SOUTH DAKOTA BOARD OF REGENTS

Academic and Student Affairs
Consent

AGENDA ITEM: 5 – Y
DATE: December 13-14, 2023

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SUBJECT

General Education Assessment Report

CONTROLLING STATUTE, RULE, OR POLICY

BOR Policy 2.3.7 – Undergraduate General Education Requirements
BOR Policy 2.3.9 – Assessment
AAC Guideline 2.3.7.A – General Education Curriculum Requirements
AAC Guideline 2.3.9.A – General Education Assessment Reporting

BACKGROUND / DISCUSSION

BOR Policy 2.3.9, Section 2.1, outlining institutional and system responsibilities regarding the assessment of the general education program, states that each institution shall:

> "Assess and analyze student achievement of the goals and learning outcomes of the established SDBOR System General Education Requirements. Each university will submit a report of their assessment findings annually to the Board at its December meeting. AAC Guidelines outline the required components of the report."

AAC Guideline 2.3.7.A, Section 5 specifies that each university assess two of the six general education goals per year on a rotating basis, prepare a general education report, and submit the report to the Board of Regents Vice President for Academic Affairs using the University Annual General Education Assessment Report Template.

Each institution assessed Goal 3: Social Sciences and Goal 6: Natural Sciences in 2021-2022, ensuring that their process included general education courses from across the relevant content areas, modalities, locations, and terms. Student artifacts (papers, assignments, projects, test responses) were evaluated using rubrics aligned to the relevant student learning outcomes listed in AAC Guideline 2.3.7.A General Education Curriculum Requirements.

Across the system, observed proficiency rates were satisfactory across all learning outcomes. In aggregate, over 70% of the artifacts reviewed were evaluated to be proficient

(Continued)

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INFORMATIONAL ITEM

or excellent for the three student learning outcomes for Goal 3, and 75% of the artifacts reviewed were deemed to be proficient or excellent for the Goal 6 student learning outcomes. Institution-level analyses suggest student performance remained consistent (if not improved) across each student learning outcome compared to the last time Goals 3 and 6 were evaluated (2018-2019).

In each of the attached assessment reports, the institutions described the results of their analyses. All of the reports described changes and improvements made to the general education assessment process compared to the previous assessment cycle. Multiple reports ascribed improvements in student performance to greater coordination among the faculty within disciplines, specifically developing shared course learning outcomes, using the same texts and materials, and developing common assessment methods.

The institutional reports also discussed how the assessment process might be improved in the future. Common recommendations included sampling more sections, developing more precise rubrics, coordinating artifact selection, and creating assessment training opportunities. Faculty also noted that there would be value in facilitating conversations between the various disciplines represented in Goals 3 and 6. Improvement could be supported at the system level by working with the respective discipline councils to write clearer student learning outcomes for each of the general education goals. Dr. Carriveau will continue to work with the relevant discipline councils and the system general education committee to discuss the findings, revisit the student learning outcomes, and discuss improvements to the assessment process.

IMPACT AND RECOMMENDATION

Informational item.

ATTACHMENTS

Attachment I – BHSU General Education Assessment Report
Attachment II – DSU General Education Assessment Report
Attachment III – NSU General Education Assessment Report
Attachment IV – SDSMT General Education Assessment Report
Attachment V – SDSU General Education Assessment Report
Attachment VI – USD General Education Assessment Report

SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

General Education Assessment Form

Use this form to report the university General Education Assessment per AAC Guideline 8.7.A and BOR Policy 2:11. This report should be no more than 5-10 pages in length.

NOTE: This form will be provided to the Board of Regents at their June BOR meeting.

Black Hills State University	2021-2022	
Institution	Academic Year Reporting Period	
Dan May	Dan May	11/14/2023
Assessment Representative	Institutional Approval Signature	Date
Jon Kilpinen		
Provost	Provost Approval Signature	Date

Section 1. Introduction

This document is an overview of the assessment of General Education Goal 3: Social Sciences and Goal 6: Natural Sciences performed at Black Hills State University in 2021-2022. The System General Education Goal 3 for the Social Sciences reads: "Students will understand the organization, potential, and diversity of the human community through study of the social sciences." The System General Education Goal 6 for the Natural Sciences reads: "Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world."

Section 2: Goals Assessed

Goal Assessed: Goal 3: Social Sciences

Methodology: BHSU faculty gathered student artifacts, created a rubric to assign performance indicators to the artifacts, and then applied that rubric to the artifacts.

Level of Achievement/Learning Outcome: BHSU faculty used the language in the goal to create specific performance indicators to assess the System General Education Goal. A rubric for applying these indicators was applied to student artifacts across the following Learning Outcomes:

SLO1: Identify and explain basic concepts, terminology, theories, and systems of inquiry of the selected social science disciplines.

SLO2: Apply selected social science concepts and theories to contemporary or historical issues from different behavioral, cultural, institutional, temporal, or spatial contexts.

SLO3: Analyze the extent and impact of diversity among individuals, cultures, or societies in contemporary or historical contexts using social science methods and concepts.

The results are summarized in the next section.

Goal Assessed: Goal 6: Natural Sciences

Methodology: BHSU faculty gathered student artifacts, created a rubric to assign performance indicators to the artifacts, and then applied that rubric to the artifacts.

Level of Achievement/Learning Outcome: BHSU faculty used the language in the goal to create specific performance indicators to assess the System General Education Goal. A rubric for applying these indicators was applied to student artifacts across the following Learning Outcomes:

SLO1: Explain the nature of science, including how scientific explanations are formulated, tested, and modified or validated.

SLO2: Distinguish between scientific and non-scientific evidence and explanations and use scientific evidence to construct arguments related to contemporary issues.

SLO3: Apply basic observational, quantitative, or technological methods to gather and analyze data and generate evidence-based conclusions in a laboratory setting.

SLO4: Understand and apply foundational knowledge and discipline-specific concepts to address issues, solve problems, or predict natural phenomena.

Section 3. Findings

Goal Assessed: Goal 3: Social Sciences

Interpretation of Findings: Each artifact was analyzed using the rubric. Artifacts exceeding the standard ("Exemplary") were given a 3, those meeting the standard ("Proficient") were given a 2, and those not achieving the standard ("Below Proficient") were given a 1.

The following table summarizes the results.

Learning Outcome(s)	Assessment(s)	Type	Data/Results
SLO1: Identify and explain basic concepts, terminology,	Analysis Papers: Students in AIS 257 (N=15) and	Performance Assessment: This type of assessment integrates knowledge, skills, and activity to demonstrate competence.	All artifacts (N=34) – the mean score was 1.94 Only AIS students (N=15) – the mean score was 1.93

theories, and systems of inquiry of the selected social science disciplines.	PSYC 101 (N=29) wrote analysis papers requiring them to explain basic concepts, terminology, theories, and systems of inquiry of the selected social science disciplines.		Only PSYC students (N=19) – the mean score was 1.95. Among these students, 73.5% met or exceeded the standard. Analysis of student analysis papers indicates that students are achieving expectations in this area as indicated by mean scores near 2 for the sampled artifacts.
SLO1: Identify and explain basic concepts, terminology, theories, and systems of inquiry of the selected social science disciplines.	Online Discussion: Students in SOC 100 (N=23) participated in online discussions requiring them to explain basic concepts, terminology, theories, and systems of inquiry of the selected social science disciplines.	Locally Developed Achievement Measures: This type of assessment generally is one that has been created by the individual faculty members, their department, the college or the university to measure specific achievement outcomes, usually identified by the department and its faculty.	All artifacts (N=16) – the mean score was 2.13. Among these students, 75.0% met or exceeded the standard. Analysis of student discussions indicates that students are achieving expectations in this area as indicated by mean scores above 2 for the sampled artifacts.
SLO2: Apply selected social science concepts and theories to contemporary or historical issues from different behavioral, cultural, institutional, temporal, or spatial contexts.	Analysis Papers: Students in AIS 257 (N=15) and PSYC 101 (N=29) wrote analysis papers requiring them to apply social science concepts and theories to real-world issues.	Performance Assessment. This type of assessment integrates knowledge, skills, and activity to demonstrate competence.	All artifacts (N=34) – the mean score was 1.97 Only AIS students (N=15) – the mean score was 2.00 Only PSYC students (N=19) – the mean score was 1.95. Among these students, 82.4% met or exceeded the standard. Analysis of student analysis papers indicates that students are achieving expectations in this area as indicated by mean scores near or above 2 for the sampled artifacts.

SLO2: Apply selected social science concepts and theories to contemporary or historical issues from different behavioral, cultural, institutional, temporal, or spatial contexts.	Online Discussion: Students in SOC 100 (N=23) participated in online discussions requiring them to apply social science concepts and theories to real-world issues.	Locally Developed Achievement Measures: This type of assessment generally is one that has been created by the individual faculty members, their department, the college or the university to measure specific achievement outcomes, usually identified by the department and its faculty.	All artifacts (N=16) – the mean score was 1.63. Among these students, 56.3% met or exceeded the standard. Analysis of student discussions indicates that students are not achieving expectations in this area as indicated by mean scores below 2 for the sampled artifacts.
SLO3: Analyze the extent and impact of diversity among individuals, cultures, or societies in contemporary or historical contexts using social science methods and concepts.	Analysis Papers: Students in AIS 257 (N=15) and PSYC 101 (N=29) wrote analysis papers requiring them to analyze the extent and impact of diversity on individuals, cultures, or societies using social science methods and concepts.	Performance Assessment. This type of assessment integrates knowledge, skills, and activity to demonstrate competence.	All artifacts (N=33) – the mean score was 1.91 Only AIS students (N=15) – the mean score was 2.00 Only PSYC students (N=18) – the mean score was 1.78. Among all students, 69.7% met or exceeded the standard. Analysis of student analysis papers indicates that students are not achieving expectations in this area as indicated by the mean scores below 2 for the sampled artifacts.
SLO3: Analyze the extent and impact of diversity among individuals, cultures, or societies in contemporary or historical contexts using social science	Online Discussion: Students in SOC 100 (N=23) participated in online discussions requiring them to analyze the extent and impact of diversity on individuals,	Locally Developed Achievement Measures: This type of assessment generally is one that has been created by the individual faculty members, their department, the college or the university to measure specific achievement outcomes, usually identified by the department and its faculty.	All artifacts (N=16) – the mean score was 2.19. Among these students, 81.3% met or exceeded the standard. Analysis of student discussions indicates that students are achieving expectations in this area as indicated by mean scores above 2 for the sampled artifacts.

methods and concepts.	cultures, or societies using social science methods and concepts.		

Comparison of Findings from Prior Period: The overall mean achievement scores for SLO 1, SLO 2, and SLO 3 were lower than the mean scores calculated three years ago. The mean for SLO 2 is considerably lower than the previous mean score. Although student achievement in AIS remained steady, the achievement scores for PSYC 101 and SOC 100 were lower than comparable courses in 2019.

The reported results demonstrate that most students achieved or exceeded each of the student learning outcomes outlined in General Education Goal 3. The range was 74.0% of students meeting or exceeding the requirements for SLO 1 and SLO 2, to 75.5% of students meeting or exceeding the requirements for SLO 3. These percentages fell by about 4 points for SLO 1 and SLO 2, while SLO 3's percentages were essentially unchanged. The lack of data from other social science disciplines prevents drawing firm conclusions.

Goal Assessed: Goal 6: Natural Sciences

Interpretation of Findings: Each artifact was analyzed using the rubric. Artifacts exceeding the standard ("Exemplary") were given a 3, those meeting the standard ("Proficient") were given a 2, and those not achieving the standard ("Below Proficient") were given a 1.

The following table summarizes the results.

Learning Outcome(s)	Assessment(s)	Type	Data/Results
SLO1: Explain the nature of science, including how scientific explanations are formulated, tested, and modified or validated.	Quiz: Students in BIOL 103 (N=15) were given a quiz testing their understanding of the scientific method.	Locally Developed Achievement Measures: This type of assessment generally is one that has been created by the individual faculty members, their department, the college or the university to measure specific achievement outcomes, usually identified by the department and its faculty.	All artifacts (N=14) – the mean score was 1.93. Among these students, 71.4% met or exceeded the standard. Analysis of student quizzes indicates that students are achieving expectations in this area as indicated by mean scores near 2 for the sampled artifacts.
SLO1: Explain the nature of science, including how scientific	Analysis Paper: Students in CHEM 106 (N=22) wrote an analysis	Performance Assessment. This type of assessment integrates knowledge, skills, and activity to demonstrate competence.	All artifacts (N=19) – the mean score was 1.95. Among these students, 89.5% met or exceeded the standard. Analysis of student analysis papers indicates that students

explanations are formulated, tested, and modified or validated.	paper requiring them to explain the scientific method and apply it to a real-world problem.		are achieving expectations in this area as indicated by mean scores near 2 for the sampled artifacts.
SLO2: Distinguish between scientific and non-scientific evidence and explanations and use scientific evidence to construct arguments related to contemporary issues.	Analysis Papers: Students in BIOL 103 (N=15) and in CHEM 106 (N=22) wrote analysis papers requiring them to distinguish between scientific and pseudo-scientific claims reported in popular media.	Performance Assessment. This type of assessment integrates knowledge, skills, and activity to demonstrate competence.	All artifacts (N=20) – the mean score was 2.00 Only BIOL students (N=8) – the mean score was 2.25 Only CHEM students (N=12) – the mean score was 1.83. Among all students, 80.0% met or exceeded the standard. Analysis of student analysis papers indicates that students are achieving expectations in this area as indicated by mean scores at or above 2 for the sampled artifacts.
SLO3: Apply basic observational, quantitative, or technological methods to gather and analyze data and generate evidence-based conclusions in a laboratory setting.	Labs: Students in BIOL 103 (N=15) and in CHEM 106 (N=22) conducted laboratory experiments to gather and analyze data and make evidence-based conclusions based on those data.	Performance Assessment. This type of assessment integrates knowledge, skills, and activity to demonstrate competence.	All artifacts (N=36) – the mean score was 2.08 Only BIOL students (N=15) – the mean score was 2.20 Only CHEM students (N=21) – the mean score was 2.00. Among all students, 86.1% met or exceeded the standard. Analysis of student labs indicates that students are achieving expectations in this area as indicated by the mean scores at or above 2 for the sampled artifacts.
SLO4: Understand and apply foundational knowledge and discipline-specific concepts to address	Analysis Paper: Students in BIOL 103 (N=15) wrote an analysis paper requiring them to explain the scientific method and	Locally Developed Achievement Measures: This type of assessment generally is one that has been created by the individual faculty members, their department, the college or the university to measure specific achievement	All artifacts (N=10) – the mean score was 2.80. Among these students, 100.0% met or exceeded the standard. Analysis of student analysis papers indicates that students are achieving expectations in this area as indicated by mean scores above 2 for the sampled artifacts.

issues, solve problems, or predict natural phenomena.	apply it to a real-world problem.	outcomes, usually identified by the department and its faculty.	
SLO4: Understand and apply foundational knowledge and discipline-specific concepts to address issues, solve problems, or predict natural phenomena.	Lab: Students in CHEM 106 (N=22) conducted a laboratory experiment requiring them to apply foundational knowledge and discipline-specific concepts to solve a real-world problem.	Performance Assessment. This type of assessment integrates knowledge, skills, and activity to demonstrate competence.	All artifacts (N=19) – the mean score was 2.00. Among these students, 100.0% met or exceeded the standard. Analysis of student labs indicates that students are achieving expectations in this area as indicated by mean scores at 2 for the sampled artifacts.

Comparison of Findings from Prior Period: The mean scores for SLO 1 and SLO 2 dropped slightly from the mean scores calculated three years ago, but the mean scores for SLO 3 and SLO 4 rose slightly over the same period. Less data was gathered than from three years ago, so it is impossible to draw firm conclusions regarding student learning across the natural sciences. Still, the mean scores comparing BIOL 101 (2019) to BIOL 103 (2022) and CHEM 106 (both years) show declining achievement across SLO 1, SLO2, and SLO3. The CHEM 106 scores on SLO 4 also declined, but the BIOL 103 scores rose significantly.

The reported results demonstrate that nearly all students achieved or exceeded three of the student learning outcomes outlined in General Education Goal 6. The range was 81.8% of students meeting or exceeding the requirements for SLO 1 to 100.0% of students meeting or exceeding the requirements for SLO 4. These percentages rose about 6 points for SLO 2, and 10 points for SLO 4, while SLO 1's percentages were practically unchanged. The dramatic increases across two of the learning objectives suggest that the changes recommended in the last General Education Assessment are working.

The reported results reveal that fewer students achieved or exceeded Student Learning Outcome 3, however. In fact, the percentage of students who achieved or exceeded SLO 3 fell nearly 20 points from three years ago. Much of this decrease can be attributed to the nearly 1-point achievement drop in the CHEM 106 labs on the Rapid City campus, although its mean falls near the middle of the range of the CHEM and GEOL lab means reported in 2019.

Section 4. Plans for Continuous Improvement

Goal Assessed: Goal 3: Social Sciences

Most students achieved or exceeded each of the student learning outcomes outlined in General Education Goal 3. The relative decrease in percentage of students doing so, however, warrants continued monitoring. The reported drop in student achievement for SLO 2 in SOC 100 (M = 1.63 versus 1.85 for SOC 150 in 2019) suggests that the online discussions may need to be revised.

Goal Assessed: Goal 6: Natural Sciences

Most students achieved or exceeded each of the student learning outcomes outlined in General Education Goal 6. The lower levels of student achievement in SLO3 in some courses, including on the Rapid City campus, suggests further monitoring and possible revisions of those sections. Furthermore, the smaller amount of data from some laboratory courses prevents drawing firm conclusions, but the reported drop in laboratory learning overall suggests that the n atural science labs may need to be redesigned.

Section 5. Summary

This document describes the assessment procedure of SDBOR General Education Goal 3: Social Sciences and Goal 6: Natural Sciences performed at Black Hills State University in 2021-2022. According to that assessment, most students achieved or exceeded each of the student learning outcomes outlined in both of those goals.

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ACADEMIC AFFAIRS FORMS

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NOTE: This form will be provided to the Board of Regents at their June BOR meeting.

Dakota State University	**2021-2022**	
Institution	Academic Year Reporting Period	
Dr. Jeanette McGreevy		
Assessment Representative	Institutional Approval Signature	Date
Dr. Rebecca Hoey	Rebecca L. Hoey	October 31, 2022
Provost	Provost Approval Signature	Date

Section 1. Introduction

Dakota State University assesses all six general education System Graduation Requirements (SGRs) annually. Each of the six general education areas (English, Oral Communication, Social Sciences, Fine Arts/Humanities, Math, and Natural Sciences) has a designated faculty assessment leader who, in collaboration with other faculty teaching general education courses during the academic year, determines the course sections that will be included in each general education assessment area annually, course-embedded measures aligned with learning outcomes, targets, benchmarks, and use of results for improvement.

General education assessment leaders annually report learning outcome results to DSU's institutional Academic Assessment Coordinating Committee for accountability and feedback. The information provided in this report is extracted from DSU's Trojan Assessment Profile (TAP), an online assessment platform from the vendor Nuventive that DSU began piloting in 2019-2020. General Education assessment leaders started using TAP in 2020-2021 as the repository for assessment plans, reports, and document storage.

As required by BOR Policy 2.11 (Assessment), this report includes learning outcomes results for Dakota State University students for the 2021-2022 academic year in the general education areas of SOCIAL SCIENCES and NATURAL SCIENCES.

Section 2: Goals Assessed 2021-2022:

GOAL #3: Students will understand the organization, potential, and diversity of the human community through study of the social sciences.

Methodology:

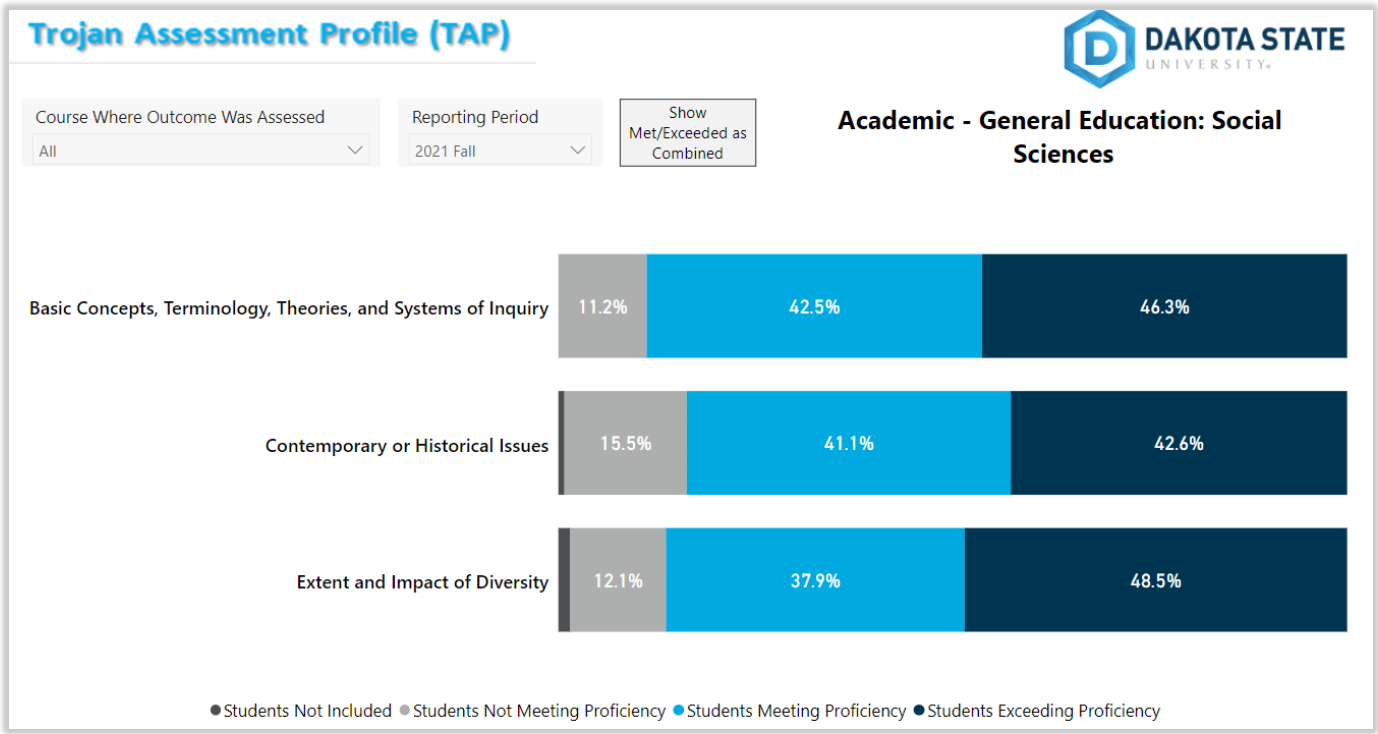
- Number of courses in sample
  - Basic Concepts, Terminology, Theories, and Systems of Inquiry: 3
  - Contemporary or Historical Issues: 3
  - Extent and Impact of Diversity: 3

- Number of students assessed
  - Basic Concepts, Terminology, Theories, and Systems of Inquiry: 134
  - Contemporary or Historical Issues: 129
  - Extent and Impact of Diversity: 132
- Measurement instruments selected
  - Exam #1: Covering Introductory Economics and Supply/Demand, Final Project (Individual and Team Parts, Exam 1, Unit Exam, Final Essay, Exam 2 Elasticity and Government Policies, Culture Project and Final Project, Course Discussions, Exam 4 Externalities/Goods/Common Resources

Level of Achievement/Learning Outcome

Note: "Students Not Included" indicates the % of students, for example, who did not hand in the assignment used for learning outcomes assessment.

- Basic Concepts, Terminology, Theories, and Systems of Inquiry
  - Exceeding Proficiency: 46.3%
  - Meeting Proficiency: 42.5%
  - Not Meeting Proficiency: 1.2%
  - Students Not Included: 0%
- Contemporary or Historical Issues
  - Exceeding Proficiency: 42.6%
  - Meeting Proficiency: 41.1%
  - Not Meeting Proficiency: 15.5%
  - Students Not Included: 1%
- Extent and Impact of Diversity
  - Exceeding Proficiency: 48.5%
  - Meeting Proficiency: 37.9%
  - Not Meeting Proficiency: 12.1%
  - Students Not Included: 1.5%



GOAL #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

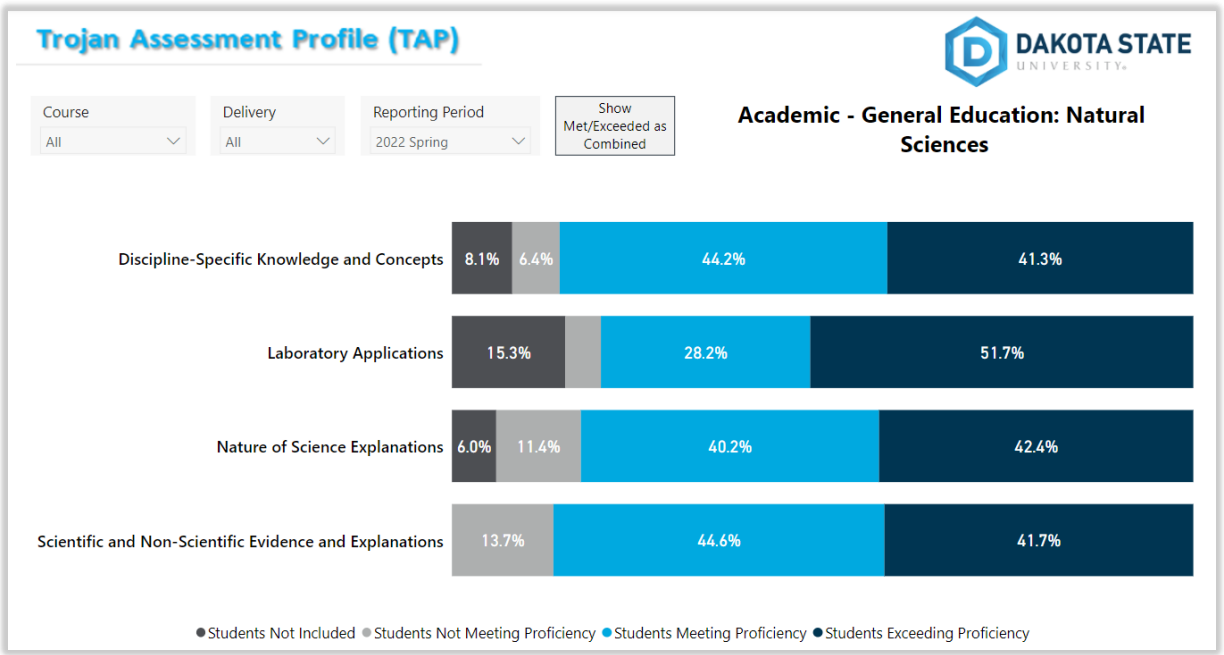
Methodology:

- Number of courses in sample
  - Laboratory Applications: 4
  - Natural Phenomena: 4
  - Nature of Science Explanations: 4
  - Scientific and Non-Scientific Evidence and Explanations: 4
- Number of students assessed
  - Laboratory Applications: 209
  - Natural Phenomena: 172
  - Nature of Science Explanations: 184
  - Scientific and Non-Scientific Evidence and Explanations: 168
- Measurement instruments selected
  - Lecture Group Assignment, Lab, Quiz: Scientific Method Concepts & Experiment Design, Exam, Group Presentations, Laboratory Activity & Report, Laboratory Experiment & Analyzed Results, Physical Simulation Laboratory, Final Exam, Lab Exercises 2, 5, & 9 Real-Life Scenarios.

Level of Achievement/Learning Outcome:

Note: "Students Not Included" indicates the % of students, for example, who did not hand in the assignment used for learning outcomes assessment.

• Laboratory Applications
  ○ Exceeding Proficiency: 51.7%
  ○ Meeting Proficiency: 28.2%
  ○ Not Meeting Proficiency: 4.8%
  ○ Students Not Included: 15.3%
• Discipline-Specific Knowledge & Concepts
  ○ Exceeding Proficiency: 41.3%
  ○ Meeting Proficiency: 44.2%
  ○ Not Meeting Proficiency: 6.4%
  ○ Students Not Included: 8.1%
	• Nature of Science Explanations
	  ○ Exceeding Proficiency: 42.4%
	  ○ Meeting Proficiency: 40.2%
	  ○ Not Meeting Proficiency: 11.4%
	  ○ Students Not Included: 6.0%
	• Scientific and Non-Scientific Evidence and Explanations
	  ○ Exceeding Proficiency: 41.7%
	  ○ Meeting Proficiency: 44.6%
	  ○ Not Meeting Proficiency: 13.7%
	  ○ Students Not Included: 0%



Section 3. Findings

GOAL #3: Students will understand the organization, potential, and diversity of the human community through study of the social sciences.

Interpretation of Findings:

Samples of faculty conclusions from DSU's Trojan Assessment Profile:

- Even though more than two students in the class received D's and F's, they still met the proficiency requirements for this learning outcome, which was great. Class attendance and not submitting weekly assignments contributed to the lower grades in the class.
- The test questions were related to the material covered. In the future, I will make the questions using a higher level of knowledge/recall.
- Students who did not meet proficiency performed in a way that showed they did not properly prepare for the exam.
- The final essay was instrumental in showing the ability of the students to apply sociological theory to the subject of their choosing, and their ability to analyze the subject using the lens of sociological theory.
- Students did poorly who didn't read the question.
- Continue to accentuate the importance of learning the S/D/ model involving price controls, per-unit taxes, and elasticity.
- Using both the Final Project and a midterm Culture Project made is easy to assess the outcome. Students also really enjoyed (and got into) the Culture Project, so meeting and exceeding the proficiency was not only easier for them, but also fun.
- The discussions are beneficial for the students in helping them assess concepts and apply them to their daily lives. Reflecting on how race/ethnicity, gender roles, and social class have impacted their lives and discussing these issues with their colleagues is an excellent way to share different approaches to these issues.
- Students who did poorly didn't prepare adequately.
- Close to meeting the benchmark. Continue to accentuate the ideas of externalities, public goods, and common resources—and the diversity that they add to the field of microeconomics as a pure social science.

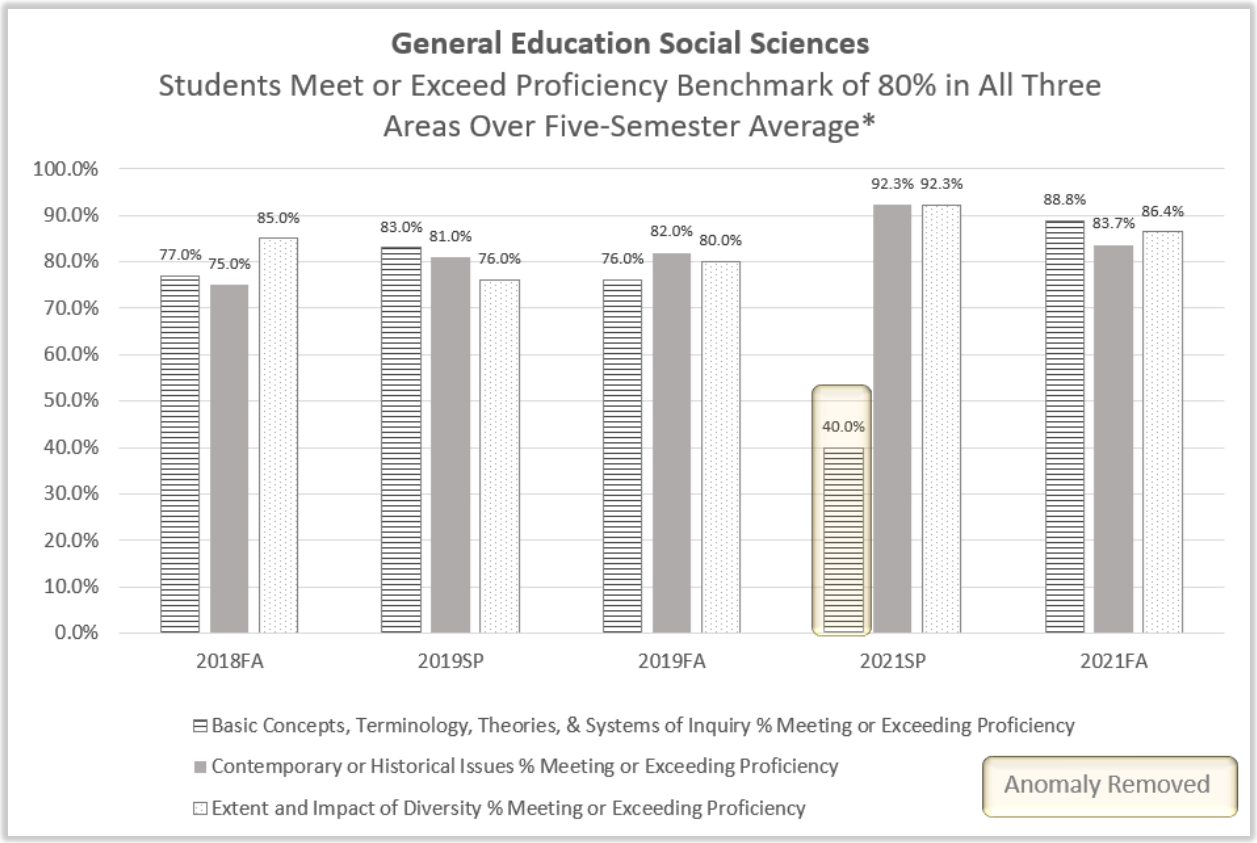
Comparison of Findings from Prior Period:

% of Students Meeting or Exceeding Proficiency in Social Sciences		
Social Studies Goal Areas	**2020-2021 Academic Year (Spring 2021)**	**2021-2022 Academic Year (Fall 2021)**
Basic Concepts, Theories, and Systems of Inquiry	(anomaly) 40.0%	88.8%*
Contemporary or Historical Issues	92.3%*	83.7%*
Extent and Impact of Diversity	92.3%*	86.4%*

*Met Long-Term Benchmark of 80% Meeting or Exceeding Proficiency

Student performance results are best reviewed from the perspective of long-term trends to reduce invalid inferences as a result of sampling bias, testing error, and/or score anomalies. Prior to DSU' implementation of its Trojan Assessment Profile (TAP) in 2020, the university collected general education results via a Qualtrics survey. Prior results from that process in addition to TAP provide a longer view of DSU student performance in social science goal areas (see next page).

SOCIAL SCIENCES General Education Learning Outcomes Reporting Terms	Basic Concepts, Terminology, Theories, & Systems of Inquiry % Meeting or Exceeding Proficiency	Contemporary or Historical Issues % Meeting or Exceeding Proficiency	Extent and Impact of Diversity % Meeting or Exceeding Proficiency
2018FA	77.0%	75.0%	85.0%
2019SP	83.0%	81.0%	76.0%
2019FA	76.0%	82.0%	80.0%
2021SP	(anomaly) 40.0%	92.3%	92.3%
2021FA	88.8%	83.7%	86.4%
	324.8%	414.0%	419.7%
	65% Average	83% Average	84% Average



OL learners scored higher then F2F learners in social sciences concepts, terminolgy, theories, and systems of inquiry.

Social Sciences 2021-2022		% of Students		Meeting or Exceeding Proficiency	
General Education Learning Outcome Area with OL vs F2F Comparison	Proficiency Level	F2F	OL	F2F	OL
Basic Concepts, Terminology, Theories, and Systems of Inquiry	Exceeding Proficiency	46.7%	45.5%	84.5%	97.8%
	Meeting Proficiency	37.8%	52.3%		
	Not Meeting Proficiency	15.6%	2.3%		
	Students Not Included	0.0%	0.0%		

GOAL #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

Interpretation of Findings:

Samples of faculty conclusions from DSU's Trojan Assessment Profile:

- The assignment is effective for covering this learning outcome.
- Students understood the material which covered both content of the course, as well as understanding how the scientific method works in an experiment.
- Students understood the material.
- Lectures and class discussions empowered students to acquire and demonstrate a solid understanding of the basics of scientific methods and the testing of hypotheses.
- Additional information on non-scientific evidence should be presented.
- Students do well on questions dealing with current issues because of relevancy to their lives.
- Students showed a remarkable understanding of using science to study current issues.
- The laboratory is an effective tool for student learning of this benchmark.
- Students understood the material regarding the application of observational, quantitative, and geographic (map) methodologies.
- Students were able to effectively apply observational and quantitative methods to arrive at evidence-based conclusions in a lab setting.
- This laboratory is an effective learning tool.
- Students met the proficiency and understood the material provided.
- Students demonstrated an understanding of the material presented.
- The results are generally encouraging, but there is still room for improvement.

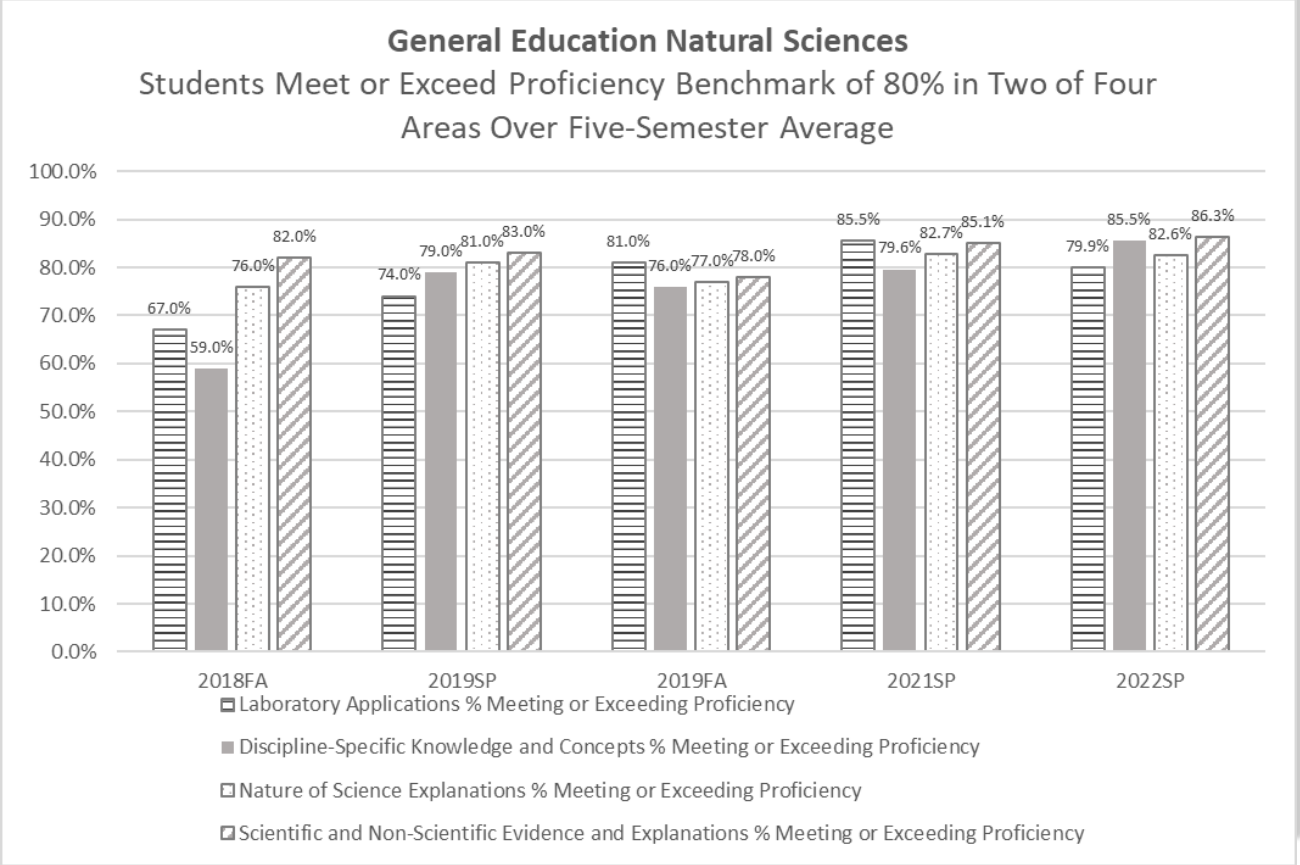
Comparison of Findings from Prior Period:

% of Students Meeting or Exceeding Proficiency in Natural Sciences		
Natural Sciences Goal Areas	**2020-2021 Academic Year (Spring 2021)**	**2021-2022 Academic Year (Spring 2022)**
Laboratory Applications	85.5%*	79.9%*
Natural Phenomena	79.6%*	85.5%*
Nature of Science Explanations	82.7%*	82.6%*
Scientific & Non-Scientific Evidence/Explanations	85.1%*	86.3%*

*Met Long-Term Benchmark of 80% Meeting or Exceeding Proficiency

Student performance results are best reviewed from the perspective of long-term trends to reduce invalid inferences as a result of sampling bias, testing error, and/or score anomalies. Prior to DSU's implementation of its Trojan Assessment Profile (TAP) in 2020, the university collected general education results via a Qualtrics survey. Prior results from that process in addition to TAP provide a longer view of DSU student performance in social science general education goal areas.

NATURAL SCIENCES General Education Learning Outcomes Reporting Terms	Laboratory Applications % Meeting or Exceeding Proficiency	Discipline-Specific Knowledge and Concepts % Meeting or Exceeding Proficiency	Nature of Science Explanations % Meeting or Exceeding Proficiency	Scientific and Non-Scientific Evidence and Explanations % Meeting or Exceeding Proficiency
2018FA	67.0%	59.0%	76.0%	82.0%
2019SP	74.0%	79.0%	81.0%	83.0%
2019FA	81.0%	76.0%	77.0%	78.0%
2021SP	85.5%	79.6%	82.7%	85.1%
2022SP	79.9%	85.5%	82.6%	86.3%
	387.4%	379.1%	399.3%	414.4%
	77% Average	76% Average	80% Average	83% Average



Online learners scored higher that F2F learners in knowledge/concepts and evidence/explanations; lower in laborator applicatior

Natural Sciences 2021-2022		% of Students		Meeting or Exceeding Proficiency	
General Education Learning Outcome Area	Proficiency Level	F2F	OL	F2F	OL
Discipline-Specific Knowledge and Concepts	Exceeding Proficiency	52.8%	21.9%	82.4%	90.7%
	Meeting Proficiency	29.6%	68.8%		
	Not Meeting Proficiency	8.3%	3.1%		
	Students Not Included	9.3%	6.3%		
Laboratory Applications	Exceeding Proficiency	73.0%	23.1%	91.5%	64.9%
	Meeting Proficiency	17.8%	41.8%		
	Not Meeting Proficiency	8.5%	35.2%		
	Students Not Included	0.0%	0.0%		
Nature of Science Explanations	Exceeding Proficiency	66.1%	0.0%	83.9%	80.3%
	Meeting Proficiency	17.8%	80.3%		
	Not Meeting Proficiency	16.1%	3.0%		
	Students Not Included	0.0%	16.7%		
Scientific and Non-Scientifice Evidence and Explanations	Exceeding Proficiency	31.5%	60.0%	84.3%	90.0%
	Meeting Proficiency	52.8%	30.0%		
	Not Meeting Proficiency	15.7%	10.0%		
	Students Not Included	0.0%	0.0%		

Section 4. Plans for Continuous Improvement

GOAL #3: Students will understand the organization, potential, and diversity of the human community through study of the social sciences.

- Opportunities for Improvement: Our main accomplishment is that the majority of students are meeting or exceeding proficiency in each of the three goal areas. We chose to only have a few faculty complete the assessment initially so that we could determine issues and problems with assessing and reporting. Therefore, while all of the Social Sciences are not represented in our numbers, the small sample still highlights that students are meeting or exceeding proficiency in the three goal areas.
  Faculty Use of Results:
  - The course grade did not necessarily equate with meeting or exceeding the proficiency in this outcome. Therefore, I will investigate the reasons why further, so that meeting and exceeding the proficiency aligns more with course grades. It appears that not doing the weekly assignments and/or coming to class contributed to a lower course grade (even though proficiencies were met).
  - I will cover more of the exam material in review.
  - The final essay was instrumental in showing that ability of the students to apply sociological theory to a subject of their choosing and their ability to analyze the subject using the lens of sociological theory.
  - I will cover exam taking more thoroughly.
  - I will cover diversity better next time.
- Areas of Strength:
  - As discussed in the Greatest Accomplishments category, we started out with only having a few faculty members enter data, so that we could monitor any issues with assessing or reporting. One issue that arose was using exams as an assessment tool. The higher percentage than we would like of not meeting proficiency occurred because a faculty member used short answer/ essay questions as part of his assessment. However, a high percentage of students in his classes do not answer those questions, so his results definitely skewed our overall results. This is something that he is addressing, and that we have shared with all Social Science faculty.
  - Another improvement that we are considering making is just having all Social Science faculty who teach General Education classes assess and report each class each semester. That way our data will be more representative and useful to us, since only one or two faculty teach in each of the Social Science disciplines on campus. We will also have a larger array of assessment activities from which to evaluate and suggest for faculty who don't feel their tool is giving an accurate assessment.

GOAL #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

- Opportunities for Improvement: Faculty did not recommend any changes at this time and suggested that courses continue to be evaluated once a year. However, evaluation will rotate among Fall, Spring, and Summer as courses offered each semester differ.
  Faculty Use of Results:
  - I will continue to teach the scientific method using real-world examples.
  - Students did well on this learning outcome. I will continue to provide a quality learning experience to my students and offer extra assistance to those who need it.
  - Additional examples of non-scientific evidence will be presented to students.
  - I will continue to offer my students the best instruction and help that I am capable of.
  - The assignment will continue to be used for this benchmark as well as additional labs.
  - The assessment was redesigned in the past to be a more effective tool.
  - I will carefully review the results at a more granular level to identify specific areas of improvement in the course.

- Areas of Strength: Student progress toward learning outcomes seems to be at or above expectations for most SLOs.

Section 5. Summary

GOAL #3: Students will understand the organization, potential, and diversity of the human community through study of the social sciences.

In each of the three general education social sciences learning outcomes, the Dakota State University students assessed and reported during the 2021-2022 academic year met or exceeded the faculty-determined benchmark of 80% proficiency. Faculty teaching general education social sciences courses will continue to refine assessments aligned with learning outcomes, make adjustments in pedagogy to meet students' needs, and analyze multiple semesters of learning outcomes results to inform decision making. In five semesters of results (with one anomaly removed) of general education social sciences results starting in 2018FA, students have met the faculty-determined 80% proficiency benchmark 71% of the time across the three learning outcome areas. Additionally, online learners out-performed face-to-face learners in the social science area of basic concepts, terminology, theories, and systems of inquiry, the one area that allowed for online and face-to-face comparison results.

GOAL #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

In each of the four general education natural sciences learning outcomes, the Dakota State University students assessed and reported during the 2021-2022 academic year met or exceeded the faculty-determined benchmark of 80% proficiency. Faculty teaching general education social sciences courses will continue to refine assessments aligned with learning outcomes, make adjustments in pedagogy to meet students' needs, and analyze multiple semesters of learning outcomes results to inform decision making. In five semesters of results of general education natural sciences results starting in 2018FA, students have met the faculty-determined 80% proficiency benchmark 50% of the time across four learning outcome areas. Additionally, online learners scored higher than face-to-face learners in the natural sciences areas on discipline-specific knowledge/concepts and scientific/non-scientific evidence and explanations.

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General Education Assessment Form

Use this form to report the university General Education Assessment per AAC Guideline 8.7.A and BOR Policy 2:11. This report should be no more than 5-10 pages in length.

NOTE: This form will be provided to the Board of Regents at their June BOR meeting.

Northern State University	2021-2022	
Institution	Academic Year Reporting Period	
Kristi Brownfield		10/11/2022
Assessment Representative	Institutional Approval Signature	Date
Michael Wanous		10/11/2022
Provost	Provost Approval Signature	Date

Section 1. Introduction

During 2021-22, Northern State University faculty assessed student learning related to General Education Goals 3 & 6. Per BOR Policy 2.11, Goal 3 is stated as: Students will understand the diversity and complexity of the human experience through study of the social sciences. Goal 6 is: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

Section 2: Goals Assessed

Goal Assessed: Goal 3

Methodology:

Instructors of Goal 3 courses designed assignments that prompted students to demonstrate their abilities related to each of the three learning outcomes in Goal 3. Results were collected during both the fall and spring terms from 46 sections across four different departments originating from 3 different colleges/schools for a total of 1,110 students assessed. Faculty typically used different assignments for each of the outcomes and used assignments that took place during the middle or at the end of the semester. Assignments used were varied but the most frequently reported type of assessments were exams, quizzes, and papers. Instructors were asked to complete student assessment ratings for all three outcomes according to the BOR-established rubric for each outcome within their D2L course shells with the Goal 3 rubric attached for ease of scoring student work. Faculty were also asked to submit a cover sheet for each section of a Goal 3 course they taught which summarized results and shared them with the Office of Institutional Research and Assessment, where office staff aggregated and disaggregated those results to report on student learning for the whole campus.

Level of Achievement/Learning Outcome:
For each learning outcome, faculty used three levels of proficiency for student ratings: Below Proficient, Proficient, Exemplary. The percentage of students per proficiency category and learning outcome are displayed in the following table.

Goal 3 Assessment Results	Below Proficient	Proficient	Exemplary
Learning Outcome 1: Identify and explain basic concepts, terminology, theories, and systems of inquiry of the selected social science disciplines	6%	46%	48%
Learning Outcome 2: Apply selected social science concepts and theories to contemporary or historical issues from different behavioral, cultural, institutional, temporal, or spatial contexts	7%	48%	45%
Learning Outcome 3: Analyze the extent and impact of diversity among individuals, cultures, or societies in contemporary or historical contexts using social science methods and concepts	8%	40%	52%

Goal Assessed: Goal 6
Methodology:
Instructors of Goal 6 courses designed assignments that prompted students to demonstrate their abilities related to each of the four learning outcomes in Goal 6. Results were collected during both the fall and spring terms from 20 sections for a total of 595 students assessed. Faculty typically used different assignments for each of the outcomes and used assignments that took place at the end of the semester. Assignments used were varied but the most frequently reported type of assessments were exams, quizzes, and lab activities or experiments. Instructors were asked to complete student assessment ratings for all four outcomes according to the BOR-established rubric for each outcome within their D2L course shells with the Goal 6 rubric attached for ease of scoring student work. Faculty were also asked to submit a cover sheet for each section of a Goal 6 course they taught which summarized results and shared them with the Office of Institutional Research and Assessment, where office staff aggregated and disaggregated those results to report on student learning for the whole campus.

Level of Achievement/Learning Outcome:
For each learning outcome, faculty used three levels of proficiency for student ratings: Below Proficient, Proficient, Exemplary. The percentage of students per proficiency category and learning outcome are displayed in the following table.

Goal 6 Assessment Results	Below Proficient	Proficient	Exemplary
Learning Outcome 1: Explain the nature of science including how scientific explanations are formulated, tested, and modified or validated.	10%	49%	41%

Learning Outcome 2: Distinguish between scientific and non-scientific evidence and explanations, and use scientific evidence to construct arguments related to contemporary issues.	19%	24%	57%
Learning Outcome 3: Apply basic observational, quantitative, or technological methods to gather and analyze data and generate evidence-based conclusions in a laboratory setting.	6%	38%	56%
Learning Outcome 4: Understand and apply foundational knowledge and discipline-specific concepts to address issues, solve problems, or predict natural phenomena.	19%	33%	48%

Section 3. Findings

Goal Assessed: Goal 3

Interpretation of Findings:

Students appear to perform relatively the same in terms of proficiency for outcomes 1 and 2. Outcome 3 has a higher proportion of students being rated as "Exemplary" versus "Proficient" in comparison to the other 2 outcomes. This is noteworthy given the rubric which asks for lower levels of reasoning ability and critical thinking (i.e., identify and apply) in outcomes 1 and 2 compared to outcome 3 (i.e., analyze). During the debrief session, faculty suggested this increase in exemplary versus proficient may be due to measurement error and faculty generally "giving the students the benefit of the doubt."

Students performed relatively the same between the different delivery methods with Rising Scholars ratings for outcome 1 and the ratings for our Huron campus students being outliers. The high number of Rising Scholars students rated as "Exemplary" for outcome 1 (94%) is likely due to these students all coming from the same section and instructor. However, without previous assessment data for either location, it is difficult to make any substantive comparison. Further, the smaller number of students in these categories also skews the results. When comparing based on delivery term, students were more likely to be rated as "Exemplary" rather than "Proficient" in the fall compared to the spring terms. The much lower number of assessments completed in the spring compared to the fall may be a factor in this difference as this trend is the opposite compared to the last Goal 3 assessment in AY2018-2019. During the debrief session, faculty suggested this difference may be related to higher levels of "optimism" in the fall compared to the spring. There is little variation in the results between disciplines, though both CJUS and GEOG courses were more likely to rate students as "Exemplary" compared to other disciplines. Given that course sections within one discipline could all be taught by the same instructor, there is little reason to believe that differences between disciplines is due to anything other than an instructor's assessment process (e.g., choice of assignment, use of the rubric) or self-selection bias of students enrolling in particular courses.

With student artifacts being rated in D2L, we can now tie our assessment ratings to student demographics of interest to NSU. Students appear to perform similarly regardless of gender though the disparity in female versus male students taking these courses may skew the data. We

have small numbers of students of color when data are disaggregated by race/ethnicity (n=191) leading to more variation between the groups. When analyzing aggregate categories of white and non-white students, there is no statistical difference in proficiency ratings. Despite this, we will need to continue tracking performance to have a better idea of how students of color are adapting and performing in the classrooms overall.

Comparison of Findings from Prior Period:
This assessment cycle included the addition of new types of sections being assessed (e.g., Rising Scholars, Online E-Learning) and a greater number of students assessed compared to when Goal 3 was last assessed in 2018-2019. Three years ago, 81% of students were rated as proficient or exemplary for outcome 1 (94% in AY21-22), 82% of students were rated as proficient or exemplary for outcome 2 (91% in AY21-22), and 85% of students were rated as proficient or exemplary for outcome 3 (92% in AY21-22). This indicates an overall increase of proficiency.

In 2018-2019, students were more proficient in spring sections compared to fall section. This trend is reversed here as fall students were rated higher. In terms of delivery type, when comparing on-campus and online sections to previous assessments, there is a decrease in the below proficient category for on-campus courses and an increase in the exemplary ratings. This trend also holds true with our online sections, with a marked decrease in below proficient ratings compared to AY2018-2019: 20% of students were rated as below proficient in outcome one (4% in AY2021-2022), 21% were rated as below proficient in outcome two (5% in AY2021-2022), and 14% were rated as below proficient in outcome three (3% in AY2021-2022). This increase can be potentially explained by the greater number of students that were assessed in this cycle (n=1,110) versus the previous Goal 3 assessment cycle (n=613).

When comparing across disciplines, there also seems to be a general trend of higher assessment ratings for six disciplines that participated in AY2018-2019; no results were available from PSYC to compare in the previous assessment cycle. Despite the higher ratings, there is not much variation between the different disciplines and what variation that can be seen is likely due to an instructor's assessment process (e.g., choice of assignment, use of the rubric) or self-selection bias of students enrolling in particular courses.

Goal Assessed: Goal 6
Interpretation of Findings:
Students overall are achieving, at a minimum, proficient, though there is a great deal of variation between the four outcomes. Outcome 2 simultaneously has the highest percentage of "Below Proficient" overall at 19 percent and the highest percentage of "Exemplary" at 57 percent. Faculty indicated that this bimodal distribution on Outcome 2 may be colored by specific beliefs around what is considered "scientific" information on the parts of the students. One faculty member gave the example of the controversy surrounding vaccines and the use/misuse of scientific evidence to convince the public that vaccines are harmful. While the students may believe those sorts of explanations are true, the use of debunked science commonly referenced in popular culture, news, and social media would lead instructors to rate the students below proficient Outcome 3 also has a high level of "Exemplary" (56%) and "Proficient" (38%) ratings. Faculty indicated this higher level of performance in Outcome 3 may be linked specifically to lab work which is often offered in a collaborative environment. This allows for students to act as "free riders" and do well in the

lab experiments or activities by relying on higher performing group members. Further, faculty indicated that the nature of labs and lab work in the classroom tended to allow for students to either do well or do poorly in the problem-solving and hands-on environment. Finally, faculty indicated that the timing of the assignment chosen for assessment was likely part of the higher level of proficiency displayed in Outcomes 2 and 3 as assignments later in the semester allow for more student growth and instructor correction prior to the finished product used for assessment. Faculty believe timing is also why Outcome 1 is the only outcome with a higher percentage of "Proficient" ratings (49%) compared to "Exemplary" (41%). As Outcome 1 asks students to demonstrate a basic understanding of the scientific method, most faculty address this early in the course (first 1-3 weeks) so students have not engaged with the content enough to show levels of proficiency considered "Exemplary," particularly for students who might be engaging with a Goal 6/college-level natural science class for the first time. Similarly, faculty also noted that this outcome was more likely to be tested with quiz or exam questions which allow for less observational input on the part of the faculty.

Students performed relatively the same between the different delivery methods with our Huron campus and Rising Scholars students being more likely rated "Exemplary" on all four outcomes compared to other delivery methods. Both our Huron and Rising Scholars students were rated by single instructors for each of the sections of these courses, so we have little reason to believe this is due to anything other an instructor's assessment process (e.g., choice of assignment, use of the rubric) or self-selection bias of students enrolling courses. However, without previous assessment data for either location, it is difficult to make any substantive comparison. Further, the smaller number of students in these categories also skews the results. Similarly, students taking a course on-campus were more likely to be marked "Below Proficient" (34%) for outcome 2 and for outcome 4 (27%) compared to other delivery methods. Faculty suggested this difference between on-campus and online proficiency ratings were likely due to the lower number of online students assessed (8 sections taught online did not submit ratings for AY21-22) and the potential for online students to cheat. For the discrepancy in Rising Scholars ratings, faculty indicated this was likely due to lack of rubric calibration to align instructor expectations to a higher standard expected by the faculty teaching within the program compared to our Rising Scholars teachers.

With student artifacts being rated in D2L, we can now tie our assessment ratings to student demographics of interest to NSU. Students appear to perform similarly regardless of gender though the disparity in female versus male students taking these courses may skew the data. Women tend to be rated "Exemplary" more often than men across all four outcomes and in Outcomes 1, 2, 3 men are more likely to be rated as "Below Proficient" compared to women. Faculty indicated this gap may be due women showing more persistence in science courses and being less likely to "give up" when challenged by the course work. We have small numbers of students of color when data are disaggregated by race/ethnicity (n=80) leading to more variation between the groups. When analyzing aggregate categories of white and non-white students, there is no statistical difference in proficiency ratings. Despite this, we will need to continue tracking performance to have a better idea of how students of color are adapting and performing in the classrooms overall.

Comparison of Findings from Prior Period:
This assessment cycle included the addition of new types of sections being assessed (e.g., Rising Scholars, Online E-Learning) and a slightly larger number of students assessed compared to when Goal 6 was last assessed in 2018-2019 (n=513). Three years ago, 72% of students were rated as proficient or exemplary for outcome 1 (90% in AY20-21), 80% of students were rated as proficient or exemplary for outcome 2 (81% in AY20-21), 84% of students were rated as proficient or exemplary for outcome 3 (94% in AY20-21), and 75% of students were rated as proficient or exemplary for outcome 4 (81% in AY20-21). This indicates proficiency remained relatively the same across the two cycles. During the debrief session, faculty noted that the overall proficiency level remaining relatively the same despite COVID-19 and educational transitions related to the pandemic was an important achievement. This meant that faculty were able to deliver the same quality of teaching despite the challenges of teaching during the pandemic.

When comparing across delivery modes, students in online and on-campus sections seem to be rated higher compared to the results in AY18-19 across all outcomes. The results in Huron are similar across the two assessment cycles. Results are also similar across the terms compared to prior results.

In terms of the disciplines, students performed comparably in BIOL, CHEM, and PHYS courses. We do see a decrease in students rated as "Below Proficient" in BIOL courses for outcomes 1 (36% in AY18-19 and 11% in AY20-12), 3 (20% in AY18-19 and 8% in AY20-21), and 4 (28% in AY18-19 and 24% in AY20-21). There is a marginal increase in BIOL students being rated "Below Proficient" in AY20-21 (24%) compared to previous results (22% in AY18-19). We also see downward trends in "Below Proficient" ratings for our CHEM students for outcome 2 (22% in AY18-19 and 15% in AY20-21) and 4 (17% in AY18-19 and 9% in AY20-21). There were marginal increases in CHEM students being rated "Below Proficient" for outcomes 1 (5% in AY18-19 and 11% in AY20-21) and 3 (3% in AY18-19 and 4% in AY20-21). No results were available from GEOG courses to compare in the previous assessment cycle. Despite the marginally different ratings across the disciplines and outcomes, what variation that can be seen that can be seen is likely due to an instructor's assessment process (e.g., choice of assignment, use of the rubric) or self-selection bias of students enrolling in particular courses.

Section 4. Plans for Continuous Improvement

Goal Assessed: Goal 3

Due to the breadth of disciplines and multiple delivery modalities included in Goal 3, it is difficult to measure and ensure intercoder reliability. Faculty suggested requiring participation in a virtual "summit" for all Goal 3 instructors during the next assessment cycle at both the start and the end of the academic year. This would include group ratings with sample student artifacts and allow the Assessment Director to have some measure of intercoder reliability and check how consistently the rubric is being used and applied.

Faculty wanted a deeper analysis of the qualitative data from the cover sheets. First, they wanted a cross-tabulation of proficiency ratings by assignment types. That is, they wanted to understand if there is a connection between the type of assignment (e.g., exam, paper, etc.) and student performance on each outcome. This could be accomplished with the data currently collected but may need more detailed assignment summaries from instructors to provide more than superficial

analyses of the connections. Similarly, faculty wanted more investigation on the connections between the level of depth and substance required by the assignment and the student proficiency level by outcome. Final exams or term papers require more effort and should demonstrate more overall learning compared to assignments that are typically more lower stakes such as journals or quizzes. Faculty wanted to better understand the connection between the value of the assessment artifact relative to the course. We are currently unable to do this type of analysis with the qualitative data we are receiving but we could adjust or add questions to the cover sheet to allow for this. Faculty requested deeper analysis of the qualitative data provided both to better gauge the validity of the artifacts as applied to the outcomes but also to get a better understanding of how teaching strategies impact learning in Goal 3 courses in addition to simply measuring student proficiency.

Goal Assessed: Goal 6

Due to the multiple disciplines and multiple delivery modalities included in Goal 6, it is difficult to measure and ensure intercoder reliability. Faculty suggested requiring participation in a virtual "summit" for all Goal 6 instructors during the next assessment cycle at both the start and the end of the academic year. This would include group ratings with sample student artifacts and allow the Assessment Director to have some measure of intercoder reliability and check how consistently the rubric is being used and applied. Faculty noted that it was particularly important that Rising Scholars teachers, Master Teachers teaching online e-Learning courses, and adjuncts teaching online courses be involved in this calibration process to ensure better alignment across courses. Faculty suggested that in disciplines that draw more students (e.g., BIOL) the use of a uniform assignment for assessment might be appropriate. This would lead to better interrater reliability and alignment to the outcomes and rubric specifically. One faculty member noted that it would be important to approach the next assessment cycle with a view of "Why are we doing this the way we are?" to review not only assignments that are being assessed for Goal 6 but also to specifically evaluate the usefulness of the rubric.

Faculty also thought a deeper understanding of student demographics, proficiencies, and disciplines would be helpful in the future for providing better teaching, at least for disciplines that draw enough students to provide valid data (e.g., BIOL, CHEM). They wanted to understand the crosstabulations between gender and race and student performance in particular courses and disciplines rather than the overall proficiency levels provided by the Assessment Director to the campus.

Section 5. Summary

The 2021-22 academic year was the second cycle of general education assessment for Goals 3 and 6 under the current guidelines and faculty showed an understanding of the new process the overall and purpose of assessing student learning. The observed proficiency rates were generally satisfactory across all learning outcomes, although faculty noted potential areas for improvement in both Goals. Upon having a group discussion about the assessment results described in this report, faculty made suggestions that were meaningful and feasible for improving student learning across delivery modalities.

Moving forward, the Assessment Director will specifically work with faculty and instructors to increase interrater reliability as this was an area of concern noted by faculty during debriefs for

both Goals 3 and 6. The amount of missing data from sections not assessed in Goal 3 (n=15) and Goals 6 (n=18) is also an issue that will need to be addressed to ensure that we continue collecting assessment data in a consistent and regularized fashion. We have not, in this or previous assessment cycles, measured summer sections of our general education courses. This is due to the qualitative difference in length and intensity of 5- or 10-week summer course in comparison to the regular 15-week semester. However, beginning with AY2022-2023, Northern has begun offering 6-week and 8-week course sections of selected general education courses during the regular fall and spring semesters that may provide more reliable comparisons to summer sections. In our next assessment cycle, this is one of the potential new areas we should explore.

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South Dakota Mines	AY2021-2022	
Institution	Academic Year Reporting Period	
Darcy Briggs	Darcy Briggs	10.1.2023
Assessment Representative	Institutional Approval Signature	Date
Lance Roberts	Lance Roberts	10.1.2023
Provost	Provost Approval Signature	Date

Section 1. Introduction

General Education assessment at South Dakota Mines underwent a complete overhaul in AY 2021/2022, following the changes to the BOR system-level process that previously existed. The institution re-established the General Education Assessment Committee, comprised of Department Heads representing each department that housed general education coursework: Mathematics; Humanities/Arts/Social Sciences; Geology and Geological Engineering; and Chemistry, Biology & Health Sciences.

Over the course of the academic year, the General Education Assessment Committee accomplished the following:

- Reviewed existing BOR policy and Guidelines
- Reviewed Higher Learning Commission (HLC) criteria and Assumed Practices related to assessment
- Created an institutional procedure document to capture the steps, expectations, responsible parties, and timeline for general education assessment
- Created a new form to capture the course(s) and section(s)-level information involved in the general education assessment work each year (Gen Ed Assessment Course Information Form)
- Created a new form to capture some overarching information about the assessment area(s) of focus, assessment and evaluation activities, insights gained from the assessment work, strategies for continuous improvement, and resources needed to implement the improvement strategies (Gen Ed Assessment Summary Report).
- Created a new process allowing limited funding to be requested from the Office of the Provost to support continuous improvement initiatives and strategies for the Gen Ed Goal.
- Created a new form to allow easy tracking of continuous improvement efforts over time.

Section 2: Goals Assessed

Goal Assessed: *Goal 3 – Social Sciences*

Methodology:

The assessment and evaluation processes by this institution concerning Goal 3 can be summarized in five stages:

1. During the 2022 Goal 3 assessment process, instructors were first selected to demonstrate coverage across all Goal 3 areas.
2. Following the instructor selection stage, course sections were selected for assessment. At this selection stage, our institution selected, among other instructors, two psychology instructors who would be teaching parallel versions of Psychology 101 in two different modalities: in-person and online.
3. After the end of the instructional school-year, instructors were asked to select artifacts of student performance relative to Goal 3, with their selection supported by a brief narrative about the strengths and weaknesses of student performance relative to Goal 3 as well as any strategies for continuous improvement.
4. The selected instructors then convened to present and review the institution's selected artifacts, narratives, and proposed strategies. During this review, instructors found that in the total institutional performance toward Goal 3, 18 artifacts showed "below proficient" performance, 33 showed "proficient" performance, and 56 showed "exemplary" performance.
   It should be noted, furthermore, that these counts were made under the condition that students who did not complete all parts of the artifacts were not included.
5. Following this review, instructors discussed changes at the institutional level to promote alignment between student performance and Goal 3, and formulated requests for resources to promote continuous performance.

Level of Achievement/Learning Outcome:

Course	Outcomes	Below Proficient	Proficient	Exemplary
PSYC 101	Outcome 1	8	14	47
	Outcome 2	8	14	47
	Outcome 3	8	14	47
POLS 165	Outcome 1	2	4	3
	Outcome 2	2	4	3
	Outcome 3	2	4	3
SOC 100	Outcome 1	5	15	6
	Outcome 2	5	15	6
	Outcome 3	5	15	6

Goal Assessed: *Goal 6 – Natural Sciences*

Methodology:

GEOLOGY:

The assessment and evaluation activities included a strategic variety of graded assignments and exercises that span the outcome expectations. The outcome goal was 75% of students achieve proficiency across all outcome assessments. This goal was achieved for all assessments of Gen Ed Goal 6 Outcomes. Outcome 1 was assessed in both GEOL201 and GEOL201L. Outcomes 2 and 4 were assessed in GEOL201 and Outcome 3 was assessed in GEOL201L. The assessment revealed a problem with students not turning in assignments or completing exams. In the formal grading scheme, these omissions resulted in a respective score of zero, which can have severe implications on final grade

calculations. These scores of zero were not applied in the assessment, as they do not reflect the learning outcomes. Nonetheless, this issue may warrant a cross-cutting institutional strategy for freshman level students.

CHEMISTRY and BIOLOGY:

In Biol 153, each outcome had 3-4 questions per exam for a total of 13 questions on each outcome per semester. There were 13 questions total because on the final exam the exact same questions were given from the first exam. This will allow for a direct "Before and After" comparison of those questions. The participation in the assessment was extremely high (near 100%) and completed at four intervals throughout the semester, as the questions were posed to the students as part of their exams (one exam in each February, March, April, and May). Each outcome was evaluated separately. The 13 questions related to each outcome were scored, the number of correct answers summed and averaged across all four exams for each student. The average number of correct answers were used to assign each student to the prescribed categories: Below Proficient (<60%; i.e., < 8 questions correct), Proficient (60-84.9%; i.e., 8 to 11 questions correct), and Exemplary (85-100%; i.e., ≥ 12 questions correct).

In Chem 112, Four questions were identified in Exams I, II, III and IV and V. There are seven questions identified for Outcome 1, six questions identified for Outcome 2, and 7 questions identified for Outcome 4. For the Outcome 1 and 4, 1-2 questions correct were counted as below proficient, 3-5 questions correct were counted as proficient, and 6-7 questions correct were counted as exemplary.

In Biol 153L, the second formal lab report (planarian lab report) was chosen to evaluate the learning outcome 3 within this Goal. For this lab experiment, students have to come up with their own questions, experiment, calculations for concentrations of chemicals, what they will use for statistics to analyze their data, and carry it out over several weeks under instructor and TA supervision. Within this lab report, students are assessed for the content they have within their formal lab report. This includes abstract writing, hypothesis development, assesses how well the methodology was written, assesses how well the student can demonstrate interpretation of results, correct labeling and placement of figures and tables, how well the report was referenced with certain styles of referencing, describing the statistics used, and implications of results in the context of peer-reviewed research and literature.

In Chem 112L, the Empirical Formula experiment was chosen for assessment of Outcome 3. The lab involves using experiment techniques (Bunsen burner, balance, oven, apparatus setup), measurements, data collection, and data analysis to determine the empirical formula for the compound made by oxidizing magnesium metal using heating in the presence of atmospheric oxygen. Detailed grading rubrics were used to evaluate the results of the experiment. Of the 169 students enrolled in these lab sections, 163 attended the lab and are therefore included in this summary. The 6 that did not attend were excluded. Exemplary was considered 90% and above for the data alone, and 90% for the entire assignment. These may not be the same students as there were several students who had better or worse performance on the data vs. the entire assignment. Proficient was considered to be between 60% and 90% for the lab total and between 21 and 35 out of 40 for the data alone. Below proficient was less than 60% on the entire assignment or 20 or fewer points out of the 40 possible on the data alone.

PHYSICS:

The weekly quizzes allow for assessment of individual topics within the course and provide feedback to students within a shorter turnaround time. Exams serve as a similar assessment process, but do not assess student understand until too much time has passed. As such, we feel the weekly quizzes make for a better assessment method for this summary.

To compliment to the short-term assessments provided by the weekly quizzes, we have also included the PRE/POST assessment surveys of our Concept Inventories. These assessments measure the student's knowledge and understanding of course concepts BEFORE the course begins covering content (PRE-assessment) and at the END of the semester (POST-assessment). Comparisons of PRE/POST scores are used to gauge improvement in student understanding and retention of course content. It also serves as a good course review before the final exam.

Level of Achievement/Learning Outcome:

Course	Outcomes	Below Proficient	Proficient	Exemplary
BIOL 153	Outcome 1	2	7	25
	Outcome 2	2	18	12
	Outcome 3	1	15	14
	Outcome 4	2	15	17
CHEM 112	Outcome 1	37	55	1
	Outcome 2	21	62	10
	Outcome 3	35	105	23
	Outcome 4	8	63	22
GEOL 201	Outcome 1a	2	15	1
	Outcome 1b	3	24	19
	Outcome 2	3	24	19
	Outcome 3	1	12	7
	Outcome 4	3	24	19
PHYS 211	Outcome 1	3	28	57
	Outcome 2	28	29	25
	Outcome 3	--	--	--
	Outcome 4a	3	28	57
	Outcome 4b	28	29	25
PHYS 213	Outcome 1	29	39	32
	Outcome 2	20	23	35
	Outcome 3	--	--	--
	Outcome 4a	29	39	32
	Outcome 4b	20	23	35

Section 3. Findings

Goal Assessed: *Goal 3 – Social Sciences*

Interpretation of Findings:

During the institutional assessment and evaluation of Goal 3 artifacts, instructors converged on one major area of insight, concerning student attrition and completion. The number of enrolled students who did not complete all parts of the assessed artifacts, while uncounted, could be sufficient to trouble any quantitative analysis of this data.

All instructors involved in this process remarked that they had significant problems with student attrition. Two instructors described multiple students who had never logged in to the Learning Management System website during the semester. All instructors described students who, variously, ceased some or all learning activities, disengaged from classes, or did not respond to communications from instructors. This was a consistent problem across both online and in-person sections of the same Psychology 101 course.

It should furthermore be noted that the AU21-SP22 school year is unique due to resuming full in-person instruction at South Dakota Board of Regents institutions following the COVID-19 pandemic.

Comparison of Findings from Prior Period:

With the significant change to general education assessment practices that occurred after AY18/19, comparison to periods prior to AY18/19 are not possible.

Goal Assessed: *Goal 6 – Natural Sciences*

Interpretation of Findings:

GEOLOGY:

A major problem for freshman level students is the requirement to turn-in assignments. Although failure to turn-in an assignment resulted in a zero for formal course grading purposes, the zeros were left out of the GE assessment as they do not reflect GE learning outcomes. Further analysis is necessary to determine if this is an institution-wide problem, and if so, what strategies can be implemented to remedy the problem. The omission of zero scores in GE assessments is an ad hoc adjustment in need of a long-term solution.

Continuous Improvement strategies for GEOL201 and GEOL201L

1. Reinforce the importance of turning-in assignments for success at the university, as well as in the professional arena (GEOL201 and GEOL201L).
2. Increase the rigor of the Societal Impacts Project. Assessment results include too many exemplary outcomes. This suggests that the students are ready for increased challenges (GEOL201). Increases in rigor will include additional uncertainty analysis and an incremental increase in precision standards.
3. Laboratory and Field safety is fundamental to the “Laboratory Setting”. Safety is difficult to assess, but the newly adopted Situational Awareness and Tourniquet exercise presents an opportunity to quantitatively assess the students’ ability to operate safely in a laboratory or field environment. The initial roll-out of the exercise in Spring 2022 was not included in the assessment. Based on lessons-learned, the activity will be modified and quantitatively assessed in future offerings of the course (GEOL201L)

CHEMISTRY and BIOLOGY:

In Biol 153, an important insight gained from the assessment and evaluation; surprisingly, few students scored below proficient (just 2 students per outcome). Active learning strategies in the classroom (students drawing and presenting their diagrams, along with small group questions and pop questions), reinforced with Dynamic Study Modules (Pearson Publishing software) and homework exercises (animal behavior observation and online assignments), and additional selected resources—to up the number of possible modes of interaction students can have with the course material (posted videos, slides, recordings, outlines) really are helping students learn successfully. The main strategy for improvement includes streamlining activities and skills for more flipped classroom experiences for large classes. To achieve this goal, research and development of excellent in-class activities that can be done with a larger class size to positively impact students' proficiency will be explored.

In Biol 153L, thirty out of thirty-four students completed the lab report. Under the SGR #6, Natural Sciences rubric, for Outcome 3, 41% of students were *exemplary*, 43% were *proficient* earning a B or C, and 2.9% were *below proficient*. Strategies for improvement may include a stronger background in statistics and data analytics. Additional guide to help students improve their scientific writing. One example would be helping them break down their ideas embedded within larger questions from the peer-reviewed literature). These strategies may be implemented by providing more data analytics in experiments of BIOL 151L (the lab taken in the prior semester to BIOL 153L).

In Chem 112, one section of the course was taught in person and the other section was taught online asynchronously. For Outcomes 1, 2, and 4, there is no significantly difference between online and in-person section. Notably, students did better in Outcomes 2 and 4 than in Outcome 1. On average, 60% were proficient or exemplary in Outcome 1, 77% were proficient or exemplary in Outcome 2, 86% were proficient or exemplary in Outcome 4. The results may reflect emphasis on problem solving in Chem 112 traditionally. Strategies for improvement in the course may include design and revision of the course materials related to scientific reasoning and thought process. To implement the strategies, case studies that can connect chemistry concepts/findings and contemporary issues may be useful. Additionally, detailed review of the solutions of the exam questions may also help students with formulating and validating scientific explanations.

In Chem 112L, the entire lab was used to assess Outcome 3. Among 163 students evaluated, 79% were proficient or exemplary. Potential improvement would be more guidance from graduate teaching assistant during the lab period to help students with data collection and calculations related to data analysis. Emphasis on pre-lab assignment and discussion may also help student improve their learning experience.

PHYSICS:

Assessments and evaluations demonstrated that our 4-credit versions of PHYS 211 & PHYS 213 appear very worthwhile; learning gains in these sections were significantly better than in the 3-credit sections (and much better than national averages). Going forward, we intend to keep the 4-credit sections of these introductory courses.

We learned that our new flipped-classroom teaching style, even with us not yet being experts on how to do it, appears to be at least about as good as the traditional lectures we did before. Our strategy going forward is to keep the 3-credit courses in an active-learning format for the foreseeable future while trying to adopt more active-learning Best Practices to see if the learning gains improve. We

hope to get faculty more knowledgeable and engaged about such Best Practices and trained in using them. We plan to continuously improve the active-learning environment and classroom experience for students of all majors.

Comparison of Findings from Prior Period:
With the significant change to general education assessment practices that occurred after AY18/19, comparison to periods prior to AY18/19 are not possible.

Section 4. Plans for Continuous Improvement

Goal Assessed: *Goal 3 – Social Sciences*

There were two areas of strategic improvement identified: concerning engagement, and concerning alternate platforms for learning materials. Concerning engagement, some instructors proposed a return to more interactive in-person learning activities in order to incentivize student engagement. One instructor has had previous success using real-time simulations in his Political Science courses. Another instructor, who noted the number of students who did not engage with textbooks, proposed using social reading platforms such as Perusall to help students connect with learning materials.

To support interactive in-person learning activities, funding was requested and granted to purchase small whiteboards for use in larger courses. In larger courses, it can be difficult to have smaller groups of students working together, particularly when that group work can/should involve idea-sharing, or making visual representations, or capturing main points of group discussion. Providing the groups of students with a small whiteboard facilitates the group interaction more effectively. The use of the whiteboards will be monitored and information about the impact discussed in the next assessment cycle for Goal 3.

Goal Assessed: *Goal 6 – Natural Sciences*

GEOLOGY:

A university-wide improvement strategy may be needed to convey understanding to freshman-level students that turning-in assignments is a fundamental expectation of post-secondary education and timely completion of tasks is fundamental to professional success. Resources and equipment for the Laboratory and Field safety (see 3 Continuous Improvements) were obtained via an endowed departmental professorship. No other specific resources are needed at this time.

CHEMISTRY and BIOLOGY:

Resources needed to implement the plan include a classroom with dry-erase boards or the like (electronic options) to allow students to draw in groups and present their work in class. A professional development opportunity to formally learn more about flipped classrooms or other active pedagogical techniques for large classes would be beneficial. Other resources may become relevant, e.g., depending on the outcome of a professional development activity.

Supplemental instruction and enhanced tutorial service (such as proposed Chemistry Success Center) will help student learning. Better multimedia and sound equipment may also help for the large classroom for Chem 112 and Biol 153.

PHYSICS:

Resources needed in adopting Best Practices for active-learning techniques are professional development training opportunities for faculty with flipped classrooms: attending the AIP/APS new faculty trainings, getting someone to campus to train in a workshop, or providing travel funds for faculty to shadow faculty in nearby institutions who have successfully implemented active learning techniques in PHYSICS classes. Improving the active-learning environment requires one of the following: priority in classroom assignments to allow the courses to be taught in non-theatre-seating classrooms, additional, perhaps portable whiteboards to allow students (especially in EEP 253/EEP 254) to more easily collaborate on in-class group work, and in ways that the faculty can provide feedback on.

Section 5. Summary

As identified earlier in this report, general education assessment underwent a wholesale revamp in AY21/22 at South Dakota Mines. The revamp included convening a General Education Assessment committee, development of new forms to capture the needed information in an easy and manageable way, updating processes to make them as efficient and streamlined as possible so the true focus of the work would be on improving student learning, and creating an opportunity to request funding from the Provost's Office to support continuous improvement strategies and initiatives.

Since this revamp was occurring during AY21/22, there are still improvements and tightening up of processes and documentation that were identified. As the institution and academic departments gain more experience in this new process, the results and reporting will be more robust.

The ability to request funding to support continuous improvement efforts was a significant improvement, and allow faculty to really consider what they might do to improve student learning in their general education area. From the results of the AY21/22 assessment, funding was provided to purchase small whiteboards for use in larger classes, and a faculty was supported to attend a conference on flipped classroom instruction. That faculty attended the conference and is presenting information learned from that conference in a session available to all faculty at South Dakota Mines.

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General Education Assessment Form

Use this form to report the university General Education Assessment per AAC Guideline 8.7.A and BOR Policy 2:11. This report should be no more than 5-10 pages in length.

NOTE: This form will be provided to the Board of Regents at their June BOR meeting.

South Dakota State University	2021-2022	
Institution	Academic Year Reporting Period	
Teresa Seefeldt		5/3/23
Assessment Representative	Institutional Approval Signature	Date
Dennis Hedge		5-4-23
Provost	Provost Approval Signature	Date

Section 1. Introduction

The South Dakota State University General Education Assessment Plan outlines the purpose, principles, and processes which guide the assessment of student learning identified by the System General Education goals and student learning outcomes.

The goal of general education assessment is to determine how well and in what ways students are achieving the intended learning outcomes. In addition, the assessment process can provide meaningful information and feedback for faculty who teach general education courses. Most important, general education assessment identifies successes of student learning, areas for improvement, and documentation of evidence-based changes.

Good assessment practices encourage the use of multiple methods to examine student learning outcomes. SDSU's general education assessment plan incorporates multiple methods to assess student learning as related to the general education curriculum. These methods include:

1. Review of student artifacts from randomly selected general education courses/sections
2. Items from the Senior Exit Survey
3. Items from the National Survey of Student Engagement
4. Focus Groups (optional)

For all general education learning outcomes, SDSU has established a benchmark that 75% of students included in the sample will achieve proficiency or exemplary on general education student learning outcomes.

Section 2: Goals Assessed

Goal Assessed: SGR #3

Methodology:

Following the SDSU Section and Artifact Sampling procedure (see General Education Assessment Plan), a sample of approximately 25% of the available courses on the approved list were selected by the Assistant Vice President of Institutional Research and Assessment.

For the 2021-22 cycle, the following courses were selected for Goal #3:

- AIS 211 (South Dakota American Indian Culture and Education)
- ECON 201 (Principles of Microeconomics)
- GEOG 111 (Sustainable Society)
- GEOG 212 (Geography of North America)
- INFO/PHIL 102 (Data Ethics)
- POLS 141 (Governments of the World)
- POLS 210 (State and Local Government)
- PSYC 101 (Introduction to Psychology)

Level of Achievement/Learning Outcome:

Social sciences/diversity included 10 course sections with a total of 683 scored student artifacts.

The artifacts were scored by each student learning outcome (SLO). The results for SLO 1 (n = 683) were 97 (14.2%) artifacts rated as below proficient, 372 (54.5%) rated as proficient, and 214 (31.3%) rated as exemplary. The results for SLO 2 (n = 683) were 192 (28.1%) artifacts rated as below proficient, 281 (41.1%) rated as proficient, and 210 (30.7%) rated as exemplary. The results for SLO 3 (n = 679) were 141 (20.8%) artifacts rated as below proficient, 334 (49.2%) rated as proficient, and 204 (30.0%) rated as exemplary.

Goal Assessed: SGR #6

Methodology:

Following the SDSU Section and Artifact Sampling procedure (see General Education Assessment Plan), a sample of approximately 25% of the available courses on the approved list were selected by the Assistant Vice President of Institutional Research and Assessment.

For the 2021-22 cycle, the following courses were selected for Goal #6:

- BIOL 103-103L (Biology Survey II and Lab)
- CHEM 106-106L (Chemistry Survey and Lab)
- CHEM 112-112L (General Chemistry I and Lab)
- PHYS 113-113L (Introduction to Physics II and Lab)
- PHYS 213-213L (University Physics II and Lab)

Level of Achievement/Learning Outcome:

Natural Sciences included 5 courses with a total of 911 scored student artifacts. The results for SLO 1 (n = 447) were 85 (19.0%) artifacts rated as below proficient, 79 (17.7%) rated as proficient, and 283 (63.3%) rated as exemplary. The results for SLO 2 (n = 416) were 90 (21.6%) artifacts rated as below proficient, 144 (34.6%) rated as proficient, and 182 (43.8%) rated as exemplary.

The results for SLO 3 (n = 911) were 69 (7.6%) artifacts rated as below proficient, 517 (56.8%) rated as proficient, and 325 (35.7%) rated as exemplary. The results for SLO 4 (n = 442) were 103 (23.3%) artifacts rated as below proficient, 166 (37.6%) rated as proficient, and 173 (39.1%) rated as exemplary.

Section 3. Findings Goal Assessed:

Interpretation of Findings: SGR 3

The results indicate that students performed at or above the benchmark for SGR Goal #3 (Social Sciences/Diversity) for SLOs 1 and 3. However, only 71.9% of students were proficient or exemplary for SLO 2.

Comparison of Findings from Prior Period: A higher percentage of students were rated proficient or exemplary on SLO 3 in 2022 compared to 2019. Performance on SLO 2 declined slightly.

Goal Assessed:

Interpretation of Findings:

The results indicate that students performed at or above the benchmark for all SGR #6 goals.

Comparison of Findings from Prior Period: Similar performance on all SGR #6 goals was achieved in 2019 and 2022.

Section 4. Plans for Continuous Improvement

Goal Assessed: SGR #3

The faculty and departments that teach courses for **SGR #3** will use the information in this report to improve student learning (and instructor pedagogical practices) in the following ways:

- Including more opportunities to apply social sciences concepts in courses
- Adding activities to help students make connections with course content
- Making students more aware of the SGR goals

Goal Assessed: SGR #6

The faculty and departments that teach courses for **SGR #6** will use the information in this report to improve student learning (and instructor pedagogical practices) in the following ways:

- Revising teaching methodology to include more relevant examples to real-life
- Giving students more opportunities to practice course content

Section 5. Summary

Overall, students performed well on the learning outcomes for SGR #3 and #6. Opportunities to enhance student learning were identified. The General Education Subcommittee has also identified opportunities to improve the assessment process by providing additional professional development opportunities for faculty teaching general education courses.

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General Education Assessment Form

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University of South Dakota	2021-2022	
Institution	Academic Year Reporting Period	
Lisa K. Bonneau, Ph.D.		
Assessment Representative	Institutional Approval Signature	Date
Kurt Hackemer, Ph.D.		
Provost	Provost Approval Signature	Date

Section 1. Introduction

General Education is an academic program that provides students with a foundation of knowledge and skills to prepare them for success. General education requirements in South Dakota are outlined in SDBOR Policies 2:7, 2:11, and 2:26, and AAC Guidelines 8.3, 8.4, and 8.7. Faculty members in each discipline from all six BOR universities meet to review the goals and learning outcomes and create rubrics to evaluate the degree to which students meet the stated student learning outcomes for the given goal.

The two System General Education Goals and Student Learning Outcomes assessed this year are: Goal #3: Students will understand the diversity and complexity of the human experiences through the study of the social sciences, and Goal #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

Section 2: Goals Assessed

Goal Assessed: Goal 3 Social Sciences

Methodology: In December, a complete list of all course sections for courses that meet the general education goal was compiled for the spring semester. Faculty teaching the Arts & Sciences, University Honors, and Beacom School of Business sections were notified of the assessment process and provided with the student learning outcomes for the goal, information on artifact selection, the approved rubrics, and instructions for submission of results into the software solution, Nuventive. This was the first semester where Nuventive was utilized to collect assessment data from faculty participating in general education assessment. Assessment results were submitted by the end of the semester, and data for each goal were collated and analyzed by the Assistant Provost to generate a report for the institution.

Level of Achievement/Learning Outcome: There were 18 different courses that meet the general education Goal 3 offered in the spring semester of the 2021-22 academic year. There were 43 sections from 18 different courses and 8 different academic departments that submitted results. There were 15 online sections from 9 different courses and 5 sections of 4 different courses from additional locations that submitted results. There were 1522 student results submitted for the general education assessment of Goal 3.

For the Goal 3 results submitted, 88.8% were rated as proficient in Outcome 1; 88.4% were rated proficient in Outcome 2, and 88.2% were rated as proficient in Outcome 3. Data were analyzed separately for proficiency in traditional face-to-face sections and online sections.

- In face-to-face sections 88.5% of students were rated proficient for Outcome 1, 81.3% for Outcome 2, and 87.4% for Outcome 3.
- In sections taught in Sioux Falls, 83.4% of students were rated proficient for Outcome 1, 81.3% for Outcome 2, and 85.0% for Outcome 3.
- In sections taught online, 89.8% of students were rated proficient for Outcome 1, 90.3% for Outcome 2, and 89.3% for Outcome 3.

Generally, students in Sioux Falls had lower levels of proficiency than main campus and online students.

Goal Assessed: Goal 6 Natural Science

Methodology: In December, a complete list of all course sections for courses that meet the general education goal was compiled for the spring semester. Faculty teaching the sections were notified of the assessment process and provided with the student learning outcomes for the goal, information on artifact selection, the approved rubrics, and instructions for submission of results into the software solution, Nuventive. This was the first semester where Nuventive was utilized to collect assessment data from faculty participating in general education assessment. Some Natural Sciences faculty submitted assessment results for fall courses in addition to those from the spring semester. Assessment results were submitted by the end of the spring semester, and data for each goal were collated and analyzed by the Assistant Provost to generate a report for the institution.

Level of Achievement/Learning Outcome: There were 25 sections of 16 different courses that met the general education Goal 6 that submitted results for the 2021-2022 academic year. There were 8 online sections from 6 different courses and 4 sections of 4 different courses from additional locations that submitted results. There were 1,430 student results submitted for the general education assessment of Goal 6.

For the Goal 6 results submitted, 90.88% were rated as proficient in Outcome 1; 91.1% were rated proficient in Outcome 2, 87.3% were rated proficient in Outcome 3, and 88.6% were rated proficient in Outcome 4. Data were analyzed separately for proficiency in traditional face-to-face sections and online sections.

- In main campus face-to-face sections 88.2% of students were rated proficient for Outcome 1, 91.9% were proficient for Outcome 2, 84.2% were proficient for Outcome 3, and 88.4% were proficient for Outcome 4.
- In sections taught in Sioux Falls, 86.6% of students were rated proficient for Outcome 1, 86.7% were proficient for Outcome 2, 77.8% were proficient for Outcome 3, and 91.1% were proficient for Outcome 4.
- In sections taught online, 95.5% of students were rated proficient for Outcome 1, 89.9% were proficient for Outcome 2, 95.2% were proficient for Outcome 3, and 89.1% were proficient for Outcome 4.

Generally, proficiency across modalities varies based on learning outcome but Sioux Falls students tend to have lower proficiency ratings that online or Vermillion students.

Section 3. Findings

Goal Assessed: Goal 3 Social Sciences

Interpretation of Findings:

Anthropology & Sociology: There is only one report for all ANTH and SOC classes combined in this report -- indicating that more than 85% of our students are proficient in the subject matter on which they were examined. So, there's not much of an analytical job that we need to, or can, do. It will be important for us to break out data by discipline in the next evaluation period. The department will continue to strive for excellence!

WMST: Overall, the majority of students in WMST were proficient in reaching all three of the SLOs for SGR3. The course did experience minor, but continued, disruption from the ongoing pandemic which impacted attendance and the consistency of the classroom learning environment. Without these interruptions and with the suggestions for improvements, it is feasible that the proficiency levels in the course can be improved in future iterations.

History: It is not surprising that students in HIST 151-152 do quite well on the lower-order Concepts, Terminology measurement and split about evenly between proficient and exemplary on the higher-order analysis and application metrics. History surveys teach both the underlying information/chronology of dates, events, etc., [concepts, terminology] while getting students to work with primary sources [analysis and application], which is more difficult. The fact that the vast majority of students are assessed as proficient or exemplary indicates the superb job History faculty do teaching surveys. Under 10% below proficient seems accurate for Gen Ed courses which will always feature a certain percentage of students who are not prepared for college or who encounter unsurmountable obstacles once here.

Political Science: Although the data in aggregate report high levels of proficiency among our students, there are some notable relative differences in levels of proficiency. The data suggest our majors (in political science or criminal justice) show very high levels of proficiency in mastery of basic concepts; teamwork; ethical reasoning and oral communication. Relative weaknesses include analysis of (social) impacts (65 percent of criminal justice majors) and information literacy (75 percent of political science majors). There appear as well to be some important differences in student modality. Curiously, students who complete a course online exhibit higher overall levels of proficiency in the application of social science concepts (90.3 percent) than do students who complete a face-to-face course (87.6 percent). Although a slight

difference. this finding is surprising because (a) online students typically exhibit lower levels of course completion; and (b) online social science sections include a high proportion of dual-credit students whom we would not expect to be as proficient as their college-aged classmates. This result may reflect a selection effect (lower retention in online sections may remove low-performing students from end-of-semester assessment) or perhaps pedagogical differences between online and face-to-face instructors. These are results that merit further investigation.

Psychology: The assessment results for General Psychology are largely consistent with other outcomes associated with a large enrollment general education course. The course is offered on campus (3 sections per year), in Sioux Falls (4 sections per year), and online (5-6 sections per year) and results broken out by location would be helpful in assessment. The fact that the percentages in each category across the three student learning outcomes are so similar bring into question the independence of the measure of each. Evaluation of related IDEA evaluation items support further separation between the three SLOs. Two external factors of note that may have contributed to the assessment findings are an increase in the online section size from 35-75 students per section and the need to cover courses with adjunct or visiting faculty due to vacancies in the department. Additional interpretation appears below each Social Science SLO.

SLO1: Identify and explain basic concepts, terminology, theories, and systems of inquiry of the selected social science disciplines.

16% of students were below proficient, which is not entirely surprising considering the DFW rate for PSYC 101 during the same academic year is approximately 15%. On average 68% of students reported substantial or exceptional progress on gaining a basic understanding of the subject. Although every course addressed all SLOs many instructors' foundational knowledge since this course serves as the only pre-requisite for the overwhelming majority of advanced psychology courses.

SLO2: Apply selected social science concepts and theories to contemporary or historical issues from different behavioral, cultural, institutional, temporal, or spatial contexts.

IDEA evaluations show that approximately 64% of students report substantial or exceptional progress in applying information broadly. Lower Assessment values are expected since a significant component of PSYC 101 is about applying information to personal experience.

SLO3: Analyze the extent and impact of diversity among individuals, cultures, or societies in contemporary or historical contexts using social science methods and concepts.

As this SLO is central to the discipline the number of students falling below competence as well as the less that 25% that are exemplary is something worthy of further exploration. Review of IDEA evaluation indicate that not all instructors marked items related to this SLO as either important or essential.

Honors: Honors students are overwhelmingly proficient in all three of the SLOs for SGR #3. This is not surprising, as students in the Honors program enter USD with HS GPAs at 3.7 or above high standardized test scores, and high rates of AP/dual credit. All students in the UHON 111 course have done well in first-year composition. The Honors Program will continue to provide students with opportunities to engage with social science concepts and improve their critical analysis skills and will continue to provide high-impact learning practices that characterize Honors education.

Comparison of Findings from Prior Period:
Direct comparison to results from 2018-2019 are not appropriate at this time, though percentages were higher with this assessment period than the previous assessment administration (Outcome 1 80% proficient or above, Outcome 2 77% proficient or above, Outcome 3 81% proficient or above). In 2018-2019, the sampling strategy was a random sample, with only 16 sections from 12 different courses sampled. There were 991student artifacts evaluated while the current cycle assessed all course sections with 1522 student artifacts evaluated.

Goal Assessed: Goal 6 Natural Sciences
Interpretation of Findings:

Sustainability & Environment: Assessments for Earth Science and Sustainability were taken from a sampling of materials and activities that represented the entire semester, the excepting being with lab activities where only one lab activity was selected, hence our largest 'below proficient' category being in method application. We categorized above proficient as those who received largely As, Proficient as those who received Bs and Cs, and Below Proficient as those who received below a C. Across all categories >75% of students were proficient or above proficient. Across all our spring semester Gen Eds, we felt that the effects of the COVID pandemic had an impact on our courses in a way that we had not seen before. All professors reported students who did not know how to prepare for class, consistently missing class without making up work, and generally having no idea to manage their time without the safeguards put in place during the height of the pandemic. As a result, there was more missing work and absences resulting in more below proficient scores than would otherwise be the case. This is especially true for the "Methods" category as only one lab was chosen and so if a student missed that single lab, then they would be rated as below proficient.

Biology: The faculty felt that the Nature of Science (SLO 3) results were significantly lower than the results for the other three Student Learning Objectives, so that is the main focus of our response. Generally, proficiency rates that are less than 10% are expected given that Drop/Fail/Withdraw rates are typically within this range or much higher for many Biology courses. We felt that pooling results for BIOL 101 and BIOL 104 with results from BIOL 151 and BIOL 153 may have brought down the overall proficiency rate for SLO 3 and may obscure other patterns in the data. We would argue that the science majors who take BIOL 151/153 would have higher proficiency rates in all four SLOs than non-science majors who take BIOL 101 and BIOL 104.

Chemistry: Chemistry students show greater than 90% proficiency in the four SLOs within Goal #6 with the strongest proficiency in the SLO 'Natural Science Concepts and Theories'. Chemistry courses well integrate theoretical and practical skills through implementing problem solving approaches in theory and laboratory contexts. This is reinforced with rigorous expectations for completing coursework and laboratory activities, and course/degree standards that meet the criteria for approval by the American Chemical Society. The data indicates a high level of impact and effectiveness of chemistry courses in meeting Goal #6.

Comparison of Findings from Prior Period:
Direct comparison to results from 2018-2019 are not appropriate at this time, though percentages were higher with this assessment period than the previous assessment cycle (Outcome 1 81%

proficient or above, Outcome 2 88% proficient or above, Outcome 3 81% proficient or above, Outcome 4 80% proficient or above). In 2018-2019, the sampling strategy was a random sample, with only 853 student artifacts evaluated while the current cycle assessed all course sections with 1430 student artifacts evaluated.

Section 4. Plans for Continuous Improvement
Goal Assessed: Goal 3 Social Sciences

Faculty mentioned the following as methods to improve success in meeting the learning outcomes in courses meeting this goal.

- *WMST*: A. Opportunities for improvement: Given that the field of WGSS continues to diversity through the incorporation of new and emergent theories, perspectives, and methods, future offerings of WMST 247 can work to improve SL03 via the incorporation of the most current and leading voices in the field within the course content. More specifically, the course can include more content focused on global perspectives of WGSS as the current course is predominantly focused on WGSS in the United States. B. Opportunities to capitalize on areas of strength: Students in the course were particularly efficient at SL02 in their ability to apply concepts to contemporary issues in WGSS. Future iterations of the course can utilize this ability to strengthen SL03 by working with students on applying concepts to more global issues.
- *History*: The vast majority of History and History Ed majors now test out of History 151 and 152 prior to coming to USD, so assessment of 151 and 152 examines Gen Ed students in those courses more than majors. Of course, some of the majors may have taken USD's courses online through Dual Credit, and some students in 151 and 152 will become majors. Those caveats notwithstanding, looking at 151 and 152 is no longer a helpful way to assess History majors.
- *Political Science*: The Department plans to harmonize course content and designs across our offerings of social science generational education courses (POLS 100: American Government and CJUS 201: Intro to Criminal Justice). With multiple sections offered annually by different instructors in different modes, there appear to be considerable differences in choice of text; learning outcomes; and means of assessing student achievement. While some of these differences are appropriate for different modalities (especially asynchronous online), we will better student proficiency by establishing common learning outcomes and perhaps a common set of texts. Faculty also are currently pursuing substantial program modifications. In political science, the undergraduate curriculum now requires majors to complete courses in all of the subfields of political science, a requirement that not only introduces them to the breadth of the discipline but also aids their understanding and application of concepts. In criminal justice, a curricular revision aims to strengthen criminal justice students' capacity to analyze impacts. This revision adds a required course and reorients extant courses to strike a better balance between conceptual courses and those for practitioners. More generally, the Department's undergraduate committee continuously assesses program curricula in the context of both assessment results and best practices in the respective disciplines.

- *Psychology:* The online delivery of PSYC 101 is undergoing a major revision with the revised course being offered for the first time in the summer of 2023. Along with this revision is a review of content recommendations in all sections of the course. The shift to hy-flex delivery may also bring the online and face-to-face sections closer together. The department operations committee has been tasked with exploring means of improving student engagement in the course, providing more effective support services to students in need and the results of this assessment report will be included in their discussion. While SLO1 will continue to be emphasized efforts to improve progress in SLO2 and SLO3 will be considered.
- *Honors:* The Honors Program continues to try to engage faculty from across the disciplines in core courses to give students a broad grounding in the required skills. We also continue to develop pedagogies that incorporate interdisciplinary, high-impact learning practices. As there is always variation from section to section of the course, we will continue to provide opportunities for instructor development.

Goal Assessed: Goal 6 Natural Sciences

Faculty mentioned the following as methods to improve success in meeting the learning outcomes in courses meeting this goal.

- Sustainability & Environment: We feel that to base a plan for improvement on a semester so outside the norm would be foolish and do damage to our courses in the future. However, we do intend to continuously improve by taking into account some broader lessons from the past several years. This includes utilizing technology that is now more accessible as a result of the pandemic to streamline or make courses more dynamic, clarifying and improving lab material, and incorporating active learning methods where appropriate.

- Biology: Lab materials were added this semester in BIOL 101 and BIOL 151 that are aimed more specifically at proficiency in the nature of science. Similar material will be added to lab exercises and lectures in BIOL 153. Two or three final exam questions on the nature of science will be added in BIOL 153 to help us further assess our progress with this SLO. Given that we now know where improvement is needed, laboratory and lecture instructors will continue to ensure that this SLO is adequately addressed. Finally, we noted that BIOL 151 and BIOL 153 are designed to be taken sequentially. Nature of science material is strongly addressed in BIOL 151 and less so in BIOL 153 under the assumption that BIOL 153 students are already familiar with that material. Therefore, the Academic Advising Center and other advisors should be aware that the order in which BIOL 151 and BIOL 153 are taken is important to our outcome with respect to SLO 3.

- Chemistry: The department will continue to update its course/degree content consistent with the standards of the American Chemical Society. The department continues the tradition of the Charles Estee Memorial Lecture that highlights exceptional work in chemical education as a means to bring new ideas to the department to positively impact teaching. The department is implementing tools to deliver content to students that is more accessible, such as improved digital accessibility, the use of multiple methods to share information (lecture, videos, digital homework tools, LMS tools), and the use of tools used by professional chemists (science databases, instrumentation,

analytical software). Research experiences within the department involve students in higher order processes on the Bloom's Taxonomy, with the expectation that students see themselves less as students and more as professionals. The department's expectation is to maintain a vigorous undergraduate research program, and is a national leader in undergraduate research in chemistry as evidenced by National Science Foundation funding for its Research Experience for Undergraduates program. The department has also adopted higher standards to evaluate teaching to include three forms of evaluation: student evaluations, self-reflection, and peer evaluations.

Section 5. Summary

Based on the assessment data for both the Social Science and Natural Science SGRs, students at USD have a high proficiency in the learning outcomes with rates at or above 86%. In addition, even though the sampling strategies were distinctly different in this assessment cycle than the previous cycle, assessed student proficiency was higher in this assessment cycle. Faculty from each of the departments offering general education courses within this goal have provided reasonable strategies for improvement of outcomes in their respective courses. It is also noted that the institution could better support improvement efforts by providing department chairs and faculty additional assessment data at the level of the course.