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In 2014, Southern New Hampshire University and Boston-based Duet Education partnered to re-imagine the traditional college experience by combining flexible, competency-based online courses with wraparound, in-person support and coaching. Using data on the first 554 students to enroll in the program, we show that this "hybrid college" model has achieved graduation rates more than twice the Massachusetts state average, cut the cost of college in half, and eliminate race-based college completion disparities. While further research is needed, early evidence suggests that this new approach could have signi

graduates, today Massachusetts college graduates earn nearly twice as much as workers without a BA.

For generations, however, the U.S. higher education system has systematically excluded many Black, Hispanic, Indigenous, and low-income students from access to educational opportunities. In Greater Boston, just 28% of Black adults and 24% of Hispanic adults hold bachelor's degrees, compared to 53% of white adults.[6] Low-income and first-generation students also suffer from low graduation rates. From the Massachusetts high school class of 2011, fewer than 20% of low-income students earned a bachelor's degree within seven years.[7]

In the wake of Covid-19, Massachusetts fall 2020 enrollment data showed the largest single-year decrease in public higher education undergraduate enrollment on record.[8] Across the country, early analyses suggest that students of color and low-income students are both failing to enroll and dropping out at higher rates than their white peers, and experts fear that we may face a "lost generation" of Black, Hispanic, and low-income students who drop out of school during the pandemic and never return.[10]

Students leave college for many reasons, but economic pressures are a critical barrier for many. An in-depth survey conducted by Public Agenda showed that almost three quarters (71%) of students who left higher education before graduating cited the "need to work and make money" as a reason they left, while 52% pointed to the high cost of tuition. 41% also cited challenges balancing family commitments.[11]

These concerns around balancing school with work and family commitments reflect the changing nature of college enrollments in the U.S., where "non-traditional" students have become the new norm. Despite the popular conception of the college student as a 20-year-old, residential, full-time student, today over 70% of students are classified non-traditional[12] in that they meet at least one of the following criteria:

" They are older than 25
" They are a parent
" They are working one or more full-time jobs
" They are the first in their family to attend college

Boston's higher education system has failed to provide sufficiently affordable and flexible college pathways that meet the needs of this new generation of non-traditional students. In FY 2014, the median financial need for full-time students in Massachusetts was $11,163 per year.[12] Students end up borrowing heavily to pay for college – today, the average student loan balance in Massachusetts is more than $38,0000 – and as a result often struggle to cover their own costs of living.[13] At Boston's largest community college, 60% of students report that they can't to eat balanced meals.[14]

As a result, many students ultimately make the decision to drop out of school and work full time. And while two-thirds of students who have dropped out of college report giving "a lot of thought" to going back,[15] the data suggest that only 13% ever will.[16]

In all, more than 1.5 million adults in the Boston metro area lack any type of postsecondary credential, including nearly 500,000 students with some college but no degree.[17] These adults—including many students of color, first-generation students, and low-income students—face limited economic opportunity, increased personal stress, and even shorter life expectancies. In order to close the college completion gap, Boston will need more able, highly supported pathways for non-traditional students, and in particular working adults.

The Role of Online Learning in Expanding Access

Over the last two decades, the growth of online learning has expanded access to higher education for millions of people. As of 2018, a total of 3.3 million students in the U.S.—nearly 1 in 5 of all American postsecondary students—were enrolled in distance-only education programs.[18] Over the last fifteen years, online enrollments have quadrupled.[19]

For many historically underrepresented students, flexibility Tj 11 0a1205 203.8718 Tm99 first iime. ,

programs.[20] As a result, observers have identified online learning as a potentially "revolutionary" solution to longstanding problems of educational inequity.[21]

However, online learning also faces critical challenges. Research on the efficacy of online learning has been mixed: while some researchers have found that online learning has the potential to improve learning outcomes while reducing cost,[22,23] in practice there is evidence to suggest that students enrolled in online-only courses receive lower grades and are more likely to drop out of school than their peers enrolled in face-to-face courses.[24,25]

Troublingly, research also indicates that historically underrepresented students and students without strong academic preparation are most likely to struggle in an online-only environment.[26,27] Online learners face a variety of unique challenges, from time-management issues[28] to a lack of clear structure[29] to lower engagement levels.[30] First and foremost, however, online-only students often struggle with feelings of isolation and disconnection.[31,32] As Baum & McPherson (2019) summarize, "The central problem appears to be the lack of adequate personal interaction between students and instructors as well as among students.[33]"

"The Human Factor": Combining Online Learning with In-Person Supports

A growing body of evidence demonstrates "how central the social, emotional, and interactional dimensions of learning are."[33] Indeed, of the many interventions that have been attempted to improve college success, providing students with personalized 1:1 advising and comprehensive wraparound support services is one of the few approaches that has been shown in multiple randomized control trials (RCT) to improve college graduation rates. For example, the Accelerated Study in Associates Program (ASAP) at the City University of New York, which combines comprehensive advising services, enhanced career training, streamlined course schedules, tuition waivers, and other wraparound support services, successfully doubled graduation rates for participating students.[34] These results were replicated when a second RCT showed that the ASAP program improved graduation rates from 19% to 35% across 3 community colleges in Ohio.[35] Similarly, a 2017 study by Evans and colleagues found that a comprehensive case management intervention providing community college students in Fort Worth, TX with intensive coaching, mentoring, and referral services tripled graduation rates from 16% for the control group to 48% for the treatment group.[36]

How can this "human touch" be replicated for online learners? In the postsecondary space, one emerging model is "hybrid college," which combines online courses with wraparound in-person supports. The hybrid college model includes two core components. First, the hybrid college model uses online learning to reduce costs and increase flexibility for non-traditional learners. Second, the hybrid college model also incorporates a range of wraparound in-person supports including 1:1 academic coaching, career counseling, transportation and childcare subsidies, and a physical study space to ensure that students receive the academic, personal, and financial support they need to complete their degrees.

A New Model for College: Competency-Based Education

Built to serve the needs of non-traditional students, including parents and working adults, most hybrid colleges also take advantage of another recent innovation in higher education: competency-based education. Under the traditional course-based higher education structure, time is constant and learning is variable: courses run for a predetermined amount of time, and at the end of each course, students receive a grade that reflects their performance. Under the competency-based approach, time is variable and learning is constant: students pursue their own learning paths and advance in their studies whenever they have mastered clearly-defined competencies.

Since learning is measured through demonstrated mastery rather than seat time, students who have already mastered certain competencies can simply complete the relevant assessment and move on without having to waste their time or money on courses they don't need; at the same time, when students struggle with a certain concept or skill, they can take the time they need to achieve mastery. In addition to increasing flexibility, this approach also increases academic rigor by setting a predetermined standard for mastery that all students are required to meet. In the words of former U.S. education secretary Arne Duncan, "the century-old practice of awarding degrees based solely on seat time in a classroom, and not on demonstrated competence in a subject, is at odds with a world in which the Internet offers perpetual opportunities for learning and mastering skills.[37]"

By combining flexible online competency-based education programs with wraparound in-person supports, a small but growing group of hybrid college sites aim to achieve "dramatically improved learning, graduation, and career outcomes for non-traditional students.[68] To date, however, no analyses have been published on outcomes for students enrolled in hybrid colleges.

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Founded in 2014, Duet, Inc. is a non-profit organization formed "to increase the number of students with college degrees earning a living wage in Greater Boston by creating a financially viable path to college completion and a good job." The Duet model combines two key components in order to increase college success: (I) accessible and affordable online degree programs and (II) wraparound in-person supports.

Part I: Flexible and Affordable Online Degree Programs

Through a partnership with Southern New Hampshire University (SNHU), Duet students are granted access to SNHU's

Potential Benefits of the Duet Model

For students not well-served by existing college options, the Duet model offers several critical advantages:

” Acceleration: Students control how quickly they earn their SNHU degree with Duet. The more work they get done, the sooner they graduate, fast-tracking their path to a better job or a higher-level degree.

” Flexibility: While many adult learners struggle to balance work and family responsibilities with rigid academic schedules and due dates, SNHU's competency-based curriculum is completely asynchronous, allowing students to their studies around the other demands in their lives.

” Affordability: For students eligible for federal Pell grants, SNHU's annual tuition of $7,000 (3 terms x $2,333 per term) is just $504 above the amount of a full Pell grant. As a result, while the average national debt burden for students graduating in the class of 2018 was more than $29,000, low-income students are able to graduate from Du without incurring large amounts of debt.

Figure 1: Age of Duet Students (2015 - 2019)
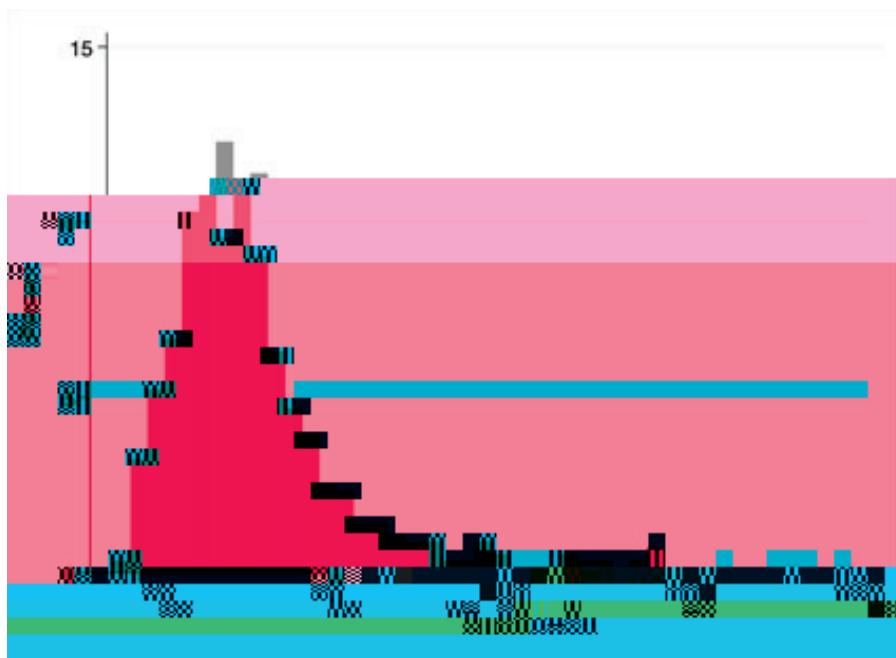
The majority of students were Massachusetts residents (92%) and attended high school in either Boston Public School (32%) or at some other Massachusetts high school (28%). About two thirds of Duet students had previous postseconda experience at either a two-year or four-year institution. Among the 367 students with previous postsecondary experienc 51% attended public two-year institutions, 1.6% attended private two-year institutions, 11.2% attended public four-year institutions and 25.8% attended private four-year institutions.

Students of color make up a greater proportion of the student body and a greater proportion of Associate in Arts (AA) graduates at the Duet-SNHU partnership than at traditional two-year colleges. Table 2 compares the share of enrollees and the share of AA graduates by race and ethnicity supported by Duet to Massachusetts traditional two-year colleges. Duet, Black and Hispanic students comprised 80.3% of enrolled students and 78.4% of AA graduates from 2015-2019. contrast, at traditional two-year colleges, Black and Hispanic students made up 33.3% of the student body and only 22. of AA graduates in 2019.

Table 2: Percent of AA Graduates by Race/Ethnicity

	Duet (2015 - 2019)			MA two-year (2019)	
	Percent Enrollees	Percent AA Graduates		Percent Enrollees	Percent Graduates
Hispanic	40.7	33.7		20.9	15.1
Black	39.6	44.7		12.4	7.5
White	6.5	6.3		52.1	62.1
Other	5	5.9		3.7	2.9
Asian	3.6	4.3		4.7	5.6
N	554	255		10,493	2,138

Note: Race is missing for 5%of DUET students and 7% of MA public two-year cohort

Graduation rates

While the majority of Duet students are pursuing bachelor's degrees, few of the students enrolled between 2015-2019 have been enrolled long enough to complete a four-year degree. As a result, we focus this analysis on AA graduation ra As a benchmark, we compare the graduation rates of students supported by Duet to the graduation rates of traditional two-year colleges in Massachusetts. While this is not a perfect comparison group—students supported by Duet di from students at traditional institutions in measured and unmeasured ways—traditional two-year colleges are the prima alternative for students seeking AA degrees. In 2019, the three-year graduation rate for full-time associate degree seeking students at traditional two-year degree granting institutions in Massachusetts was 20%. By comparison graduation rates for students supported by Duet were more than twice as high as the statewide average: 46% of all students who enrolled in SNHU with Duet support between 2015-2019 completed an AA degree within three years, with graduation rates for the most recent cohorts rising above 50%.

Duet graduation rates are also higher than traditional two-year colleges across all racial subgroups. Figure 2 displays A graduation rates broken out by race and ethnicity. The graduation rates of students supported by Duet are more than tw times higher than those of traditional two-year colleges across all race and ethnicity subgroups except for white studen

Time to degree completion

SNHU's flexible, competency-based model allows students to complete their degree at their own pace. From 2015-201 AA graduates took between 1 and 55 months to complete their degree. Figure 3 displays a selection of possible paths t AA degree completion by plotting the number of credits completed against the numbers of months it took to complete 6 credits among the first 100 Duet students to attain AA degrees. As the figure shows, some students accrue credits quite rapidly while others take more time to complete their degree. It is also important to note that the SNHU-Duet partnershi model allows students to easily take a break from their studies and then re-enroll at a future time when necessary. Inde twenty percent of AA graduates withdrew from the program and then re-enrolled at some point before completing an AA degree.

While there is variation, students supported by Duet tend to complete their degree significantly faster than students ation rates 73242oaufal tw7r 9er /g9er ac8Tf cmp then re-enroll at a sT[( )-282(8 0ai data5.2(AA)55.Na -1.363Sw7r 9e

Figure 3: Duet AA Graduates' Paths to Degree

Note: Each line represents one of Duet's first 100 Associate graduate's paths to degree completion (60 credits mastered). Adapted from Duet.

Across cohorts, Duet students follow a similar trajectory to degree completion. Figure 4 displays the percent of students completing an AA degree by the number of months it took for each entry year cohort. In the 2015, 2017 and 2018 cohorts about 40% of students completed an AA degree within 24 months or less. The 2019 cohort appears to be outpacing earlier cohorts with 40% of students completing their degree in under 20 months, while the 2016 cohort had fewer students (30%) completing a degree in under two years.

Cost of attendance

SNHU's subscription-based tuition structure, under which full time students pay a flat fee ($2,333 per term) for as many credits as they want to complete with no additional charges or fees, provides an opportunity for savings in comparison to the per-credit cost of two-year colleges or four-year colleges. An average Duet student completing their AA degree in 20 months will spend a total of $11,665 ($2,333 x 5 four-month terms), almost half the average cost of tuition and fees ($21,300) to complete an AA at a traditional two-year college in Massachusetts ($5,325 x 4 semesters). While the data is limited, among the 26 BA completers in our data, the average time to degree was 18 months, allowing Duet BA graduates to earn a bachelor's degree for about a quarter of the cost of four years at a traditional in-state four-year college.

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The preceding analyses highlight the ways in which the Duet-SNHU partnership is increasing college degree attainment and reducing barriers to postsecondary education for a traditionally underserved population. Due to the lack of a valid comparison group and differences between the populations of students who attend SNHU with Duet support and those who attend traditional two-year colleges, these results cannot support strong claims about the causal impact of attending SNHU with Duet support versus attending a traditional institution. However, they do suggest that the hybrid college model is a promising approach for addressing three important challenges facing Massachusetts and the nation: racial inequality, social mobility, and economic growth.

Racial inequality

For decades, systemic barriers have prevented students of color from graduating college at the same rates as white students. Nationally, research indicates that even for students enrolled at the same institution, graduation rates may be as much as 35 percentage points lower for students of color compared to white students.[41] In Massachusetts, white students

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gap and expanding economic opportunity more broadly. According to a 2015 analysis conducted by the Boston Federal Reserve, white households in Boston have median wealth of $247,500, compared to just $8 for Black households.[44] A follow-up working group convened by the Boston Fed in response to these findings concluded that inequities in Massachusetts' current higher education systems "widen the gap between rich and poor and between whites and people of color…contributing to intergenerational cycles of poverty and lack of opportunity to build wealth."

The model represented by Duet's partnership with SNHU has the potential to change that in at least two ways. First, by reducing the cost of higher education, Duet can help its students mitigate the burden of college debt, which disproportionately impacts communities of color and reinforces the racial wealth gap. Today, Black adults are more than twice as likely as white adults to hold college debt,[45] and an analysis conducted by the Brookings institution found that Black BA graduates are five times as likely to default on student loans as white BA graduates.[46] Second, by increasing college graduation rates, the Duet model can improve earning potential for graduates and reduce racial income disparities. Black college graduates could not only see an immediate income boost, but also an improved earnings trajectory over time. Specifically, Black adults between 25-34 earn $18,000 more per year than their counterparts with only a high school degree, but that wage premium almost doubles to $33,000 for those 35-44.[47]

Economic opportunity & social mobility

While many view the United States as a land of opportunity, America has fallen to 16th in the world in intergenerational mobility, substantially behind other high-income countries like Canada, Norway, and Denmark.[48] According to research from the Equality of Opportunity Project, absolute economic mobility, as measured by the percentage of children who earn more than their parents, has dropped from 90% for children born in 1940 to just 50% for children born in 1980.[49] While Massachusetts has fared better than many other states, absolute mobility has still fallen more than 35 percentage points in Massachusetts over the last 40 years.[50]

Higher education can dramatically improve social mobility. An analysis conducted by the Equality of Opportunity Project has shown that while in general, students from the highest-income families end up 30 percentile points higher in the national income distribution than students from low-income families, for students from different income backgrounds who attend the same college, that earnings gap is reduced by 75%.[51] The authors conclude that "The small gap in earnings

college and complete their degrees.

In 2019, 68,233 students graduated from Massachusetts' public high schools, and 49,233 (72%) enrolled at an instituti of higher education.[58] While increasing college matriculation rates for Massachusetts' high school graduates is a key priority, the number of potential degree completers age 25+ is a far bigger pool than the number of students graduating high school each year. Specifically, more than 744,000 Massachusetts residents over the age of 25 have some college credit but no degree, and another 1.2 million have no credential beyond a high school diploma.[59] If Massachusetts hopes to increase its college graduation rate, more attention must be paid to this critical and underserved demographic. Accordi to our findings, 67% of students at Duet have attended at least one prior institution of higher education. Programs like Duet, therefore, can provide an important pathway for the hundreds of thousands of Massachusetts residents across th state with some college to be able to return to school and graduate.

While we do not have sufficient data on the employment outcomes of students who have graduated from SNHU with Due support to estimate the economic return of the program, past research suggests that the returns on a college degree a generally large. According to Hershbein and Kearney, the median bachelor's degree holder earns $1.19 million in lifetim income, more than twice the typical high school graduate.[60] The benefits of increased college graduation rates are also not limited just to individual graduates: at the city level, there is a strong correlation in Massachusetts between higher rates educational attainment and lower rates of unemployment.[61] Statewide, according to a 2021 analysis conducted by Ithaka S + Rc, associate degree holders in Massachusetts contribute more than $1,000 in annual benefit, and bachelor's degree holders contribute more than $2,500 in annual benefit due to increased tax revenue and reduced public expenditures.[62] In total, the report estimated that a 5% increase in educational attainment in Massachusetts would produce between $2 million (if new degrees are all associates) to $500 million (if new degrees are all bachelor's) in annual value.

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Through a combination of innovative strategies, including competency-based education and hybrid learning, Duet's partnership with SNHU serves an underrepresented population in higher education and outperforms comparable postsecondary institutions on similar degree attainment measures. While this evidence is not causal, it does suggest programs like Duet may play an important role in reducing racial inequality and increasing social mobility and economic growth. Further research is needed to establish causals of Duet and other hybrid programs on college degree attainment and longer-term labor market outcomes. Nonetheless, the initial evidence suggests these programs have th potential to be transformative in higher education.

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