Economics

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From Fall 2019 to Fall 2021, the 4 full-timers in economics (along with the rest of SMC faculty) transferred to teaching fully online and continued in that modality thru Fall 2021, the most recent semester for which data is available. We believe that this change has resulted in improvements in course quality, equity, instructional pedagogy, and even student outcomes. We also believe that this is an effective way to attract additional Black, Latinx and female students to the discipline and foster an atmosphere of inclusive excellence. We are not suggesting that we should be a completely online discipline but would like the opportunity to fully develop the online curriculum so that our courses fully integrate the best practices for quality online instruction and the department's equity plan.

Online Teaching and Learning in Economics: Student Success Rates, Equity Gaps, Enrollment Gaps, and Inclusive Excellence: Fall 2019 – Fall 2021

Success Rates

Success rates increased by 10% for all students as we transitioned to the online teaching learning environment. Not surprisingly, while all student demographic groups experienced an increase in success, the largest gains in success accrued to Latinx and Black students. From 2019-2021, success rates increased by 39% for Black students and 20% for Latinx students, while White student success rates increased by 13.5% and Asian student success rates increased by 9%. With respect to gender, we noted that female student success rates increased by 7.4% while male student success rates increased by twice that amount at 15%. This additional boost to male success rates held true for all demographic groups, except White. Black female success rates increased by 33% (vs increase of 43% for Black men), Latinx female success rates increased by 12% (vs increase of 26% for Latinx men), Asian female success rates increased by 1.25% (vs increase of 8.75% for Asian men), and White female success rates increased by 16% (vs increase of only 11% for White men.)

Thus, transitioning to online tended to benefit all students, but especially Black and Latinx students at SMC. We believe that the online teaching-learning environment mitigates some of the structural barriers to success for many of our Black and Latinx students who are more likely to work full-time and/or have family responsibilities, and/or have long commutes. This typically means that there is less conflict between academic responsibilities and work and family life, which would show up as greater participation and assignment completion rates in their coursework. We are also exploring the extent to which the online environment reduces unconscious bias across students, and thereby creates a more welcoming environment for Black, Latinx, and female students, holding everything else constant.

We also contend that success rates improved because of the increased flexibility introduced into the online teaching-learning environment, which allows students to customize the timing and pace of their learning and choose the schedule that best aligns with their individual needs and responsibilities. That is, students participate in their courses throughout the week, choosing the days and times that work best with their schedule, rather than a fixed time and location. Therefore, changes in work (or other) schedules, sick children or parents, heavy traffic, did not cause students to "miss" class or fall behind as would occur in on-ground courses. Further, students' academic performance was not as negatively impacted by these events because they still had access to all instructional materials and sufficient time to complete their work. Further, individual instructor policies also increased flexibility, with some allowing students to move through the course at their own pace and catch up as needed, while others utilize policies that allowed for late submissions on some but not all assignments. Regardless of the variation in policies, students benefitted simply from the increased flexibility in the online environment.

We also believe that success rates improved because students were more engaged with course content, with their peers, and with their instructor. That is, based on information from the online courses offered by the 4 full-time faculty, the online teaching-learning environment provides more opportunities for students to engage with the content, interact with their peers, and interact with the instructor. In terms of interacting with the content, there are many more weekly assignments that require more regular interaction with the content (in addition to cramming for a high stakes midterm, for example). The fact that students can complete these assignments during times and days that accommodate their schedules also increases engagement.

With respect to interaction with peers, we tend to have weekly discussion forums that require that students interact with the content for their initial posts as well as interact with each other in terms of their peer response. For many students, the discussions may be the highlight of the course. We also found that we have exceedingly more participation from students in discussions online than we experienced with in-class discussions in the on-ground setting. Further, we also encourage students to form study groups, attend supplemental instruction hours, and review sessions, which all involve student-student interaction. (We would likely do the same in the on-ground environment.) We also noted that group work continues to be a challenge in the online environment, but we continue to brainstorm solutions. Finally, and this is not limited to online, Canvas provides more opportunity for faculty to initiate contact with students through weekly announcements, regular and timely feedback on assessments, and weekly assignment reminders. We also interact with students via Zoom for office hours and review sessions, and via email for daily questions.

In terms of metrics, we can measure student interaction with the course content based on participation rates, page views, and time spent in the course, which are all calculated in Canvas. We can also examine submission rates for individual assignments, discussions, lessons, and other assessments. We can measure peer-to-peer interaction with peers based on participation in discussions, group work, and Q&A forums. Canvas also tracks interactions between instructor and students. However, interaction is likely more nuanced and may occur outside Canvas (via Zoom for example). Therefore, individual faculty narratives tell a more complete story.

Finally, we believe that increased success rates have positive spillover effects, both academically and psycho-socially. Academically, students who experience successful outcomes in courses are likely to be better prepared as they move on to other courses, and thereby have a greater probability of success in these later courses. Holding everything else constant, success breeds persistence. Psycho-socially, students who experience successful outcomes are more likely to believe that they belong in college and at SMC, and thereby become more confident in their abilities, and more persistent in their studies. That is, students choose to attend SMC, but their success at SMC means that SMC has chosen them. They will continue to persist if they choose (I want to go to SMC, I want to study Economics) and are chosen (I belong at SMC and in my Economics class).

Equity Gaps

In a similar fashion, from 2019-2021, equity gaps declined by 23% for Black students and by 5.3% for Latinx students, as measured by the difference in success rates between Black and Latinx students, and White students. This means that in addition to all student groups becoming more successful in their economics classes as measured by success rates, the gap between success rates among student groups was also reduced. This suggests that the online teaching-learning environment promotes both success and equity.

We suggested above that success rates increased because the online teaching-learning environment mitigated some of the structural barriers to success, provided more flexibility for students, and increased engagement. We also noted that success rates for Black and Latinx students increased by more than success rates for White and Asian students, which means reduced equity gaps. Therefore, we believe that the same factors that help to explain increased success rates, may also explain reduced equity gaps. That is, if Black and Latinx students are more likely to work full-time and/or have family responsibilities, a reduction in these structural barriers would have a greater impact on their success rates than they would for students for whom work and/or family responsibilities do not significantly impact their academic work. Further, the online environment provides more access to college and classes, given that it can be combined with work and family life, and does not involve any commuting time. Here too we should expect to see greater impacts on students for whom work, family life, or commuting may be barriers to access. In addition, we believe that reducing costs of attendance (like transitioning to OER) and/or facilitating registration (as is done on the CVC exchange), would also increase access, and ultimately reduce equity gaps.

In terms of engagement, we contend that the online teaching-learning environment provides more opportunity for students to participate in the course, as compared to its on-ground counterpart. That is, students' participation can occur any hour of the day throughout the week, rather than at a fixed time and place during the week. While this positively impacts all students, the effect is greater for students for whom the fixed time and place model puts them at a disadvantage with respect to participation.

Inclusive Excellence & Enrollment Gaps

Clearly, the most significant equity problem in economics is enrollment gaps. Unlike the other social sciences, economics has been strikingly ineffective at attracting a representative slice of the campus population. From 2016-2021, approximately 4000 students per year passed through our ECON 1 and ECON 2 gateway courses, plus an additional 500 students who enrolled in ECON 4, 5, 6, and 15. The composition of these students is roughly 5.6% Black (compared to 9% Black at SMC), 29.6% Latinx (compared to 40% Latinx at SMC), 29.9% White versus 27% for SMC, 19% Asian in ECON versus 12% Asian student population at SMC, 37% female (compared to 53% female at SMC), and 30% foreign students (compared to 10% at SMC).

Therefore, we seek to deliberately target and attract Black, Latinx and female students, and believe that the online environment might be the most effective way to achieve these goals since it provides more access and flexibility. We should leverage all of the lessons learned during the pandemic.

Enrollment gaps are a problem because they reflect an unequal distribution of economics education at SMC and a failure to provide an inclusive academic experience to all our students. It is difficult to claim "success" even though success rates have been increasing over time, unless we recruit more female, Black, and Latinx students to Economics, and thereby provide equal access to the major. We believe that high quality online teaching-learning environment is the most promising path to achieve these enrollment goals, and the most effective way to create a more welcoming environment for Black, Latinx and female students, and increase their sense of belonging in the discipline, in their economics courses, with their instructor, and with their peers.

Consistent with these goals, over the last two years, the Department of Philosophy & Social Sciences has developed a set of principles and practices to welcome a diverse population of students. These principles and practices reflect the latest research in the literature, and are designed to increase the relevance, quality, and accessibility of our content, instruction, and assessment to encourage and empower students to engage with their world, their community, their peers, and their learning process.

For Economics, the most important principle is **making the content and curriculum more relevant**. This stands out because research suggests that persistence and success in college and economics is a function of students' perception of how relevant or useful the content is to their own lives. If our students are to understand the economic system they participate in, we need to integrate how we teach economics with the knowledge and experience that our Black, Latinx, and female students bring to the classroom. Integrating a **range of real-world economic and social problems**, like economic inequality, discrimination, and climate change, into our curriculum exposes students to the breadth of economics and gives them an opportunity to use economics to examine issues that are relevant to their lives. We believe these changes can be effectively introduced to the online environment and then refined and developed over time. We have already begun the process of developing these modules for our courses.

Research in economics instruction also indicates that **diversifying economic content** attracts a broader range of students. This includes: (1) integrating a diversity of perspectives (schools of thought), especially political economy, into the economics curriculum, (2) reintegrating debates into the economics curriculum, (3) using resources and scholarship from a culturally diverse group of economists, and (4) representing a variety of demographic groups when analyzing problems and issues. The idea here is not to compete with other disciplines for student majors, but to ensure that all majors are equally accessible and welcoming to all students.

Is there evidence that making the content and curriculum more relevant works?

In Economics, we experimented with making the content and curriculum more relevant in 4 sections of ECON 1 and ECON 2. We piloted these changes and assessed the impact on Black, Latinx and female students. These courses had the following characteristics: They were taught fully online with a class size of approximately 40-45 students. They used course materials that presented a diversity of perspectives in economics and included representation from Black, Latinx, and female economists. They also used a variety of open educational resources (OER), and included highly structured, real-world learning units on poverty, inequality, climate change, and discrimination in addition to the standard topics.

These changes positively impacted all students, but especially minoritized and female students. In the survey we designed to assess the impact of these treatments, we found that Black, Latinx and female students **agree or strongly agree** that the text/course materials represented them (73%), and that the instructor used relatable examples (85%). We were also pleased to see that roughly 95% of all students **agree or strongly agree** that important issues were discussed in these classes, with no significant difference between Black, Latinx, and female students and their white male counterparts. Likewise, 89% of female and minoritized students and 95% of White male students **agree or strongly agree** that the class gave them a useful framework for thinking about important issues. We attribute this success to the real-world topics on poverty, inequality, climate, and discrimination that were included in the curriculum and to the diversity of course materials that students had access to through OER.

Further, strategies to enhance content relevance also positively impacted sense of belonging across all student groups, but especially among Black, Latinx and female students. The results indicate a greater sense of belonging in the course, in the discipline, with the instructor, and with their peers. Black, Latinx and female students responded with **agree or strongly agree** to the following**:** the economics class was collegial (84%), students supported one another in the course (51%)**,** the professor cared about whether I learned the material (78%), I felt comfortable asking questions (71%)**,** people like me can become an economist (70%), I felt that the professor believed that I could learn the material (81%), I believed that I could learn the material (85%).