

Big Bend Community College 2020-2021 Assessment Report

Submitted by Sean Twohy

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Recaps

Big Bend's Assessment process is in the middle stages of completing a 7-year assessment cycle. The focus of the assessment during this time is to create a stable and predictable assessment process. We are guarding against big changes to the assessment process and working toward creating clarity and comfort for faculty using the process.

Accreditation Recap: Last fall, the college was relieved of its long-standing recommendation regarding Assessment. The Accrediting body approved of the efforts and process created, regarding assessment at BBCC.

Assessment Report Process Recap: Work has been done by the committee to think in long term, the way in which the 7-year plan is done. The process for assessment will be as follows:

- 1) In 2018-2019, IO1 was assessed. In 2019-2020, IO2 was assessed. In the 2020-2021 year, IO3 will be assessed. This means that any program that needs to assess IO3, should do so in the upcoming year—using the prepackaged plan if possible.
- 2) Following this year, there will be a two-year grace period (2022-2023, 2023-2024), wherein programs and departments will focus on assessing courses and outcomes that they did not complete during the previous three years.
- 3) Beginning in the 2024-2025 year, the 7-year assessment cycle will continue as follows:
 - a. Year one: Assess IO1
 - b. Year two: Follow-up to assessment of IO1 OR assess specific Program Outcomes
 - c. Year three: Assess IO2
 - d. Year four: Follow-up to Assessment of IO2 or Assess specific Program Outcomes
 - e. Year five: Assess IO3
 - f. Year six: Follow-up to assessment of IO3 OR Assess Specific Program Outcomes
 - g. Year seven: Focus on any Program-specific Outcomes that have not been met in years one through six
- 4) If you do not have any courses with the designated IO for the year being assessed, you may substitute Program-level Outcomes during that year. For example, if the English Department does not have any courses with IO2, they may choose to focus on an alternative program outcome.

Assessment Videos Recap: The committee continues to commit to its focus in making assessment simple and available, through Assessment videos that allow faculty to access basic expectations and processes for the year. These videos can be found on BBCC's website, under "Instruction and Assessment".

Assessing for Improvement Recap: The committee continues to focus on its commitment to making assessment a tool for improving courses, student experience, achievement of learning objectives, and campus-wide expectations through focusing on assessing for improvement—as opposed to assessing for competency. This focus means that assessment reports should not generally be used confirm that outcomes are being met—but to explore ways in which we can improve the process of meeting those outcomes.

Assessment Reports Summary

The Assessment Committee received 49 assessment reports, which correlated with the 7-Year Plans of programs across campus. These reports outlined the plan, results, and analysis of assessments designed to measure student learning outcomes and improve instructional programs. Some of the results of those plans are as follows:

General Assessment Reports

While an attempt to connect assessments to larger campus-wide goals is part of the college's strategy, individual programs and departments still must meet the needs of their 7-Year Plan. In this way, a number of assessment reports do not fit into the college's 2019-2020 focus on Mathematics (IO2). There were 22 total Assessment Reports that focused on program, course, and institutional outcomes outside of IO2.

In English 211 (Creative Writing), Institutional Outcome 1 was assessed (Students will be able to communicate clearly and effectively) in connection to course outcome 4 (On an introductory level, students will demonstrate an informed appreciation of the craft of fiction by identifying and contrasting qualities of published and unpublished texts, and judging their effect on readers). The instructor polled students to assess whether they were actually doing the readings for the course. The instructor found that all students did all of the required readings (which were quizzed) but that only 35% of students did any of the optional readings). While the instructor accepts that quizzes assess surface-level interaction with the texts, they would also like to think of other tools to ensure that students are engaged.

In HUM 110, Institutional Outcome 1 was assessed in regard to Course Outcome 1 (Distinguish between gods in the Greek pantheon in written examination). The instructor was attempting to improve the depth of student learning by removing the most obvious connections students might make between Greek Gods and astronomy. The instructor required students to post information about a specific moon and its connection and relevance to Greek Gods and mythology. The instructor found that being more prescriptive led to a more successful examination of this topic. They plan to try and "find other ways to have controlled research projects like this."

In CMST 102, Institutional Outcome 1 was assessed in regard to Course Outcome 10 (Implement oral and written skills to generate media content in a way that demonstrates audience awareness, ethical considerations, properly supported content, and writing consistent with professional and academic standards). The instructor chose to assess student reading and comprehension through a final assignment. The instructor found that a significant portion of the students struggled with the assignment and plans to provide clearer instructions in the future, as well as to better incorporate Canvas into the course.

In Spanish 121, Program Outcome 4: (Students will be able to recognize or articulate personal/interpersonal aspects of, or connections between, diverse cultural, social, or political contexts), was addressed in terms of a failure that the instructor saw for students to recognize their importance as global citizens. The instructor had students write a letter at the beginning of the quarter to "convince" their parents to let them study abroad. Throughout the quarter, the instructor provided culture videos each week. At the end of the quarter, the instructor had the students revisit their letter. The instructor found that "these assessments indicated that students in this course are developing an

understanding of how to gain cultural understanding as well as the importance of developing that understanding.” The instructor plans to continue this activity.

In Music 105, 170, 174, and 175, Program Outcome 4 was assessed in relation to Course Outcome 3. Course Outcome 3, for each of these courses, focused on the cultural/historical significance of the theme for the course. The instructor looked at student understanding of social and historical contexts in the 1st and 8th weeks of the course, through a response driven assignment. While it was clear that students had gained a deeper understanding by week 8, the instructor found that, in the future, they would like to put more of an emphasis on having students support their claims.

In Art 121, 122, and 123 (Ceramics), Course Outcome 3 (Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources) was looked at. In The students in these courses were expected to use a combination of construction tools and understandings to create a final piece. The results of this were mixed but the instructor did find that “students who were the most successful participated fully in the discussion forums and instructor private message systems provided on Canvas.” The instructor plans on incentivizing students to connect with the instructor more frequently, through offering additional points for doing so.

In History 126 (World Civilizations I), Program Outcome 5 (Students will be able to solve problems gathering, interpreting, combining, and/or applying information from multiple sources) was looked at in connection with Course Outcome 7 (Examine and compare how human societies developed ways of organizing their members, particularly social stratification based on kinship systems, ethnic associations, and hierarchies of wealth, class, gender, and race). The instructor looked at improvement between two essays in the course, through a combination of teaching strategies. They found that “the combination of scaffolding, interim formative assessments, and the two paper assignments that allowed for reflection and growth over time helped lead to student growth.”

In History 110 (American Experience), Program Outcome 5 was assessed in relation to Course Outcome 2 (Analyze how and why definitions of American and national identity have developed). The instructor looked at the ability for students to improve the understanding of national identity. The instructor found that there was significant student learning and growth over the length of the quarter, based on a rubric which measured growth in stages of exemplary, accomplished, proficient, developing, and beginning.

In History 137, Institutional Outcome 1 was assessed in connection with Course Outcome 10 (Demonstrate communication skills, both written and oral, by employing primary evidence in support of carefully formed conclusions regarding the historical record of the American past). The instructor felt that students were having trouble connecting quotes to larger contextual histories and issues. The instructor implemented a rubric which attempted to alleviate this concern. The instructor found that students in the fall quarter tend to do worse than students in the winter quarter and suggested that the course (which is writing intensive) not be offered in the fall. The instructor also suggested that students may be failing to take skills received in English courses with them to other courses on campus.

In History 137, Institutional Outcome 1 was also assessed in terms of Course Outcome 2 (Explain how ideas about democracy, freedom, and individualism found expression in the development of cultural values and institutions). The instructor looked at the way in which “students develop knowledge and critical thinking skills about history and demonstrate their ability to summarize, structure, prioritize, support, connect, and communicate concepts based on what they learned. For two different U.S.

historical eras (e.g. Roaring Twenties, 1950s), students had to demonstrate their critical thinking and communication skills related to the concept Culture and Society””. The instructor used the Concept Map Rubric to measure student success. While the instructor found that students were generally successful, they did mention that they had some students that struggled and that, in the future they will reach out to these students who failed to show improvement—and to try and support them with targeted instruction.

In Sociology 101, Institutional Outcome 1 was looked at in relation to Course Outcome 1 (Communicate sociological concepts theories and findings through writing and speaking). The instructor found that many students had trouble understanding the credibility of sources. The instructor administered a quiz on source credibility and found that there was a large enough percentage of students who struggled that a library lab session on sources might be appropriate. The instructor plans on reaching out to the librarian to see how the students might best be served.

In Political Science 202, Institutional Outcome 1 was analyzed in regard to Course Outcome 1 (Illustrate the role of law upon society and the need for government). This assessment was a follow-up to an assessment done in 2017-2018, looking at the effectiveness of a project-based, group-prepared, mock Supreme Court hearing. Covid struggles created the need for substantial adjustments to the assignment, and the instructor found that the project did not work well in an online environment.

In Library 101, Institutional Outcome 1 was assessed in regard to plagiarism and academic integrity and Course Outcome 4 (Choosing, citing, summarizing, and evaluating sources). In this new course, the instructor asked students to self-evaluate their understanding of plagiarism and Similarity Reports (a Turn-it-in feature). “The instructor found the following results: “Fall 2021 Pre vs After, 20.21% improvement, Winter 2021 Pre vs After Test 15.16% improvement, Spring 2021 Pre vs After Test 13.56% Improvement”. This instructor is pleased with these results and would like to see additional gains made in other areas.

In the Counseling Department, Program Outcome 1 (Students will be able to communicate clearly and effectively) and 5 (Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources) were assessed. The faculty looked at the way in which enhanced advising impacts student academic success. Volunteer students participated in lessons, advising sessions, and activities. Students who participated found an average GPA increase of 63% from fall to winter—students who did not participate only saw an average of 57% increase. The Counseling Department found this to be a successful activity.

In CDL 100, Institutional Outcome 3 (Human Relations/Workplace Skills) was assessed in regard to Program Outcome 4 (Demonstrate safe shifting, backing and maneuvering). The instructor found that about 30% of students have trouble with this task. The instructor suggested that a simulator might help struggling students.

In Automotive 124, Institutional Outcome 3 was assessed in regard to Program Outcome 5 (Students will use proper tools during repair and diagnostic work in the lab) and Course Outcome 8 (Demonstrate the ability to perform all types of brake system repairs and service). The instructor assessed the students’ abilities to select the correct tools to do brake repairs and service. While only 33% of students could do so initially, 75% of students completed the task quickly by the end of the quarter. The rest of the

students improved but worked too slowly or made too many mistakes. The instructor plans to spend more time on tool instruction in the future.

In Automotive 121, Program Outcome 3 was assessed in relation to Program Outcome 6 (Students will demonstrate the ability to retrieve service information from manuals and online sources.). The instructor noticed that “only 75% of the students were able to correctly trace power flow through wiring diagram on their first attempt.” In an attempt to improve these numbers, the instructor “required the students to stop reading the circuit description and trace out the flow of power from Point A to Point B before moving on to the next line in the description.” After a change in process, the instructor found that 84% of students were able to successfully complete the task on the first try. The instructor would like to see close to 100% success.

In EDUC 115, Program Outcome 4 (Describe how children acquire language and creative expression and develop physically, cognitively and socially) was assessed in regard to Course Outcome 2 (Describe the developmental sequence from conception through early adolescence in all domains). The instructor looked at the ability of students to analyze child development in regard to three domains and language development. While the students generally did well on this assignment, the instructor plans to add a pre-assessment to the activity to help show growth.

In MA 197, Program Outcome 2 (Demonstrate cultural competency when caring for patients experiencing selected health) was looked at in regard to Course Outcome 4 (Students will be able to recognize or articulate personal/interpersonal aspects of, or connections between diverse cultural, social, or political contexts). The instructor “looked at clinical site evaluations of students during their 198-hour Medical Assistant externship. Specifically, how the clinical site evaluated student interaction with a diverse population of patients.” The instructor found that 100% of students were able to complete this task successfully.

In Nursing 231, Program Outcome 6 (Demonstrate clinical decision-making from a theoretical knowledge base utilizing the nursing process to develop patient care plans that ensure safe, effective care in a variety of settings) was assessed in connection to Course Outcome 6 (Prioritize advanced care delivery using critical thinking skills to a group of less stable patients). The instructor looked at the ability for students to work with independence and skill and to exercise critical thinking skills. The instructor used preceptor evaluation tools to assess and found that only 11% of students scored below a 4 on a five-point scale. The instructor believes that some of the reasons for students scoring relatively low could be due to personal hardships. They will continue to monitor this outcome.

In Nursing 120, Program Outcome 5 (Plan, initiate, and evaluate patient teaching including assessment of current knowledge, use of appropriate materials and techniques) was assessed in relation to Course Outcome 4 (Apply pathophysiology, pharmacology, and therapeutic communication skills to the nursing care of clients with common conditions). The instructor put students in groups and asked to present discharge information to patients hospitalized with various musculoskeletal conditions. The instructor found that all students did a great job in this activity and in the following assessments of learning in this area. While the lesson and learning were great, the instructor plans on further revising the rubric to better allow for a more accurate assessment of various parts.

In Physics 221, Institutional Outcome 1 was addressed in terms of Course Outcome 5 (State the conservation principles of mass, energy, and momentum, and apply these principles to problems

involving linear, two-dimensional, circular, and rotational motion). The instructor used a quiz to assess the level of understanding that students had in regard to conservation of two-dimensional momentum. The instructor found that six of thirteen students did very well, two of the students did okay, and five of the students seemed to have no idea what they were doing. The instructor plans to focus on this issue in the future.

Institutional Outcome 2 Assessment Reports

The broad institutional goal for assessment is to have Institutional Outcomes assessed campus-wide, simultaneously. This will allow for the college and faculty to collectively root out issues and concerns regarding those Institutional Outcomes, as well as to allow faculty to hold cross-departmental conversations about ways in which we can address those issues and concerns. While the Assessment Committee encourages faculty to participate in “Prepackaged Assessment Activities”, we recognize that it is not always in the best interest of specific departments, programs, or courses to participate in the exact activity the college is promoting. In this way, some of the faculty that focus on Institutional Outcome 2 (mathematics), did so without focusing as narrowly on the Prepackaged Activity. There were 6 Assessment Reports which focused on IO2 but did not seem to focus directly on the Prepackaged Plan.

In IST 105, Institutional Outcome 2 (Quantitative Reasoning) was assessed in relation to IST Program Outcome 2 (Solve basic electrical problems involving voltage, current, resistance, and power) and 5 (Assemble, analyze, troubleshoot, and solve problems involving series, parallel, and series-parallel DC circuits using multimeters). In MAP 103, Institutional Outcome 2 was assessed in regard to Program Outcome 7 (Students will be able to reason mathematically using methods appropriate to the profession). The instructor looked at how online instruction was impacting the ability for students to successfully complete assignments that required mathematical reasoning. In instructor did find concerning success rates (compared to previous years). The instructor would like to continue to explore ways in which to make online instruction more successful.

In Agriculture 241, Institutional Outcome 2 was assessed in connection to the Course Outcome (Analyze financial statements to determine liquidity, solvency and profitability). The instructor looked at the ways in which balance sheets could determine the ability for students to calculate financial ratios and interpret their meaning. The instructor wanted to look at the ability for students to accurately complete math in balance sheets. The instructor found that the average score on a related assignment was 19.3 out of 20—with the lowest score being an 18. The instructor feels confident in this area but plans to continue to provide additional instruction and explanation.

In Econ 200, Institutional Outcome 2 was assessed in regard to Program Outcome 1 (Measuring Economic Activity). The instructor looked at the ability for students to “demonstrate a clear understanding of basic principles before moving on to more complex analysis of GDP” through the use of a chapter review assignment. The results of this assessment were mixed and, moving forward. The instructor will “provide a more detailed explanation of GDP, the math involved and its importance to economic theory.”

In Biology 170, Institutional Outcome 2 was assessed in connection to Course Outcome “Describe the form and function of various systems including the muscular, skeletal, respiratory, nervous and

cardiovascular.” The instructor looked at the way in which a majority of students are unable to connect a phase of the cardiac cycle to the electrical condition of the heart. The instructor implemented online instruction study tools and found a 13% increase in student success. The instructor plans to continue to use this support tool.

In MAP 100, Institutional Outcome 2 is looked at in relation to Course Outcomes 1 (Extract roots and raised numbers to a given power), 2 (Determine areas and volumes of various geometrical shapes), 3 (Solve ratio, proportion, and percentage problems), and 4 (Perform algebraic operations involving addition, subtraction, multiplication, and division of positive and negative numbers). The instructor gave students interactive quizzes throughout the quarter and found that “the interaction and comradery with each other helped them learn the subject matter easier and created a fun way to accomplish their goals. It did turn a quiz into something like a game, which challenged the students and they ended up helping each other.” The instructor plans on continuing this activity.

In DVS 80, Institutional Outcome 2 was assessed. The instructor looked at the way in which students were able to pass a final exam after passing 5 Skill Checks. All students that passed the Skill Checks passed the final exam. Tracking of student success through Starfish has been useful to the instructor.

Prepackaged IO Activity Assessment Reports

Each year, the Assessment Committee creates an activity, or focus, which can accomplish two goals. The first goal is to provide an assessment activity for those who may not have anything in mind, or who may not be in a position requiring the creation such activities (such as adjunct faculty). The second, and larger, goal is to create an activity which allows for cross-campus collaborations and assessment to occur. The focus of the 2020-2021 Prepackaged Assessment Activity was on Institutional Outcome 2. Specifically, the Assessment Committee challenged faculty to include data (numeric, tabular, graphical, or word) in an assignment which was not going so well. This could be an assignment that currently included no data, or an assignment which needed to have its data inclusion revised. The Assessment Committee encouraged faculty to compare student learning from before and after the activity. Of the total received Assessment Reports, 21 chose to do the Prepackaged IO2 activity.

In Geology 101, Institutional Outcome 2 (Quantitative Reasoning) was assessed in connection to Course Outcome 9 (Describe igneous processes and volcanism). The instructor used 3D models to “build greater comprehension in understanding 3-D dimensionality of geologic structures” The instructor saw improvement in student comprehension, from 29% to 55% of students correctly identifying a massive pluton structure on a diagram. The instructor will continue to utilize these models.

In Astronomy 101, Institutional Outcome 2 was assessed in relation to Course Outcome 3 (Identify lunar phases and, given a lunar phase, predict rising and setting times). The instructor felt that students often struggle with identifying time based on where the moon is positioned in the sky. The instructor addressed this issue more explicitly in an attempt to improve student comprehension. However, because the lab was taught online, it was difficult to gage whether the students watched the lecture. Students did not improve as the instructor had hoped and, in the future, the lecture video will be a prerequisite to taking the test.

In the Chemistry Department, Institutional Outcome 2 was assessed in Chemistry 110 in with Course Outcome 5 (Identify the role of chemical reactions in daily life and write or interpret equations). The instructor noticed that students were not always supporting claims with evidence and data and decided to provide explicit instruction in this area. Prior to changes, “less than 30% of students were using data/evidence at all, let alone effectively in their discussion posts for questions where the use of data would be expected or beneficial to a response. After the changes, that number went up to 68% using data and all of those used it effectively.” The instructor stated that “I will continue employing discussions in my CHEM&110 course along with the changes I have included (grading, support, examples, etc.) as the data suggests this improved student ability to reason mathematically and by interpreting data and using evidence to support their conclusions; and because most students do report finding value in the discussions for their learning. I will also work on discussion questions themselves to include more prompts that support mathematically reasoning to increase student opportunities to put into practice these valuable skills. Through this process I realized there were far fewer questions within the discussions for data interpretation which I would like further highlighted in the course as a STEM class.” Additionally, the instructor stated that “I recommend that the college explore training for faculty on writing effective discussion prompts (and assessment in general) and be intentional about providing opportunities for faculty collaboration (e.g. workshops, stipends etc.). I feel I would benefit from working with other experienced faculty to come up with more real-life examples for data interpretation and mathematically reasoning to incorporate into my course.”

In Biology 100, Institutional Outcome 2 was assessed with Course Outcome 11 (Demonstrate knowledge of evolution and natural selection by defining each including what makes them different, and using an appropriate example to illustrate these concepts) and 12 (Demonstrate knowledge of evolution by discussing fitness, adaptation, and the patterns of natural selection, and describing the evidence for evolution). The instructor noticed that some students struggled to understand evolution and mutations. The instructor added a homework assignment which attempted to combat this struggle. The instructor found a correlation between the assignment and student success, stating that those “that had completed the assignment earned either perfect or nearly perfect scores on that written question on the final.” However, the instructor also felt that there was an issue of potential academic dishonesty, as many of the answers seemed to match exactly (or nearly exactly) between the homework and the exam. The instructor would like the larger question of academic honesty to be focused on at the institutional level.

In Biology 221, Institutional Outcome 2 was assessed with Course Outcome 10 (Explain Hardy-Weinberg equilibrium and use the tools of population genetics to calculate allele frequencies, identify and explain the results of natural selection, and describe and discuss the impacts of other causes of population change). The instructor found that “students typically struggled with and either revised or incorporated making sense and use of data in either numerical, tabular, graphical, or word forms in BIOL&221” and that “30-35% of the students in BIOL&221 do not answer the questions regarding Hardy-Weinberg equilibrium correctly” on the final exam. The instructor added some online learning tools (McGraw-Hill Connect) and compared the results between two quarters. The instructor “found that 61% of the Hardy-Weinberg questions were answered correctly on the final exam in 2019, and that 81% were answered correctly on the final exam in 2020.” They are going to continue to use these online resources, but needs to tweak a lab to ensure that some answers cannot be found online. The instructor recommends a college-wide adoption of McGraw-Hill Connect.

In Biology 260, Institutional Outcome 2 was assessed with Program Outcome 1 (Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources) and the Course Outcome: Demonstrate an understanding of the reasons for the appearance of new and emerging diseases. For this assessment, the instructor “evaluated and assessed how students engage with and understand epidemiological data regarding disease transmission as obtained from graphs, tables, and writings from the scientific and popular literature, and public health and scientific websites.” Previous to this assessment, students were required to understand basic terminology but not required to understand how data is generated and used to inform decisions. The instructor used a pre and post-test to assess growth. The results were mixed. While growth definitely did occur (15% of students understood pre-test and 70% understood post-test), there was still some confusion that the instructor plans to address, beginning Fall of 2021.

In Nutrition 101, Institutional Outcome 2 was assessed with Course Outcome 3 (Assess current nutritional status through personal dietary analysis). The instructor found that students struggled with calculating calories. The instructor collected data from fall quarter instruction, and then added written instructions and a video, reminding students about PEMDAS for winter quarter. The instructor found that “During Fall 2020, 7 out of 28, or 25%, incorrectly calculated their EER. After adding PEMDAS information into the assignment, 3 out of 26, or 11% incorrectly calculated their EER.” The instructor will continue using the updated instruction format. The instructor will also consult with math faculty about best practices.

In the Math Department, Institutional Outcome 2 was assessed in Math 90, Math 94, Math 97, and Math 98 and in relation to outcomes related to the conversion of units of measure and outcomes related to converting word problems to algebraic sentences. The department “looked at a redesign of our precollege math focus on dimensional analysis based on feedback from the Chemistry and Physics departments.” The department focused on key problems related to these issues. The department found the following: “For Math 90 and 94, 54/60 (90%) students successfully completed the dimensional analysis problem on the exam. When a similar question appeared on the final exam, only 36/57 (63%) correctly answered the question. The topic is addressed again in Math 97 and 98 at a deeper level, including chemistry applications. For these classes, 62/77 (81%) successfully completed the dimensional analysis problem on the exam. When it came to the final exam, 60/68 (88%) students correctly answered the question. From IR, it was reported that 24/58 (41%) of students who took Math 98 were successful (2.0+) in Chem& 121. There were 67/107 (63%) students whose initial placement was higher than Math 98 were successful (2.0+) in Chem& 121.” The department feels like students are learning the outcome but that long term retention may be an issue. The department will continue to work with the chemistry department to help students retain skills from math in their chemistry courses.

In Nursing 114, Institutional Outcome 2 was assessed in connection with Program Outcome 1 (Utilize accurate methods to calculate oral and parenteral medication doses and rates within a reasonable time frame). The instructor assessed student understanding of mathematics as it applied to nursing. “During the initial mathematical pre-examination given during the first week of the quarter, 3/18 students obtained a 90% or greater on the 15-point assessment. Weeks later during the formal 30-point calculations exam, 14/18 passed on the first attempt with the other four students reaching 90% on the second attempt.” The instructor was satisfied with these results.

In Nursing 220, Institutional Outcome 2 was assessed with Course Outcome 1 (Deliver safe and effective physical, psychosocial, cultural, and spiritual care to the whole person in a variety of settings). “In winter 2021 the nursing faculty assessed Level 2 student’s competency in accurately calculating drug dosages.” The instructor stated that “On the first week of the quarter in NUR 220 students were given the opportunity to practice calculations with a practice worksheet. The passing score for the calculations test was set at 27/30 and those students scoring under 27 were given the opportunity to retake the test a week later. The retake exam is a high-stakes exam in which students who failed it would be out of the program.” All students met the 90% benchmark in this area.

In Nursing 114, Institutional Outcome 2 was assessed with Course Outcome 1 (Utilize accurate methods to calculate oral and parenteral medication doses and rates within a reasonable time frame). The instructors looked at the way in which students were able to effectively administer dosage calculations. The instructors stated that “The fall course started with 23 Level one students. For the initial calculations test, 13/23 (56.5%) of the students passed the test. During the first 6 weeks of class five students withdrew from the course for varied reasons: thus, results will be analyzed based on the 18 remaining students who completed the quarter: For the initial 15 question test, 3/18 (17%) obtained a score greater than 90%. For the second 30 questions test weeks later, 14/18 (78%) passes on the first attempt. The remaining four students reached 90% on the second attempt. For information only: 2 of the 5 students who withdrew passed the initial calculations test.” The instructors stated that they would continue with current practices in regard to this area.

In the Aviation Program, Institutional Outcome 2 was assessed in multiple courses and in regard to many course outcomes. In AVF 112: Course outcome 9 (Calculate Aircraft Performance) was assessed. The program “used the standardized FAA written test results to analyze how students performed on calculating aircraft performance. Since this class was taught virtually this year it gave us an opportunity to evaluate and assess the use of a virtual white board in teaching performance calculations.” The program found that “While the class average on the comprehensive private pilot FAA written test dropped from 84% in 2020 to 82% 2021 the picture was slightly different when the specific area of aircraft performance on the test was evaluated. Here we saw measurable improvement from 44% of the 2020 class deficient in the area of aircraft performance calculations to 36% of the 2021 class deficient. Aircraft performance calculations also slipped from the third highest deficiency on the FAA comprehensive written exam to the fourth highest deficiency for the 2021 class.” In AVF 114, Course outcome 2 (Apply mathematical rules and concepts in the analysis of aerodynamic theory and aircraft performance) was assessed. The program found that “found that 0% of the students got any of the three (3) non-graded takeoff and landing distance performance questions correct on exam 2. After the third unit of related material was covered in-class the same questions were administered on exam 3 with the following results: 92% of students got question 1 correct. 77% of students got question 2 correct. 100% of students got question 3 correct.” In AVF 142, Course outcome 1 (Construct a VFR flight plan with the required aircraft performance calculations and pertinent weather data) was assessed. In AVF 251, Course outcome 1 (Simplify aircraft performance data calculations to maximize efficiency in cross country flight planning) was assessed. The Program found that “First time pass rates for these two classes was 97%. There were no known failures for preflight aircraft performance calculations for the 2020-2021 school year. Enroute calculations for the diversion portion of the flight yielded a 100% pass rate.” The program found that there “seems to be a disconnect between the content that is being tested in the classroom/FAA written test and what is being tested in the flight stage exams (practical flight

tests). While students are clearly being brought up to proficiency in the program for the real-world flights there may be some areas in which the classroom instruction could be improved.” The program plans to make specific in order to address weaknesses. Specifically, “FAA written tests and AVF 114 theory of flight both tend to teach aircraft performance calculations for a broad range of aircraft makes and models; however, our real-world flight tests in AVF 142/252 are specific to the Beechcraft aircraft we fly. The following recommendations have been given to correct for a weak area in our curriculum. AVF 112: Homework and worksheets developed to re-enforce non-Beechcraft aircraft performance calculations for AVF 112. AVF 114: Additional homework developed to reinforce how weight affects stopping distance calculations in relation to deficiencies found on question #2 in the assessment activity for AVF114. AVF 142/251: Increased surveillance of the preflight calculations on the stage 2 and Stage 4 check rides for AVF 142/251.”

In the Welding Program, Welding 207, 205, 130, 151, and 153 were assessed in regard to Institutional Outcome 2 and with Program Outcome 5 (Students will be able to demonstrate competent cutting and welds to appropriate welding codes). Each of the courses worked through this outcome with slightly different goals in mind: “Welding 207 used an exercise that had each student calculate the carbon equivalency of a material when they are given a formula and specific chemistry of a particular steel example. The students in the class were given an assignment that had 2 questions related to this calculation.” The instructor found that “The results were less than desired. Only 17% of these questions were answered correctly.” The instructor plans to “provide some additional training to assist the students in this class. The material will be additional review of how to multiply fractions.” “Welding 205 used an exercise where the students were required to determine tensile strength of a steel plate they welded together. The plates were welded together, cut out and then pulled apart with a hydraulic press. Each student processed the plate after welding, cut it and machined it to size, that was measured. The forces needed to pull it apart were measured. Using the force needed to pull it apart, and the area of the piece, the students were asked to determine the tensile strength of the weld.” The instructor found that “results of this assignment showed that 83% of the students were able to correctly determine the tensile strength of a material when given the correct formula and specific values.” The instructor was pleased with this outcome. “Welding 130 assessed quantitative reasoning by assigning an exercise that required students to convert metric dimensions into inches, and vice versa. This assignment was provided as a table that provided a value, then asked the student' to provide the value of the conversion.” The instructor stated that “the results of this assignment displayed that just over half of the students were able to convert a value in one system to another. This was less than expected.” The instructor stated that this assessment “has led to a plan to provide additional training on how to solve ratio equations.” “Welding 151 assessed the students' ability to determine dimensions on drawings provided in the text used. In this exercise, the students were required to solve some equations to determine the size and location of various features on a weld drawing. Assignment 8c required each student to calculate some dimensions on a part drawing. Three questions related to quantitative reasoning were included in this assignment: #4, 5, and 14.” The instructor found that “results of this exercise varied, and of the 24 answers, 13 were correct. Some of the results were attributed to the students needing to find locations and determine the values to be calculated. Of the incorrect answers, approximately half can be determined to be incorrect due to the students using information from the wrong locations on a drawing, and providing the correct mathematical answers, but from the wrong values on the drawing.” The instructor stated that the assessment “leads the welding department to consider working more closely with the MAP101 instructor to bolster the students' ability to determine

these fractional dimensions.” “Welding 153 assessed quantitative reasoning by assigning a project that required the student to perform calculations to create a paper pattern, that would be used to cut out a pipe, and form it into a hemispherical end. The students were given the pipe size (diameter) and a step by step set of instructions that clearly provided the method to calculate 8 dimensions that would be used to create the pattern. Each student was evaluated on the on a variety of criteria, one of which accuracy of the final part that was cut out and formed based on the directions given.” They found that “Each of these assessments show the ability of a student to use quantitative reasoning to determine how to set welding equipment, to determine appropriate weld sizes, to calculate where to cut materials, and how to determine where and how to cut material to obtain correct functioning of a welded/fabricated item.”

In Automotive 223, Institutional Outcome 2 was assessed with Program Outcome 6 (Students demonstrate the ability to retrieve service information from manuals and on-line sources). The purpose of the assessment was to understand student proficiency at calculating cost and markup through vendors, and understanding the relationships between manufacturer costs, venter costs, and overall costs to the customer. The instructor found that “In all cases but two, the students struggled with these calculations. The two exceptions were more mature” students who are or had been married and both have children. Of the remaining students, half could calculate a sales tax (interesting enough, none knew the actual sales tax rate in the area), but could not quickly figure a mark-up to create an estimate.” The instructor hinted at the idea of including additional courses for the degree and stated that “I will need to instruct the students outside of the shop environment on simple business practices and necessities like a reasonable mark-up for profit and the inclusion of sales tax for payment and remittal.”

In Agriculture 241, Institutional Outcome 2 was assessed with the Course Outcome which attempts to “Analyze financial statements to determine liquidity, solvency and profitability.” The instructor assessed the teaching of financial analysis concepts through an assignment focused on calculating ratios and interpreting their meaning. The instructor found that the “average score was 19.3 out of 20 and the low score was 18.” The instructor stated that while “mechanically the students were able to accurately complete the math in the balance sheet analysis, I felt less confident in their understanding of the results of the analysis. Moving forward I will assign a few more problems and require an explanation of the analysis.”

In Business 102, Institutional Outcome 2 was assessed with Course Outcome 7 (Calculate the due date, interest, and maturity value of a promissory note) and 8 (Calculate the finance and interest charges for credit card purchases and bank loans. Related to both of these outcomes is the principle of Compounding Interest). The instructor “been disappointed in the students' ability to properly solve compounding interest questions on the Final Exam. I wanted to see if adding a specific Quiz on Compounding Interest (prior to the Final Exam) would help increase performance on the Final Exam related to those 5 questions found on the Exam, pertaining to this principle.” The activity did increase student success by improving grades from an average of 1.7 to 2.6. The instructor is please with the results and will continue to utilize methods described.

In BIM180, Institutional Outcome 2 was assessed with Course Outcome 2 (Design, create, format, and edit basic Excel spreadsheets and charts). In BIM190, Institutional Outcome 2 was assessed in connection to Course Outcome 4 (Work with functions and formulas). In BIM280, Institutional Outcome 2 was assessed in regard to Course Outcome 2 (Design, create, format, and edit complex Excel

spreadsheets and charts). All of these assessments focused on the ability for students to “complete complicated formulas in Excel.” The instructor found that, out of a collective 36 completed tests, only four students did not pass on their first try. The average score for those who passed was a 94.41%. The average score for those who failed was a 73.25%. In order to tackle this issue, the instructor utilized online tools—specifically Mindtap. While the individual average scores did not exceed the original scores, the instructor was encouraged by the results, stating that: “The important thing to look at is that with a total of 22 students they earned collectively in these 3 classes in the math related portions of the class a total of 36 credits while in the winter of 2021 that a total of 17 students earned a total of 38 credits in the math related portion of the class. We see that each student earned 1.63 credits in 2020 and in 2021 each student earned 2.23 credits. This shows us that students are taking more credits in their classes and achieving more. This is a positive and great thing.”

In English 101, Institutional Outcome 2 was assessed with Outcome (Demonstrate clarity of ideas and sound support of assertions). The instructor felt that students often failed to back up claims with fact-based evidence and, instead, tended to use quotes of opinion. The instructor added a video which specifically addressed this issue through a video on primary, secondary, and tertiary sources. The instructor found that “it did feel like students in my fall and winter English 101 courses increased the amount of professional and scientific evidence used in their essays. In the film review essay, for example, I had much fewer essays that attempted to show that the film was good because some reviewer online said it was good (and many more essays that relied on demonstratable evidence from the film and the expectations the film met).” In the future, the video will be mandatory.

In Philosophy 120, Institutional Outcome 2 was assessed with Program Outcome 5 (Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources) and Course Outcome 3 (Prove validity using predicate logic). The instructor increased the number of quizzes and decreased each quizzes value, regarding proofs in predicate logic in Canvas. The instructor found that this change actually reduced student success in the course, with average scores [by students that completed the quizzes] going from an average of 92% to 83%. The instructor believes that this decrease could be explained by a number of variables, including the issue of having students attempt to do Venn Diagrams in an online course.

In Developmental English, Institutional Outcome 2 was assessed with Course Outcome 1 (Analyze texts and present their meanings in writing). The instructors “used the pre-packaged assessment for applying graphical data to a research-supported argument paper. We wanted to see if direct instruction in interpreting graphical data would help students transfer that skill to support an argument in writing). They “taught students to interpret the story told by graphical data (charts, graphs) so they could use that as evidence to support a claim in writing. Students wrote analytical narratives to explain the data and then helped each other through a peer review process online to deepen the analysis. Students were given guiding questions for their peer review to help them focus on diving for deeper meaning. Finally, students searched for graphical data related to their own research, analyzed and interpreted that data, and then synthesized the evidence into their support for their argument.” The results of this assessment were not as positive as the instructors had hoped. Part of the issue seemed to be that some of the chosen writing topics did not lend themselves to finding relevant graphical data, and part of the issue seemed to be with not beginning the assessment activity early enough. If they decide to try again, they will try to give more explicit instruction in the area of graphical analysis, as well as try and begin earlier.

The department believes that having assessment activities occur cross-departmentally could also benefit the overall success and value of the assessment activity.

Academic Transfer Program Assessment Report

While each of the Professional/Technical (Workforce) programs complete assessment independently, the Academic Transfer Program must assess its program across a wide range of departments. One purpose of the Prepackaged Assessment Plan, and having faculty assess similar outcomes each year, is to find broad themes and connections between departments within the Academic Transfer Program.

In order to allow the entire campus to see math as more than just numbers, the Math/Science Division worked to broaden the understanding of what a math assessment could be. The general focus of the Prepackaged Activity was on the way in which data inclusion could improve meeting learning outcomes for students in courses across campus. Although individual department and course reports had a wide array of results, some common themes and conclusions could be found.

One of the themes that could be seen in the IO2 assessment was the inclusion of outside learning tools, which could aid, even in a virtual environment, in the students' engagement with and visualization of concepts. For example, BIO&221 included the McGraw-Hill connect and Astronomy used 3D models to improve on student learning. In ENGL&101, the instructor used videos to clarify different types of sources, and how those sources might be better or worse at providing evidence and data. The inclusion of these outside tools show that faculty are willing to continue to grow and change in order to meet the needs of the students. In cases where educational tools may not be available, desire for these educational tools is there. For example, in Biology 260, the instructor would like to add more instructional tools to help students with terminology and concepts. While Covid has had a large negative impact on education, instructors are utilizing the best practices they learned in converting their courses online to ways that could be best leveraged for student learning and success moving forward.

Another theme that could be seen is in the desire for, and implementation of, cross-departmental collaboration. The Developmental English Department concluded that designing cross-departmental assessment activities could be beneficial to making larger meaning of the assessment reports. NUTR&101 plans to work closely with the Math Department to help them design tools to improve instruction. Chemistry and Math will continue to collaborate and track student progress and retention between the two disciplines. When looking at the data found in the assessment that individual departments did, the immediate instinct of many faculty seems to be to find out how the outcomes for students can be improved upon and understood across campus.

Lastly, a theme that is present is the value of the inclusion of data in activities and work across campus. Of the eleven Academic Transfer Program assessments which looked directly at the inclusion of data, six instructors found immediate improvement in the ability for students to meet a desired outcome. Of the remaining five assessments, the immediate outcomes in student learning were not obvious, but all of the instructors seemed to unearth some important consideration or question which they believe deserves attention. For example, in BIO&100, the instructor came across an issue of academic dishonesty. In Chemistry 110, the Instructor recommends that the college provide more instruction relating to writing effective prompts. In Philosophy 120, the instructor asserts that having an easier way to do Venn Diagrams in Canvas would improve instruction and the math department found a problem with the long-term retention of a concept. While not every Instructor that looked at the inclusion of

data saw straightforward results, the activity itself seemed to signal continued progress toward excellence.

Reflection and Response to Faculty Assessment Reports

The 2020-2021 Assessment revealed that faculty are increasingly confident in the assessment process, faculty are willing to take part in activities that benefit the greater good—even when those activities do not necessarily help their immediate goals, and the inclusion of data has a net benefit across nearly every course on campus.

Faculty confidence in the assessment process is clearly demonstrated through the ability for faculty to complete their assessment, even during a time as difficult as Covid, with little help outside of the assessment videos and In-service activities. One notable distinction is in a transition between the desire of faculty [in the past] to have more time dedicated to assessment, and the current desire to have less time dedicated to assessment. Between the videos and worksheets, faculty seem to be comfortable with the process and/or comfortable with re-watching the videos for needed clarifications. The assessment process has gone from feeling very confusing to feeling so clear that additional time spent on explaining it feels redundant. While there are still some faculty that struggle with some individual aspects of assessment, in general, there is a feeling of clarity surrounding expectations and process.

Although math was not a requirement for all faculty, and although the Prepackaged Activity was not necessarily the activity that some faculty might have chosen on their own, nearly half of the submitted reports did this activity. Credit must be given to the Math/Science faculty, for creating an activity that looked at math in broad terms, and saw data as something mathematical—whether or not it was directly focused on traditional ideas of numerical mathematics. This creative way of thinking about math allowed many faculty to take part, who might have otherwise decided to skip out on this Institutional Outcome.

Lastly, the inclusion (or revision) of data-driven assignments and activities seems to have had a net positive impact on student success. While the expectation that students would use data was already there in most courses, the explicit focus on thinking about how it is included and understood seemed to help instructors find problems and work toward solutions in various areas of their courses. While not all of the courses saw the inclusion of data as something that saw immediate improvement in student success, the process of doing the IO2 Assessment seemed to be useful for all faculty, in understanding some aspect of their own teaching.

Assessment Committee Plans for 2021/2022

In regard to the 2021-2022 Assessment plans, the college is focused on continuing to push the assessment process in place. There is a minor change to the 7-year plans, but this change should only minimally impact faculty. The assessment process will stay the same, and the assessment team is working toward creating a repeatable and simple schedule for the assessment committee members to follow.

Sharing and Discussing the 2020-2021 Assessment Report: In regard to these reports, the Assessment Chair provided specific constructive feedback to 6 faculty members on their reports. This feedback ranged from questioning the conclusions being drawn by the faculty, to submission errors, to requesting clarifications. Along with this individual feedback, the faculty will have time at Winter In-service to read and discuss the report. These discussions will help us to continue to build successful assessments in the future, as well as to push us to think of additional ways in which the results of the report might have meaningful impacts on policies and procedures moving forward. Lastly, the Assessment Team will continue to discuss and look at the report to determine any additional steps that need to be taken.

Training for Assessment Committee Members: The Committee planned to update the onboarding process for its members. With the struggles of Covid and other concerns, this took a backseat to other issues. However, the onboarding process for new and incoming Assessment Committee members is still not as strong as it should be. Much of the process of learning about assessment comes slowly in a “sit back and watch” kind of approach. Now that the committee has a much more directed path for the assessment process, we would like to create a clearer onboarding process for new team members as well as members who would like to move into leadership roles. We hope to make a video which outlines the motivation, expectations, and timeline for many of the assessment activities (prepackaged plan, Fall In-service, report writing, accessing reports on SharePoint, etc.). By clarifying the process of what is expected of the committee, it will help to give members the broader understanding needed to help their peers across campus.

Preparing for Two Years of Program/Departmental-Level Assessment Plans: For the past three years, the Assessment Committee has had faculty working on Institutional Outcomes for their assessment. The 2022-2023 and 2023-2024 school years will be used to allow programs to meet the rest of their Program-level Outcomes, should they need to. Because of this, the Assessment Committee needs to find new ways of helping faculty meet their Assessment goals and requirements in the future.

Define the Purpose of Assessment: Continuing to push the idea of assessment for improvement is important to the long-term success of assessment and its usefulness to the faculty. While faculty seem to understand the idea of assessing for improvement, many continue to do assessments which do not aim to do so. Moving forward, we will need to devise a way in which to get more people to actually do an assessment which aims to improve their course (by starting with a problem and doing an activity which attempts to address that problem), as opposed to doing an assessment activity which only attempts to confirm adherence to Course Outcomes or to only find a problem.