**WTCS STUDENT SUCCESS CENTER**

# ACTION RESEARCH BRIEF

## Early impacts of COVID-19 pandemic on the Wisconsin Technical College System

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## Abstract

The COVID-19 pandemic dramatically altered workforce dynamics, the economy, and education. Industries that primarily rely on face-to-face contact (e.g., leisure and hospitality, food service, and retail) were hardest hit, resulting in spikes of unemployment. Schools and colleges had to quickly implement new health and safety guidelines and switch course delivery to an online format. These changes have exacerbated existing inequities, harming communities from minoritized backgrounds. This brief explores the early impacts of COVID-19 on the Wisconsin Technical College System. We provide an analysis of 2020 WTCS data with a focus on course enrollments, COVID-19 related course withdraws, dual credit participation, adult education and English language learning programs, and educational programs at correctional facilities. An analysis of student outcomes and participation reveals a heightened need for strategies to support equity in student access and success. Students from minoritized backgrounds were overrepresented in COVID-19 related course withdraws in Spring 2020 and underrepresented in Summer and Fall 2020 course enrollments. To help address these widening disparities, we provide a list of evidence-based practices and resources to help close student equity gaps.
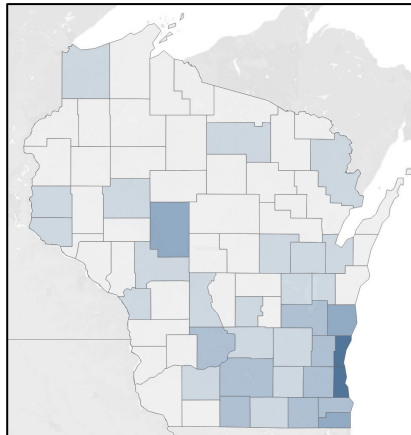
## Contents

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# Introduction

In December 2019, the novel coronavirus disease (COVID-19) started to spread across the United States.[1] Formal testing for the disease began in early March. In Spring 2020, urban counties tended to have the highest positive test rates for COVID-19 across Wisconsin (Fig. 1). As of April 1, just over 1,500 Wisconsinites tested positive for COVID-19 for an overall positive test rate of 7.6% across the state.



Percent positive COVID-19 tests

0%                              20%

**Figure 1. Positive COVID-19 test rates as of April 1, 2020.** Data from Wisconsin Department of Health Services. Counties with fewer than 50 tests are shown with a 0% positive test rate to control for the effects of small sample sizes.

## Impacts on the workforce

The spread of COVID-19 and the strategies to mitigate the worst impacts (e.g., social distancing, stay at home orders) led to unprecedented shifts in the workforce and economy. Unemployment insurance claims began to spike in March and April both nationally and in Wisconsin. From March 15 to April 18, 2020, approximately one in six U.S. workers had filed for unemployment (over 26 million jobs).[2] Industries that were hit hardest in Spring 2020 included leisure and hospitality, food service, retail, business services, non-essential healthcare and manufacturing.[2] An analysis from the McKinsey Institute estimates that up to 57 million additional jobs are vulnerable to COVID-19 related layoffs, furloughs or reductions in hours and pay.[2]

The workers most impacted by these COVID-19 related shifts in the economy are individuals in low-wage (less than $40,000/year), part-time employment from minoritized backgrounds.[2] Workers of color, workers younger than 35-years-old, women, and workers without a postsecondary degree were disproportionately affected.[2,3] In particular, Black and African American workers, especially women, have experienced the worst of the economic impacts of COVID-19 due to a long history of systemic barriers resulting in unequal opportunity, wealth and economic stability.[4] For example, Black and African American workers are less likely to be able to work from home and less likely to have paid sick days than White workers.[4]

While COVID-19 has resulted in furloughs, unemployment, and heightened worker disparities, the pandemic has also led to an increased demand for essential and frontline workers. Essential workers can be found in many sectors including grocery, convenience and drug store workers, childcare and social services, positions in public transit, trucking, warehouse and postal delivery, and healthcare.[5] Essential healthcare workers are in very high demand, including interpreters and translators for hospitals, respiratory therapists, nurses, and family and general practitioners.[2]

The Wisconsin Technical College System (WTCS) serves the communities who have been most impacted by COVID-19 and historically underserved by other forms of higher education. Approximately 14% of WTCS students in program courses are identified as underemployed, unemployed or a dislocated worker. WTCS students are also more racially and ethnically diverse than the Wisconsin workforce, and the percent of students living under the federal poverty line is roughly three times higher than the poverty rate for Wisconsin.[6] The WTCS career pathway model prepares students for essential and in-demand jobs, while also decreasing equity gaps in the workforce.[7]

## Impacts on students and education workforce

Both secondary and postsecondary education were directly affected by COVID-19, resulting in shifts to online learning, increased challenges of supporting vulnerable students, and an increased demand on faculty and staff

responsibilities. Both nationally and in Wisconsin, colleges moved many courses to an online format after spring break (mid to late March) and implemented safety screenings and measures in courses that needed to remain in-person (e.g., clinicals for nursing students). While the movement to online learning helped slow the spread of coronavirus, this shift also exacerbated educational disparities for students from minoritized backgrounds who were less likely to have access to technology and a reliable internet connection.[4,8]

Due to the COVID-19 pandemic and longstanding systemic barriers, students from minoritized backgrounds have been more likely to experience job insecurity, food insecurity, housing insecurity and homelessness. For example, while 71% of Black or African American students and 74% of Native American students experienced increased insecurity for basic housing and food needs due to COVID-19, only 52% of White students were similarly affected.[8] Additional challenges that students face during the pandemic include mental health challenges and increased anxiety, increased dependent care responsibilities, and increased workload and stress for students, especially those who are essential workers.[8] These disparities and barriers negatively affect a student's ability to access education and complete their academic goals.

The workloads and responsibilities of college faculty and staff have become strained with the demands of moving to online learning, implementing health and safety changes across campus, serving vulnerable students, and dealing with the effects of COVID-19 (e.g., caring for older family members, childcare challenges). In March and April of 2020, a national survey found that one in four faculty members reported high stress levels primarily due to moving courses online and trying to help meet the emotional and mental health needs of their students.[9] Student services staff have been similarly strained with moving support services to virtual formats and helping vulnerable students navigate the challenges of COVID-19. For many faculty and staff, teaching and serving students in a virtual format was a new experience. Within the WTCS, colleges provided professional learning opportunities that specifically addressed service delivery in an online format to help employees with this transition.

## Research Aim

This action research brief further explores data within the WTCS to better understand the early effects of COVID-19 on students and colleges, focusing on Spring 2020 with preliminary analyses for Summer and Fall 2020 terms. This assessment includes information about the movement of courses to online learning, course withdraws due to COVID-19, and effects on course success, dual enrollment, adult education, English language learning and justice-involved students. For details regarding the data analysis methods, please see the Appendix.

## Results and Discussion

### Effects of Instruction Delivery on Student Success

In Spring 2020, over 40,000 WTCS students were enrolled in a face-to-face course that converted to emergency online instruction due to COVID-19. Collectively, these students had over 90,000 course enrollments that converted to emergency online instruction, accounting for roughly 50% of all face-to-face course enrollments. Changes in course delivery from face-to-face to emergency online appear to have negatively affected student success (Fig. 2). Compared with previous Spring terms, student success as measured by the percent of course enrollments with a C grade or greater decreased by 4.7% in courses that moved to emergency online. Yet, student success was consistent in courses that remained face-to-face in Spring 2020.

While the change in course delivery format may have decreased student success, this decrease was not larger than what would be expected for course success rates in online courses. For online courses, approximately 74-77% of course enrollments result in a C grade or greater and 75% of emergency online course enrollments resulted in a C grade or greater. This finding highlights the resiliency of WTCS students, faculty, and staff. Successful online courses are intentionally designed to help sustain student engagement, create community,

and provide wraparound supports. WTCS faculty had just 1-2 weeks to move face-to-face courses to emergency online, and WTCS students had to shift to a learning format that they may not have preferred. Given these factors, it is notable that course success in the emergency online format remained relatively high compared with online instruction.
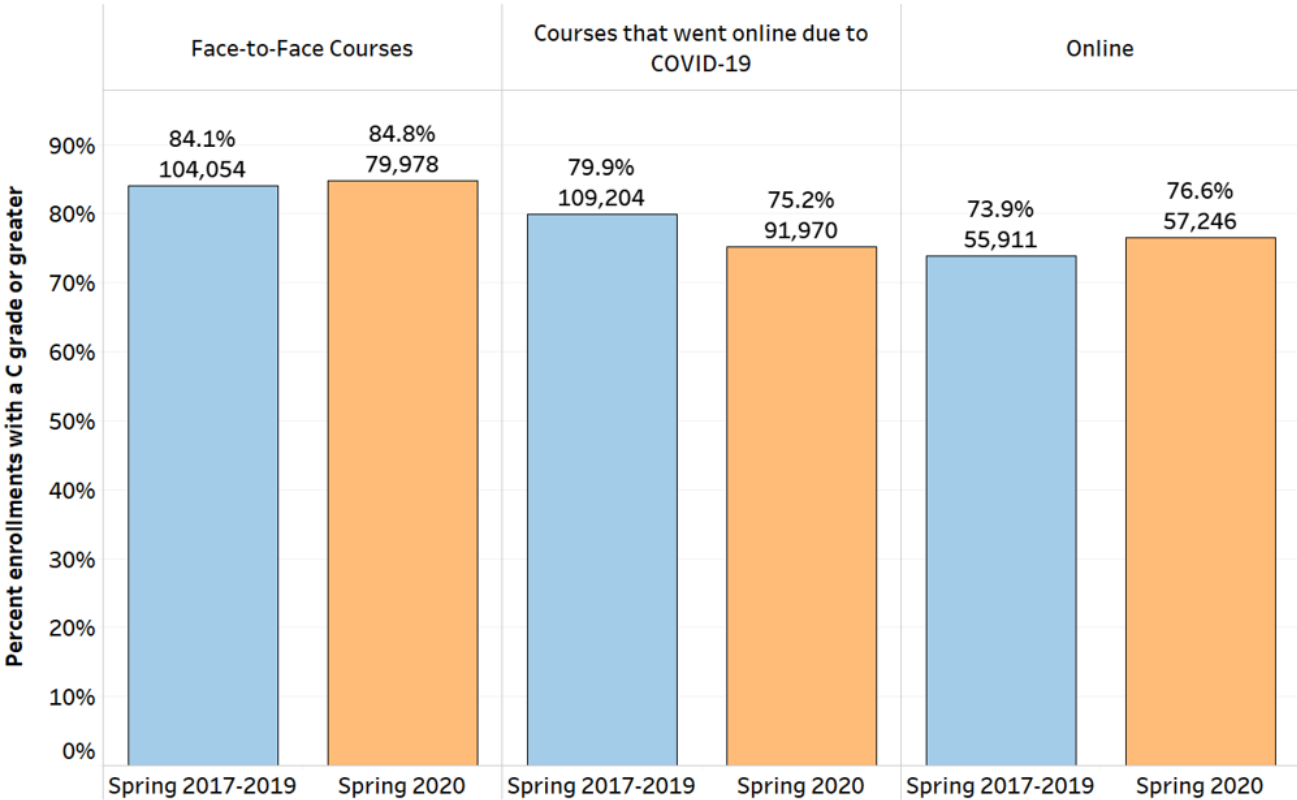


**Figure 2. Comparison of course success across course delivery methods.** Course success is the percent of course enrollments with a C grade or greater. Blue bars represent baseline course success rates from Spring 2017, 2018 and 2019 Spring terms. Orange bars represent course success in Spring 2020. The number above each bar is the number of course enrollments.

The 4.7% decrease in student success in face-to-face courses that moved to emergency online was not evenly distributed across student groups. Students who were experiencing existing equity gaps in course success were disproportionately affected. For instance, the decrease in course success for Black and African American students living below the federal poverty line was 7%, with only 54.3% of emergency online course enrollments resulting in a C grade or greater. WTCS state and federal grants to colleges provided extra flexibility in Spring 2020 to help support students, including initiatives to expand technology and WiFi access. Despite these additional supports, the findings show that existing inequities in course success were exacerbated by COVID-19 and a change in course delivery format.

## Enrollment Impacts

Overall, 6% of WTCS students withdrew from at least one Spring 2020 course due to COVID-19. In general, student populations that were most likely to be impacted by COVID-19 via health implications and/or effects on employment were also the most likely to withdraw from Spring 2020 courses due to COVID-19. Students of color and especially students of color who are living below the federal poverty line were overrepresented in COVID-19 related course withdraws (Fig. 3). Most notably, Black/African American and Native American students living in poverty withdrew from courses due to COVID-19 at a rate that was almost three times higher than the overall

4

student level. In comparison, White students living above the poverty line were significantly underrepresented in COVID-19 related course withdraws (Fig. 3).
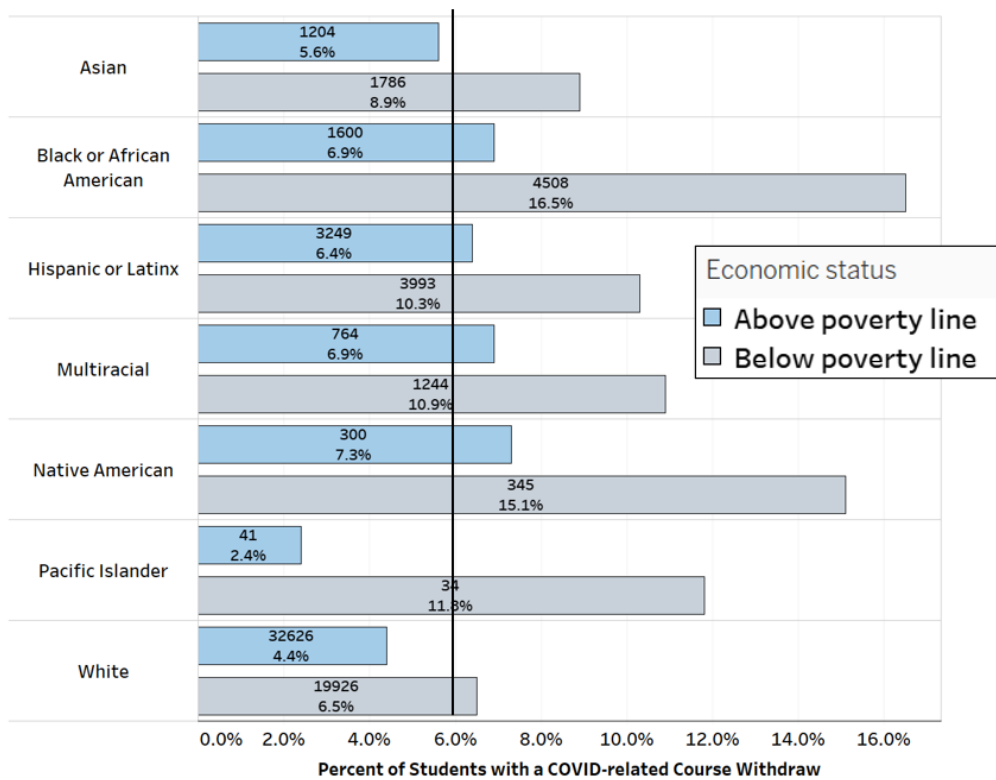
**Figure 3. Percent of students who withdrew from at least one course in Spring 2020 due to COVID-19.** Each bar represents a different student race/ethnicity group, and the color represents whether this group of students is living above (medium blue) or below (light blue) the federal poverty line. The horizontal line represents the overall percent (6%) of students who withdrew from at least one Spring 2020 course due to COVID-19.The number within each bar is the number of students enrolled in program courses in Spring 2020.

Based on preliminary data from Summer and Fall 2020, minoritized populations were underrepresented in program course enrollments compared with previous terms (2017-2019). Overall, student enrollments in program courses decreased by approximately 11-12% in Summer and Fall 2020. Yet, decreases were significantly larger for students with a basic skills gap (22% decrease in Summer 2020, 41% decrease in Fall 2020), single parents (69% decrease in Summer 2020, 37% decrease in Fall 2020), male students (29% decrease in Summer 2020, 18% decrease in Fall 2020), and older students (35 and older, 15% decrease in Summer 2020, 50% decrease in Fall 2020). Across race and ethnicity groups, Black and African American students had the largest decrease in Fall 2020 enrollments at 14.5%, while Hispanic and Latinx, Native American, and multiracial students had smaller enrollment declines (2.4%-9.5% decrease in student enrollments). These shifts in the WTCS student body reveal that the populations that have been most negatively affected by COVID-19 are in many cases also losing access to WTCS career pathways.

## WTCS Dual Credit

Over the last five years, there has been striking growth in the number of students earning WTCS dual credit.[10] Yet, while the 2019-20 academic year resulted in an overall increase in dual credit participation from the year prior, analysis of course enrollments by semester revealed that COVID-19 had an impact on participation. In Fall 2019 dual credit course enrollments continued to climb, while Spring 2020 course enrollments showed the first year-to-year decline on record with 1,400 fewer enrollments. Along with the decrease in dual credit enrollments in Spring 2020, there were roughly 2,000 dual credit students who had to withdraw from at least one course due to COVID-19. Across all dual enrollment students, 8.7% withdrew from at least one course due to COVID-19. Yet, Black and African American dual enrollment students and Hispanic and Latinx dual enrollment students had

much higher course withdraw rates that were approximately two to three times higher (Fig. 4). Course withdraw rates due to COVID-19 were also higher among Native American and Pacific Islander students. In comparison, course withdraw rates were much lower for Asian and White dual enrollment students. In some cases course withdraws due to COVID-19 were a result of high schools needing to cancel dual enrollment courses. For some high schools, the work to move all high school courses and dual enrollment courses to an emergency online format in March 2020 was too much to maintain. In these cases, dual enrollment courses were canceled.

Dual enrollment provides educational momentum, and students who partake in dual credit opportunities have better outcomes in college.[11] Prior to the pandemic, WTCS action research showed that students from minoritized backgrounds were underrepresented in dual enrollment opportunities. [12] The decreased access to dual credit due to the pandemic has disproportionately affected minoritized students, worsening equity gaps for educational access and success.
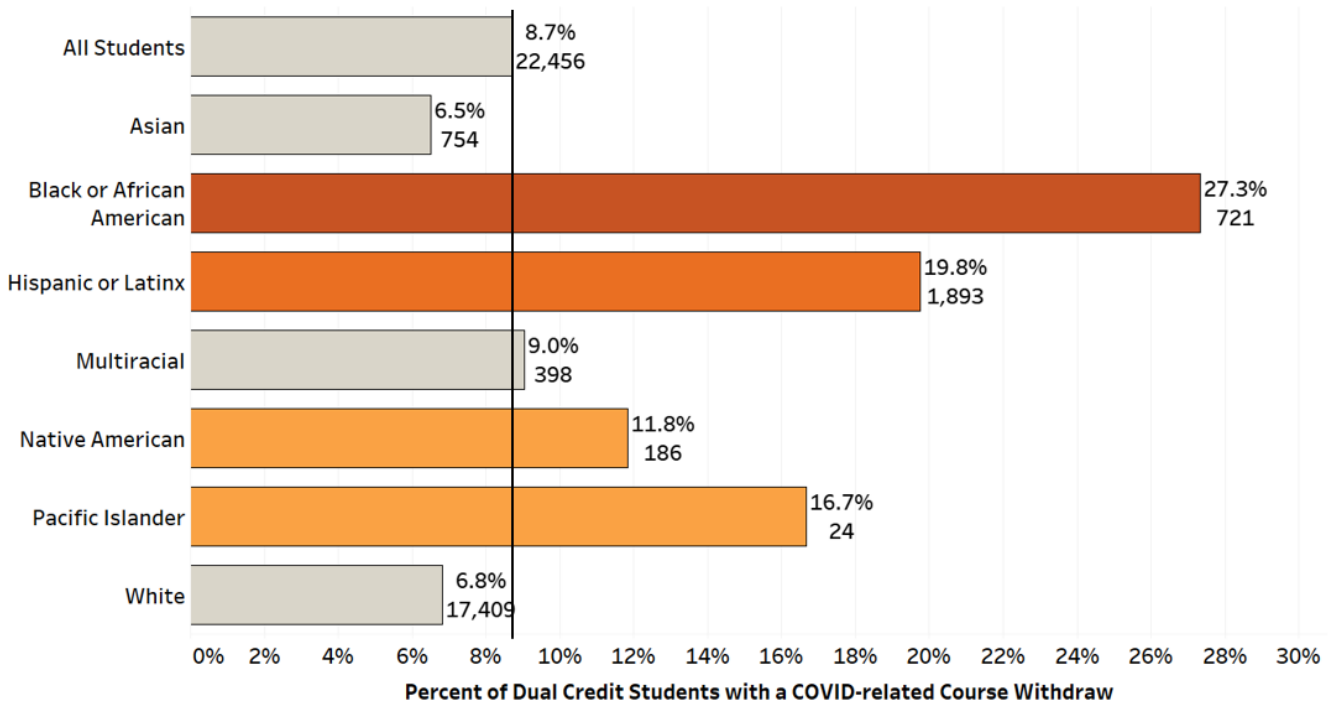


Figure 4. Dual credit course withdraw rates due to COVID-19 in Spring 2020. Overall, 8.7% of dual credit students withdrew from at least one course due to COVID-19, shown with the vertical line. The number to the right of each bar is the number of dual enrollment students in the race/ethnicity group in Spring 2020, and the percentage is the percent of this population that withdrew from a course due to COVID-19.

## Adult Education

Of the 11,280 participants served in the Wisconsin Adult Education and Family Literacy Act (AEFLA) program during the 2019-20 program year, nearly 30% exited the program prior to the onset of COVID-19 restrictions in March 2020. More than 70% of participants in the AEFLA program either had an interruption of services or began services during the COVID-19 restrictions. Of the participants who did not exit the program prior to March 2020, more than 52% transitioned to emergency online instruction.

COVID-19 had a considerable impact on AEFLA outcomes, such as Measurable Skill Gains. The 2019-20 Measurable Skill Gain rate prior to the pandemic (before March 1, 2020) was 52% while the Measurable Skill Gain rate among participants who continued services or began services during the pandemic was 42%. While the adult education program experienced a 5.4% decrease in Measurable Skill Gain from 2018-19 to 2019-20, the

English language learning program was more affected with a 14% decline. The impact of COVID-19 on Measurable Skill Gain achievement was further compounded by the existing equity gaps in outcomes across student groups (Table 1). For example, the overall Measurable Skill Gain rate pre-pandemic was 52%, while the rate among low-income participants was 44%. During the pandemic, this rate dropped to 37%.

Anecdotal evidence from AEFLA providers indicated that declines in Measurable Skill Gain were due both to the effects of COVID-19 on students (e.g., childcare, employment) and a decrease in post-testing.[13] Because of the pandemic, adult education testing was moved from a face-to-face to an online format. This shift may have decreased post-testing rates. Compared with prior years, 2,000 fewer AEFLA participants were able to complete a post-test.

Table 1. Differences in Measurable Skill Gain (MSG) pre-pandemic and during pandemic (2019-20) for AEFLA participants.

| Student Group | MSG Pre-Pandemic | MSG During Pandemic | Difference |
|---|---|---|---|
| *Overall* | *52%* | *42%* | *-10%* |
| American Indian/Alaskan Native | 36% | 26% | -10% |
| Asian | 53% | 43% | -10% |
| Black/African American | 47% | 40% | -7% |
| Hispanic/Latinx | 49% | 40% | -9% |
| More than one race | 65% | 48% | -18% |
| Native Hawaiian/Pacific Islander[1] | N/A | N/A | N/A |
| White | 56% | 49% | -7% |
| Low-Income Participants | 44% | 37% | -7% |
| Single Parents | 41% | 38% | -3% |

[1]Measurable Skill Gain comparisons unavailable due to sample sizes of less than 10 students.

Every year, AEFLA providers are assessed with a 'risk score' to determine areas of strength and opportunity to improve Wisconsin adult education and English language learning programs. Providers with high performance are then interviewed to better understand the factors that helped them succeed throughout the challenges of COVID-19. Four key themes emerged from these conversations regarding response to COVID-19.

- Organization leadership support and advocate for adult education as a pipeline for career pathways.
- Innovative instructional delivery shapes distance learning. For instance, a community-based organization reported that all of their instructional materials are Open Educational Resources. This no-cost and accessible approach to course learning was vital to the program's successful distance education activities in Spring 2020.
- Relationships are successfully maintained with students in a virtual environment through instructor outreach and engagement.
- Students who become disconnected from the program are identified and contacted (via emails, texts and phone calls) to help assess their needs and provide support for them to complete their adult education learning.

## Justice-Involved Students

COVID-19 weakened an already fragile infrastructure for justice-involved students in need of educational opportunities. The high infection and transmission rate in correctional facilities placed barriers on students, instructors, and correctional institutions. According to research reported in the Journal of the American Medical Association, incarcerated people are infected by COVID-19 at a rate more than five times higher than the nation's overall rate. The death rate of inmates (39 deaths per 100,000) is also higher than the national rate (29 deaths per 100,000).

These numbers forced prison and jail officials to take a closer look at safety measures for justice-involved students, prison/jail staff, and educators performing face-to-face instruction. COVID-19 put a halt on nearly all educational programming within institutions in Wisconsin. Compared with previous Spring terms (2017-19), Spring 2020 course enrollments for justice-involved students decreased by approximately 30% (from 10,000 enrollments to 7000 enrollments). Preliminary data show a 50% decrease in course enrollments in Summer and Fall 2020 compared with previous terms (2017-19).

Wisconsin Technical Colleges responded along with their institutional partners by expanding distance learning tools. The challenge was to introduce tools that would adhere to the security precautions of the institution while delivering quality instruction. This challenge was met through Learning Management Systems that did not require internet services and alternative learning modalities were implemented such as written correspondence between students and teachers via learning packets and one-on-one virtual conferencing. As of May 2021, safety restrictions on instruction for justice-involved students are relaxing, yet at a slower pace than the removal of safety measures across Wisconsin (e.g., Badger Bounce Back Plan). Also, this change depends upon the particular instructional facility; some now allow in person instruction, while other facilities are still closed to in-person learning.

Educational programming for justice-involved students helps support vulnerable populations. In Wisconsin, incarcerated individuals are disproportionately people of color, individuals with disabilities, people living in poverty, and people without postsecondary education who often lack a high school diploma (Department of Corrections 2021, WTCS Client Reporting data). The challenges of COVID-19 led to a severe reduction in access to education for justice-involved students, worsening equity gaps for vulnerable populations.

# Implications

The analysis of 2020 WTCS data and COVID-19 impacts reveals a heightened need for strategies to support equity in student access and success. Students from minoritized backgrounds were overrepresented in COVID-19 related course withdraws in Spring 2020 and underrepresented in Summer and Fall 2020 course enrollments. The consequences of these exacerbated equity gaps will likely be felt long into the future. For instance, K12 school closures are expected to result in severe learning loss for low-income, African American or Black and Hispanic students, resulting in long-term equity impacts.[14] Below is a list of potential strategies to consider for helping to close student equity gaps across the WTCS.

## Strengthen partnerships for providing students with support

Since the CARES Act funding was insufficient to fully address student needs, colleges may need to strengthen partnerships with community-based organizations, high schools, and other agencies to help provide wraparound student supports. A Hope Center survey found that many students who became eligible for various assistance programs (e.g., SNAP, TANF) due to COVID-19 impacts, were unaware that they could now access these supports.[8] Thus, colleges may need to provide more communication, guidance, and direct student support to help students apply to these programs.

## Create a student-led participatory research program

To best understand the needs of the students who are most affected by COVID-19 and facing equity gaps, colleges can implement student-led participatory research programs. These programs are led by students in collaboration with college staff to identify challenges or issues across the college, develop and implement research methods to assess the issue, devise potential solutions and disseminate the results to the larger college community. To learn more about this type of research program and its benefits, visit the Community Toolbox website on participatory research. To see examples of these programs, visit the Youth-Led Participatory Action Research Hub and the Kentucky Student Voice Team website. The Perkins V Capacity Building for Equity and

Inclusion grant can be leveraged to help support this work (e.g., providing students with compensation for their work, provide resources and technology needed to conduct the research).

## Assess college strategies through an equity lens

The COVID-19 pandemic has magnified the importance of assessing institutional policies, practices, and strategies through an equity lens to ensure each student served in the WTCS is provided the support needed to be successful. For example, equity audits of financial assistance programs can help ensure that funding reaches the most vulnerable students. Chippewa Valley Technical College (CVTC) conducted weekly audits of CARES Act funding to assess whether the emergency student funds were being distributed to the students most in need of assistance. This approach helped CVTC staff quickly adjust communication and outreach practices as needed to equitably distribute these funds. To support an equity-minded approach in developing college policy and practice, Central Carolina Community College has developed an Equity Decision List that prompts practitioners to consider the needs of the students they serve. The Centering Racial Equity Throughout Data Integration Toolkit from the Actionable Intelligence for Social Policy provides information for centering equity in data planning and collection through reporting and dissemination.

## Expand opportunities for adult education students entering career pathways

The WTCS Adult Education program provides services that target the more than 270,000 Wisconsin adults without a high school credential and the 129,000 Wisconsin adults that do not speak English well or at all. The COVID-19 pandemic has further highlighted the need to enroll adult education students in a career pathway to support economic mobility during these uncertain times. Further scaling Integrated Education and Training programming linked to a WTCS postsecondary credential or industry certification may be a solution to quickly get students on a career pathway. These integrated service delivery models provide adult education and literacy activities concurrently and contextually with workforce preparation activities and workforce training for a specific occupation or occupational cluster. Another strategy for getting students on a career pathway may reside in local implementation of the recently approved WTCS Ability to Benefit State Option. Ability to Benefit is a financial aid provision which offers adult education students the opportunity to enter a WTCS career pathway program, earn a high school credential or its equivalent, and obtain funding for applicable tuition/fees under Title IV federal aid.

## Support faculty and staff mentors

Research shows that minoritized students benefit from having faculty mentors who come from similar backgrounds.[15] This positive affect highlights a broader need for faculty representation across many identities, backgrounds, and experiences. For instance, faculty of color are often underrepresented across college campuses compared with the diversity of the student body and tend to have lower employee retention rates than White faculty members.[6,8] These lower faculty retention rates have been attributed to many systemic factors including college communities that are not inclusive and lack of mentors and networks within their institution. Chronic stress and challenges related to COVID-19 may further decrease retention rates of employees from minoritized backgrounds.[16] Both the Professional Growth and Perkins V Capacity Building for Equity and Inclusion grants can be used to develop, implement and scale diversity, equity and inclusion professional learning opportunities across the college. In addition, the WTCS Diversity, Equity and Inclusion Committee has developed an Employees of Color Mentoring Program. This systemwide program will help create a network of support and leadership, and employees who are seeking to mentor or find a mentor can sign up on the Diversity, Equity and Inclusion myWTCS webpage to get involved. As part of its broad commitment to diversity, equity and inclusion, WTCS is committed to recognizing, including and supporting the success of students, faculty, staff, and college leaders of various identities and backgrounds. Systemwide work on promoting employee inclusion will continue to expand and address the needs of representation more broadly (e.g., Spring 2021 webinar series on employee affinity groups).

## Scale equitable teaching practices

Teaching practices that promote equitable student learning outcomes are critical in helping to serve students who have been disproportionately negatively impacted by COVID-19. Equitable teaching practices center course material in the cultural identities of the students to enhance student belonging and engagement in their learning. Teaching that encourages growth mindsets helps students excel in their course competencies. For information on culturally relevant pedagogy, growth mindsets, classroom belonging and more, visit the Equitable Learning Library and PERTS (Project for Education Research that Scales) resources. While some of these resources have been created for a K-12 audience, they are still relevant and helpful for higher education. See the Building Equitable Learning Environments (BELE) Framework for best practices in teaching and learning. Faculty can also use the Copilot-Ascend tool from PERTS. "Copilot-Ascend is a free, data-driven professional learning program that enables college instructors and administrators to learn how their students are experiencing courses and what they can do to make those experiences more equitable, more engaging, and more supportive of student success."

## Adopt Open Educational Resources (OER)

Open Educational Resources are free to use and openly licensed materials, including textbooks, case studies, activities, etc. Research has shown that OER can help close course success equity gaps for Pell recipients, minoritized students and part-time students.[17] This positive effect is likely due to reducing the cost of taking college courses, which presents a significant barrier for students. Yet, additional advantages of OER may also contribute to closing student equity gaps in courses. OER can be remixed and modified as needed, which allows instructors the freedom to better contextualize the course content and provide more inclusive representation within the material. In general OER can be accessed in many different formats, including in-print, online, and downloaded on a device for offline viewing. This adaptability makes OER well-suited for changes in course delivery format (e.g., in-person to online) as will be the case when students have more options to choose the delivery format that best meets their needs (e.g., 'my-way' or 'HyFlex' instruction).[18] For more information on OER, see the WTCS OER webpage, which includes a link to a repository of OER that are used across the System, summarized by course.

# Resources for more information

- COVID-19 racial equity and social justice resources
- #RealCollege 2021: Basic Needs Insecurity During the Ongoing Pandemic 2021 Report from The Hope Center
- COVID-19 Diversity, Equity and Inclusion Crisis Action Strategy Guide from the National Inclusive Excellence Leadership Academy
- Open Education Resilience in Crisis and Beyond webinar recording from the Community College Consortium for Open Educational Resources
- High-Quality CTE During COVID-19: Challenges and Innovations report from the Association for Career and Technical Education

# Acknowledgments

## Appendix: Research Methods

In Spring 2020, the System Office added two new COVID-19 codes in Client Reporting to help capture both courses that have changed delivery method to emergency online instruction (course delivery code 98) and course withdraws due to COVID-19 (COVID-19 related course completion status code 98; either the student withdrew from the course due to COVID-19 related impacts or the college cancelled the course due to COVID-19). Yet, there has been some inconsistency with the use of these emergency Client Reporting codes. For instance, some colleges reported courses that moved to an online format after spring break as a hybrid or blended course format, rather than reporting the emergency online instruction format. Thus, the information was gathered in a way to attempt to best capture the full extent of course delivery changes across WTCS. Analyses based on course enrollments are focused on FTE-generating courses in program aid codes 10, 20, 30, 31, 32 and 50 with recognized credit codes of 9D (institutional credit – standard enrollment) and 'yes – no recognized credit code'. Analyses of dual credit participation included recognized credit codes 1A, 1B, 8A, 8B, 9B, 9C, 9H and 9K for students enrolled in a public or private high school with their highest grade completed identified as 8th through 12th grade (and unknown highest grade completed). Analyses of adult education programming included Measurable Skill Gain data derived from Client Reporting and provider-level AEFLA risk scores. In addition, AEFLA providers with successful outcomes were during the beginning of the pandemic were interviewed to further identify their strategies that improved adult learner success.

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