost structure, student will draw a graph showing demand, marginal revenue, and marginal cost. Students will show the monopoly profit-maximizing output and price in the graph. Then, a brief explanation of why monopolists do not produce a socially desired level of output should be made by reference to the graph.”

ECON 201	Face-to-Face	Online
2016-2017	73%	69%
2019-2020	86.68%	86.62%

Video: [How to do Assignment 1](#)

Video: [Econ 201, Module 4, Practice Assignment](#)



Example 2: CHEM 101



As a result of SLO assessment the Chemistry Department initiated three changes to improve outcomes in CHEM 101.

“With three recent changes happening, we expect to see better overall results for CHEM 101 moving forward.

Beginning Fall 2019, instructors can choose their own SLO assessment tool. In late Fall 2019 (after the EMP was submitted), the Department approved moving away from a common assessment for all courses. Since SLOs were first required at SBVC, CHEM 101 has had a common assessment. For about 10 years, that assessment was a quiz consisting of 12 multiple-choice questions (written by the Department). At first, we were instructed to give the assessment as a quiz, but over time, many instructors moved these questions onto their final exams. The difficulty with a common assessment is that we all present the content differently, our students get used to the way we frame questions, and many instructors don't use multiple-choice exams at any other point during the semester. The SLO result should measure the student's understanding, and not reflect an unfamiliar exam format. This year, some of our Department SLO discussions have considered the benefits of allowing instructors to assess the outcome statements as they see best. Some instructors have decided to keep the multiple-choice questions (which we revised in Fall 2019 for clarity; some faculty who used them reported improved results). Other instructors are opting to write their own assessment questions, whereas others are planning to use existing exams or quizzes (so students are not limited to only 3 questions per SLO) to measure the outcomes.

Beginning Spring 2020, all of our CHEM 101 classes have resumed to single sections. One persistent problem with CHEM 101 is that for more than 10 years we were directed to stack two courses into a double section of lecture, which split out into two separate sections of lab each week. This model is highly ineffective and not conducive to student engagement, learning, and mastery of the material. As an introductory course for students pursuing both STEM fields and allied health pathways, as well as for students meeting their general education requirement for science with a lab, it is critical for students to be able to interact with their instructor, freely ask questions, and receive individualized attention. As pointed out in a Chronicle of Higher Education article earlier this year, “fixing [gateway] courses is, in essence, a social justice issue, one that higher education has an ethical, and overdue, obligation to address” (<https://www.chronicle.com/article/DoGateway-Courses-Foster/247853>). It is very difficult to run an engaging classroom setting, demonstrate problem-solving, and keep tabs on student learning during a lecture class of more than 50 students. It's not surprising that the SLO success for this course has been the lowest of all the groupings.

Beginning Fall 2020, we have strengthened our prerequisites. READ 100 or ENGL 101 (instead of ENGL 015), and MATH 102 (instead of MATH 090) completion will now be required. College-level reading and strong algebra skills are necessary for students to have as they enter CHEM 101 if they are going to be successful in the class. If students struggle with the calculations, they begin to fall behind and rarely catch up. They either don't pass the course or they withdraw, and we hope they return the next semester. If students can't read and clearly comprehend the lecture materials, it becomes difficult for them to grasp the critical thinking that is necessary to solve the problems. Furthermore, if they cannot read the lab manual adequately, it could be a safety issue to themselves and others”

A quick comparison of SLO data at the different stages of implementation show that when common assessment instruments were implemented. With the removal of common assessment instruments in FA19 SLO 1 dropped incrementally, SLO2 had a significant drop in success, SLOs 3 & 4 success rates rose. Spring 20 data includes removal of common assessment instruments (2nd semester), and implementation of single stacked courses. Success on all SLO exceeded the SLO success prior to the implementation of the planned improvements. The third improvement, strengthening prerequisites is being implemented this semester (fall 2020).

CHEM101	Three Year Average 2016/2017 thru 2018-2019	Fall 19 Remove Common Assessment	Spring 20 Remove Common Assessment Single Stacked Classes
SLO1	66%	64.5%	79.8%
SLO2	63.1%	51.9%	65.2%
SLO3	46.3%	51.5%	71.7%
SLO4	53.1%	58.4%	78.8%

2.9.1a [Chemistry Program Efficacy SP20](#)