Incorporating Inquiry in an Introductory American Politics Course[1]

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Abstract: Introductory-level courses in political science are long on subject matter. That results in "shallow learning" because students are not introduced to the "assumptions, arguments, approaches, and controversies" that are the foundations of political science (Wahlke 1991, 49). For decades, reformers in political science have urged "sequential learning" that scaffolds students through the political science major that "lead to more sophisticated understanding…leaps of imagination and efforts at synthesis" (49). This paper uses data from a course redesign in Fall 2020 to ask: What if lab assignments were incorporated into a general education course? During Fall 2020, I redesigned my intro to American politics course to include mandatory labs appropriate for an introductory course with a diverse student body (e.g., college readiness, intended major, ethnicity, socioeconomic status). This "experiment" suggests that requiring students to complete labs has a positive effect on learning outcomes. Specifically, for each completed lab, the average exam score increases by almost 8-points $p < .000$). Furthermore, these results do not introduce "equity gaps" based on ethnicity, first-generation status, or socioeconomic need. I conclude that the benefits of "incorporating inquiry" in lower-division political science courses will have benefits for students regardless of major. I argue that the critical thinking and quantitative literacy skills acquired in the labs may improve political science students' performance in other major courses and may be translated into better student performance for students pursuing other majors. Non-majors will benefit from understanding the commonalities and differences in the questions and methodologies in their chosen major.

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[1]This study involves human subjects. California State University Channel Islands' Institutional Review Board determined that the study posed minimal risk to participants and was exempt from the requirement for informed consent (IRB #IO5561). I want to acknowledge the work of students enrolled in this course. Comments, suggestions and discussions with Dana Baker, Tiina Itkonen, Shriya Kelly, Dave Parker, and Sheen Rajmaira helped me improve my presentation. Leading up to this reimagining I learned a great deal from Jill Leafstedt and Michael McGarry in CI's Teaching and Learning Innovations (TLI) office, and from TLI-facilitated fellowship opportunities with Theresa Avila, Raquel Baker, Jackie Reynoso, and Luis Sanchez.

Political science undergraduate curricula are backward. During the first two years, most political science programs focus on the hustle and bustle of politics—the "how," history, context, conflicts, leaders—fascinating and exciting, but not the foundation of political science as a social science.[2] Most political science curricula focus on *content mastery* over *discovery*. Yet, discovery is the most exciting and rewarding part of learning. Discussing the systematic study of politics is often delayed until the Junior and Senior years when we shock students with research methods and social science statistics.[3]

In contrast to political science, labs in the natural sciences (e.g., biology, chemistry, physics) are common at the introductory level. The pedagogical philosophies of Alexander von Humboldt and John Dewey argued for improving the relationship between subject matter and active involvement with appropriate skills and experiences.

Labs quickly became commonplace in the natural sciences, and for a good reason. In lab-based science courses, students develop the basic skills to replicate simple findings to reinforce concepts expressed in lectures and readings (Lopatto, 2007; Russell *et al*., 2007; Hanauer and Hatfull, 2015). Students in those majors build on those initial skills in upper-division lab courses and undergraduate research experiences. Science labs for non-majors—Course-based Undergraduate Research Experiences (CUREs)—build scientific literacy skills, proscience attitudes, and evidence-based decision-making skills (Ballen *et al*. 2017, 2).

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[2] Curriculum reform and attempts to improve the structure of the political science major periodically emerge. Reports like the "Wahlke Report" (1991) generate heat and light, but little change (Ishiyama 2005, Ishiyama, et al. 2006). Lack of consensus on the purpose of political science is partly to blame. Is the purpose of political science to promote civic engagement or to promote systematic and critical thinking about politics. Consistent with Wahlke (1991, 48-49) the foundational assumptions of this paper are that 1) "the goal of liberal education is the development of students' general intellectual abilities—curiosity, powers of critical analysis, aesthcicc appreciation and creativity…" and, 2) that learning should be sequential, "building blocks of knowledge that lead to more sopticated understanding…" In short, the political science curriculum should be more intentional, not a series of seemingly (to students) unrelated content course that place the onus to integrate material on the student, or backloading integration in a capstone course or thesis requirement.

[3] I regularly teach research methods and social science statistics. I regularly witness the students' Gestalt experience of entering a course surprised by the focus on studying politics based on evidence that is often quantitative. Students naturally bridle.

Focusing on developing skills and a deeper understanding of concepts prepares students to enter research labs or continued post-graduate education. Consistent with this view, the Wahlke report suggests that "That every political science major gain familiarity with the different assumptions, methods, and analytical approaches used by political scientists…" (Wahlke 1991, 51). Bringing this ethos to a general education course introduces "… non-major students to experience the realities of empirical research—to grapple with failure, experience the inherent messiness of science, and understand..." the research process (Ballen et al. 2017, 2), consistent with the conclusions of the Wahlke Report.

Much of the existing literature focused on "deep learning" in introductory courses is heavily focused on promoting civic engagement and service-learning. Understandably, articles about teaching quantitative literacy focus on teaching research methods and statistics courses (e.g., Henshaw and Mieneke 2018). Megan Becker (2019) recently argued for "importing" the Undergraduate Research Experience into political science. However, like Weinschenk (2020), the focus of most work remains on involving upper-division students. Despite the convincing findings of John Ishyama (2002) that social science and humanities students benefit from early exposure to research, the embedded research model has not gained broad currency in political science.

What if an introductory American politics course incorporated basic social science inquiry into a lower-division general education course? Not to emulate the natural sciences, but to borrow a *pedagogical approach* demonstrated to improve student learning outcomes.[4] I summarize my

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[4] I will not join the ongoing battle about the status of the social sciences as science. It is well beyond the scope of this paper. As I tell students, the natural sciences typically have greater control over the environment of the subject, often allowing for experimentation on subjects. Social scientists observe the behaviors of human beings, a subject group of which we are all members. We are both scholars and subjects. This makes observing human behavior more difficult since we are subjects of the same impulses, beliefs, biases, and frailties as the subjects that we study. Human subjects are aware of their surroundings, they learn, and they are capable of changing beliefs, responses, and behaviors to satisfy their needs. Actions that are predictable at one point may become unpredictable at another time or in another context. This makes Social Science "hard," that is, challenging. In some ways harder than the natural sciences. The lack of control over the human environment, the individuals that inhabit that environment, and the essential "humanness" of our subjects make generalizing about behavior difficult, limiting our ability to predict behaviors with high levels of certainty.

reimagining of a typical introduction to American politics course integrating elements of inquiry.[5]

Before Fall 2020, I integrated inquiry into my introductory course in two ways. First, I treated each section of the class as motivated by a research question(s) raised in the study of politics (e.g. Who votes? How do voters choose?). Second, I presented elements of my research that touch on course topics (e.g., congressional and presidential politics) to "model" curiosity and illustrate research behavior that is common in political science.

Switching to fully-online teaching beginning in the Fall Semester of 2020[6] due to the Coronavirus restrictions was an opportunity to reimagine my American Political Institutions course—a graduation requirement for CSU students—focusing on inquiry. Unlike decades before, the technology available allowed me to offer labs online. Web 2.0, the "interactive internet," enables students to engage in active learning—application, analysis, evaluation, and creation.[7] Only recently has appropriate technology emerged that allows for scaling up social science lab content.

This paper reports an analysis of course outcomes focusing on 1) student success and 2) analyzing outcomes for potential equity gaps—that is, course requirements that systematically hinder student success within socioeconomic groups. I conclude that adding lab exercises to my introductory American politics course improved student outcomes on exams. Further, these outcomes did not introduce racial or socioeconomic biases.

Campus Student Profile

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[5] What counts as student research is a matter of fierce debate. I place my experience in the context of a developmental view. See Appendix 3 for a discussion of student research, and how this course fits into the development of student researchers.

[6] For Academic Year 2020-2021 the entire CSU system transition to online only courses, with very few exceptions.

[7] See Sean Q Kelly, 2019, Teaching, Inquiry, and Technology, https://tlinnovations.cikeys.com/teaching-learning/teaching-inquiry-and-technology/ (Accessed December 28, 2020).

Established in 2002, CSU Channel Islands (CI) is the 23rd campus in the CSU system. It was created by the California State Assembly to service Ventura and Santa Barbara counties and Northern Los Angeles County; it is the only 4-year public institution in Ventura County.[8]

A Hispanic Serving Institution, over half of CI students (55.4%) are from historically underrepresented groups, 53.1% of whom identify as Hispanic or Latinx. Almost 60% (59.7%) are first-generation college, and 57% of CI students are Pell-eligible.[9] CI accepts 70% of applicants on average. The middle 50% of students admitted to CI have SAT scores between 410 and 520 in Math and Critical Reading. First-year High School enrollees have an average GPA of 3.22.

Affording college is a considerable challenge for our students. Many of them engage in full-time work to support themselves, often helping nuclear families and taking on student loans to cover tuition costs. Many CI students are not able to commit themselves to a laser-like focus on their education. We want to challenge our students. However, CI faculty do not want to introduce barriers to success and graduation, especially if a requirement creates a disproportionate burden on students by race or socioeconomic class.

CSU Channel Islands students are diverse in terms of ethnicity, socioeconomic status, and college preparedness. Given this profile, it is incumbent on faculty to consider biases in course structure that might disadvantage students by race or social class. As a campus champion of student research, I occasionally heard anonymous comments suggesting that student research was “elitist,” which I took to mean biased toward white students and not useful for our students of color.[10] Any diversity and inclusion champion should seek to minimize barriers to involving students in inquiry and remain mindful of creating or exacerbating equity gaps.

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[8] Ventura County is a majority-minority county. According to the 2010 census, 55% of the county’s residents are not of European origin. About 50% of students are from Ventura County and about 25% are from Los Angeles County.

[9] See the current student profile at the CI Institutional Research site.

[10] This is a perspective with which I completely disagree. Depriving our students of color the opportunity to engage in research in courses and with faculty denies them the opportunities that are offered at “more prestigious”

Course Modality and Structure

This course was offered in Fall 2020 during the COVID-19 epidemic. It was taught asynchronously online using our Learning Management System, Canvas (see Appendix 2).[11] Synchronous office hours were offered twice per week, and I was available to students for meetings during regular working hours. Weekly updates (video or text) opened each week's module, laying out the focus, purpose, and assignments for the week. I covered the same course topics. The major changes were the online modality, and the incorporation of labs.

Lecture Presentations—I presented course content through 70 original videos of different lengths (minimum 4 minutes, maximum 60 minutes). These lectures presented content typical for my course, aimed at communicating a basic understanding of American politics. During appropriate sections of the class, I included a presentation based on my research. These presentations "model" intellectual curiosity and demonstrate how political scientists approach research questions. Using PlayPosit, an interactive video platform, students were required to answer two questions at the end of each presentation: 1) Describe something interesting or surprising you heard in this presentation, and 2) What question occurs to you as a result of this presentation. The first question is intended to encourage students to reflect (ever so briefly) on the content. The second question is intended to stimulate curiosity, to develop a habit of asking questions. Responses are formative-level exercises for students and a useful attendance check for the instructor.

Reading Quizzes—I use the no-cost OpenStax *American Government* text (Krutz citation). No instructor can cover everything about American politics in an intro course. The book is presented to students as an opportunity to augment my presentations. Multiple-choice reading

universities on a routine basis. The skills and challenges of engaging in inquiry are precisely the competencies we want our students to develop. Student research at CI is aimed at reducing equity gaps not aggravating them.

[11] Because of the suddenness of the switch to virtual learning, and the likelihood that very few students had taken an online course previously, I offered every student extra-credit to complete a self-paced online learning course developed by our Teaching and Learning Innovations operation.

quizzes provide an incentive to read the text, at best, and at worst use the book's information to answer the questions. Quizzes are open-book and open-note exercise. They are a formative-level exercises focused on developing student understanding of the material in conjunction with the lecture presentations.

Labs—These are the primary innovation in the course. The purpose is to incorporate inquiry into the class by 1) demonstrating how a political scientist might approach a substantive research question and, 2) improving students' technological literacy (using Excel and Adobe Spark), 3) reinforcing substantive material presented by the instructor, 4) promoting quantitative literacy by requiring students to interpret quantitative information, 5) conditioning students to focus on evidence to support their assertions. Each lab had clearly stated standards. They were graded satisfactory or unsatisfactory based on achieving the criteria laid out in the assignment. A short description of each lab can be found in Appendix 1. Students were required to complete at least two labs to become eligible for a "C" in the course.

Exams—Student outcomes were measured by a midterm and a non-cumulative final exam. Each exam was composed of 100 multiple-choice questions. Students had five days to complete the exam in an untimed, open book, open note environment, a format that I have used for about a decade.[12]

Course Grading Scheme

Grading for the course was a combination of grades on presentations (25%), quizzes (10%), and exams (65%), and the number of satisfactory labs. A total of 8 labs were offered to students. They were required to satisfactorily complete at least two labs to pass the course, and an increasing number to get higher grades in the class. First, student grades are calculated as above. After calculating the grade for the student's work on assignments, I determine the

[12] I have discovered over time that exams given in this format result in a very similar grade distribution compared to a typical in-class exam. Furthermore, students who take the exam using the resources at their disposal are reinforcing their understanding by taking the exam.

number of successful labs. The intersection of these two elements determines a student's final grade.[13] Far from being "busy work," the labs are integral to student learning.[14]

[REFER TO FIGURE 1]

Lab Participation

As part of the course orientation, students were asked the number of labs they would complete during the course. The question was somewhat strategic. Behavioral research hints that when individuals actively commit to a course of action, they will adhere to the commitment (for instance, see Lokhorst, et al. 2011). Perhaps, if students "committed" to completing a specific number of labs early in the course, they would strive to meet that number of labs. All of the respondents suggested they would complete 3 or more labs; 5 or more was the modal response. None of the students indicated that they planned to do the minimum number of labs.

[REFER TO TABLE 1]

The correlation between the self-estimated labs and the actual number of labs was .26 ($p < .001$); 70.5% of students either met or exceeded the number of labs to which they committed. The average number of completed labs among those who "failed to commit" was 4.29 labs, compared to 5.02 for those who "committed." However, the mean difference of .74 points was not significant ($p = .12$). These results indicate mild support for suggesting that asking students to commit to a defined level of effort in the class has some merit.

Students completed a mean of 4.99 labs; the modal number of satisfactory labs was 5. Of the 137 students enrolled in the course, almost two-thirds (64.4%) completed 5 or more labs. This

[13] Assignment grades were based on a simple ten point scale (e.g., 70-79 is a "C"). I did not offer plusses and minuses, except for those students who did exemplary work on assignments *and* labs—they could earn an A+.
[14] Students were informed of thise grading scheme from the beginning of the course. I reminded them on several occasions how their grade would be determined.

suggests that, on average, students were willing to invest additional time to increase their chances of receiving a grade beyond a C.

[REFER TO TABLE 2]

Throughout the semester, participation rates in labs ranged from just under 50% to a high of 76%. Offering the opportunity to engage in the labs consistent with their personal workload provides students with a sense of agency. My casual observation was that students appreciated the opportunity to work the labs into their schedules. One element I would change is to require the first lab to familiarize students with the structure of the labs and to focus students on the structure Constitution (see Appendix A). Finally, the incentive structure—students were required to complete at least 2 labs to pass the course—did not result in students “settling” for doing the minimum number of labs to simply get a passing grade.

[REFER TO TABLE 3]

Labs and Outcomes

The purpose of incorporating inquiry was aimed at achieving better student outcomes. Did students who complete more labs receive higher grades on course exams? The dependent variable in this analysis is the *average of percentage of grades* on the midterm and the final exam.[15] Because the exams are multiple choice, requiring no grading that might introduce subjective bias, and because the exams are structured as the most important summative assignment in the course, this is the appropriate dependent variable.

I examine four hypotheses:

[15] I do not include information from student evaluations in this study, nor did I examine student evaluations for this course. Students’ subjective evaluations of a course do not measure student learning. Students can “hate” a course and still learn a great deal; “love” a course and learn very little—and every iteration in between. Furthermore, reporting results from evaluations introduces a conflict of interest in the analysis and presentation of the results, and third-party coding of the data is not practical.

H_1: Students who complete more labs will perform better on exams than those who completed fewer labs.

H_2: Students who achieve higher grades on the course lectures will achieve higher grades on exams than those who watch fewer presentations.

H_3: Students who achieve higher grades on the reading quizzes will achieve higher grades on the exams than those who have lower scores on the reading quizzes.

H_4: Students who completed a general online learning course will achieve higher grades on the exams than students who did not complete the training.

Bivariate Correlations

First, consider the bivariate correlation between the dependent variable, average exam score, and the main independent variables (see Table 4, row 1). Students' average exam scores are strongly associated with the number of satisfactory labs completed (r = .53). Reading quizzes and lectures have a solid correlation with exam outcomes (r = .35 and .34, respectively); there is a mild correlation between exam scores and engagement in the online learning tutorial (r = .20). In short, the bivariate correlations suggest that the major components of the course are associated with higher grades on the exams.

All instructional modalities are aimed at helping students to achieve higher grades on exams. They are intended to combine to produce better learning outcomes, as measured by grades on course exams. It is not surprising that there are strong associations *between* these modalities. The successful completion of labs is strongly correlated with quiz scores (r = .72) and presentation responses (r = .58). However, from a statistical perspective, these intercorrelations make it difficult to parse the individual effects of these assignments on outcomes.

[REFER TO TABLE 4]

Multivariate Analysis

Despite the inconvenience of collinearity, we can gain confidence by estimating a series of regression models (see Table 5) and engaging in path analysis. A simple bivariate correlation gives us a baseline to determine the main independent variable's effect (successful lab participation). Column one indicates that every *additional satisfactory lab results in an 8-point improvement in students' average exam scores* (*B* = 7.95). The adjusted-R^2 indicates that 28% of the variance in average exam scores is accounted for by the successful completion of labs.

Column 2 includes a dummy viable, indicating whether the student engaged in the campus online learning course. Lab success remains high (*B* = 7.79). The training coefficient is positive and significant at the .05-level, indicating that taking the training improved student scores by over 4-points (*B* = 8.89). This effect may appear stronger than the labs. However, the standardized coefficient (β) indicates that a lab is about 3.5 times more impactful than the training (β_{labs}= .518 vs. $\beta_{training}$=.151), and there are more labs (8) than training (1).

Furthermore, adding the variable to the model improves the adjusted R^2 by only 1 point. The training does not significantly affect the dependent variable in equations 3 and 4 and is mildly associated with improved exam scores. In all, the online training mildly improved students' ability to learn in an online environment, but it does not appear to help with the comprehension of course content (something it was not meant to do).

Both the quizzes and the course presentations have a significant impact on exam outcomes. Column 3 indicates that a one-percent increase in the presentation score results in an increase of .71 points on the exam grade. This may seem like a small effect. However, considering the number of presentations (about 70), the cumulative effect is considerable. The association of presentations and exam scores is fundamentally vital since it indicates that the instructor is having an impact on exam outcomes, which is what teachers are supposed to do! A one percentage point gain in the quiz grade is associated with an average increase in exam scores of .86 (Column 4), very similar to the effect associated with the presentations.

The variable that seems to have no effect on students' grades is their pre-course estimate of the number of labs they planned to complete. This indicates that student aspirations and course outcomes are not related. In other words, exam outcomes do not reflect a self-selection effect.

[REFER TO TABLE 5]

Summary

Returning to the four hypotheses listed above, there is strong support for the contention that students who complete more labs will perform better on exams than those who completed fewer labs. The number of successful labs completed by students is associated with higher exam scores by 7.2 to 7.9 scores per completed lab (p = .000)

Likewise, there is support for the hypothesis that students who achieve higher grades on the presentations (lectures) will achieve higher grades on exams than those who watch fewer presentations. Every additional percentage point on the presentation score results in an average increase of .39 on students' exam grades. Hypothesis 3 also finds similar support. Finally, there is mild support for the expectation that students who engage in an online learning course at the beginning of the semester did better on exams (Hypothesis 4). The online learning course likely helps students to be successful in the online environment.

Path Analysis

To further plumb the effects of course components on exam outcomes and better understand the underlying causal process, I performed a path analysis. Figure 2 illustrates the theoretical causal linkages between the course components. The online learning course is expected to influence exam outcomes by providing students with strategies to complete the course assignments, not directly by addressing course content. Exam outcomes are hypothesized to be affected by the course components (labs, lectures, and reading quizzes).

Based on the discussion above, we expect the online training to have an indirect effect on exam outcomes by helping students to adapt to online instruction. The regression coefficients in Table 5 suggest a direct impact of course lectures on exam scores and the course labs.
The results of the path analysis (Figure 2) provide a clearer understanding of how the components of the course translate into improved outcomes. Participation in the online training and increasing commitment to the labs improves performance on the quiz grades and lab performance. The influence of the quizzes, lectures, and labs improve exams, with the labs leading the way ($\beta = .532$), followed by the reading quizzes and course lecture assignments ($\beta = .352$ and $\beta = .337$, respectively).

[REFER TO FIGURE 2]

Final Grade Distribution

The final grades assigned in the class were the highest in my career in higher education. Over 50% of students in the course received an “A” or “A+,” 82% of students earned a “B” or higher, and 9.6% of students achieved a “C.” Only 8% of students received a D, F, or W. This is only slightly below the D/F/W rate for the 942 students who took American politics in 2019, which produced a D/F/W rate of 10%, per the CSU Student Success Dashboard.

While the D/F/W rate for this course is not significantly lower, the good news is that it is *not* higher. We can tentatively conclude that the additional lab exercises *did not* negatively influence student success *and* improved student performance.

[REFER TO TABLE 6]

How can we account for this extraordinary result? There are two differences between my standard course and this course. First is the switch to an asynchronous modality.[16] It took considerable effort to translate classroom lectures into video presentations. The second is the addition of the lab component. The exam format and questions have been a part of the course for years, and I have used the OpenStax *American* Government book and quizzes since the book was first published.

One explanation is that motivated students remained in the course after the first week while unmotivated students sought a seemingly less challenging class.[17] At the beginning of the course, 140 students were registered (the course maximum); I did not add students after the course's first day. Of those registered for the course, 131 finished both the midterm and the final (93.5%). This does not suggest that students were engaged in strategic behavior.

Another possibility is that students sequestered at home during the COVID-19 epidemic were subject to fewer distractions (like work and socializing) and were thus able to focus on this course. This seems plausible. However, there is no reasonable way to control for the effect of the COVID environment on course outcomes.

[16] I have taught several hybrid courses that combine in-person and online instruction. This was my first experience in a fully-online environment.
[17] It is difficult to observe whether the students were aware of the unconventional nature of the class beyond my mentioning it early in the semester.

These findings suggest that adding lab assignments in an introductory American politics course may improve outcomes for students. The hope is that the skills developed in the course have downstream benefits for students in their chosen majors.

Equity in Mind

This section focuses on examining the course outcomes through an equity lens. In this section, the analysis is extended by incorporating student demographic data into the analysis.
About 140 students began the semester, and 135 finished the course, a 96.4% persistence rate. It does not appear that the class's unconventional nature led to a high level of course drops. The finding above—that the D/F/W rate was not higher than the average for the previous year—provides an initial indication that the course structure does not create or exacerbate equity gaps.

[REFER TO TABLE 7]

For purposes of the subsequent analysis, Table 7 presents a comparison of the students enrolled in the course and the CI student population. To some degree, enrollees in the class overrepresent our Latinx and first-generation population, while the percentage of Pell-eligible students is the same. The overrepresentation of Latinx and first-generation students allows us to have greater confidence in the findings related to equity gaps.

Bivariate correlations indicate that *none* of the demographic variables are significantly correlated with exam outcomes (see Appendix 4). The three demographic variables, as one would expect, *are* highly correlated. First-generation students are likely to identify as Latinx (r =.52) and are Pell-eligible (r = .44). Given the profile of CI's student body this is unsurprising.

The correlations themselves do not indicate the absence of an equity gap. To further scrutinize potential equity gaps, regression models are employed to control for ethnicity and socioeconomic factors. Correlations also suggest that a student's major has no impact on course exam outcomes.

[REFER TO TABLE 8]

The results in Table 9 indicate that the research embedded approach does not create equity gaps. Each model in the table included the number of satisfactory labs controlling for ethnicity, socioeconomic need, and first-generation college. The effect of the labs on student outcomes is remarkably stable, ranging from 7.93 to 7.99 ($p < .001$). None of the control variables approach statistical significance. In sum, adding lab exercises to an introductory American politics course improved student outcomes on exams. Further, these outcomes did not introduce racial or socioeconomic biases.

Conclusions

The Coronavirus lockdown was a crisis and an opportunity.[18] Scrambling to provide meaningful, student-centered learning experiences, faculty moved quickly to shift to online teaching. Web 2.0—the interactive web—provides an opportunity to scale up a research embedded approach to a General Education course. My asynchronous class incorporated online lab exercises to 1) expose students to inquiry in political science and, 2) improve student learning outcomes.

The results from this approach suggest that student engagement in the lab exercises *significantly increased student performance* on exam outcomes. Each one satisfactory lab increased average student exam grades by almost 8-percentage points (an effect that surprised even me). Standard elements of the course—quizzes and lectures—also evidenced a positive impact on student outcomes.

Furthermore, incorporating labs into this course *did not* aggravate equity gaps. The results indicate that measures of ethnic identification, first-generation college students, and students with dire financial need all benefitted from engaging in the lab exercises.

[18] During the lockdown, university service activities were reduced considerably. The ability to focus without the distractions of service allowed me the mental "space" to devote to restricting this course. Opportunities to invest in close examination of teaching practice are rare—rarer than they should be.

These findings should encourage faculty to incorporate labs into entry-level political science course; but this study's results may not translate to other classes, even on our campus. Among possible confounding factors:

- This course was offered during the coronavirus pandemic. Students might have had additional time or focus that is not available during ordinary times.
- Students might be responding to the specific focus of my course or my peculiar pedagogy.

For labs to be successful, it is critical that the lab directly reflect topics that naturally arise from the course itself. For instance, Lab #2 on barriers to voting comes directly out of my discussion of cost-benefit self-interest, and how public policy can increase or decrease the "costs" of voting (see Appendices for lab descriptions and course structure) and thus participation.

I plan to continue with this structure in future semesters. However, there are several changes that I will make based on this initial experience.

- Based on the size of the effect on outcomes, I will require students to complete more than the minimum of 3 labs.
- The grading scheme illustrated in Figure 1 resulted in inflated final grades (see Table 6). Requiring more labs will likely result in a more normal distribution of final grades.
- Labs in this course were graded satisfactory or unsatisfactory. To encourage students to complete more labs a middle grade, "submitted," will provide students with an incentive to attempt more labs. In this scheme, two labs that are submitted will equal one satisfactory labs.
- Meaningful attention must focus on minimizing or eliminating equity gaps. It is important to monitor D/F/W rates and any ethnic or socioeconomic effects.

The undergraduate political science curriculum needs a fundamental rethinking. Introductory political science coursed do not accurately reflect the *practice* of academic political science. Unlike students in Biology, Chemistry and other natural sciences, we delay exposure to the nature, structure, and joys of inquiry. That is a feature of our pedagogy in dire need of change. Creating intentional opportunities to introduce students to inquiry, especially in lower-division courses, is a first step toward building enthusiasm among students and faculty.

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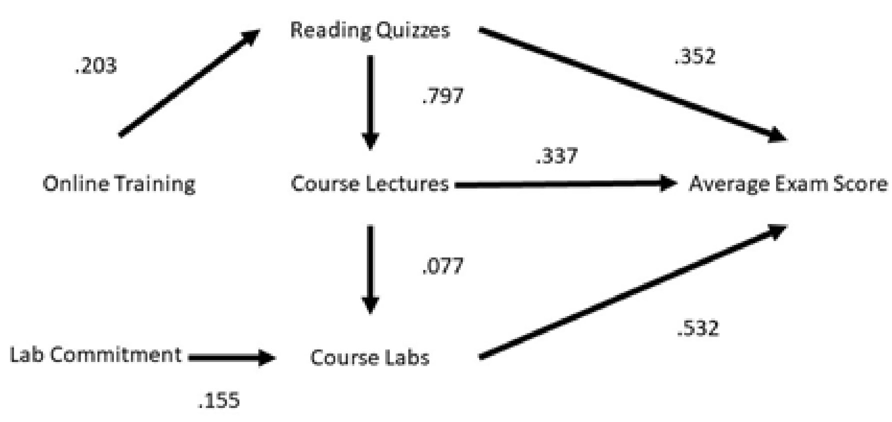
Figures

Figure 1: Grading Scheme to Determine Final Grade. Course grades are the intersection of the assignment grades and the number of successful labs.

	Satisfactory Completion of Labs				
	0/1	2	3	4	5-6
Average of grades on assignments					
F	F	F	F	F	F
D	F	D	C	C	C
C	F	C	B	B	B
B	F	C	B	A	A
A	F	C	B	A	A+

Figure 2: Path Analysis of Course Component Effects on Exam Grades



Incorporating Inquiry in an Introductory American Politics Course

Tables

Table 1: Student Self-Prediction of Complete Labs. Students were asked during the first week of class to estimate the number of labs they would complete during the semester

Self Prediction	Number	Percent
0	--	--
1	--	--
2	--	--
3	4	2.9%
4	24	19.7%
5 or more	94	69.1%
Missing	14	10.3%

Table 2: Distribution of Successfully Completed Labs. Almost two-thirds of students completed five or more labs.

Completed Labs	Number	Percent
0	2	1.5%
1	4	2.9%
2	7	5.2%
3	18	13.3%
4	17	12.6%
5	29	21.5%
6	28	20.7%
7	20	14.8%
8	10	7.4%

Table 3: Lab Participation. Overall, half or more of the students participated in each lab.

Lab #	Participation Rate
1	72.1%
2	64.7%
3	47.8%
4	61.8%
5	47.8%
6	66.2%
7	75.7%
8	58.8%

Table 4: Intercorrelation of Course Components

		Average of Midterm and Final	Number of Satisfactory Labs	Presentations Score	Reading Quizzes	XC Online Training	Student self estimate of the number of labs they would complete during the course
Average of Midterm and Final	Pearson Correlation	1	.532**	.337**	.345**	.201*	.160
	Sig. (2-tailed)		.000	.000	.000	.021	.085
	N	131	131	131	131	131	117
Number of Satisfactory Labs	Pearson Correlation	.532**	1	.577**	.472**	.050	.262**
	Sig. (2-tailed)	.000		.000	.000	.565	.004
	N	131	135	135	135	135	121
Presentations Score	Pearson Correlation	.337**	.577**	1	.718**	.107	.197*
	Sig. (2-tailed)	.000	.000		.000	.217	.031
	N	131	135	135	135	135	121
Reading Quizzes	Pearson Correlation	.345**	.472**	.718**	1	.193*	.245**
	Sig. (2-tailed)	.000	.000	.000		.025	.007
	N	131	135	135	135	135	121
XC Online Training	Pearson Correlation	.201*	.050	.107	.193*	1	.003
	Sig. (2-tailed)	.021	.565	.217	.025		.972
	N	131	135	135	135	135	121
Student self estimate of the number of labs they would complete during the course	Pearson Correlation	.160	.262**	.197*	.245**	.003	1
	Sig. (2-tailed)	.085	.004	.031	.007	.972	
	N	117	121	121	121	121	121

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 5: Course Components and Exam Outcomes

	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: Average Semester Exam Score				
Number of Successful Labs (0-8)	7.95*** (1.11)	7.74*** (1.11)	--	--	7.17*** (1.38)
Avg. Presentation Score (percentage)	--	--	.71*** (.23)	--	.18 (.23)
Avg. Quiz Score (percentage)	--	--	--	.86*** (.24)	--
Online Learning Training (0=No, 1=Yes)	--	8.89* (4.35)	8.19 (5.56)	6.82 (5.53)	9.26+ (5.01)
Student estimated number of labs (prior to beginning class)	--	--	6.53 (4.68)	5.35 (4.66)	2.21 (4.29)
Constant	117.99*** (6.01)	112.59*** (3.25)	57.51* (28.59)	56.23* (27.24)	86.54*** (26.36)
Adjusted R^2	.28	.29	.10	.13	.27
N	131	131	131	131	131

Note: Standard Errors in parentheses
*** Significant at p=.000
* Significant at p < .05
+ Significant at p < .10

Table 6: Grade Distribution in American Political Institutions, Fall 2020

Grade	Number	Percent
W	1	.7%
F/NC	7	5.1%
D	3	2.2%
C	13	9.6%
B	41	30.1%
A	30	22.1%
A+	41	30.1%
Total	*136*	*100.0*

Table 7: Course population and CI Student body compared

	Course Population	CSUCI Population	Difference
Latinx	64.7%	53.1%	+14.6%
First-Generation College	71.3%	59.7%	+11.6%
Pell-Eligible	57.4%	57.0%	-0.4%

Table 8: Regression Analysis testing for equity gaps caused by ethnic, first-generation, and socioeconomic need.

	(1)	(2)	(3)	(4)
	Dependent Variable: Average Semester Exam Score			
Number of Successful Labs (0-8)	7.93*** (1.12)	7.98*** (1.12)	7.99*** (1.11)	7.95*** (1.12)
Avg. Presentation Score (percentage)	--	--	--	
Latinx Identification (0=No, 1=Yes)	-3.06 (4.03)	--	--	-2.39 (4.76)
First Generation College (0=No, 1=Yes)	--	-2.68 (4.28)	--	-1.34 (5.06)
Pell Eligible (0=No, 1=Yes)	--	--	-6.10 (3.89)	--
Constant	120.04***	119.76***	121.25***	120.48***

	(6.59)	(6.65)	(6.33)	(6.82)
Adjusted R^2	.28	.27	.29	.27
N	131	131	131	131

Note: Standard Errors in parentheses

*** Significant at p = .000 (two-tailed)

* Significant at p < .05 (two-tailed)

+ Significant at p < .10 (two-tailed)

Appendix 1:
Lab Descriptions

[redacted]

Grading: All labs are graded satisfactory or unsatisfactory. Each lab had clear standards to achieve a satisfactory grade. These standards were fairly standard throughout. Students must:

- Follow the instructions completely
- Produce and submit the "results"
- When the student answers lab questions, they MUST cite the appropriate and correctly calculated results
- The evidence must be consistent with their assertions

Lab 1: Six Big Ideas in the Constitution
Learning Objective: Engage students in the 'big ideas' embodied in the US Constitution
Description: Following a discussion of the origins of American political institutions, students analyze the US Constitution. Adapted from an exercise developed by the National Archives and Records Administration, students conduct a "word count" for each Article of the Constitution, calculating the percentage of words dedicated to each Article, briefly describing the subject, structure, or power that each Article addresses. They then create a graph to illustrate the framers focus on six "big ideas" embodied in the Constitution: limited government, republicanism, checks and balances, federalism, separation of powers, and popular sovereignty. In their lab report student use their results to answer a set of important questions:

- Which topics received the most attention (as measured by the proportions of words) in the Constitution?
- Does the map suggest anything about the relative importance to the Founders of the powers of the new government?
- To what extent do the powers of each branch of government displayed in the map match how the federal government works today?

Lab 2: State-Level Barriers to Voting
Learning Objective: Understand how state-level policies can encourage or discourage voter turnout
Description: Voting is central to the concept of popular sovereignty. This lab focuses on how state registration and voting policies influence political participation. Using a small dataset I created—along with a spreadsheet program—students explore if and how different state policies regarding voter registration and voting influence participation rates. Using specific results noted in the exercise, students address a series of questions:

1. How do policies aimed at making voting easier seem to influence voter registration and turnout?
2. How do policies aimed at increasing barriers to voting influence voter registration and turnout?

3. Given the results you produced, do you think that proposition 2 is supported or not supported by your analysis?

Lab 3: Using Survey Data to Test a Hypothesis
Learning Objective: Better understand individual vote choices by focusing on party id, ideology, and candidate likeability.
Description: This lab focuses on vote choice. In class, I presented a look at vote choice in the 2012 election focusing on the role of ideology, party id, and candidate likeability. Students were given crosstabs mirroring that presentation for the 2016 election. A series of tables allow students to demonstrate their ability to translate information in the spreadsheet into information, enabling them to address several questions. Answers to each were required to include results from the table to support their conclusion in one or two sentences:

- Describe the relationship between ideology and the vote for president
- What is the relationship between party identification and the vote for president?
- Discuss the relationship between Hillary Clinton's likeability and the vote for president
- What is the relationship between Donald Trump's likability and the vote for president?
- Discuss the relationship between vote choice and the likeability of the two candidates

Lab 4: Issue Ownership and Party Platforms
Learning Objective: To understand how parties seek to appeal to voters through 'issue ownership' expressed in party platforms
Description: Issue ownership suggests that parties will "emphasize issues on which they are advantaged and their opponents are less well regarded" (Petrocik 1996). Using party platforms between 1972 and 2020, students will explore whether the Democratic and Republican parties seek to emphasize policies that are consistent with generally-held beliefs about the "competencies" of the two parties. Students enter data from keyword searches of party platforms to determine whether the parties seek to highlight their issue ownership, and to explore whether the parties shift their messaging based on the electoral context. Students enter their results in a table. Using these results student then address these questions:

- Is there a difference in the percentage of key terms emphasized by one party or another?
- Is there a difference in the percentage of key terms that seem emphasized by one party or another when there is NO INCUMBENT?
- Is there a difference in the percentage of key terms that seem emphasized by one party or another when there is a DEMOCRATIC INCUMBENT?
- Is there a difference in the percentage of key terms that seem emphasized by one party or another when there is a REPUBLICAN INCUMBENT?

Lab 5: Media and Politics
Learning Objective: Critical analysis of media content and develop a skill

Description: This lab is the most "qualitative" of the assignments. Students were asked to visit a list of 10 false claims made by Donald Trump in 2019. Students chose **one** false claim as the focus of a presentation created in Adobe Spark. Students were required to write and read from a prepared script. Major components of the short video include:

- Summarize Trump's claim in your own words. Explain it briefly so that someone completely unfamiliar with the claim can understand. (30 seconds)
- Provide evidence from three reliable sources that dispute the assertion Trump makes. In your presentation, explain how the information you present demonstrates that Trump's claim is false. (90 seconds)
- Be sure to cite your sources for each slide.
- Write out your presentation so that you read from a prepared script.

Lab 6: Credit-Claiming and Position-Taking in Congress
Learning Objective: Understand how members of Congress use credit-claiming and position-taking, and the incumbent advantage
Description: In class, students learned about credit-claiming and position-taking. Students were required to go to the website of our local member of Congress and code press release headlines based on whether the release was an example of credit-claiming or position-taking in 19 categories of press releases (as provided by the MC). After entering this in a self-calculating Excel spreadsheet, students used the results to address these questions:

- Which issue areas produce the most press releases? Which areas produce the fewest press releases?
- Which areas produce the highest percentage of credit claims? Which areas produce the lowest percentage of credit claims?
- Which areas produce the highest percentage of position-taking statements? Which areas produce the lowest percentage of position-taking statements?
- Representative Brownley is a member of the **Veterans' Affairs** Committee and the **Transportation and Infrastructure** Committee. Making specific reference to your findings, how do her press releases reflect this, *relative to other areas* with regard to:
  - Credit -claiming behavior
  - Position-taking behavior

Lab 7: Committees and Legislating
Learning Objective: The purpose of this lab is to engage students in 1) understanding the difficulties of the legislative process, and 2) reinforcing the vital role of committees in the legislative process.
Description: Using the GovTrack website, students entered into the self-calculating Excel spreadsheet the number of bills referred to each congressional committee in the 116th Congress. They also entered the number of bills enacted into law from coming from each committee. Students then briefly answered these questions based on their results:

- In percentage terms, which committees are assigned the greatest proportion of bills? Which committees receive the lowest percentage of bill referrals?

- In percentage terms, which committees have the highest percentage of their bills enacted? Which committees have the lowest percentage of their bills enacted?
- As a percentage of all bills enacted, which committees have the greatest proportion of the total bills enacted? Which committees have the lowest proportion of th total bills enacted?
- One committee stands out with a very high percentage of its bills enacted as a percentage of all other committees: Appropriations. Address these two questions:
  - What percent of committee bills enacted in the 116th Congress were Appropriations Committee bills?
  - Based on what you know about the Appropriations Committee from the presentation and the book, why do you think that is the case?

Lab 8: Presidential Vetoes and Veto Threats
Learning Objective: To understand how *individual presidents* and *institutional structures* affect presidential behavior
Description: I created a dataset of vetoes and veto threats from a variety of academic datasets. Students were provided with professor-generated results by the individual president and by institutional context: united versus divided government. Using these results, students addressed these questions:

- Which president issued the most veto threats on average? On average, which president issued the fewest veto threats?
- On average, how do presidential veto threats vary depending on whether they are operating under united and divided government?
- On average, how do presidential vetoes vary depending on whether they are operating under united and divided government?
- On average, are veto overrides more likely during united or divided party government?
- **Based on these results**, what do you conclude about the relative role of presidential personality versus institutional variables? **Specifically**: Do you think that veto threats, vetoes, and veto overrides are more a function of **individual presidents** OR **united/divided government**?

Appendix 2:
Course Outline and Canvas Module Structure

- Syllabus and Course Orientation (8/24-30)
- Madison's Theory of the Republic (8/31-9/6)
- The US Constitution (9/7-13)
- Lab 1: Six Constitutional Ideas (Available 9/10, DUE 9/20, 11:59 PM)
- Self Interest and Collective Action (9/14-20)
- Lab 2: Barriers to Participation (Available 9/21, DUE: 9/27, 11:59 PM)
- How Voters Choose (9/21-27)
- Lab 3: Using Survey Data to Test a Hypothesis (Available 9/27, DUE 10/4)
- Political Parties (9/28-10/4)
- LAB 4: Political Party Platforms (Available 10/5, DUE 10/11, 11:59 PM)
- Interest Groups (10/5-11)
- Extra Credit Assignment: Attend a Congressional Debate (Due 11/1)

- Midterm Exam (Available 10/12, DUE 10/16)
- Media and Politics (10/19-25) — Complete All Items
- LAB 5: Media and Politics (Available 10/19, DUE 10/25)
- The US Congress I: Micro-Representation (10/26-11/1)
- Lab 6: Credit-Claiming and Position-Taking (Available 11/2, Due 11/8)
- The U.S. Congress II: Macro-Representation (11/2-8)
- Lab 7: Committees and Legislating (Available 11/8, Due 11/15)
- The US Presidency--Formal Powers of the Presidency (11/9-15)
- The U.S. Presidency--Leadership (11/16-22)
- FINAL Lab 8: Presidents, Vetoes, and Veto Threats (Available 11/16, Due 11/30)
- The Federal Courts & Course Wrap (11/30-12/6)
- Final Exam (Available 12/7, Due 12/11)

Appendix 3:
What is Student Research?

Engaging students in research, scholarship, and creative activities--student research for short--is a high-impact practice demonstrated to improve learning, student persistence, and reduces time to graduation. Faculty-mentored student research helps students develop the core qualities that promote lifelong learning and the skills employers look for in employees: curiosity, creativity, resilience, and problem-solving.

What is Student Research? It would be nice if there was some consensus about the definition of student research. There is not. This is understandable. Student research has only become a “thing” in the past couple of decades. Definitions continue to be contested—what else would we expect from an academic community!

The Council on Undergraduate Research, the largest association dedicated to student research, defines undergraduate research as “An inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline.”

Student research is not restricted to STEM and Social Sciences. CUR’s definition is very broad, leaving plenty of room for understanding “research” to include creative activities. However, there are two terms included in this definition that are worthy of contestation.

First is the word “original.” Determining what is “original” is tricky. What is “original?” Even Newton, the founder of calculus, said “If I have seen further than others, it is by standing upon the shoulders of giants.” Even someone who created a whole field of mathematics understood that science and discovery rely on those who came before us. Holding any faculty member, much less a student, to the standard of originality rules out most of the work that most of us has ever done.

The second word worthy of some reflection is “contribution.” For most of us, the thought of a contribution is the “end state” of our research—a publication in a peer-reviewed journal, a curated exhibit, a novel or short story, a book published by a university press. Again, if that is where we set the bar for student research most of *us* would not clear the bar.

The California State University system defines student research a little differently.

> Undergraduate research is an inquiry or investigation conducted by an undergraduate student that makes an original intellectual, scholarly, or creative contribution to the discipline, is guided by a research mentor (faculty, graduate student, or research staff) and moves along a developmental trajectory toward scholarly independence, originality, and autonomy. Undergraduate research projects should address a specific research question, utilize appropriate research methodologies, adhere to the standards of the discipline, and ideally result in the dissemination of the results through publication, presentation, performance or exhibition.

The CSU definition, like the CUR definition, highlights “original” and “contribution” as part of the definition. However, as we’ve argued earlier, these two standards suggest a bar for student research that many faculty have not cleared. The CSU definition acknowledges the important role that mentors play in the development of student researchers.

Think about your own experience as a researcher. Were you a natural? You needed no mentorship. Your research always ended as expected. If that is you, congratulations! For most of us, that is not the case. My first research project as a senior in college was not fully formed or definitive of the subject. It was my first experience. I learned from it and moved on to the next thing…and the next…and the next!

During the early stages of student development, the most important element is ***engagement in the process***. For early-career researchers, the focus is on learning the habits of mind of a researcher.

Embedding research or inquiry in courses, especially in first- and second-year courses, orients students to the different questions and methodologies of the discipline and helps students develop curiosity and problem-solving skills. Research is the foundation of lifelong learning. To be a lifelong learner, one needs to develop the “habits of mind” that repeatedly engage research and creative processes.

Later in the development of a scholar, we expect more.

Finally, is the issue of outcomes. Ideally, a student will present their work in a discipline-appropriate venue. Many students achieve this by presenting at an on-campus research symposium or exhibition. These “low stakes” opportunities allow students to gain confidence in a more supportive atmosphere.

The mentor might help identify a regional or national undergraduate research conference. These events tend to be larger, allowing students to compare their work to others’ and begin to realize that they can do work that is good or better than students at other, supposedly “better” universities.

Many disciplines are now adding student research components to their regional and national conferences. This might be appropriate for a student who has one or two presentations under their belt. The atmosphere might not be as naturally supportive. A student with a little experience can deal with the added pressure easier.

One element embedded in the previous discussion is an acknowledgment that researchers develop in stages.

- **Novice students** are typically first or second-year students with limited content-specific courses. The goal for their research experience is to be exposed to a range of methods, research settings, primary and secondary sources and/or data, tools, and potential projects. They should be introduced to the relevant literature in a structured, guided manner. Appropriate projects may include mastering a single method or piece of equipment; identifying an aesthetic or creative conversation and determining how their creative work might engage with it; or undertaking a literature review in order to formulate a viable scholarly research question.

- **Apprentice researchers** should have a more solid understanding of the methods and research tools appropriate to their field; have an increased grasp of the literature and have taken core content courses. Students at this stage should develop some autonomy. If working in a lab setting, they should be given increasingly independent responsibilities that develop their research and problem-solving skills. Students doing academic, creative or design-based research should be able to undertake independent field research as appropriate (databases, archives, material culture, oral history), and begin to analyze their findings in conversation with the faculty mentor.

- **Advanced researchers** demonstrate a greater sense of ownership of the research question and process, a solid understanding of the literature and methods of the research, as well as an appropriate level of independence. Advanced undergraduate researchers should develop an independent element that advances the goals of the research project (if working collaboratively) and, as appropriate, make contributions worthy of publication or presentation. Students undertaking individual research projects should be able to independently formulate and investigate an original research question that contributes to knowledge in the field, be able to clearly and effectively communicate their findings, and defend the research to a critical audience. Creative or design-based projects should have produced a final design/work that has grown out of the research process that is suitable for public presentation or exhibition. Advanced researchers should also have developed an understanding of how they can transfer and apply their skills to other areas of inquiry.

[redacted] definition of student research reflects the most important elements of research in a developmental context.

- **Guided by a faculty member**. This highlights the active engagement of faculty and students at a high level. The student is being groomed as a researcher and a future researcher.

- **Developmental trajectory**. This incorporates the idea that the faculty-mentored experience should be sensitive to the student's stage of development. And that the mentor plays an important role in shepherding students through these developmental stages with appropriate involvement, tasks, and expectations.

- **Outcomes**. Faculty mentors should have reasonable expectations for student outcomes. Early on, a poster at a campus event might be appropriate. As the student progresses, a large interdisciplinary or disciplinary event will help the student to develop their skills and their confidence.

- **Appropriate expectations** about publications and public performances should not be the first expectation for student outcomes at the undergraduate level. This is especially true of research-embedded courses, which should focus on creating “novice researchers” through students’ exposure to General Education courses. Embedding research in GE courses helps prepare students to become “apprentice researchers” in their chosen major, preparing them to become “advanced researchers” ready to engage in the labor market, or equipped for graduate education in their field.

Appendix 4:
Bivarate Correlation of Demographic Data

Correlations

		Average of Midterm and Final	Latinx	First Generation	Pell Eligibile	STEM major	Social Science Major	Arts Major
Average of Midterm and Final	Pearson Correlation	1	-.071	-.026	-.102	.118	-.076	.041
	Sig. (2-tailed)		.424	.770	.246	.178	.387	.646
	N	131	131	131	131	131	131	131
Latino non Latino	Pearson Correlation	-.071	1	.518**	.483**	.112	-.036	-.120
	Sig. (2-tailed)	.424		.000	.000	.193	.681	.166
	N	131	136	136	136	136	136	136
First Generation	Pearson Correlation	-.026	.518**	1	.439**	.039	-.047	.069
	Sig. (2-tailed)	.770	.000		.000	.648	.587	.426
	N	131	136	136	136	136	136	136
Pell Eligibility	Pearson Correlation	-.102	.483**	.439**	1	.166	.017	-.017
	Sig. (2-tailed)	.246	.000	.000		.054	.843	.846
	N	131	136	136	136	136	136	136
Dummy for STEM majors	Pearson Correlation	.118	.112	.039	.166	1	-.569**	-.292**
	Sig. (2-tailed)	.178	.193	.648	.054		.000	.001
	N	131	136	136	136	136	136	136
Social Science Major Dummy Variable	Pearson Correlation	-.076	-.036	-.047	.017	-.569**	1	-.171*
	Sig. (2-tailed)	.387	.681	.587	.843	.000		.046
	N	131	136	136	136	136	136	136
Arts Major Dummy Variable	Pearson Correlation	.041	-.120	.069	-.017	-.292**	-.171*	1
	Sig. (2-tailed)	.646	.166	.426	.846	.001	.046	
	N	131	136	136	136	136	136	136

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).