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Mark J. Braun, EdD, Executive Director

May 13, 2022

Mr. Charlie Smithson Secretary of the Senate State Capitol Building Des Moines IA 50319 Ms. Meghan Nelson Chief Clerk of the House State Capitol Building Des Moines IA 50319

Re: Continuous Improvement Plan Report

Dear Members of the General Assembly:

In accordance with 2015 lowa Code §262.9.36, (which was enacted in 2012 by SF 2284), the Board of Regents, State of Iowa, has prepared a report describing the implementation of continuous improvement of courses with a combined enrollment of 100 or more students in 2020-2021. Enclosed is the annual report.

The universities have added support programs to assist students through the pandemic and have implemented expansion of online learning. Efforts on courses with high rates of DFW grades were particularly important and included faculty development sessions, additional peer mentors and peer-led tutoring sessions, and various strategies to help with the mental health challenges students are facing.

Please feel free to contact me if you have any questions about this report.

Sincerely, Ve Directo

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Attachments

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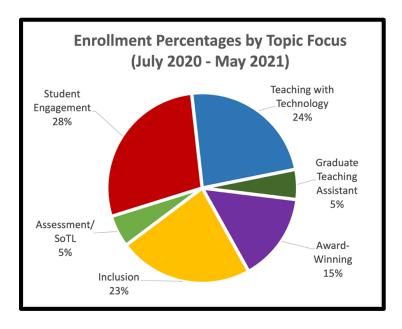
2020-21 Annual Report Iowa Board of Regents Continuous Improvement Report

I. Executive Summary

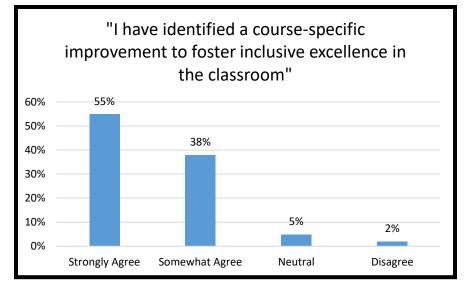
For the 2020-21 academic year, the State of Iowa's Board of Regents adjusted the traditional reporting requirements imposed by Iowa Code Section 262.9(36) to allow universities to effectively respond to the ongoing COVID-19 crisis. The adjusted requirements permitted institutions to highlight the efforts made by faculty and staff to ensure that students continued to meet course learning objectives as faculty continued to deliver course content for many large courses online. Our report for this year includes: high level data points, training efforts used to improve pedagogy, and a narrative statement detailing new efforts to improve student success in high DFW rate courses.

II. Center for Excellence in Learning and Teaching Initiatives

During the 2020-21 academic year, Iowa State's Center for Excellence in Learning and Teaching (CELT) sponsored a variety of programs from one-time webinars to semester-long learning communities. One thousand, three-hundred faculty, staff, graduate students and post-docs took advantage of these training opportunities. The Center prioritized activities most profoundly impacted by the pandemic: teaching with technology, increasing engagement in the classroom, inclusive teaching practices, and supporting student mental health and well-being.



Most importantly, program assessment data from the inclusive excellence program indicate that the majority of participants took away a course-specific improvement strategy that they could implement into their classroom. Similarly, survey responses cited three key benefits of the training program including: increased familiarity with a wide range of resources designed to improve teaching, garnering new ideas to improve classroom participation from colleagues, and increased insights gained from self-reflection of teaching practices.



III. Student Success Predictor Course Outreach Efforts

Traditionally, instructors in large courses assessed student performance by administering a midterm and a final exam. By the time that a student receives their midterm grades, it is often too late for a student to effectively change their study habits or to access student resources to change their academic performance. To change this dynamic, in the fall of 2019, Iowa State instructors began sending "early alert notices" to students in high DFW rate courses who were at risk of failing a course due to missed homework assignments, Iow attendance, or poor performance on quizzes or exams. Though our efforts initially targeted students enrolled in four math courses, this program <u>now targets forty high DFW rate gateway courses</u>. Our outreach efforts have similarly increased, growing from <u>148 progress reports</u> sent in fall 2019 to over <u>2000 progress reports</u> issued in during the spring 2021 semester. Remarkably, while the average faculty participation rate in an R1 institution in a progress report hovers around the 35% mark, in spring 2021, <u>87% of faculty</u> in our identified courses participated in the effort.

	Number of Identified High DFW Rate Courses	Number of Progress Reports Sent to At Risk Students	% Faculty Participation
Spring 2021	40	2,121	87%
Fall 2020	37	1,884	65%
Spring 2020	26	1,249	90%
Fall 2019	4	148	71%

During the spring 2021 semester, we enhanced our outreach efforts on students who were not "engaged" in online learning. Specifically, in cases where an instructor reported low student engagement in a course, our residence life staff reached out to the student to encourage the student to boost their engagement with the course. We are in the process of analyzing the data collected from that effort to determine whether that outreach effort led to improvements in student performance.

IV. High DFW rate courses – Equity initiative

Although ISU's overall retention and graduation rates have been on an upward trajectory, equity gaps exist. In an effort to address those gaps, Iowa State has begun to disaggregate DFW rate data in our top fifty gateway courses. An analysis of those rates indicates that significant gaps (>30%) exist in several gateway courses <u>between the average DFW rate and the DFW rates of first gen and multi-cultural students</u>. ISU is in the early stages of creating a working group spearheaded by the Associate Deans for Academic Programs to create faculty and staff teams to tackle these equity gaps. The top changes that we are discussing include:

- 1. Creating a pilot program of 4 to 5 courses that would explore changing the course structure to include enhanced active learning opportunities.
- 2. Providing professors with instructional design assistance.
- 3. Adding teaching assistants, supplemental instruction groups, and/or academic coaching support to the targeted courses.
- 4. Requiring advisors to meet with students enrolled in the pilot courses who receive an early alert to proactively discuss steps the student might take to improve performance.
- 5. Offering a one-time stipend to instructors and academic staff who participate in course team meetings.

V. ACE Learner Success Lab Project

In October 2021, Iowa State joined a ten institution cohort project sponsored by the American Council on Education known as the Learner Success Lab Project. The Learner Success Lab is a comprehensive change management process designed to spur continuous improvement of institutional learner success efforts. The eighteen month project guides institutions through a <u>comprehensive audit</u> of existing processes and practices related to learner success in six focus areas: institutional mission, budget, and messaging practices; leadership & structure; faculty and staff support; mobility, partnerships, and curriculum/co-curriculum. After the institutions complete the audit, institutions then draft a strategic plan for learner success. In contrast to other strategic planning processes, the central focus of this project is on <u>learner success</u>. Critically, the ACE model asks institutions to realign their student success practices to adjust to the reality that students will need to be life-long learners to succeed in the new global economy. Given demographic changes in the U.S., institutions to design programs using the lenses of: diversity, equity, and inclusion; data-informed decision-making, and agile and transformative practices.

To date: ISU has created an seventeen-person steering committee and staff six subcommittees with an forty-six faculty and staff members. The subcommittees have begun collecting data for the student success audit and intend to complete the strategic plan by March 2022.



Office of Assessment 310 Calvin Hall, University of Iowa

lowa City, lowa 52242 assessment.ujowa.edu

DATE: May 28, 2021

TO: Rachel Boon, Chief Academic Officer, Iowa Board of Regents FROM: Wayne Jacobson, Assessment Director, University of Iowa

RE: Update on Compliance with Continuous Quality Improvement Legislation

I am providing a report of the University of Iowa's compliance with Iowa Code Section 262.9(36) for 2020/21. Previous years' reports were based on a uniform structure that was originally established at the July 2013 meeting of project coordinators for each of the three Regents universities. This documentation has shown widespread use of continuous quality improvement strategies in courses throughout campus, with our most recent report showing an average of 4.4 distinct strategies employed in each course with annual enrollments of 100 or more students. This use of continuous quality improvement has consistently been shown to be widely integrated throughout existing course structures and established faculty practices.

With the sudden unexpected transition to virtual instruction in Spring 2020, we asked departments to direct assessment efforts toward collecting information needed to support faculty and students under the exceptional circumstances caused by the pandemic, rather than verifying established practices already in place prior to the pandemic. We have maintained that focus during 2020/21.

This year's report focuses on efforts to support student learning and success in large enrollment courses, including some efforts that were piloted for the first time during this academic year. The attached report features:

- Use of Peer Learning Assistants to assist faculty and provide instructional support for students
- Explicit instruction in metacognition added to the curriculum and incorporated into courses
- o Strategic investments in faculty-led course redesign efforts for large enrollment gateway courses

In addition to these course improvement efforts, the university's annual efforts to monitor program level support for student learning and success have continued, and these efforts will provide further documentation of department efforts to support faculty and students under pandemic conditions. This information for the 2020/21 academic year will be collected and compiled during June and July. Reports compiled for the 2019/20 academic year are available online: <u>https://assessment.uiowa.edu/reports-and-surveys#Outcomes</u>.

Please let me know if you need additional information from me about these documents or about institutional assessment and improvement efforts at the University of Iowa during 2020/2021.

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Examples of Improvement Strategies in Large Enrollment Courses During 2020/21

During the 2020/21 academic year, the University of Iowa offered a total of 499 courses with enrollments of 100 or more students, accounting for nearly 150,000 unique student enrollments.

This report identifies strategic points of intervention for supporting faculty and departments who are seeking to improve student learning and success in large enrollment courses. These changes have been prompted by examination of past and present patterns in DFW rates, benchmarking with BTAA, AAU, and APLU peers, and findings of the AAU STEM initiative, AAC&U, and national research on supporting student learning and success.

Following are selected examples provided by UI faculty and departments which illustrate ways that they are using information about student learning and success to further develop or improve courses:

Success in Rhetoric

All undergraduates at UI must complete a Rhetoric requirement. Based on data showing correlations between student performance in Rhetoric and the ability of the university to retain students, the Rhetoric department developed a peer-mentoring undergraduate program to better support students in this critical required course. This program assigns upper-level students who have been successful in this course to serve as peer mentors to sections of Rhetoric and provide additional support to instructors. Peer mentors attend two hours of a Rhetoric class session each week to better assist students and instructors with their major Rhetoric assignments. They also hold small-group tutoring sessions, conduct writing and speaking workshops, provide peer response to major Rhetoric assignments, and sometimes lead whole-class Rhetoric-related mini-lessons at the request of the instructor. The program to date has improved rates of successful completion of Rhetoric courses.

Learning About Learning

The university offers an asynchronous 8-week course in which students learn about concepts that are known predictors of learning success, organized around concepts of mindset, metacognition, and memory. Course content is applicable to many domains, and assignments ask students to apply concepts to their learning in other courses. Course assessment show a statistically significant increases in students' self-reported metacognitive behaviors, increases on Critical Thinking assessments, and reductions in Test Anxiety.

Explicit Instruction in Metacognition in Large Enrollment Gen Ed Courses

Based on initial evaluation of data from the Learning About Learning initiative, UI launched a pilot initiative to incorporate explicit instruction in metacognition into General Education courses taught during the 4-week Winter Session of 2020/21. Faculty in these courses observed increased student engagement and reduced levels of missing assignments and tests. Based on preliminary analysis of this pilot, the university is planning to expand this pilot to a larger number of large-enrollment Gen Ed courses during 15-week semesters.

Peer Led Undergraduate Study in High-Risk Course Combinations

PLUS is a 0 s.h. course for students concurrently enrolled in General Chemistry I (CHEM:1070) and College Algebra (MATH:1005). It focuses on the quantitative reasoning parts of the chemistry course, and in turn helps students in both chemistry and algebra skills. PLUS is facilitated by an undergraduate student who has already been successful in chemistry. This structure has been shown to save students time, make studying more effective, and enhance learning in subjects involving complex concepts. Students who participate in PLUS have

earned higher grades on average in both General Chemistry I and College Algebra compared to students who haven't participated in PLUS. The average gain for students who have participated is an increase by half to a full letter grade in both courses.

College Algebra (MATH 1005)

MATH 1005 completed the second-year of a three-year course redesign pilot project which has increased the use of short instructional videos that students can view independently in order to increase the amount of inperson class time used for small group work and interactive problem-solving. This redesign has increased the number and frequency of formative feedback to students on their learning, and also the amount of direct contact students have with instructors. This redesign has led to decreased DFW rates overall and a significant reduction in performance gaps for first generation and underrepresented minority students.

Undergraduate Learning Assistants Embedded in General Chemistry

Undergraduate Learning Assistants (LAs) who receive training and support and help faculty facilitate activities during class sessions to increase active collaboration and participation to improve student learning. LAs meet weekly with faculty member for the course they are supporting and facilitate activities during the course each week. In fall 2020, LAs were in the Principles of Chemistry I (CHEM:1110), and in spring 2021, LAs were also in Principles of Chemistry II (CHEM:1120) supporting over 2000 students in its first year. Students who engaged with their LA in fall 2020, received higher grades in the course. The LA program will be expanding in 2021-2022, with General Chemistry I (CHEM:1070) in Fall 2021.

Introductory STEM Course Redesign

Before graduating, approximately 44% of UI undergraduates will take an introductory chemistry course and 62% will take a mathematics course. These courses serve as prerequisites for coursework in a wide variety of other majors, making them a gateway for many students' academic and career aspirations. These courses also exhibit a persistent, years-long pattern of high DFW rates and a troubling pattern of achievement gaps: First-generation students and students from underrepresented groups have a DFW rate 10 percentage points greater than rates for continuing generation and majority group students, despite comparable pre-enrollment academic characteristics.

These patterns contribute to lower retention rates, longer graduation times, and a loss of talent and human capital. CLAS and the Provost's Office are partnering on a strategic initiative with five STEM departments (Chemistry, Computer Science, Health & Human Physiology, Mathematics, and Statistics & Actuarial Science) to develop and test course innovations to improve teaching and learning in key large-enrollment introductory courses and identify ways to provide more equity in the academic experience for students.

Course redesign will support instructors in adopting strategies piloted successfully in other UI introductory courses, offer training and access to instructor-facing dashboards which track student course engagement and basic student demographics, and support course redesign strategies with embedded academic support for introductory courses in each department.

Redesign of ACE (Assess, Consider, Engage), the university's support for assessing and improving teaching

In Spring 2020 the university launched a revised system for supporting assessment of teaching. Following three semesters of research, deliberations, and pilot-testing, the campus-wide ACE Task Force launched a revised student ratings system, resources for mid-course student feedback, and a systematic process for faculty peer review of teaching, all with the goal of providing faculty members with better data to support improvement of teaching. The Task Force will continue to monitor the implementation of this university-wide change and identify steps needed to support the use of the system. For more information, see https://ace.uiowa.edu



To: Rachel Boon, Chief Academic Officer, Iowa Board of Regents
From: Megan Vogt-Kostner, Office of Institutional Research and Effectiveness
Re: Report on 2020-2021 Compliance with Continuous Quality Improvement Legislation
Date: May 28, 2021

The attached report provides information on course-level assessments conducted at the University of Northern Iowa in compliance with Iowa Code Section 262.9 (36). Faculty teaching courses enrolling 100 or more students during the 2020-2021 academic year were asked to respond to a survey, either individually or in collaboration with other faculty teaching the same course, to collect information on the ways they monitor and work to strengthen student learning in their courses. Throughout the ongoing COVID-19 pandemic, UNI administrators, faculty and staff worked diligently to deliver the same high quality academic experience that sets UNI apart from other institutions. During the 2020-2021 academic year, the majority of courses were offered in-person/on-site or in a hybrid model, with only a small number of courses entirely online. For Spring 2021, 80% of courses at UNI were delivered in-person or using a hybrid format.

In addition to requesting information on the types of course-level assessments being implemented and the kinds of improvements made in response to what was learned from the assessments, the survey also requested information related to the ways in which learning outcomes were communicated to students. Data showed that 96% of the faculty responding to the survey included learning outcomes for their courses on the course syllabus. Learning outcomes were also on a course website and/or eLearning course web page (75%), communicated verbally (69%), with information for specific assignments for the course (43%), and in PowerPoint presentations provided during the course (42%).

The attached report provides information on the types of course changes faculty reported making as a result of what they learned from their assessments of student learning. It is worthy of note that, of the top five changes reported, four deal directly with the student learning experience—the assignments students are asked to complete, their activities or experiences in the course, the class time spent on specific course content, and to review or revise course texts and other learning resources. The fifth most frequently recognized course change noted by faculty was to change the assessment strategies to gain more accurate insight into what students are learning.

In addition to multiple-response survey items, the 2020-2021 CQI faculty survey included an openended question asking faculty to provide more detailed information on changes they had made to their classes as a result of their assessment of student learning; almost seventy-five percent of the survey respondents shared stories of their experiences. An examination of these personal narratives showed several repeated themes— instructors enhanced or changed their courses to meet the needs of students as well as the best practice standards in online instruction, instructors were consistent and intentional to use the same textbook and educational materials across sections, allowing all instructors teaching the course to adopt a common set of learning objectives, similar assessment formats and the ability to review the learning outcomes periodically throughout the semester, and instructors included weekly participation assignments or group discussions help students to practice the application of theory to case studies. Selected examples of the narratives collected are included in the attached report.

At UNI we believe in the power and critical importance of good teaching. The Continuous Quality Improvement survey for this year again provides evidence of this belief in action.

University of Northern Iowa CQI Report for 2020-2021

This page provides summary information on the types of assessment strategies used during 2020-2021; the following pages provide an overview of the types of course improvements undertaken by faculty and examples of assessments and related activities in selected courses.

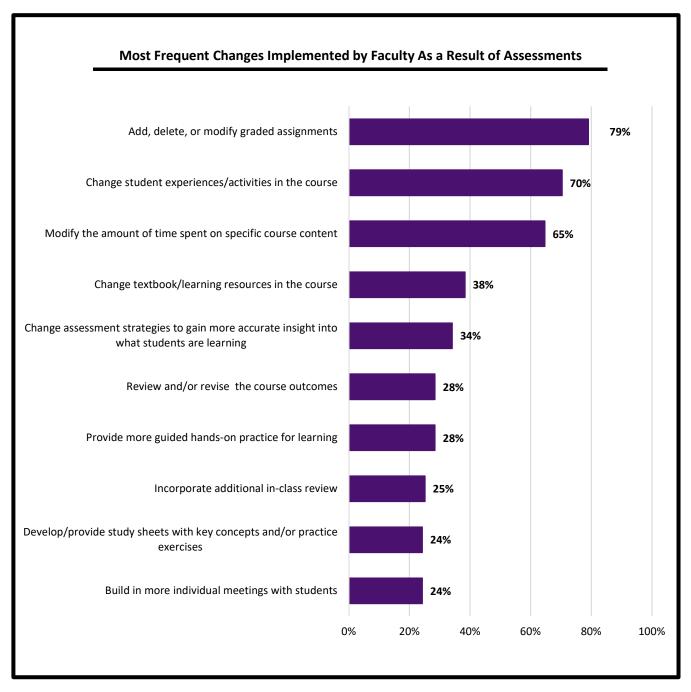
Continuous Improvement in University of Northern Iowa Courses				
June 2021	Report Date			
Summer 2020 – Spring 2021	Report Period			
Number of Courses, Students Enrolled				
109 courses 586 sections	Total Number of Courses Offered (enrollment > or = 100 students) Total Number of Sections Offered in 2020-2021 (enrollment > or = 100 students)			
91,043	Total Student Enrollment in Courses			
Number of Courses ¹ Utilizing C	ontinuous Improvement Strategies and Percent of Respondents Reporting			
242	Graded homework assignments (72%)			
227	Locally-developed tests or quizzes (68%)			
202	Student understanding of content and concepts as revealed in class discussions (60%)			
173	Observation of students doing in-class activities (52%)			
151	Specific questions on tests or quizzes (45%)			
135	Written or oral student reflections on their experiences and/or learning (40%)			
117	Rubrics or evaluation forms for individual project(s) (35%)			
112	Journaling, discussion boards, blog (34%)			
107	Discussion in individual meetings with students (32%)			
86	Faculty assessment of presentations or projects (26%)			
74	Comparison of course syllabi and/or assignments across sections (22%)			
73	Faculty review of mid-term and final grade distributions (22%)			
71	Formative (non-graded) assessments over the term (21%)			
69	Survey of student perceptions of their learning (21%)			
68	Faculty discussion of student performance across sections of course (20%)			
61	Rubrics or evaluation forms for culminating project(s) (18%)			
49	Peer assessment of presentations or projects (15%)			
34	Field experience evaluation forms (10%)			
32	Evaluation of student performance in simulations activities (10%)			
28	Pre- & post-tests (8%)			
28	Clicker questions or polling (8%)			

¹ Total number of strategies in use is greater than the total number of courses because many courses employ more than one continuous improvement strategy.

Other responses included the following methods for assessing student learning: student's performance in subsequent courses, department/program monitoring of DFW rates, review of course or program student portfolios, comparison of performance with professional licensure requirements, the use of Small Group Instructional Diagnosis (SGID), external reviewer assessments of presentations or projects, research or semester long projects, and assessments (diagnostic, formative, or summative) of course performance.

Overview of CQI Activities at UNI

As part of the Qualtrics survey administered in March, April and May 2021 to faculty teaching courses serving 100 or more students per academic year, one question asked faculty what kinds of changes they were making as they gathered assessment information and worked on continuous improvement. The table below summarizes their responses.



Selected Examples of Assessments

The Qualtrics survey responses for the 2020-2021 academic year included many examples of the efforts made by faculty to keep their courses current and engaging and to support student learning. The examples below are just a very small sample of those provided.

World Geography (GEOG:1110): I believe that my mission as a geographer - to improve geographic-spatial literacy - is critically important as globalization and global climate change play ever-larger roles in all our lives. Through repeated assessment of my classes over 25 years of teaching World Geography, I teach my introductory classes from a conceptual, systematic approach, illuminated by generous examples of my own personal experiences as a student, a geographer, and an enthusiastic traveler with a deep and wide exposure to many varied environments and cultures. I use my narrative lecturing style to engage my large introductory classes full of iPod-toting, web-savvy freshmen using primarily images and video led discussions. I have found, through assessment feedback, that information-heavy introductory corecurriculum classes can be counter-productive, turning students off both geography and learning as a whole because of their overemphasis on memorization rather than understanding. As a result, I teach my World Geography students with the goal to help them develop their critical thinking and begin to create a spatial understanding of the world around them. I teach World Geography as I would a hard-science class, emphasizing the broad conceptual underpinnings of our geographic understanding of the spatial variation in wealth, culture, access to health-care, and political representation, in process creating for them a model of power-relations, global inequalities, and cultural attributes that students can use to evaluate regions they are subsequently exposed too.

General Biology Organismal Diversity (BIOL:2051): Because of past experiences and our general perceptions of how little exposure pre-college students have to the basic concepts of evolutionary theory, and evidence of the many misconceptions that students have regarding the mechanisms of, implications of, and the validity of, evolutionary science, we have focused the first few weeks of the course on providing a detailed explanation of evolution and the evidence that supports it. In addition, we also explore cultural attitudes towards this branch of science and the reasons why the US public often resists it and ranks poorly in the understanding of genetics, evolution, and scientific evidence in general. As another example, based on social attitudes of the public, we added an evidence-based exploration of the recent anti-vaxxer social movement, including exposing students to primary medical research literature (including the original fraudulent study, now retracted, by Andrew J. Wakefield that linked the MMR vaccine as a cause of autism and subsequent meta-analyses that have thoroughly debunked this association). We also use this section of the course to promote understanding of probability values, odds ratios, basic biostatistics and to teach them how to read and understand primary scientific literature. Lastly, we spend the first two weeks of the course delivering up-to-date and timely information on the Covid-19 pandemic, including where it came from, how it relates to prior zoonotic coronavirus outbreaks, how and why the virus affects individual humans and their organ systems differently, mask type efficacy, and strategies in vaccine development. For Fall 2020, all of the course material, including these newly developed course sections were successfully converted to an online format. The student grade distribution was similar to, but slightly higher than, previous in-person versions of the course and only a very small handful (5-6) out of 119 students earned less than a C (this is about half the usual percentage for this course). Student assessments and a course survey were very positive.

Educational Technology & Design (INSTTECH:1031): My course was already designed to be blended with online lectures, so it wasn't too difficult to transform it into a synchronous course. The most important part of this transition involved addressing the students' social and emotional state. We held active discussions about what they needed to survive this event. They told me that the transition had sent them into isolation and they needed to develop connections. I modified my class to address these needs by having check-ins at the beginning of each class and extending student hours to provide needed support. Deadlines were no longer set in stone I worked with my students to support their success. During the final days of our Spring 2020 semester, my colleagues and I surveyed our students to find out about their experiences. We asked them about their feelings concerning how our course infrastructure, our teacher-student/student-student support systems, and our online learning materials supported them through the transition. This was quite informative and is the basis for an article that we have submitted to be published. The most important finding in our results had to do with supporting their social and emotional selves. They reported that their teacher's presence was one of the highest factors in successful making the switch. They appreciated the feeling that their instructors cared about their success. The increased use of classroom discussion, weekly checklists, reassuring messages, individual emails, and individualized communication were important. Based upon these results, I have continued to provide our expanded teacher presence. I begin each of my online classes by asking each of my 33 students a question that will allow them to share something about themselves. This has developed a feeling of community that has nurtured their learning. While I have not made any comparisons between my students' work this semester in comparison to past semesters, I have had online students (who I have never met face-to-face) tell me that they look forward to engaging in my class and that they feel special because I talk with them. These findings and my success with this strategy have changed how I teach forever.

Elements of Weather (EARTHSCI:1200): Students' participation and involvement play a very important role in teaching. To achieve the best teaching effect, various teaching methods I have learned are selected and used, such as lecture, PowerPoint presentation, demonstration, and group discussion. It is my philosophy that teaching will be more effective when students actively participate in the process of teaching-learning. I learned through my assessment that students want more in class activities to help them understand the complicated science concepts, so I prepared several fun experiments such as cloud in a bottle, mysterious hand holding water, the cooling balloon etc. These activities increased students' engagement and improved their understanding of the contents. For future offerings of this course, I will continue to improve my teaching through various opportunities.

Teaching Mathematics in Elementary Schools (MATH:3203): I had to make adjustments to the course in order to accommodate the new hybrid format due to COVID-19 concerns. I had to make decisions to cut some content as well as create new course activities. I also made decisions on how to better assess student learning given that we were not allowed to have a field placement due to COVID (it is not required for this course, but is often built in). For example, the major assessment for the course is a detailed lesson plan. Instead of having students write this lesson at the end of the semester, students write this lesson plan throughout the semester, adding parts to it as we discover/learn about those parts in class. For instance, asking good questions while students are working on a task is important. When we cover this material in depth in class, the students update their lesson plans to include good questions for their specific lesson.