WTCS STUDENT SUCCESS CENTER

ACTION RESEARCH BRIEF

Minoritized students are more often enrolled in programs that lead to lower wages

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Abstract

Higher education can provide economic mobility and help individuals advance along a career pathway into jobs with higher wages. Yet, significant equity gaps exist both in access to and success in these educational opportunities. To evaluate equity in program-level access, we quantified program enrollment patterns both across and within career clusters for various student groups (e.g., race/ethnicity, English language learners) in the Wisconsin Technical College System using chi-squared tests. We found that students from minoritized communities were overrepresented in programs and career clusters that can lead to lower wages. This result could stem from several potential barriers, including geographic access, program-specific financial costs, entrance requirements, immediate employment needs and lack of awareness of program options and support to pursue these options. Further research (e.g., focus groups, surveys) is needed locally at each institution to determine and address the factors that are contributing to these enrollment gaps.

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Introduction

Wisconsin communities are increasingly diverse.[1] Yet, systemic equity gaps exist in the workforce and education systems that disadvantage our increasingly diverse population.[2] Closing these gaps would advance not only the economy, but also strengthen communities across the state.[2]

While Wisconsin is substantially less racially and ethnically diverse than the nation, the rate of growth in populations of color is significantly higher in Wisconsin compared to national patterns.[1] Currently, 20% of Wisconsinites are people of color, and by 2050 this percentage will grow to 30%.[1] The communities that are contributing the most to this growth include Latinx, Asian or Pacific Islander, and multiracial communities).[1]

Due to historic and current systemic policies that intentionally disadvantage minoritized communities, significant equity gaps exist in Wisconsin's workforce and education systems.[2] For example, the unemployment rate for Wisconsinites of color is more than double the rate for white Wisconsinites.[3] In addition, workers of color earn significantly less than white workers even with the same level of education[4], and women earn significantly less than men within the same occupational area.[5] Substantial equity gaps also exist in Wisconsin for both postsecondary program participation and completion. Students of color are underrepresented in postsecondary and workforce certificate programs, and their degree completion rates are 14.3 percentage points lower than white students.[6]

Closing these gaps across Wisconsin will provide major benefits for both the state's economy and individuals. Closing equity gaps in income across race/ethnicity groups would have added $18.58 billion to the Wisconsin economy in 2015.[1] Workforce diversity is a key driver of economic growth with links to increased sales revenue, customer following, and market share.[7] Closing access and attainment gaps in higher education will help individuals from low socioeconomic backgrounds improve their financial stability.[8] This stability increases along a career pathway: acquiring the next credential, diploma, or degree improves an individual's earning potential and ability to secure a job with higher wages.[9,10]

Preliminary findings within the Wisconsin Technical College System (WTCS) have shown that while access to programming in general is equitable and the student body is more diverse than the state's population, participation at the program-level exhibits gaps in enrollment patterns.[11] Students of color and women are overrepresented in programs that tend to lead to lower wages (<$26,000/year), while white students and men are overrepresented in programs that tend to lead to higher wages (>$56,000/year).[11] These patterns indicate that although students from minoritized communities are enrolling in postsecondary programs that will help them advance along their career path, they still may not be able to move up the economic ladder as readily as students enrolled in programs that can lead to higher wages.

While individuals select programs for various reasons (e.g. vocational calling, family support) other than potential wages, systemic barriers have been shown to contribute to program-level equity gaps that block access to higher paying careers.[12,13] To better understand and address these patterns, we measured enrollments across several student demographics for programs that can lead to lower versus higher graduate wages based on follow-up survey responses.[9,10] We focused on the following research questions: Do student demographics vary significantly across programs/clusters with differing wages? Which demographics are over- or underrepresented? For a summary of the research methods, see page 11.

Results

We found evidence for significant over- and underrepresentation of particular student groups both across and within career clusters for programs with varying wage outcomes. In general, students who enrolled in low-wage programs were more often female, students of color, differently abled, economically disadvantaged, and English Language Learners (ELL). For a summary of the chi-squared analysis results both across and within career clusters, see Supplemental Table 1.

Across career clusters

Median wages vary across career clusters from $20,000-35,000 for education and training, and hospitality and tourism programs to over $50,000 (including apprentice wages) for manufacturing and architecture and construction programs. Students of color are often overrepresented in career areas that can lead to lower wage outcomes (e.g., human services), while white students tend to be overrepresented in career areas that can lead to higher wages (e.g., manufacturing; Fig. 1). One exception is that students of color are overrepresented in liberal arts associate's degree programs, which can lead to higher wages.

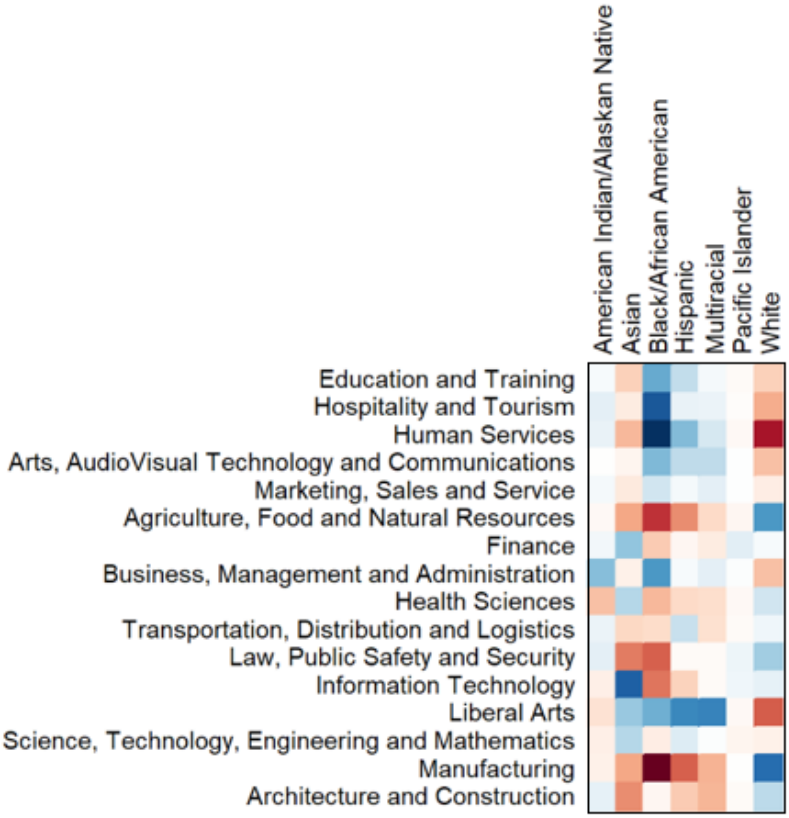

Figure 1. Enrollment patterns across career clusters for student race/ethnicity groups. Career clusters are ordered from lowest median wages at the top to highest median wages at the bottom. Color indicates student distribution with blue indicating overrepresentation and orange indicating underrepresentation. The stronger/darker the color, the more pronounced the under- or overrepresentation

Most career clusters exhibit significant gender biases with overrepresentation of either male or female students (Fig. 2A). Career clusters that are typically male-dominated in both the workforce and WTCS student body (e.g., STEM, information technology, manufacturing) typically have more earning potential than career clusters that are female-dominated (e.g., human services, education). While women are typically underrepresented in career areas that can lead to higher wages, women are significantly overrepresented in health science programs, which have a median wage of over $35,000, six months after graduation.

Students enrolled in high school dual enrollment (i.e., younger than 18) are overrepresented in health science programs (e.g., certified nursing assistant), while older students (25-61-years-old) are overrepresented in finance and business, management and administration programs (Fig. 2B). Traditional college-aged students (18-24-years-old) are overrepresented in liberal arts and law, public safety and security programs. While there are clear uneven distributions of students of different ages across career clusters, these patterns do not necessarily show particular age groups of students enrolling in career areas that lead to low or high wages.

Differently abled students (both cognitive and physical abilities) are more unevenly distributed across career cluster areas than abled students, with clear over- and underrepresentation in particular career areas (Fig. 2C). While differently abled students are overrepresented in several career areas that can lead to low wages (e.g., education, human services), they are also overrepresented in a few career areas that can lead to high wages (e.g., manufacturing, information technology). At the same time, differently abled students are underrepresented in a few career areas that can lead to high wages: health sciences; law, public safety and security; and architecture and construction programs.

In general, students living at or below the poverty-level are overrepresented in career areas that can lead to lower wages (Fig. 2D). Meanwhile, students without an economic disadvantage are overrepresented in career areas that can lead to high wages. Only three career clusters show relatively equal representation of students both with and without an economic disadvantage, including transportation, distribution and logistics; information technology; and science, technology, engineering and mathematics (STEM).

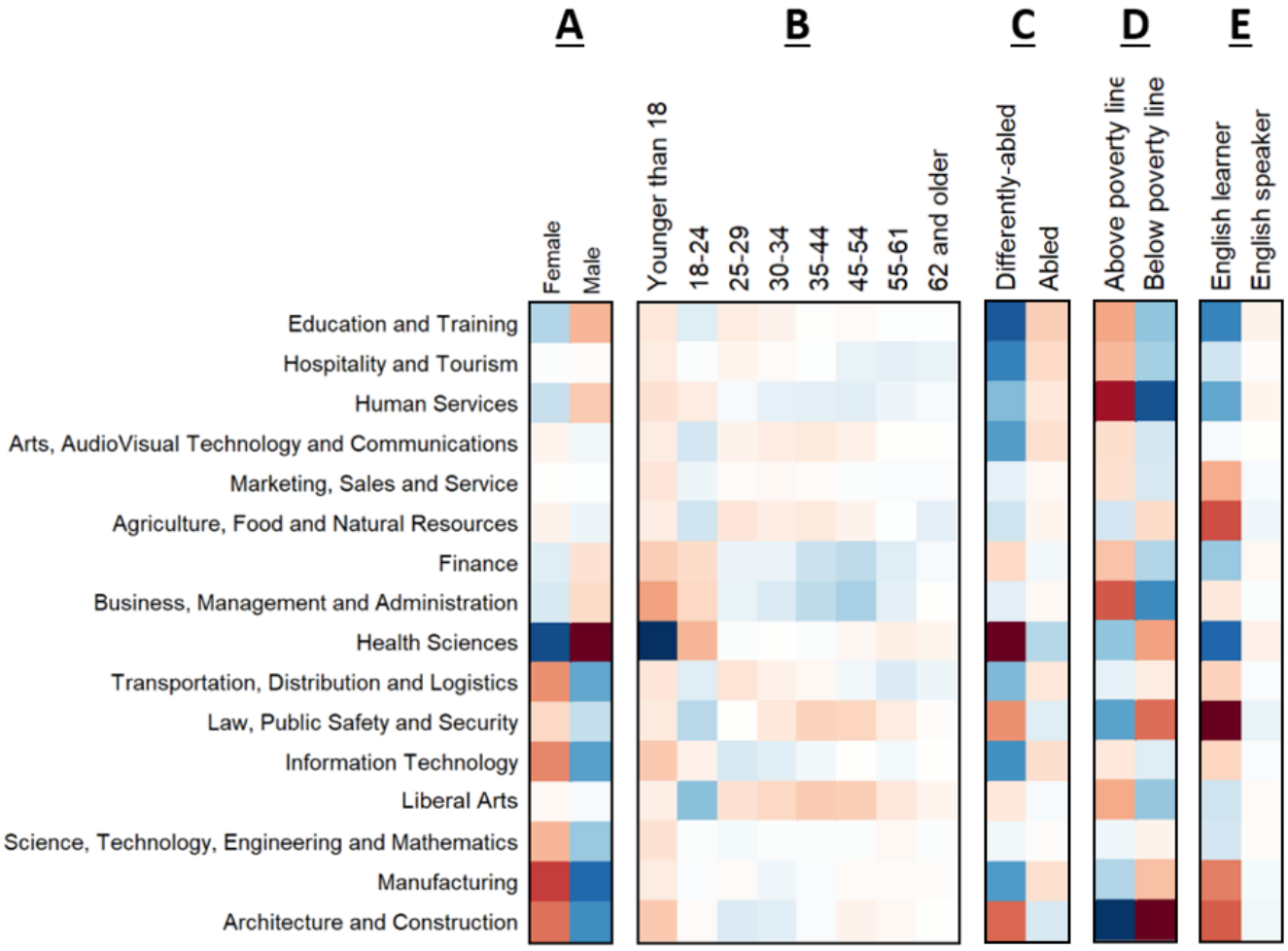

Figure 2. Enrollment patterns across career clusters for (A) female and male students, (B) students of varying age groups, (C) differently abled and abled students, (D) students living above or below the poverty line, and (E) students who are English speakers versus learners. Career clusters are ordered from lowest median wages at the top to highest median wages at the bottom. Color indicates student distribution with blue indicating overrepresentation and orange indicating underrepresentation. The stronger/darker the color, the more pronounced the under- or overrepresentation.

While English-speaking students are fairly equally represented across career clusters, students who are learning English exhibit uneven enrollment patterns (Fig. 2E). English language learners are overrepresented in a few career areas that can lead to lower wages (e.g., education and training), yet are also overrepresented in health sciences and finance programs that can lead to higher wages (> $35,000). English language learners are also underrepresented in manufacturing; architecture and construction; and law, public safety and security programs, all of which can lead to higher wages (> $40,000).

Within career clusters

In general, analyses within career clusters showed that minoritized students (e.g., student of color, women, differently abled students, etc.) were often overrepresented in programs that can lead to lower wages (Fig. 3). Furthermore, this finding is consistent with reports from other state education systems.[12,14] Yet, there were a few exceptions to these patterns.

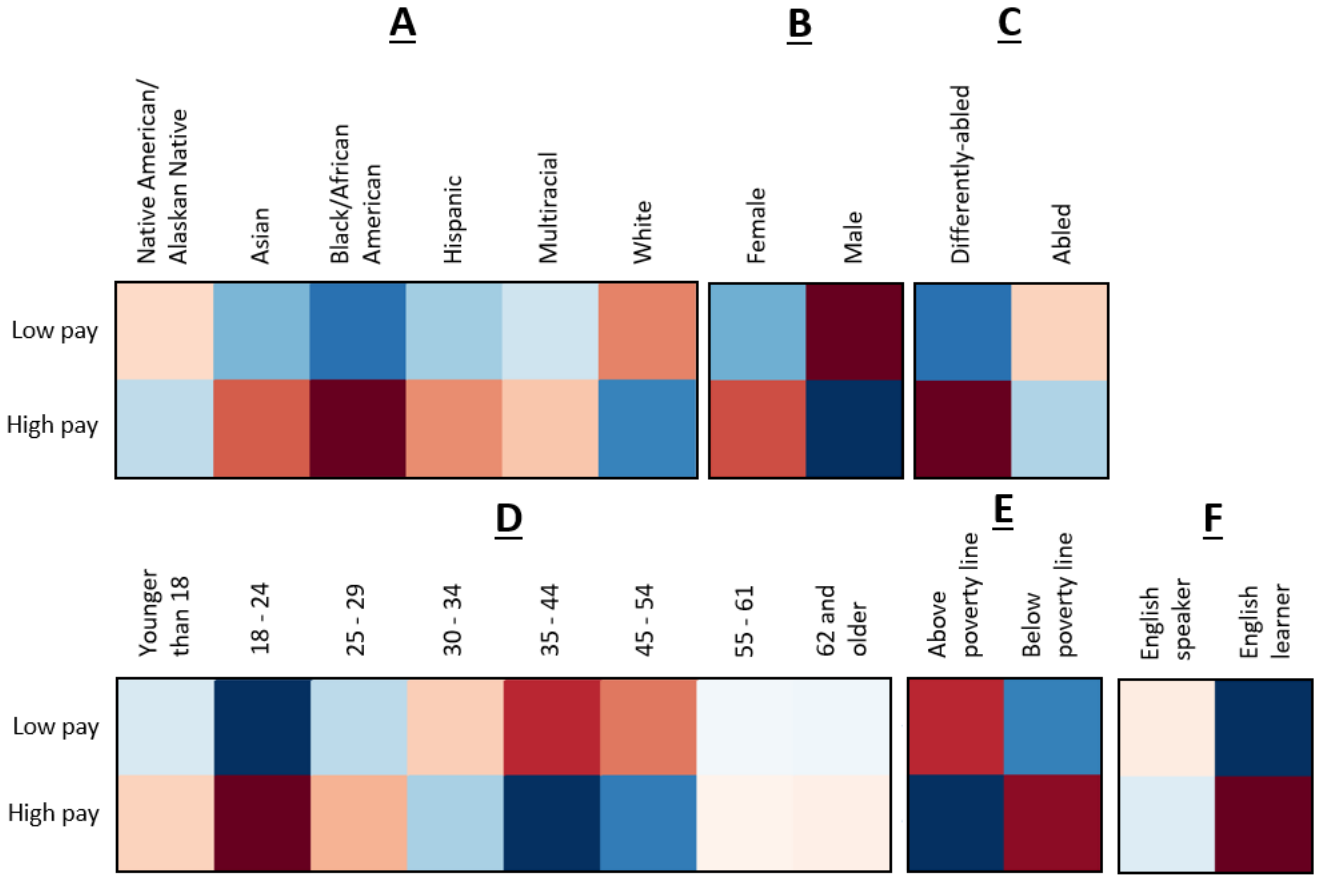

Figure 3. Enrollment patterns within career clusters for (A) student race/ethnicity groups, (B) female and male students, (C) differently abled and abled students, (D) students of varying age groups, (E) students living above or below the poverty line, and (F) students who are English speakers versus learners. All visuals are for the Business, Management & Administration career cluster, which is representative of the typical trends in enrollment across programs that lead to low versus high pay in most career clusters. Color indicates student distribution with blue indicating overrepresentation and orange indicating underrepresentation. The stronger/darker the color, the more pronounced the under- or overrepresentation.

First in health science, black and African American students were significantly overrepresented in programs that can lead to higher wages (e.g., nursing), while other race/ethnicity groups including multiracial, Asian, Hispanic, and Native American students were fairly evenly distributed across programs, and white students were overrepresented in programs that can lead to lower wages. In addition, students living at or below the poverty line were overrepresented in health science programs that can lead to higher wages (Fig. 4). However, there is a caveat with these findings. Some of the students in the enrollment analyses for health science programs were technically 'pre-program' students, in that they may have declared their intention to enroll in the nursing associate's degree but are currently on a waitlist to get into the program. If the analysis assessed only students who were in the nursing program, then the findings may have aligned more with the results from other career clusters in that minoritized students are often overrepresented in programs that can lead to lower wages.

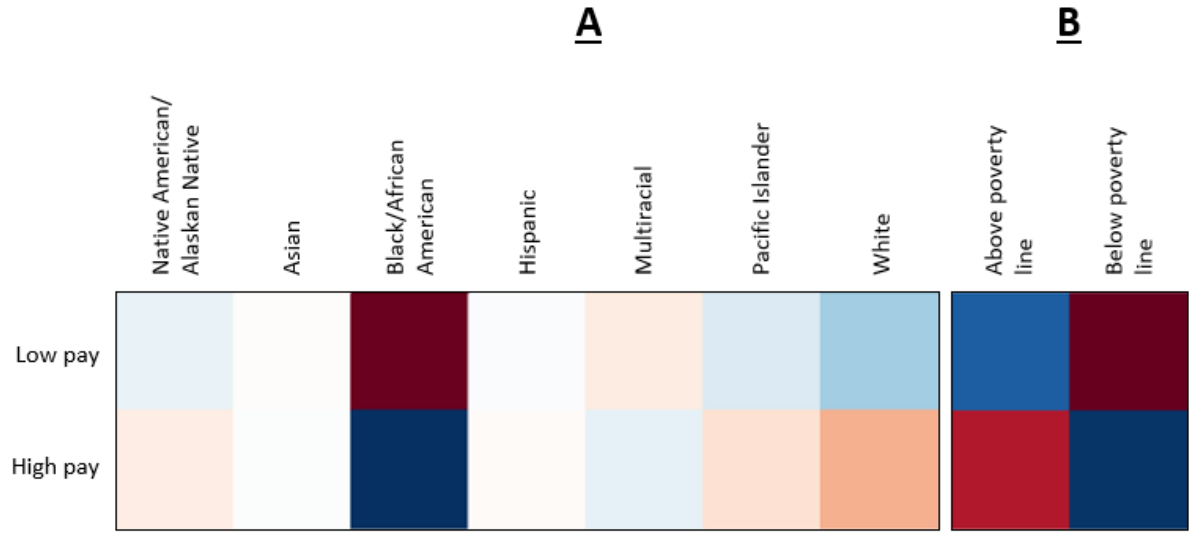

Figure 4. Enrollment patterns within the health sciences career cluster for (A) student race/ethnicity groups and (B) students living above or below the poverty line. Color indicates student distribution with blue indicating overrepresentation and orange indicating underrepresentation. The stronger/darker the color, the more pronounced the under- or overrepresentation.

Another exception in the findings, was that although women are underrepresented in the transportation, distribution and logistics career cluster, when female students enroll in these programs they more often enroll in 'high-wage' programs. These programs include truck driving, supply chain management and diesel technician. In terms of age, younger students (<25-years-old) were typically overrepresented in programs that can lead to lower pay, while older students (>25-years-old) were overrepresented in programs that can lead to higher pay (Fig. 3). However, this trend was reversed in both Information Technology (IT) and law, public safety and security programs. In these areas, students aged 35 and above were overrepresented in programs that can lead to lower pay (e.g., computer support technician, emergency medical technician; Fig. 5).

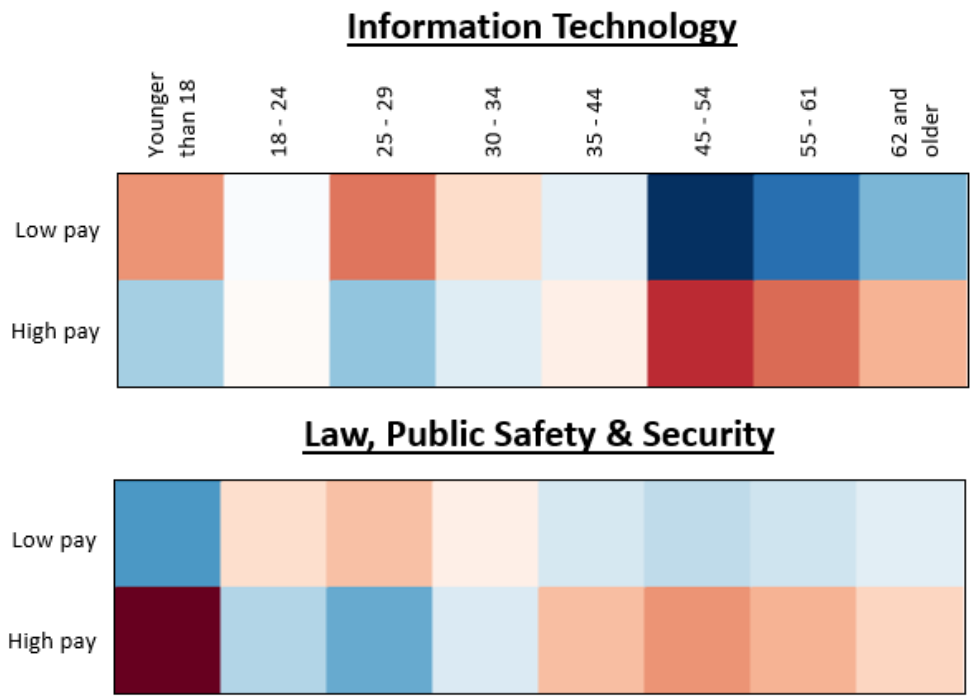

Figure 5. Enrollment patterns within the information technology (top) and law, public safety & security (bottom) career clusters for student age groups. Color indicates student distribution with blue indicating overrepresentation and orange indicating underrepresentation. The stronger/darker the color, the more pronounced the under- or overrepresentation.

Discussion & implications

Postsecondary education provides economic and career opportunity. Yet, these findings show that minoritized communities are underrepresented in programs that can lead to higher wages in Wisconsin. Thus, the equity gaps that exist across our state will likely continue unless extensive changes are made. Each college should collect qualitative data (e.g., focus groups, interviews, surveys) to identify the key underlying factors that are leading to these patterns locally. Previous research has identified several barriers to program entry that could be contributing to equity gaps in program enrollment across the Wisconsin Technical College System. These barriers include geographic access, program-specific financial costs, entrance requirements, immediate employment needs and lack of awareness of program options and support to pursue these options.[12]

Geographic barriers include physical distance, lack of infrastructure (e.g., no broadband access for online programs), and physical barriers (e.g., large highway separates learners from nearby program opportunities) that inhibit a student's ability to access a program.[12] In addition, since programs within the WTCS are aligned with local workforce needs, depending upon the business and industry sectors within the area, aligned programs may primarily lead to lower paying careers. In this case, college campuses should identify the higher paying programs in their area and regularly evaluate these to ensure that enrollments are inclusive across the diversity within their student body.

While tuition costs are equal across WTCS programs ($136.50 per credit for Wisconsin residents), other program-specific expenses such as the cost of textbooks can limit access to high-wage careers. For instance, health science textbooks can cost upwards of $200 each, which can make programs in this career cluster unaffordable to students living at or below the poverty line, even with financial aid. Adopting affordable and/or open educational resources can help remove this barrier. All WTCS colleges are currently collaborating on developing open textbooks for five nursing courses and 25 open virtual reality nursing scenarios as part of a Department of Education grant (OpenRN). This work will drastically reduce the cost of enrolling in the nursing career pathway and help make this high-skill, high-wage, and high-demand occupation more accessible to

students from minoritized communities. This work should be expanded to include other career pathways as well (e.g., see Nicolet College's zero-textbook cost Criminal Justice Studies degree).

Program-specific entrance requirements can also disproportionately impact students from minoritized communities. These requirements may include academic performance indicators (assessment scores, high school grades) and initial costs before financial aid is available (e.g., cost of physical exams, background checks, etc.). To remove these barriers, colleges should reexamine these requirements to ensure that they truly predict student success within the program and provide funding to help cover upfront program entrance costs. In addition, colleges can implement and expand bridge programs that help connect students with foundational skills gaps to programs that lead to careers with higher wages.

Apprenticeship programs provide access to high-skilled, high-wage, and in-demand careers while allowing students to earn a living while completing their coursework. In this way, apprenticeship programs are especially important for students from low socioeconomic backgrounds. Yet within the WTCS, minoritized students are severely underrepresented in apprenticeship opportunities (Table 1) and while 43% of WTCS program students live at or below the poverty line, only 4% of apprentice students are economically disadvantaged. These patterns correspond with national apprenticeship gaps, in which women and people of color are significantly underrepresented in apprenticeship programs.[15] Established bridge programs to apprenticeship opportunities can help close these equity gaps (e.g. Madison College's Apprenticeship Bridge Program).[2,13,16,] In addition, the Bureau of Apprentice Standards has recently added a searchable employer database to their website, which allows for interested individuals to select key industries or occupations to find 'featured sponsors' (employers who currently train apprentices and are likely to have additional openings) and job postings for apprentice positions. This transparency will hopefully allow communities who have historically not had access to these opportunities find and get into apprenticeship programs.

Table 1. Comparison of student demographics between all program students (aid codes 10, 20, 30, 31, 32, 61 and 50) and apprentice students only (aid code 50) for students enrolled in 2015 through 2019.

WTCS 2015-19 enrollees	All program students	Apprentice students only
Students of color	26%	10%
Female students	55%	6%
Differently abled students	7%	1%
Students living at or below the poverty-level	43%	4%
English language learners	1%	0.4%
Students with a foundational skills gap	24%	4%

Due to a long history of systemic educational and workforce policies that intentionally disadvantage minoritized communities,[2] individuals from these communities are more likely to be underemployed or unemployed. For instance, within the WTCS, 8% of white students are under- or unemployed at enrollment compared with 20% of black/African American students (2015-19 students enrolled in FTE-generating courses). As a result, minoritized students have a dire need to quickly gain a credential that will lead to a viable employment opportunity. Since shorter-term credentials (aid codes 30 and 31) tend to lead to lower wages, this effect may explain why minoritized students are overrepresented in 'low-wage' programs.

Yet, there are strategies available that could still help students from minoritized communities secure their short-term employment needs while providing long-term opportunity and growth into higher-wage careers. For instance, we can work to diversify access to apprenticeship training opportunities through activities like the provision of apprenticeship bridge programs (mentioned above) and partnering with workforce development

entities and industry stakeholders to enhance community awareness of this uniquely beneficial educational pathway. Second, we can continue to strengthen and assess our career pathways work to confirm that stackable credentials provide each individual with the ability to upskill and advance in their career when they are ready to do so. Career pathways models have been highlighted as a way to advance equity in education and the workforce,[17] however evidence of these effects has not yet been documented (e.g., are minoritized students able to advance along a career pathway as readily as advantaged students?). This lack of information highlights a need for robust longitudinal data and analyses to help inform and advance career pathway models. See our upcoming action research brief on pathway progression for these analyses. Third, we can try alternative short-term education strategies, such as 8-week courses and micro-credentialing. These options may allow individuals to more readily obtain much needed employment with the capacity and flexibility to earn more advanced credentials to access high-wage careers.[18,19,20,21]

Another significant barrier to program access is student awareness of the different program options and community support to pursue these programs. Within the WTCS there are over 500 programs. To make exploring these options uncomplicated, we need transparent and easy to find and navigate information about the associated occupation(s) (e.g., skills, work-life balance, responsibilities) and earning potential of these programs. To then make an informed career decision, students need supportive advising to assess their skills, goals, and motivations and evaluate alignment with potential career options. This support will require a college- and community-wide effort.[22] Within this work, every student mentor needs to be aware of their own micromessages to students (see example, below) and intentional about not letting their own implicit biases affect a student's program choice.[22] Research has also shown that programs that highlight alternative representation (provide examples of non-stereotypical role models in different occupational areas), culturally relevant pedagogy,[23] and affinity-based mentorship (connect students to peers and mentors within the career area who share their identity) are most effective in shaping an individual's occupational identity and getting individuals from minoritized backgrounds into career pathways that can lead to higher wages.[24] In addition, this work needs to connect with the academic and career planning process from secondary schools so that these efforts align and inform each other.

Micromessages:

- An instructor's tone of voice and body language can make a student feel unwelcome or that the program is not meant for them.
- Displaying photos of only stereotypical people within the occupation (e.g., white female nurses, white male engineers) on the program website and marketing materials, within the associated textbooks, etc.
- Having program equipment/supplies that only work for the stereotypical people within that occupation (e.g., welding gear that only fits men).

To conclude, the results show that minoritized students are overrepresented in WTCS programs than can lead to lower wages. Several potential underlying factors could be causing this pattern, yet each WTCS institution should explore these factors locally (e.g., focus groups, student surveys, interviews, etc.) to determine root causes and steps to remove barriers to program access. Closing these gaps in program enrollment is a critical step in advancing equity in Wisconsin communities and workforce.

Guiding questions

- How do policies related to academic/technical preparation, advising, entrance requirements, etc. prevent students from being able to enroll in programs at your college?

- What micromessages have you witnessed within your institution? How might these messages influence student self-efficacy and program choice? How can we change these patterns and make our college communities more inclusive?

- What partnerships/resources can you leverage to ensure that each student has equitable access to programs that meet their career goals?

Resources for more information

- DATA USA provides information on occupations and programs (wages, diversity, skills, etc.)
- DWD Skill Explorer provides a tool for finding relevant career opportunities based on prior work experience and/or skillset
- WTCS System-wide Equity Report highlights goals for advancing equity across the WTCS and includes tools and resources for achieving these goals (pgs. 10-13)
- National Alliance for Partnerships in Equity (NAPE) resources on micromessaging: Leading for Equity Workbook and Micromessaging to Reach and Teach Every Student
- NAPE program rubric for STEM, which can also be adapted for other program areas and provides useful equity criteria for evaluating and improving programs
- Project Implicit provides online implicit bias assessments
- Expanding Access to Opportunity report from Advance CTE that focuses on strategies to promote equitable access to career and technical education programs
- Growing Equity and Diversity Through Apprenticeship report from JFF provides ideas for recruiting and retaining apprentices from diverse backgrounds and Broadening the Apprenticeship Pipeline report from the National Skills Coalition provides recommendations for pre-apprenticeship programs.
- Influences on Occupational Identity in Adolescence: A Review of Research and Programs report from the Connected Learning Alliance
- Teach for America provides a useful summary of 'How to Practice Culturally Relevant Pedagogy.'
- Career Exploration & Development with a Focus on Implicit Bias webinar recording from the American School Counselor Association
- Career Conversation Starters from the American School Counselor Association
- Pathway Planit from WISC-Online (FVTC) provides surveys for students to assess their career interests and help match them to a career cluster.

Acknowledgments

The WTCS Student Success Center would like to thank Ascendium Education Group for generous support to help make this WTCS Action Research project possible. We would also like to thank WTCS college staff for their input and feedback during a session at the Common Ground Conference in developing the strategies to address program access gaps.

Methods

To assess over- and underrepresentation of student demographics across programs (aid codes 10, 20, 30, 31, 32 and 50) and career clusters with varying wage outcomes, we quantified student enrollment patterns across several demographics and analyzed these patterns using chi-squared tests. Student demographics included gender, race/ethnicity groups, age groups, economic disadvantage status (living at or below the poverty line and/or receiving need-based financial aid), disability status (including both cognitive and physical disabilities), and English Language Learner status. We analyzed student patterns both across and within career clusters.

For analyses across career clusters, we selected data from the WTCS QRP cubes for cohort students enrolled in 2015-19. All programs within each career cluster were included (except for WTCS Pathway Certificates) and data were disaggregated by career cluster. For analyses within career clusters, we selected data from the WTCS Program Enrollment cube for students enrolled in 2015-19. To control for small sample sizes and regional variation in wages, only programs with relatively high enrollments across the system (i.e., >130 students per year) and programs that were offered at three or more districts were included. In addition, the wage spread for graduates across these programs had to allow for clear delineation between low and high wages (e.g., less than $36,000 and greater than $45,000). Median wage data from the Graduate Outcomes and Apprentice Completer reports were averaged across 2016-18 to assess wage spread both across career clusters and across programs within a cluster. With these restrictions, Human Services and STEM programs were excluded from the within career cluster analyses. For a breakdown of which programs were included in each career cluster and the wage cutoffs for low and high wages, see Supplemental Table 2.

We conducted separate chi-squared (X^2) tests for each student demographic variable both across and within each career cluster for a total of 54 individual tests. To correct for multiple testing and eliminate false positives, we used a Bonferroni p-value cutoff of 0.0009. To visualize enrollment patterns across student demographics and programs with varying wage outcomes, we created correlation heatmaps using the chi-squared residuals. All analyses were conducted in R (stats package)[25] and the heatmaps were created using the corrplot package.[26]

One limitation of this analysis is that although program outcomes for graduates show general trends in wages and earning potential, extensive pay gaps and hiring biases exist for minoritized individuals[2] due to intentional and structural policies that disadvantage individuals based on race/ethnicity, gender, etc. Thus, students enrolled in programs that tend to lead to higher wages may not gain the same employment and economic opportunities based on extensive inequalities in the workforce.

Supplemental Table 1

Summary of chi-squared analyses across and within career clusters. Bolded probability values (p-values) indicate significant chi-squared tests after correcting for multiple testing.

Analysis type	Student Demographic	Chi-squared statistic	Degrees of freedom	P-value
Across career clusters				
	Race/ethnicity	10660	90	**< 0.0009**
	Gender	101490	15	**< 0.0009**
	Age	15550	105	**< 0.0009**
	Disability Status	1949	15	**< 0.0009**
	Economic Status	9436	15	**< 0.0009**
	English language learning status	297	15	**< 0.0009**
Within career clusters: high vs. low wage programs				
Agriculture, Food & Natural Resources	Race/ethnicity	173	5	**< 0.0009**
	Gender	139	1	**< 0.0009**
	Age	300	7	**< 0.0009**
	Disability Status	79	1	**< 0.0009**
	Economic Status	432	1	**< 0.0009**
	English language learning status	7	1	0.007
Architecture & Construction	Race/ethnicity	1011	5	**< 0.0009**
	Gender	446	1	**< 0.0009**
	Age	335	7	**< 0.0009**
	Disability Status	159	1	**< 0.0009**
	Economic Status	1346	1	**< 0.0009**
	English language learning status	67	1	**< 0.0009**
Business, Management & Administration	Race/ethnicity	138	5	**< 0.0009**
	Gender	1697	1	**< 0.0009**
	Age	314	7	**< 0.0009**
	Disability Status	56	1	**< 0.0009**
	Economic Status	382	1	**< 0.0009**
	English language learning status	9	1	0.003

Analysis type	Student Demographic	Chi-squared statistic	Degrees of freedom	P-value
Health Sciences	Race/ethnicity	621	6	**< 0.0009**
	Gender	40	1	**< 0.0009**
	Age	14411	7	**< 0.0009**
	Disability Status	10	1	0.002
	Economic Status	4531	1	**< 0.0009**
	English language learning status	31	1	**< 0.0009**
Information Technology	Race/ethnicity	76	5	**< 0.0009**
	Gender	1	1	0.394
	Age	73	7	**< 0.0009**
	Disability Status	50	1	**< 0.0009**
	Economic Status	5	1	0.027
	English language learning status	0.3	1	0.558
Law, Public Safety & Security	Race/ethnicity	105	5	**< 0.0009**
	Gender	780	1	**< 0.0009**
	Age	419	7	**< 0.0009**
	Disability Status	12	1	**< 0.0009**
	Economic Status	56	1	**< 0.0009**
	English language learning status	8	1	0.005
Manufacturing	Race/ethnicity	207	5	**< 0.0009**
	Gender	36	1	**< 0.0009**
	Age	611	7	**< 0.0009**
	Disability Status	119	1	**< 0.0009**
	Economic Status	405	1	**< 0.0009**
	English language learning status	8	1	0.004
Transportation, Distribution & Logistics	Race/ethnicity	265	5	**< 0.0009**
	Gender	85	1	**< 0.0009**
	Age	904	7	**< 0.0009**
	Disability Status	55	1	**< 0.0009**
	Economic Status	550	1	**< 0.0009**
	English language learning status	10	1	0.002

Supplemental Table 2

Summary of within career cluster analyses with a list of which programs were included and the median wage cutoffs for graduates six months after graduation.

Career Cluster	Low wage threshold	Low wage programs	High wage threshold	High wage programs
Agriculture, Farm, Natural Resources	< $35,000	310911 – Dairy Herd Management 100014 – Landscape Horticulture	> $40,000	300901 – Farm Business & Production Management 104821 – Wind Energy Technology
Architecture & Construction	< $40,000	314131 – Electricity 314011 – Refrigeration, Air Cond & Heating Services Tech 106141 – Architectural Technology	> $60,000	314132 – Electrical Power Distribution 504101 – Carpentry Apprentice 504139 – Electrician Apprentice 504132 – Electricity Construction Apprentice 504321 – Plumbing Apprentice 504352 – Steamfitting Apprentice
Business, Management & Administration	< $35,000	101064 – Medical Administrative Specialist 101066 – Administrative Professional	> $50,000	101961 – Leadership Development
Health Sciences	< $31,000	305371 – Therapeutic Massage 305431 – Nursing Assistant 305131 – Phlebotomy Tech 305082 – Dental Assistant – Short Term 315091 – Medical Assistant	> $45,000	105261 – Radiography 105151 – Respiratory Therapist 105431 – Nursing Associate Degree 105081 – Dental Hygienist
Information Technology	< $40,000	311546 – Computer Support Tech 101543 – Computer Support Specialist	> $50,000	101521 – Software Developer 101527 – Web & Software Developer 101524 – Web Software Developer
Law Public Safety & Security	< $36,000	305313 – Emergency Medical Tech (EMT) 305316 – Advanced EMT 101101 – Paralegal	> $45,000	105311 – Paramedic Tech 305041 – Criminal Justice Law Enforcement 520 Academy 305042 – Criminal Justice Law Enforcement 720 Academy
Manufacturing	< $38,000	304422 – Welding/Maintenance & Fabrication 314571 – Metal Fabrication/Welding 304421 – Production Welding 324441 – CNC Tech 314201 – Machine Tool Operation	> $50,000	106201 – Electromechanical Technology 314622 – Industrial Maintenance Mechanic 324621 – Industrial Maintenance Tech 504231 – Maintenance Mechanic/Millwright Apprentice 504131 – Industrial Electrician Apprentice
Transportation, Distribution & Logistics	< $31,000	304041 – Automotive Maintenance & Light Repair Tech 314043 – Automotive Maintenance Tech 324042 – Automotive Tech	> $40,000	324121 – Diesel & Heavy Equipment Tech 314121 – Diesel Equipment Mechanic 304581 – Truck Driving 101821 – Supply Chain Management

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