SOUTH DAKOTA BOARD OF REGENTS

Academic and Student Affairs
Consent

AGENDA ITEM: 5 – Y
DATE: December 11-12, 2024

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SUBJECT

General Education Assessment Report 2023-24

CONTROLLING STATUTE, RULE, OR POLICY

BOR Policy 2.3.7 – Baccalaureate General Education Curriculum
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 1: Written Communication and Goal 5: Mathematics in 2023-2024, 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. Institution-level analyses indicate, with a few exceptions, student performance remained generally consistent (if not improved) across each student learning outcome

(Continued)

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INFORMATIONAL ITEM

compared to the last time Goals 1 and 5 were evaluated (2020-2021), though it is relevant to note the impact Covid may have had on instruction and student learning that year.

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. This is the second cycle of assessment for Goals 1 and 5 under the revised general education assessment process. Improvements in assessment methodology were noted compared to the last cycle, specifically in increased sample sizes at most institutions and the inclusion of samples from multiple modalities and locations.

The plans for continuous improvement include recommendations that are tailored specifically to English and math instruction at the regental institutions. For example, one institution cited the recent development of a grammar/usage handbook for student use while another institution indicated interest in developing such a tool. In math, multiple institutions suggested students would benefit from more opportunities for active learning in class, particularly problems that require students to show their work. However, multiple institutions identified steps designed to improve the assessment process on their campuses, including developing shared rubrics, streamlining the assessment process, and recommended additional faculty training in assessment.

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	2023-2024	
Institution	Academic Year Reporting Period	
Dan May	Dan May	10/4/2024
Assessment Representative	Institutional Approval Signature	Date
Jon Kilpinen	DocuSigned by: Jon L. Kilpinen C83468641FCA4E2...	10/7/2024 | 9:50:24 AM MDT
Provost	Provost Approval Signature	Date

Section 1. Introduction

This document is an overview of the assessment of General Education Goal 1: English and Goal 5: Mathematics performed at Black Hills State University for the 2022-2023 academic year. The System General Education Goal 1 for English reads: "Students will write effectively and responsibly and will understand and interpret the written expression of others." The System General Education Goal 5 for Mathematics reads: "Students will understand and apply fundamental mathematical processes and reasoning."

Section 2: Goals Assessed

Goal Assessed: Goal 1: English

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: Write using standard American English, including correct punctuation, grammar, and sentence structure.

SLO2: Write logically.

SLO3: Write persuasively, with a variety of rhetorical strategies (e.g., expository, argumentative, descriptive).

SLO4: Incorporate formal research and documentation into their writing, including research obtained through modern, technology-based research tools.

Table 1 summarizes the results of the English assessment.

	Below Proficient	Proficient	Exemplary
SLO1	12%	47%	41%
SLO2	0%	73%	27%
SLO3	13%	81%	6%
SLO4	0%	87%	13%

Table 1: English Student Learning Outcomes

Goal Assessed: Goal 5: Mathematics

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: Use mathematical symbols and mathematical structure to model and solve real world problems.

SLO2: Demonstrate appropriate communication skills related to mathematical terms and concepts.

Table 2 summarizes the results of the Mathematics assessment.

	Below Proficient	Proficient	Exemplary
SLO1	32%	19%	49%
SLO2	25%	27%	47%

Table 2: Mathematics Student Learning Outcomes

Section 3. Findings

Goal Assessed: Goal 1: English

Interpretation of Findings: Drawn from three sections of ENGL 101 courses satisfying the English general education requirement, 17 total artifacts were collected and assessed by applying a rubric established by the English faculty. The rubric guided the faculty in assessing each artifact as being "below proficient," "proficient," or "exemplary" in satisfying each of the four student learning outcomes in the English general education goal. Table 3 shows the rubric applied for this goal.

Goal 1: Students will write effectively and responsibly and will understand and interpret the written expression of others.

	Level 1 - Below Proficient	Level 2 - Proficient	Level 3 - Exemplary
Mechanics, Grammar, and Syntax: Write using standard American English, including correct punctuation, grammar, and sentence structure.	Convey meaning inconsistently due to errors in punctuation, grammar, and syntax.	Convey meaning adequately in prose that is clear and fluent overall, though some lapses are evident.	Convey meaning precisely, clearly, and fluently in prose that demonstrates control of the conventions of punctuation, grammar, and syntax.
Logical Development. Write logically	Use sometimes relevant logic to explore the subject in some parts of the essay, though that logic is intermittent and, at times, incoherent.	Use relevant logic to explore the subject and to develop the essay, though that logic is not wholly systematic or coherent.	Use relevant, systematic, and coherent logic to explore the subject and to develop the essay.
Persuasion. Write persuasively, using a variety of rhetorical strategies (e.g., exposition, argumentation, description).	Use a limited repertoire of rhetorical strategies, only some of which are suited to the writing task and audience, that demonstrates limited understanding of the subject and an inability to argue plausibly or consistently.	Use a variety of rhetorical strategies, most of which are suited to the writing task and audience, to demonstrate adequate comprehension of the subject and to argue plausibly overall.	Use a variety of rhetorical strategies suited to the writing task and audience to demonstrate mastery of the subject and to argue convincingly.
Research and Documentation. Incorporate formal research and documentation into their writing, including research obtained through modern, technology-based research tools.	Demonstrate an attempt to use sources to support ideas, but effort and results are inconsistent as is documentation.	Demonstrate mostly consistent use of credible, relevant sources to support ideas and document them properly overall, though some lapses are evident.	Demonstrate skillful use of credible, relevant sources to develop ideas and document them properly.

Table 3: English rubric

The artifacts included the following:

- Film analysis essays in which the student created a logical argument regarding a key take-away from the film. The students were required to quote from and make other direct references to the film, and they created a works cited page.

- Final semester papers which incorporated materials from other primary sources that could contribute to the students' thesis. These papers were intended to foster skills in all of the areas of writing, including the incorporation of outside materials, creating a logical argument, organizing, and writing in standard English.

- A study of several poems thematically related to each other. Students presented their ideas in logical form according to the thesis and cited the poetry as evidence.

Table 4 provides more information about the number of artifacts assessed across each learning outcome and the results of the assessment.

	SLO1	SLO2	SLO3	SLO4
Number of artifacts sampled	17	15	16	15
Number of artifacts Below Proficient	2	0	2	0
Number of artifacts Proficient	8	11	13	13
Number of artifacts Exemplary	7	4	1	2
Percentage Below Proficient	12%	0%	13%	0%
Percentage Proficient	47%	73%	81%	87%
Percentage Exemplary	41%	27%	6%	13%

Table 4: English Student Learning Outcomes artifact counts

Comparison of Findings from Prior Period: In Table 5, the results of the English assessment from Table 1 in Section 2 are compared to results from the previous English assessment in 2020-2021.

		Below Proficient	Proficient	Exemplary
2020-2021	**SLO1**	12%	88% combined	
	SLO2	22%	78% combined	
	SLO3	29%	71% combined	
	SLO4	14%	86% combined	
2022-2023	**SLO1**	12%	47%	41%
	SLO2	0%	73%	27%
	SLO3	13%	81%	6%
	SLO4	0%	87%	13%

Table 5: English Assessment, 2020-2021 vs. 2022-2023

In general, student achievement on the English general education goal was measured to be higher during the 2022-2023 assessment than in the 2020-2021 assessment. In particular, while the percentage of artifacts assessed as "below sufficient" on SLO1 remained constant, the corresponding percentages dropped considerably for SLO2, SLO3, and SLO4. This indicates considerably more students were "proficient" or "exemplary" in the current assessment.

Several factors could account for these changes. Potential factors include sample sizes (a fairly small sample size in this assessment), intercoder reliability (different faculty applying the rubric from one assessment to the next), and changes in assessment leadership (new coordinator, different forms). As such, no strong conclusions can be drawn from the minor differences between the 2020-2021 and 2022-2023 assessments.

Goal Assessed: Goal 5: Mathematics

Interpretation of Findings: Drawn from six sections of MATH 114 courses satisfying the Mathematics general education requirement, 102 total artifacts were collected and assessed by applying a rubric established by the Mathematics faculty. The rubric guided the faculty in assessing each artifact as being "below proficient," "proficient," or "exemplary" in satisfying each of the two student learning outcomes in the Mathematics general education goal. Table 6 shows the rubric applied for this goal.

Goal 5: Students will understand and apply fundamental mathematical processes and reasoning.

	Level 1 - Below Proficient	**Level 2 - Proficient**	**Level 3 - Exemplary**
Outcome 1: Students will use mathematical symbols and mathematical structure to model and solve real world problems.	Minimal understanding of mathematical processes and reasoning.	Basic understanding of, and has the ability to apply, fundamental mathematical processes and reasoning.	Deep understanding of, and has the ability to apply and analyze, mathematical processes and reasoning effectively.
	Aware of a mathematical plan to solve a quantitative problem.	Follows a mathematical plan to solve a quantitative problem.	Creates a mathematical plan to solve a quantitative problem.
	Aware of a sequence of steps that constitutes a valid line of reasoning.	Follows a given sequence of steps that constitutes a valid line of reasoning.	Creates a given sequence of steps that constitutes a valid line of reasoning.
	Aware of a multi-step mathematical process to answer a question and the need to evaluate the reasonableness of results.	Follows a multi-step mathematical process through to a logical conclusion and evaluates the reasonableness of the result.	Outcome
Outcome 2: Students will demonstrate appropriate communication skills related to mathematical terms and concepts.	Understands mathematical notation, has a working knowledge of mathematical terms and shows some work when solving a problem.	Uses mathematical notation in finding the solution of a problem and appropriately communicates the intermediate steps showing work progressing to the solution.	Uses proper mathematical notation in all aspects of the solution of a problem and appropriately communicates the line of reasoning through the completion of the problem.

Table 6: Mathematics rubric

The artifacts were student responses on an exam question from the third and final exam of the semester, on which students were allowed a notecard. The exam question was a part of a summative activity. Students were allowed 90 minutes to complete the full exam. The exam was partially completed in the Pearson online learning platform MyLab Math and partially written (including the artifact exam question).

Table 7 provides more information about the number of artifacts assessed across each learning outcome and the results of the assessment.

	SLO1	SLO2
Number of artifacts sampled	102	102
Number of artifacts Below Proficient	33	26
Number of artifacts Proficient	19	28
Number of artifacts Exemplary	50	48
Percentage Below Proficient	32%	25%
Percentage Proficient	19%	27%
Percentage Exemplary	49%	47%

Table 7: Mathematics Student Learning Outcomes artifact counts

Comparison of Findings from Prior Period: In Table 8, the results of the Mathematics assessment from Table 2 in Section 2 are compared to results from the previous Mathematics assessment in 2020-2021.

		Below Proficient	Proficient	Exemplary
2020-2021	**SLO1**	11%	30%	59%
	SLO2	11%	30%	59%
2022-2023	**SLO1**	32%	19%	49%
	SLO2	25%	27%	47%

Table 8: Mathematics Assessment, 2020-2021 vs. 2022-2023

In general, student achievement on the Mathematics general education goal was measured to be lower during the 2022-2023 assessment than in the 2020-2021 assessment. In particular, the percentage of artifacts assessed as "below sufficient" on both SLO1 and SLO2 increased. Correspondingly, the percentages of students who were assessed to be "proficient" or "exemplary" in the current assessment were lower.

Several factors could account for these changes. Potential factors include sample sizes (a fairly small sample size in the previous assessment), intercoder reliability (different faculty applying the rubric from one assessment to the next), and changes in assessment leadership (new coordinator, different forms). As such, no strong conclusions can be drawn from the minor differences between the 2020-2021 and 2022-2023 assessments.

Section 4. Plans for Continuous Improvement

Goal Assessed: Goal 1: English

Each student learning outcome was satisfied at the "proficient" or "exemplary" level by at least 88% of students sampled. While this number is satisfactory, plans for continuous improvement are ongoing. After completing the assessment and compiling the data, faculty members in English were consulted for input on how to increase the number of students who are "proficient" or "exemplary." Here are their recommendations:

- Facilitate class-to-class collaboration between Advanced Creative Writing and Introduction to Acting, which utilizes research-based collaboration and experiential learning techniques. The two classes could work together to create a full-length theater production from scratch and perform it for the public by the end of the semester. The pilot program was a marked success with obvious improvements in student interest, enrollment, engagement, student success (grades), and recruitment.
- Make use of the latest in games theory and play pedagogy, by utilizing small-group, in-class, narrative games to facilitate engaging discussion, research, analysis, and writing about education, pedagogy, and narrative. The pilot programs have seen significant gains in student engagement, retention, and overall progress on relevant outcomes.
- Move all our composition classes back toward strict Aristotelian argumentation based on syllogistic reasoning and the use of enthymemes.

Goal Assessed: Goal 5: Mathematics

Each student learning outcome was satisfied at the "proficient" or "exemplary" level by at least 68% of students sampled. While this number is satisfactory, plans for continuous improvement are ongoing. After completing the assessment and compiling the data, faculty members in Mathematics were consulted for input on how to increase the number of students who are "proficient" or "exemplary." Here are their recommendations:

- Make greater use of CalcPlot3D to help students to visualize mathematical concepts in 3 dimensions more effectively.
- Include more work that requires students to show their work in class.
- Encourage more students to take advantage of the Math Assistance Center on campus for free tutoring.
- Provide more remediation as necessary, through extra assignments in the OLS or during.

Section 5. Summary

As this report indicates, most students sampled for this assessment satisfied every learning outcome at the "proficient" or "exemplary" level for both the English and Mathematics general education goals. Black Hills State University remains committed to continual review and improvement of general education offerings, in the hopes of maintaining or improving the quality of student outcomes and learning.

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Dakota State University	2023-2024	
Institution	Academic Year Reporting Period	
Dr. Jeanette McGreevy	Jeanette McGreevy	10/15/2025
Assessment Representative	Institutional Approval Signature	Date
Dr. Rebecca Hoey	Rebecca L. Hoey	10/15/2025
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 (Written Communication, 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 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.

As required by BOR Policy 2.3.9 Assessment and AAC Guideline 2.3.9.A General Education Assessment Reporting, this report includes learning outcomes results for Dakota State University students for the 2023-2024 academic year in the general education areas of English and Mathematics.

Section 2: Goals Assessed 2023-2024:

GOAL #1 (Written Communication): Students will write effectively and responsibly and will understand and interpret the written expression of others.

Methodology: In August 2023, a member of the University Academic Assessment Committee met with the Provost and decided to significantly expand the number of sections collecting assessment data. They aimed to gather data from every Math General Education (GE) section for all learning outcomes. A comprehensive list of course sections meeting the general education goal for the 2023-24 academic year was compiled. Instructors were informed before the semester began and provided with the student learning outcomes, guidance on selecting assessment artifacts, the approved rubrics, and instructions for submitting data. The results were shared with the Academic Assessment Committee and University leadership at the end of each semester.

- Number of students assessed: 576

- Measurement instruments selected: As determined by instructor in consultation with program colleagues

GOAL #5 (Mathematics): Students will understand and apply fundamental mathematical processes and reasoning.

Methodology: As with Goal #1 (Written Communication), the University attempted to gather data from every mathematics GE section for all learning outcomes.

- Number of students assessed: 937
- Measurement instruments selected: As determined by instructor

Section 3. Findings

GOAL #1 (Written Communication): Students will write effectively and responsibly and will understand and interpret the written expression of others.

Level of Achievement/Learning Outcome

	F2F	Online	Total (F2F+OL)
Research and Documentation in Writing			
Exceeding Proficiency	37.6%	35.6%	32.8%
Meeting Proficiency	51.1%	37.3%	50.5%
Not Meeting Proficiency	11.2%	27.1%	16.6%
Writing American English			
Exceeding Proficiency	44.6%	39.0%	41.7%
Meeting Proficiency	48.2%	37.7%	47.0%
Not Meeting Proficiency	7.6%	17.5%	11.4%
Writing Logically			
Exceeding Proficiency	40.4%	49.3%	42.6%
Meeting Proficiency	51.2%	33.8%	47.1%
Not Meeting Proficiency	8.4%	17.0%	10.2%
Writing Persuasively			
Exceeding Proficiency	48.0%	40.0%	43.2%
Meeting Proficiency	43.1%	37.1%	45%
Not Meeting Proficiency	9.0%	22.9%	11.7%

Interpretation of Findings: For the 2023-2024 school year, the University gathered larger numbers of assessment data than previous years (n=576). In all four areas, the percentage of students who met or exceeded proficiency increased. Taking a longer-term perspective (using data back to 2020), outcomes have improved in two of the four areas. There is also a sizeable gap in outcomes between online students and face-to-face students, with those in traditional classrooms performing higher than those online in each of the four goal areas. Approximately 48% of the students assessed were in online courses. Students met the faculty designated benchmark of 70% in each sub area.

Comparison of Findings from Prior Period:

% of Students Meeting or Exceeding Proficiency in Written Communication		
Written Communication Goal Areas	**2022-2023 Academic Year**	**2023-2024 Academic Year**
Research and Documentation in Writing	82.0%*	83.4%*
Writing American English	86.6%*	88.6%*
Writing Logically	81.7%*	89.8*
Writing Persuasively	81.1%*	88.3%*

*Met Long-Term Benchmark of 70% Meeting or Exceeding Proficiency

GOAL #5 (Mathematics): Students will understand and apply fundamental mathematical processes and reasoning.

Level of Achievement/Learning Outcome:

	F2F	Online	Total (F2F+OL)
Communication of Math Terms and Skills			
Exceeding Proficiency	0%	0.7%	0.03%
Meeting Proficiency	65.2%	83.4%	71.8%
Not Meeting Proficiency	34.8%	15.9%	27.8%
Math Symbols and Structure for Problem Solving			
Exceeding Proficiency	0%	1%	0.4%
Meeting Proficiency	71.6%	87.4%	77.0%
Not Meeting Proficiency	28.4%	11.5%	22.6%

Interpretation of Findings: The math faculty were pleased with the student outcome levels and noted that they were similar to past data. They did point out that the number of students participating in the assessment process had increased significantly (n=937), which should provide increased accuracy. Even so, they brainstormed methods for getting even more students to participate.

The percentage of students not meeting proficiency was higher in the fall than in the spring, which was somewhat unanticipated. This may be a function of using a new hire in the fall, though it is difficult to verify this. Also unexpectedly, online students had higher levels of proficiency than did face-to-face students. Students performed better on problem solving than communicating mathematical terms and skills. Approximately two-thirds of the students assessed were enrolled in face-to-face courses, with the rest in online courses.

Comparison of Findings from Prior Period:

% of Students Meeting or Exceeding Proficiency in Mathematics		
Mathematics Goal Areas	**2022-2023 Academic Year**	**2023-2024 Academic Year**
Communication of Mathematical Terms and Skills	68.0%	72.2%
Mathematical Symbols and Structure for Problem Solving	68.5%	77.4%

Assessment data shows increased levels of student achievement in comparison with the previous year. This is a function of investments in teaching materials, intentional assigning of professors in GE courses, and smaller workloads/class sizes as a result of hiring additional math faculty. Because of these actions, students are now reaching the faculty designated benchmark of 70%.

Section 4. Plans for Continuous Improvement

GOAL #1 (Written Communication): Students will write effectively and responsibly and will understand and interpret the written expression of others.

The analysis of assessment data for general education written communication courses has identified some areas in need of improvement. One major issue is the discrepancy in outcomes between online courses and face-to-face courses. Adjunct instructors assist many with online sections. Moving forward, program faculty will provide improved training on assessment processes and expectations. They will also seek to standardize the assessment instrument used to provide greater consistency.

GOAL #5 (Mathematics): Students will understand and apply fundamental mathematical processes and reasoning.

The evaluation of assessment data for the general education math classes has revealed some areas that need improvement. Assessment leaders are currently working with faculty to streamline the reporting process and provide clear directions to all faculty.

Another key finding is the need for greater coordination across the program in terms of reporting methods and standards. While the current system works well for the math program, largely due to Dr. Wicklein's availability and support, there is room for improvement in standardizing reporting practices across the program. Faculty are supportive of providing access to the D2L platform to streamline data collection.

Section 5. Summary

GOAL #1 (Written Communication): Students will write effectively and responsibly and will understand and interpret the written expression of others.

In each of the four general education written communication learning outcomes, the Dakota State University students assessed during the 2023-2024 academic year met or exceeded the faculty-determined benchmark of 70% proficiency. Faculty who teaching general education social sciences courses will continue to refine assessments aligned with learning outcomes, make adjustments in pedagogy to meet students' needs, and carefully consider the use of online instructors.

GOAL #5 (Mathematics): Students will understand and apply fundamental mathematical processes and reasoning.

In each of the two general education mathematics learning outcomes, the Dakota State University students assessed during the 2023-2024 academic year met or exceeded the faculty-determined benchmark of 70% proficiency. Faculty teaching general education math 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. For the 2024-25 school year, the University is onboarding two new faculty, which will require training in the assessment process. The University should continue to be conscientious in assigning instructors for online courses to maintain the same level of outcomes we have currently obtained.

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

Northern State University	2023-2024	
Institution	Academic Year Reporting Period	
Kristi Brownfield		11/06/2024
Assessment Representative	Institutional Approval Signature	Date
Michael Wanous	*Michael Wanous*	11/06/2024
Provost	Provost Approval Signature	Date

Section 1. Introduction

During 2023-24, Northern State University faculty assessed student learning related to General Education Goals 1 & 5. Per BOR Policy 2.11, Goal 1 is stated as: Students will write effectively and responsibly and will understand and interpret the written expression of others. Goal 5 is: Students will understand and apply fundamental mathematical processes and reasoning.

Section 2: Goals Assessed

Goal Assessed: Goal 1

Methodology:

Northern lists two courses included in Goal 1 (ENGL-101 and ENGL-201), assessment is only performed in ENGL-201 due to the sequential ordering of these classes and the fulfillment of the ENGL-101 requirement via non-Northern class completions. During the 2023-24 academic year, 17 sections of ENGL-201 were conducted by Northern faculty with 7 sections providing ratings data for 49 students. All sections were online and only from Fall 2023. Due to the low amount of ratings data initially collected in Spring 2024, instructors and faculty were asked to submit again in early Fall 2024. Despite the second attempt to capture data, the response rate from instructors was extremely low for Goal 1. In the future, this will be addressed by working with faculty and instructors as a group and having them enter their ratings collectively as a group. This will both allow us to capture more comprehensive data but also allow the Assessment Director to capture initial data on inter-rater reliability.

Instructors of Goal 1 courses designed assignments that prompted students to demonstrate their abilities related to each of the learning outcomes in Goal 1. Faculty typically used different assignments for each of the outcomes and used assignments that took place during the the end of

the semester. Assignments that were assessed by faculty for the individual learning outcomes included: final exams and papers. Instructors were asked to complete student assessment ratings for both outcomes according to the BOR-established rubric for each outcome within their D2L course shells with the Goal 1 rubric attached for ease of scoring student work. Faculty were also asked to submit a cover sheet for each section of a Goal 1 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 1 Assessment Results	Below Proficient	Proficient	Exemplary
Learning Outcome 1: Mechanics, Grammar and Syntax: Write using standard American English, including correct punctuation, grammar and sentence structure.	22%	71%	6%
Learning Outcome 2: Logical Development. Write logically.	22%	71%	6%
Learning Outcome 3: Persuasion. Write persuasively, using a variety of rhetorical strategies (e.g., exposition, argumentation, description).	18%	76%	6%
Learning Outcome 4: Research and Documentation. Incorporate formal research and documentation into their writing, including research obtained through modern, technology-based research tools.	20%	73%	6%

Goal Assessed: Goal 5

Methodology:
Instructors of Goal 5 courses designed assignments that prompted students to demonstrate their abilities related to each of the four learning outcomes in Goal 5. Northern lists ten courses that are included in Goal 5: MATH-103 (Mathematical Reasoning), MATH-114 (College Algebra), MATH-115 (Precalculus), MATH-120 (Trigonometry), MATH-121 (Survey of Calculus), MATH-123 (Calculus I), MATH-125 (Calculus II), MATH 216 (Discrete Structures), MATH-225 (Calculus III), and MATH 281 (Introduction to Statistics). During the 2023-2024 academic year, 2 sections of MATH 103, 8 sections of MATH 114, 1 section of MATH 123, 1 section of MATH 225, and 1 section of MATH 281 were assessed. Data was collected from NSU faculty teaching on-campus and online courses as well as sections from E-Learning, and any sections offered at the Huron campus location. Data was requested from Rising Scholars instructors but due to technical difficulties with creating D2L accounts to submit ratings and the ongoing NACEP self-study, no data was collected from those sections.

Faculty predominantly used the same assignment or assignment types for both outcomes. Not all faculty provided time periods for each assessment but of those that did, the majority of faculty reported using assessments in their course sections at the end of the semester. Instructors largely used exam questions, real-world problem solving, word problems, and general homework assignments to assess the learning outcomes. Instructors were asked to complete student assessment ratings according to the BOR-established rubric for each outcome within their D2L course shells with the Goal 5 rubric attached for ease of scoring student work. Faculty were also asked to submit a cover sheet for each section of a Goal 5 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 and Proficient. The percentage of students per proficiency category and learning outcome are displayed in the following table.

Goal 5 Assessment Results	Below Proficient	Proficient
Learning Outcome 1: Students will use mathematical symbols and mathematical structure to model and solve real world problems.	19%	81%
Learning Outcome 2: Students will demonstrate appropriate communication skills related to mathematical terms and concepts.	14%	86%

Section 3. Findings

Goal Assessed: Goal 1

Interpretation of Findings: Students seem to perform similarly across all four outcomes. Due to the low response rate, there is no data for Spring 2024 or for modalities other than online. Given this, it is inappropriate at this time to make substantive conclusions based on this data regarding student proficiency in writing.

Due to the inclusion of a rating system within D2L, Northern is now able to capture demographic data to better enhance our understanding and assessment of student learning. Due to the small samples size of our ratings, it would be inappropriate to draw statistical conclusions regarding student performance. However, we can still observe patterns within the data that will allow us to observe change over time and how this affects different demographics. 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 and men are more likely to be rated "Below Proficient" than women across all four outcomes. Faculty indicated this difference was likely due to the cultural expectations of women that require them to be better communicators. We have small numbers of students of color when data are disaggregated by race/ethnicity (n=6) leading to more variation between the groups. When analyzing aggregate categories of white and non-white students, there is a stark contrast between the proficiency ratings. However, given the small number of non-white students sampled, it would be inappropriate to make conclusions at this time. 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. Students appear to perform similarly regardless of student type with students coded as juniors performing the best overall. No junior was rated as "below proficient." Perhaps more concerning is the senior students (n=3), all of which were rated as "below proficient."

Comparison of Findings from Prior Period:
This assessment cycle included a much smaller sample compared to 2020-2021 (n=165), despite the increase of modalities that were scheduled be assessed (e.g., on campus, online, Huron, etc.). Three years ago, 73% of students were rated as proficient or exemplary for outcome 1 (77% in AY23-24), 85% of students were rated as proficient or exemplary for outcome 2 (77% in AY23-24), 88% of students were rated as proficient or exemplary for outcome 3 (82% in AY23-24), and 71% of students were rated as proficient or exemplary for outcome 4 (79% in AY23-24). This indicated an overall decrease in proficiency in outcomes 2 and 3, but this may be because of sample size. The faculty indicated two potential reasons for the drop in proficiency in these outcomes: (1) students coming from high school into the composition classes with learning loss from COVID-19; faculty indicated that student work demonstrated the loss of approximately a year worth of learning and (2) a loss of critical thinking skills in general due to an overreliance on standardized testing and formulaic writing. For example, faculty expressed the need to "unteach" writing techniques that are designed for standardized testing such as the "5-paragraph essay."

We are unable to compare the previous cycle in terms of different modalities, due to only data from online sections being provided this cycle. When comparing the online sections in 2020-2021, students performed similarly to the previous cycle on all four outcomes when assessing aggregate categories of "below proficient" versus "proficient/exemplary." In contrast, students were much more likely to be assessed as "exemplary" in the previous cycle on all four outcomes compared to 2023-2024.

Goal Assessed: Goal 5
Interpretation of Findings:
Students seem to perform similarly across both outcomes. When evaluating modality, students appear to do better in on campus or E-Learning sections compared to the traditional online courses. This is the opposite compared to the previous cycle, in which online students performed better. One potential explanation for the change is the separation of E-Learning sections into their own category for assessment. We know that online sections have higher percentages of high school dual credit students than face-to-face sections, and those high school students typically perform better academically than traditional college students due to differences in motivation and academic profile. Similarly, the E-Learning sections often capture this same demographic. When comparing the high school dual credit students in E-Learning sections and online sections, there is no difference in performance.

Turning to the better performance in fall sections compared with spring, there are no differences in performance between students, though a majority are taking the courses in the spring compared to fall. We know that students must delay taking MATH-114 until the spring when they first need to complete remedial coursework. It is also common for students who are apprehensive about

taking math classes to delay enrollment. Finally, students who are not pursuing a math-intensive degree program may not find it necessary to fulfill their math general education requirement right away, and those students may have weaker math skills in general. All these scenarios can impact on the academic profile (related to mathematics) of students enrolled in the spring semester. When evaluating the course type, there are no differences in performance. MATH 123 (n=9) and MATH 225 (n=3) are outliers in that all students in both courses were evaluated as "proficient." However, there is no reason to believe this difference is related to anything but the small sample size.

Due to the inclusion of a rating system within D2L, Northern is now able to capture demographic data to better enhance our understanding and assessment of student learning. 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=44) 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. Students appear to perform similarly regardless of student type and class, with seniors and nondegree-seeking students performing slightly better overall. Most of our students taking Goal 5 courses are high school dual credit (79%), particularly students enrolled in E-Learning sections of MATH 114 (68%). Faculty are pleased that there is largely no difference in performance based on demographics and indicates this reflects student-focused teaching in the classroom.

Comparison of Findings from Prior Period:
This assessment cycle included a larger sample compared to 2020-2021 (n=220) due to the increase in modalities being assessed (e.g., E-Learning). It is likely that this number will also increase again during the next cycle if Rising Scholars sections are included in the sample. Three years ago, 65% of students were rated as proficient for outcome 1 (81% in AY23-24) and 65% of students were rated as proficient for outcome 2 (86% in AY23-24. This indicated an overall increase in proficiency. Faculty indicated this overall increase of proficiency was likely tied to the inclusion of E-Learning students into the sampling during this assessment cycle. As noted previously, the E-Learning and dual credit high school students often perform at higher levels compared to more traditional first-time full-time college students.

Compared to the previous cycle, there are differences based on delivery terms with students being more proficient in fall compared to spring previously. Similarly, there are differences in modality, with online sections being less proficient compared to three years ago. The inclusion of E-Learning sections does provide new dimensions to the data, and we will need more time to accumulate data from new modalities, such as Huron, E-Learning, and Rising Scholars sections prior to making any substantive conclusions.

Section 4. Plans for Continuous Improvement

Goal Assessed: Goal 1

Reflecting on the assessment process and results described in this report, the most important recommendation is to continue collecting assessment data in a consistent and regularized fashion. We will also need to do a better job with our evidence collection to ensure that we have comprehensive data. Missing data does not allow us to have a full picture of how our

students are doing within our Goal 1 general education courses. This is also the initial collection of Goal 1 assessments from Huron, Rising Scholars, Online E-Learning, as delivery modes. This gives a fuller picture of how Goal 1 courses are taught but only at this one period. Further longitudinal data will provide more insight into the development and trends found in our delivery of general education at Northern.

Similarly, we will need to ensure that there is sufficient support for our students from traditionally marginalized groups so that they may continue to succeed in our classes. Further cross-sections of student demographics will help us discover those trends.

Finally, the faculty expressed a desire to complete a grade norming exercise as a department to ensure consistency between ratings, particularly given turnover in faculty and instructors. After completing the norming, faculty also wish to work on a standardized "handbook of writing" that can be provided to students to assist not just in the Goal 1 courses but throughout their college career.

Goal Assessed: Goal 5

Reflecting on the assessment process and results described in this report, the most important recommendation is to continue collecting assessment data in a consistent and regularized fashion. We will also need to do a better job with our evidence collection to ensure that we have comprehensive data. Missing data does not allow us to have a full picture of how our students are doing within our Goal 5 general education courses. This is also the initial collection of Goal 5 assessments from Huron, Rising Scholars, Online E-Learning, as delivery modes. This gives a fuller picture of how Goal 5 courses are taught but only at this one period. Further longitudinal data will provide more insight into the development and trends found in our delivery of general education at Northern.

Similarly, we will need to ensure that there is sufficient support for our students from traditionally marginalized groups so that they may continue to succeed in our classes. Further cross-sections of student demographics will help us discover those trends.

Finally, faculty expressed a desire to discuss the rubric used, noting it as potentially too subjective, as a group that includes full-time faculty, adjunct instructors, and Rising Scholars and E-Learning Master teachers. A full focus group provides time to complete norming exercises and provides robust feedback to the Math Discipline Council on the rubric and assessment process.

Section 5. Summary

The 2023-24 academic year was the second cycle of general education assessment for Goals 1 and 5 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 1 and 5. The amount of missing data from sections not assessed 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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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 Mines	AY2023-2024	
Institution	Academic Year Reporting Period	
Darcy Briggs	Darcy Briggs	6.12.2024
Assessment Representative	Institutional Approval Signature	Date
Lance Roberts	Lance Roberts	6.12.2024
Provost	Provost Approval Signature	Date

Section 1. Introduction

Academic Year 2023-2024 represented the second full year of the newly designed and revamped general education assessment process being in place at South Dakota Mines. During this academic year, Written Communication (Goal 1) and Mathematics (Goal 5) were assessed. This report serves to summarize the data, information, and insights gained through that assessment, and the continuous improvement strategies identified to improve student learning.

Section 2: Goals Assessed

Goal Assessed: Written Communication (Goal 1)

Methodology:

Written Communication learning outcomes are included in one course offered at South Dakota Mines, ENG 101 Composition I.

Multiple sections of this course were included in the assessment activities, and the evaluation of student achievement toward the learning outcomes utilized the Goal 1 Communication Rubric.

Level of Achievement/Learning Outcome:

The overall achievement at the learning outcome level is reflected in the following table:

	Below Proficient	Proficient	Exemplary
Outcome 1: Mechanics, Grammar, and Syntax	5 (6%)	61 (77%)	13 (17%)
Outcome 2: Logical Development	13 (17%)	46 (58%)	20 (25%)
Outcome 3: Persuasion	22 (28%)	45 (57%)	12 (15%)
Outcome 4: Research and Documentation	24 (30%)	37 (47%)	18 (23%)

Goal Assessed: Mathematics (Goal 5)

Methodology:

Mathematics learning outcomes are included in several courses offered at South Dakota Mines:

- MATH 120 Trigonometry
- MATH 123 Calculus I
- MATH 125 Calculus II
- MATH 225 Calculus III

Multiple sections of these courses were included in the assessment activities, and the evaluation of student achievement toward the learning outcomes utilized the Goal 5 Mathematics Rubric.

Level of Achievement/Learning Outcome:

The overall achievement at the learning outcome level is reflected in the following table:

General Education Goal #5	**Level 0**: No valid work	**Level 1**: Below proficient	**Level 2**: Proficient
Outcome 1: Model and solve real-world problems	**195 (22%)**	**207 (23%)**	**497 (55%)**
MATH 120 Trigonometry	18 (12%)	60 (40%)	**72 (48%)**
MATH 123 Calculus I	133 (38%)	73 (21%)	**142 (41%)**
MATH 125 Calculus II	23 (11%)	23 (11%)	**159 (78%)**
MATH 225 Calculus III	21 (11%)	51 (26%)	**124 (63%)**
Outcome 2: Mathematical communication	**318 (22%)**	**265 (19%)**	**837 (59%)**
MATH 120 Trigonometry	14 (19%)	29 (39%)	**31 (42%)**
MATH 123 Calculus I[1]	180 (35%)	60 (12%)	**281 (54%)**
MATH 125 Calculus II	71 (11%)	130 (21%)	**421 (68%)**
MATH 225 Calculus III	53 (26%)	46 (23%)	**104 (51%)**

Section 3. Findings

Goal Assessed: Written Communication (Goal 1)

Interpretation of Findings:

Our assessment and evaluation in Fall 2023 show that current instructional strategies are largely effective. Most students were at least proficient in all four of the outcomes in Goal 1, ranging from 70% proficient or exemplary in Outcome 4 (research and documentation) to 94% proficient or exemplary in Outcome 1 (mechanics, grammar, and syntax). The outcome with the highest percentage of students failing to reach proficiency was Outcome 4 (research and documentation) at 30% below proficient with Outcome 3 (persuasion) not far behind at 28% below proficient. However, Outcome 4 had a substantially higher percentage of students with work rated as exemplary (23%) compared to Outcome 3 with only 15% rated as exemplary.

Faculty identified recent changes they had made in course structure that resulted in less time placed on persuasion (Outcome 3) and research and documentation (Outcome 4) during the Fall 2023 semester. In our discussion of the results, it was decided that rather than focus our instructional improvement strategy on any single learning outcome it would be more productive to focus on a more holistic approach that would positively impact student learning across all Goal 1 courses and all four outcomes.

Comparison of Findings from Prior Period:

The following chart provides the findings of Written Communication (Goal 1) assessment from AY2020-2021. Given the wholesale change in the general education assessment process utilized at South Dakota Mines in AY 2021-2022, direct comparison of the findings from the two academic years is not possible.

	Earlier artifacts	**Later artifacts**
Outcome 1 – Below Proficient	13	6
Outcome 1 – Proficient	27	30
Outcome 1 – Excellent	22	26
	Earlier artifacts	**Later artifacts**
Outcome 2 – Below Proficient	22	10
Outcome 2 – Proficient	24	31
Outcome 2 – Excellent	16	21
	Earlier artifacts	**Later artifacts**
Outcome 3 – Below Proficient	20	9
Outcome 3 – Proficient	28	33
Outcome 3 – Excellent	14	20
	Earlier artifacts	**Later artifacts**
Outcome 4 – Below Proficient	22	9
Outcome 4 – Proficient	26	33
Outcome 4 – Excellent	12	20

Goal Assessed: Mathematics (Goal 5)

Interpretation of Findings:

Insights gained from an analysis of the findings are presented in four broad categories: assessment artifacts, assessment rubrics, student collected work, and overall student performance.

Assessment artifacts. The review of assessment problems was positive. The department was content with the overall quality and breadth of the problems asked, as well as their relevance to the two GEG5 outcomes. Three areas for improvement were identified:

1. Faculty selected their own assessment problems, typically consisting of 3–5 quiz or exam problems that collectively addressed both GEG5 outcomes. Consequently, outside of the coordinated FA23 MATH 123 classes, there was little consistency in the assessment problems used across different sections of the same class. This made it challenging to compare student work across different sections of the same course.
2. Faculty often forgot to make digital copies of student work prior to returning exams, thereby losing data acquired from assessment problems taken from in-class exams. Consequently, faculty were often required to use problems from homework and/or the final exam. Unfortunately, such problems often lead to an increase in **Level 0** (No valid work) submissions:
    - While non-exam assessments such as homework assignments or collaborative projects (such as in-class worksheets or "open" quizzes) can provide better insight into a student's thinking process and skill set, because any individual assignment is typically worth only a small percentage of a student's final grade, students are much more likely to ignore *non-exam* assessment problems. This inflates the number of cases counted at **Level 0** – it is difficult to

distinguish students who simply opt out of an assignment from those who truly do not understand it.

- Similarly, assessment problems taken from a final exam, while having the benefit of assessing the cumulative effect of the class on a student's GEG5 performance, are also often left blank due to *grade inertia*, the tendency for the final exam to have no effect on a student's course grade outside of extremely unlikely low or high scores. Again, this inflates the number of cases counted at **Level 0** – it is impossible to distinguish students who opt out of a problem for "test triage" considerations from those who truly do not understand the problem.

3. Problems for GEG5 Outcome 2 often emphasized understanding mathematical notation and language, often at the expense of having students attempt to explain (via exposition rather than equation) their thought process.

Assessment rubrics. The review of assessment rubrics was more ambivalent. While faculty members independently agreed on how they would implement the GEG5 rubric into their assessment grading in practice (described in Bullet 1), they were dissatisfied that these seemed out of alignment with the SGR #5 Math Rubric. Two areas for improvement were identified:

1. The approved levels for Mathematics represent *No valid work*, *Below proficient*, and *Proficient*, rather than the more traditional rankings *Below proficient*, *Proficient*, and *Exemplary*. (These are, in fact, how the *other five* General Education Goals are ranked.) Some faculty assessed student work more in alignment with the traditional scale, and thus more critically than the rubric called for.
    - The 80%-or-better threshold is certainly sufficient to indicate **Level 2**, but may not be necessary for it. For example, on a problem for GEG5 Outcome 1, a student *could* provide a "logically valid sequence of steps to solve a problem" *but* could make minor arithmetic or algebraic errors at each step. This would likely bring their score below 80%, although it might be argued that they have demonstrated **Level 2** proficiency *per the SGR rubric*. (That said, most department faculty would argue that the presence of minor or careless errors at each step of a process should *not* indicate proficiency in one's ability to *solve* such problems.)
2. Many faculty would prefer to move to a *Below proficient*, *Proficient*, and *Exemplary* ranking, although it is unclear that this would be allowed under the current SDBOR Gen Ed process.

Student work. The review of submitted student work was largely positive. Faculty seemed to agree with the assigned grading of student submissions. One area of improvement was identified:

1. Instructors in FA23 MATH 123 had the advantage of giving the same assessments, which allowed them to compare each other's students' work continuously, which ensured that their individual grading was consistent across sections and provided real-time cross-sectional diagnostic information for the classes to implement. Instructors in non-coordinated sections lacked this advantage.

Student performance. Review of the overall performance data indicates that the proficiency rate is **low**: only Calculus II had a majority of assessment problems scored at Level 2 for both outcomes of GEG5. Faculty discussion and review of student work resulted in the following conclusions:

1. Students entering MATHs 120 and 123 have weaker algebra and writing skills than their pre-pandemic cohorts, possibly reflecting greater use of online curricula and homework platforms (and therefore less practice with writing mathematical expressions) in K12 schools. Weaknesses

in algebra negatively impact a student's ability to *construct and solve real world problems* (Outcome 1), while weakness in writing skills negatively impact a student's ability to *communicate mathematics effectively* (Outcome 2).

2. Students in MATHs 125 and 225 have more matured mathematics skills (reflected in their higher proficiency rates), although the content of these courses is significantly more challenging.

Since most incoming freshmen students at Mines are placed into MATH 120 or MATH 123, and success in a student's first mathematics class is one of the best indicators of their continued learning and success at Mines, the department is focusing its efforts to improve student learning on GEG5 in those classes first by reviewing and redesigning them to address these deficiencies. This will be described below.

Additionally, department review also identified other confounding factors that could contribute to the overall lowering of the GEG5 proficiency rate:

- The majority of GEG5 classes at Mines are *calculus-based* and highly *dependent on mastery of college algebra*. This increases the difficulty of problems involving associated real-world applications and symbolic mastery. Gaps in a student's algebraic knowledge will necessarily hamper their performance on GEG5 problems, regardless of the clarity and effectiveness of their calculus instruction.
- The use of non-semester-exam problems (i.e., problems from homework or the final exam) increased the number of **Level 0** submissions, without that necessarily being indicative of lack of student understanding.
- Lack of consistent problem selection and ambiguity in their proficiency assessment made it harder to compare results across sections.

Comparison of Findings from Prior Period:

Due to a confluence of several unexpected events, including a major restructuring of the mathematics department (AY19), its major (AY20), its internal assessment processes (AY21), and conflicting instructions from the then Associate Provost for Academic Affairs (AY20), the processes to assess General Education Goal #5 looked very different in AY20/21. During that one academic year only, the Fundamentals of Engineering (FE) exam was used as a proxy assessment artifact.

Consequently, the department opted to use the AY24 GEG5 cycle to serve as a baseline for future assessments across all four GEG5 classes: MATH 120 (Trigonometry), MATH 123 (Calculus I), MATH 125 (Calculus II), and MATH 225 (Calculus III).

Section 4. Plans for Continuous Improvement

Goal Assessed: Written Communication (Goal 1)

Faculty identified the implementation of metacognitive/reflection activities or assignments as a means of improving growth in students' writing skills and their ability to transfer those skills to other contexts. Research indicates that introducing metacognition and reflection into writing courses enhances writing skill transfer and growth. Metacognition has also been found to positively impact writing self-efficacy which is associated with improved transfer and performance. In Fall 2024, Goal 1 courses will explicitly introduce to students the practice of metacognition/reflection for writing and why it's useful and include at least one metacognitive/reflection activity or assignment. We will also implement a survey to measure students' self-efficacy at the start and end of the semester using the Situated Academic Writing Self-Efficacy Scale (SAWSES).

Goal Assessed: Mathematics (Goal 5)

The current plan for improvement is two-fold. First, the department will review and update MATH 120 and 123 with the aim to improve overall student learning and success. Second, the department will improve the selection, administration, and assessment of GEG5 artifacts to better gauge the effectiveness of these curricular changes.

Curricular plan. The department plans to better align the curriculum and assessment of MATHs 123 and 120 with the recommendations resulting from the 2015 National Study of College Calculus administered by the Mathematical Association of America:

1. Active and purposeful coordination of sections and instructors,
2. Construction of engaging courses with appropriate STEM content,
3. Purposeful use of active learning pedagogies in the classroom,
4. Integrated with proactive student support services, and
5. Regular review of local data to inform new GEG5 decisions.

For each GEG5 class, the department will charge an *ad hoc* subcommittee to review course learning outcomes and their alignment with Mines programs' needs and General Education goals, and develop a common curriculum that includes topic schedule, grade structure, and assessments. This will be presented to the Mathematics Curriculum Committee for further refinement before implementation.

Assessment plan. The review of GEG5 assessment artifacts will consist of the following.

1. *Preselection of assessment problems.* The department will develop a plan to provide GEG5 instructors the GEG5 assessment problems at the start of the semester as part of their semesterly assessment assignment. A process for the design and vetting of these problems needs to be developed and implemented. These problems will be pooled over the 3- and/or 6-year assessment cycle, which will allow for comparisons against past cohorts.
2. *Development of consistent rubrics*. With common problems, the department will also develop common rubrics for their assessment. Discussion of these rubrics will take place as part of the department's annual review process, with rubrics finalized for courses selected for GEG5 assessment in 2026.
3. *Establishment of benchmarks for proficiency*. Eliminating cross-sectional noise will give a better understanding of student progress towards GEG5. This will provide a more accurate baseline of student performance in AY27, from which benchmarks for future progress will be derived.

Section 5. Summary

This is the second full year of general education assessment utilizing the new structure, process, and forms created by South Dakota Mines in AY2021/2022 and the first time Written Communication (Goal 1) and Mathematics (Goal 5) were assessed under the new structure. While there are always opportunities to improve, the new process is providing to be solid.

The established learning outcomes and rubrics for the BOR system were utilized as the foundation for the assessment work. The faculty readily engaged in the assessment work, and through the analysis of the data and information, gained valuable insights. Further, through their collaborative discussions, strategies and initiatives to improve their assessment processes, and most importantly student learning, in the future were identified and are in the process of being implemented.

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General Education Assessment Form

Use this form to report the university General Education Assessment per AAC Guideline 2.3.9.A and BOR Policy 2.3.9. This report should be no more than 5-10 pages in length.

South Dakota State University Institution	2023-2024 Academic Year Reporting Period	
Robyn Marschke Assessment Representative	Institutional Approval Signature	10-24-24 Date
Teresa Seefeldt Vice Provost Undergrad Educ	Vice Provost Approval Signature	10-21-24 Date
Dennis Hedge Provost	Provost Approval Signature	10-21-24 Date

Contents

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. The process provides meaningful information and feedback for faculty who teach general education courses. Our general education assessment plan incorporates multiple sources to assess student learning. These sources may include (a) student artifacts from their coursework, (b) results from the Senior Exit Survey, (c) results from the National Survey of Student Engagement, and (d) optional focus groups.

For all general education learning outcomes, SDSU has established a benchmark: 75% of SDSU students included in the sample will achieve proficient or exemplary status. We ask faculty to use rubrics to assess proficiency. When a rubric is not appropriate, faculty determine how to measure proficiency.

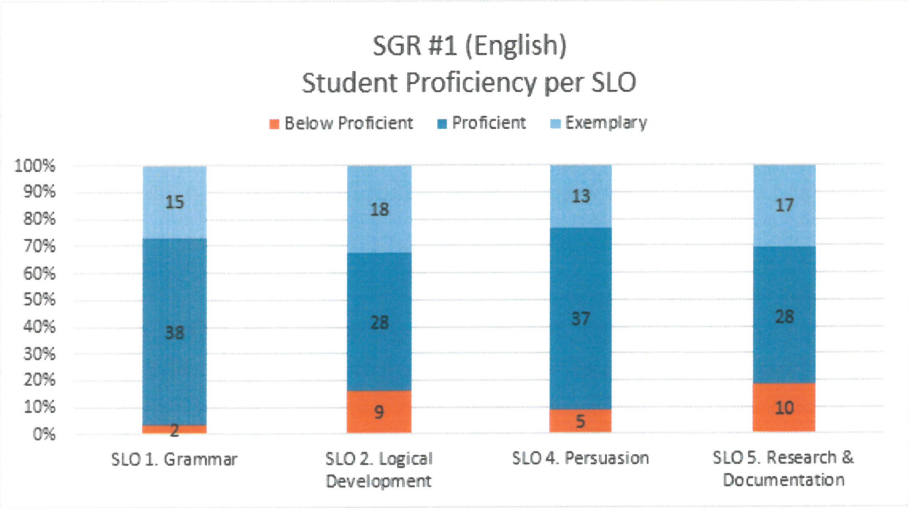
Section 2: Goal #1 (English)

Goal #1: Students will write effectively and responsibly and will understand and interpret the written expression of others. As a result of taking courses meeting this goal, students will:

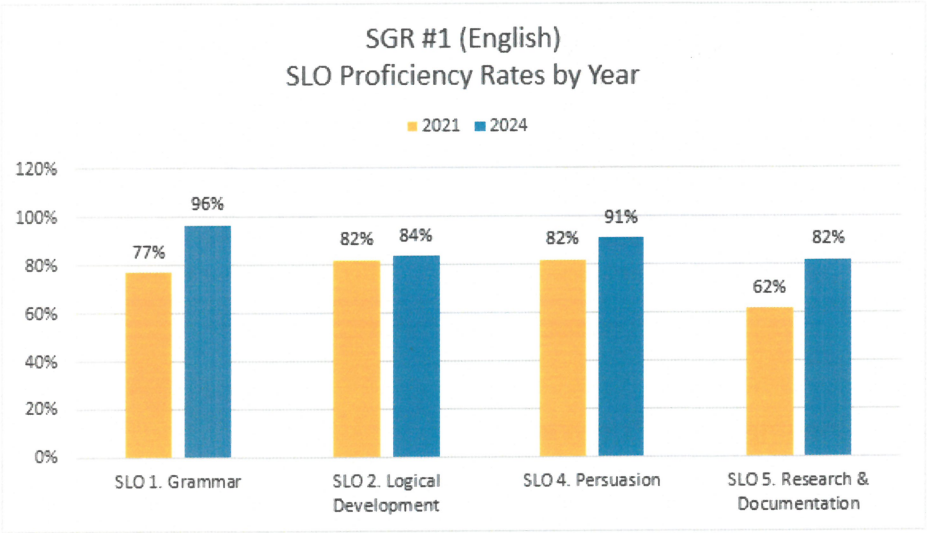
a. Write using standard American English, including correct punctuation, grammar, and sentence structure,
b. Write logically,
c. Write persuasively, with a variety of rhetorical strategies (e.g., expository, argumentative, descriptive), and
d. Incorporate formal research and documentation into their writing, including research obtained through modern, technology-based research tools.

Methodology:
The Vice Provost for Undergraduate Education and the Assistant Vice President for Institutional Research and Assessment select each year a sample of approximately 25% of approved General Education courses. The faculty teaching the courses submit artifacts for assessment. Our assessment of English learning outcomes originally included four sections of English 101. One section (SE1) was excluded from assessment due to an instructor resignation and another section, S15, included several students who were also enrolled in a concurrent section for Basic Writing. Overall, we assessed three sections of English 101 and 55 students.

Level of Achievement/Learning Outcome:
Student proficiency exceeded the 75% benchmark for all four Student Learning Outcomes. The proficiency rate was highest for SLO 1 (Grammar) at 96% followed by SLO 4 (Persuasion) at 91%. The proficiency rate was 84% for SLO 2 (Logical Development) and 82% for SLO 5 (Research and Documentation).



Comparison of Findings from Prior Period:
Compared to 2021, proficiency increased substantially for Grammar, Persuasion, and Research and Documentation. Proficiency of students' logical development increased slightly.

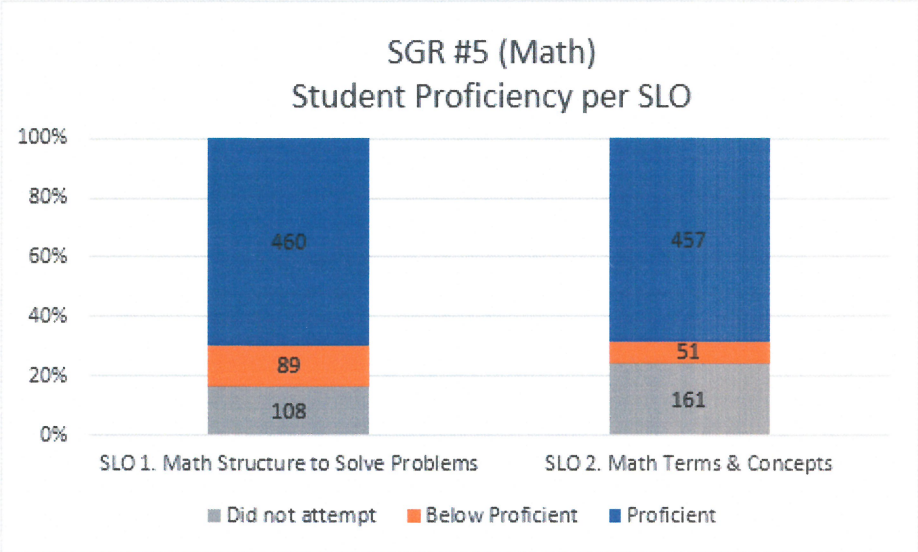


Section 3. Goal #5 (Math)
Goal #5: Students will understand and apply fundamental mathematical processes and reasoning. As a result of taking courses meeting this goal, students will:

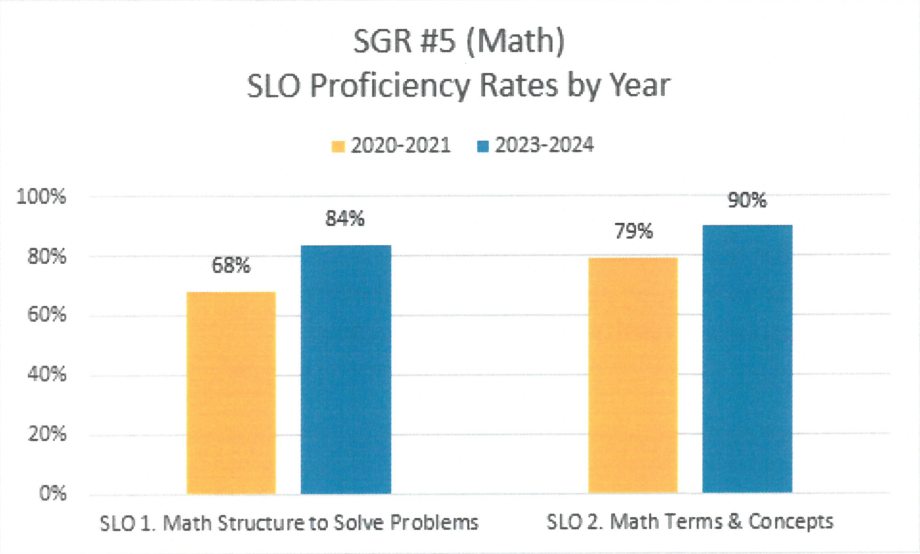
a. Use mathematical symbols and mathematical structure to model and solve real world problems,
b. Demonstrate appropriate communication skills related to mathematical terms and concepts.

Methodology:
The Vice Provost for Undergraduate Education and the Assistant Vice President for Institutional Research and Assessment select each year a sample of approximately 25% of approved General Education courses. The faculty teaching the courses submit artifacts for assessment. Our assessment of math learning outcomes included 5 sections of Math 114 and 3 sections of Statistics (STAT 281) with up to 549 students. The faculty opted to collect artifacts from exams and group projects.

Level of Achievement/Learning Outcome:
Student proficiency exceeded the 75% benchmarks for both SLOs. The overall proficiency was 84% for SLO 1 on the use of math structures to solve problems. The rate varied among the sections, ranging from 78% to 100%. The overall proficiency was 90% for SLO 2 on math terms and concepts, ranging from 78% to 98%.



Comparison of Findings from Prior Period:
The proficiency rate was higher for math terms and concepts (90%) than problem solving (84%) and both rates are substantial improvements upon the proficiency rates from 2020-2021.



Section 4. Plans for Continuous Improvement

SGR #1 (English):

- Create more practice assignments and encourage students to visit the writing center for feedback on essay drafts.
- Faculty intend to work towards a new interactive handbook to provide students more direct instruction in grammar/usage.
- Create more opportunities for students to practice paraphrasing and summarizing sources.
- Spend more time explaining assignments designed to compare genres and rhetorical situations.

SGR #5 (Math):

- Include more examples during lectures to demonstrate how to apply formulas and draw appropriate conclusions from data.
- Streamline lectures to increase time/focus on active participation problems.
- In homework, provide more practice problems and remove problems that are beyond the scope of the course.
- Faculty will adjust to make recitations more approachable with the hopes of increasing attendance, the collection of artifacts, and overall learning.

Overall:

- Monitor data collection to maintain the sample size of courses and a reasonable sample of artifacts when course schedules or teaching assignments change. For example, identifying an alternative section or alternative evaluators.
- Provide workshops for faculty whose courses are selected for assessment and general education assessment primers for any faculty who teach general education courses.
- Encourage faculty to select multiple types of artifacts to help triangulate the measurement of student learning.
- Assistant VP for Institutional Research and Assessment will investigate students' perceived gains on learning outcomes collected from the National Survey of Student Engagement and share results with key stakeholders.

Section 5. Summary

Overall, students performed well on the learning outcomes for SGR #1 and #5 especially writing using appropriate grammar and punctuation, incorporating formal research and documentation into their writing, and using math to solve real world problems. We identified opportunities to enhance student learning through pedagogical adjustments like clarifying the purpose of assignments, providing practice assignments, and encouraging students to use available resources. From an institutional perspective, we will ensure backup plans for data collection, encourage more robust measures of student learning, and provide professional development opportunities for faculty teaching general education courses.

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.

University of South Dakota	2023-2024	
Institution	Academic Year Reporting Period	
Lisa K. Bonneau, Ph.D.		10/10/2024
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 2.3.7 and 2.3.9 and AAC Guidelines 2.3.7.A, 2.3.7.B, 2.3.7.C, 2.3.7.D, 2.3.9.A, 2.3.9.A(1), and 2.3.9.A(A-1). Faculty members utilize a common rubric 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 #1: Students will write effectively and responsibility and will understand and interpret the written expression of others and Goal #5: Students will understand and apply fundamental mathematical processes and reasoning.

Section 2: Goals Assessed

Goal Assessed: Goal 1 Written Communication

Methodology: In early August and December, a complete list of all course sections for courses that meet the general education goals for the semester was compiled. All faculty were notified right before or at the beginning of each semester and provided with the student learning outcomes for the goal, information on artifact selection, the approved rubrics, and the instructions to submit data within Nuventive. All course sections in all courses that met the goal were expected to assess student work and submit data for analysis. Results were analyzed at the end of the academic year.

Level of Achievement/Learning Outcome:

	% Proficient and Exemplary
Logical Development	94.1%
Mechanics, Grammar, Syntax	94.4%
Persuasion	93.0%
Research, Documentation	90.6%

Goal Assessed: Goal 5 Mathematical Process and Reasoning

Methodology: In early August and December, a complete list of all course sections for courses that meet the general education goals for the semester was compiled. All faculty were notified right before or at the beginning of each semester and provided with the student learning outcomes for the goal, information on artifact selection, the approved rubrics, and the instructions to submit data within Nuventive. All course sections in all courses that met the goal were expected to assess student work and submit data for analysis. Results were analyzed at the end of the academic year.

Level of Achievement/Learning Outcome:

	% Proficient and Exemplary
Communication of Terms & Skills	66.6%
Mathematical Symbols & Structures	66.2%

Section 3. Findings

Goal Assessed: Goal 1 Communication

Interpretation of Findings: Students are doing well meeting the learning outcomes of this goal. No benchmarks were set for comparison as assessment process in AY20-21 had success rates above 90%. The trends in assessment across the two assessment periods are similar though the Persuasion and Research & Documentation outcomes had slightly lower percentages of student work rated as proficient and exemplary.

Comparison of Findings from Prior Period:

	AY2020-2021	AY2023-2024
Logical Development	94.7%	94.1%
Mechanics, Grammar, Syntax	94.0%	94.4%
Persuasion	94.7%	93.0%
Research, Documentation	92.7%	90.6%

Goal Assessed: Goal 5 Mathematical Process and Reasoning

Interpretation of Findings: The results of the assessment in Mathematics for this period reflect the constant effort of the department to improve the success rate of students in the lower-level courses. Considering that less than 50% of high school students in South Dakota are proficient in Math, findings of this report show that most of the students seeking to satisfy the general requirements in math and who are taking our courses are improving their ability to express themselves in a rigorous manner and are getting better in converting real-life problems in mathematical language.

Comparison of Findings from Prior Period: No major changes have occurred in this period compared to the previous assessment cycle, with a slight improvement in the assessment of Communication of Terms and Skills.

	AY2020-2021	AY2023-2024
Communication of Terms & Skills	63.4%	66.6%
Mathematical Symbols & Structures	66.7%	66.2%

Section 4. Plans for Continuous Improvement

Goal Assessed: Goal 1 Written Communication

The English department strives for continuous improvement in Goal #1: Students will write effectively and responsibly and will understand and interpret the written expression of others. While the success rates of the students in the individual learning outcomes are impressively high, the slight downward trend will be worth attending to. With the support of the English department, the Director of Writing and the Writing Committee examine the curriculum each year for necessary updates to materials and activities. The slight improvement in Mechanics, Grammar, Syntax correlates with the period of adopting a different online handbook with grammar exercises. While this coincidence of timing is not evidence of a link between the two, it may be worth attending to how regularizing some of the learning outcomes may continue to support students in their writing. Finally, the department would like to continue to review results disaggregated by modality as there may be room for additional improvement in online sections.

Goal Assessed: Goal 5 Mathematical Process and Reasoning

In certain courses the proficiency rates are lower than expected (especially College Algebra) where more changes need to be implemented and a better training of our TAs need to be provided. There is also a need for improvement of results at our Sioux Falls campus where there is a larger number of nontraditional students. We have frequent conversations with

instructors and with the leadership of Academic and Support Center to improve attendance and retention there.

Section 5. Summary

Faculty teaching courses in the Writing Program are required first and foremost to follow the guidelines provided in the English department's Course Instructor's Guides established for each of the courses meeting SGR#1. These guidelines are based on BOR policies, System General Requirements, and the relevant Student Learning Outcomes. The English department's Course Instructor's Guides include a wealth of information including sections on course materials and textbooks, required and suggested writing assignments, required course policies, academic integrity guidelines, grammar instruction, individual conferences, instructor and peer feedback, grading guidelines, information literacy and library instruction, and numerous other areas of attention. In addition to providing these materials, all Writing Program courses in the Department of English are overseen by the Director of Writing and the Chair of the department. Support for attending pedagogical training and numerous pedagogy workshops is provided through the department.

The Department of Mathematical Sciences monitors very closely the success rates in their entry level math courses, especially the Math 103 and Math 114 which typically have high enrollments and also struggle with the DFW rates. Course coordinators of these sections and the department chair meet at the end of every semester to discuss changes to the course and make adjustments that are needed to help students be more proactive in their learning and remove any unneeded obstacles for their success.