

# The Relationship Between Participation in Career and College Promise and Community College Attainment

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## BRIEF DESCRIPTION

This brief is the first of a series that addresses the relationship between North Carolina's dual enrollment program, Career and College Promise (CCP), and community college attainment in the state. The purpose of this study is to understand CCP participation trends and descriptive outcomes for students who participate. In addition, this study offers policy and practice implications for how historically underserved student participation in CCP may contribute toward increasing postsecondary attainment in North Carolina.

## INTRODUCTION

In the United States, the value of college is increasing (Baum et al., 2013; Jackson, 2014). Students and families understand that college is a way to ensure job stability and a family-sustaining wage. However, we see declining trends in college enrollment nationally (Ladd & Goertz, 2015). At the same time there is an increased need for skilled labor (Jackson, 2014; myFutureNC Commission, 2019). In North Carolina, 67 percent of jobs require a postsecondary credential, which only 50 percent of state's residents currently hold (myFutureNC Commission, 2019). To meet this need, North Carolina set the ambitious goal for 2 million North Carolinians to hold a postsecondary credential by 2030. North Carolina's 58 community colleges serve over 700,000 students annually, providing access to a high quality, low-cost education within 30 miles of home for 99 percent of residents (NCCCS website, 2019).

Dual enrollment programs are one strategy used to help meet myFutureNC's goal (An, 2013a; Bailey & Karp, 2003; Karp & Hughes, 2008; Tobolowsky & Allen, 2016). Career and College Promise (CCP) was established and funded by the North Carolina legislature in 2012 (North Carolina State Law, 2011). In 2016, the North Carolina legislature invested approximately \$111 million annually into CCP through the North Carolina Community College System (Coltrane & Eads, 2018; Eads, 2018). A key aspect of the program is that students earn college credits during high school that also meet high school graduation requirements. CCP is made up of two pathways (the **College Transfer Pathway** and the **Career and Technical Education Pathway**). In both cases, courses taken in high school are expected to lead to a postsecondary credential. In the College Transfer Pathway, students take general education classes meant to lead to an Associate in Arts or Associate in Science that transfers to a four-year institution. In the Career and Technical Education Pathway, students take courses that lead to an industry-recognized credential (Certificate, Diploma, or Associate in Applied Sciences). Given that CCP is funded by the North Carolina legislature, students participate tuition-free, regardless of which pathway they choose.

## KEY POINTS

- » Overall participation trends in CCP show that students are primarily white, female, and higher income compared to non-participants. Comparatively, the Career and Technical Education pathway shows more diversity in participation, particularly for low-income students, LatinX<sup>1</sup> students, and Black<sup>2</sup> students.
- » Descriptive outcomes suggest that students in both pathways experience higher rates of community college enrollment, persistence, credits earned, and credential completion relative to peers who do not participate in the program.

## THE PROJECT

The study summarized here uses a correlational analysis and ordinary least squares regression to describe CCP participants in North Carolina and explore relationships between CCP participation and community college success. This preliminary information is descriptive in nature and represents an important first step in understanding both who the program is serving, particularly regarding historically underrepresented groups of students, and how CCP participation relates to student success.

This study's longitudinal dataset includes all North Carolina high school students who were juniors in the 2015-2016 academic year and remained enrolled in the same high school through their senior year (2016-2017). The 2014-2015 academic year, students' sophomore year of high school, was used as a baseline to identify students' demographic characteristics and their eligibility to participate in CCP as juniors and seniors. Students were observed through 2018-2019, which includes data two years after their anticipated high school graduation (spring 2017), allowing for an exploration of whether students completed a community college credential. Two years is the shortest amount of time in which a student might complete an associate's degree, although admittedly North Carolina community college students often take four years or longer to complete their degree (NCCCS, 2020).

Data were obtained through the North Carolina Community College System (NCCCS) and the state's longitudinal data system (P-20), which connects data and is jointly managed by public K-12 schools, the community college system and the university system. The analytic sample for this study included 82,816 students, of which 16,235 (or 20 percent) participated in one of the two CCP pathways at some point during their junior and/or senior year. Of these 82,816 students, 4,254 (or 5 percent) participated in CCP in both their junior and senior years of high school. This brief presents descriptive statistics for both student populations, defining them in the following way: **"Ever-Users"** are those students who participated in CCP for any length of time during their junior and senior year (i.e., 16,235 students), whereas **"Always-Users"** are the students who participated consistently for both their junior and senior years (i.e., 4,254 students).

To explore participation trends in CCP, I first compare demographic data for the Ever-Users, the Always-Users, the students who never participated in CCP (which I term **"Never-Users"**), and all

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<sup>1</sup> LatinX students are those whose race/ethnicity is listed as "Hispanic" in the North Carolina Department of Public Instruction's demographic records.

<sup>2</sup> Black students are those whose race/ethnicity is listed as "African American" or "Black" in the North Carolina Department of Public Instruction's demographic records.

students in the sample. I then compare students' demographic characteristics by pathway: comparing students in the College Transfer Pathway to those the Career and Technical Education Pathway. Next, I look at descriptive community college outcomes for students. These include:

- » enrolling in a North Carolina community college after high school;
- » persistence in a community college for at least two years after high school;
- » the number of total community college credits earned either during or after high school;
- » first year post high school community college GPA;
- » earning a community college credential (certificate, diploma, or associate's degree) during or after high school.

These outcomes are disaggregated by gender, race/ethnicity, and economic disadvantage<sup>3</sup>. To further explore the relationship between participation in CCP and community college outcomes, I estimate a series of linear regression models using ordinary least squares. Control variables include students' demographic characteristics (e.g., gender, race/ethnicity<sup>4</sup>, free and reduced lunch status) and high school characteristics (i.e., the school performance grade score in 2014-2015, the four-year cohort graduation rate in 2014-2015, and the student-to-teacher ratio in 2014-2015). To further control for variation in participation related to local conditions, I include county-level data from the U.S. Census Bureau (i.e., county urbanicity, employment rate, total number of households, and mean household income). Including these county-level controls helps address concerns that there are county-specific differences that affect both participation in CCP and postsecondary attainment outcomes.

## FINDINGS

**Female, white, and middle-to-upper class students make up the majority of CCP participants. Conversely, the participation rates for historically underrepresented students are lower than their proportion of the population (Appendix: Table 1).**

Specifically, females are over-represented in the CCP program by about 8 to 10 percentage points. That is, although just 50 percent of all North Carolina students in this population are female, 60 percent of Always-Users and 58 percent of Ever-Users are female. CCP participants also tend to be less racially and ethnically diverse than the overall population. Whereas 56 percent of students in the population are white, 75 percent of Always-Users and 70 percent of Ever-Users are white. Conversely, students of color<sup>5</sup> are notably under-represented in the CCP program. Although Black students represent 24 percent of the total population, they represent just 13 percent of Always-Users and 15 percent of Ever-Users. Similarly, LatinX students represent 12 percent of the population but only 8 percent of Always-Users and 9 percent of Ever-Users. We can also examine the proportion of economically disadvantaged students (defined as those qualifying for free or reduced lunch) in the program. These students access the CCP program at lower rates than expected, representing 38 percent of Always-Users and 39 percent of Ever-Users, compared to their much higher presence in the overall population at 44 percent. It is also notable that CCP participants primarily speak English at home (92 percent of Always-Users and 90 percent of Ever-Users, compared to 86 percent of all

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<sup>3</sup> Defined as those qualifying for Free and Reduced Lunch status

<sup>4</sup> Less than 4 percent of the total population is American Indian, Alaskan Native, Asian, Pacific Islander, or identifies with two or more races. Due to the low percentage of the population, these descriptive statistics are not included in the tables below.

<sup>5</sup> Defined as Black or LatinX students

students in the population). Finally, CCP participants have a higher high school GPA (3.8 for Always-Users; 3.6 for Ever-Users) than the mean value of 3.2 which is observed in the overall population. It is worth noting, however, that this latter observation may be simply mechanical given that CCP participation requires a 3.0 minimum weighted high school GPA.

**In addition to looking at overall participation in CCP, we can examine student characteristics by pathway, which reveals notable differences in the types of students matriculating through the two CCP pathways (Appendix: Table 2).** Relative to their counterparts in the Career and Technical Education pathway, students in the College Transfer Pathway are more likely to be female (63 compared to 52 percent), white (76 compared to 64 percent), and to speak English at home (93 compared to 87 percent). Perhaps most notably, students in the College Transfer Pathway have a much higher high school GPA than their peers in the Career and Technical Education pathway (4.0, on average, compared to 3.2).

If we focus specifically on the population of historically underrepresented students, it is apparent that students that meet these criteria are more likely to participate in the Career and Technical Education Pathway. Relative to their counterparts in the College Transfer Pathway, students in the Career and Technical Education Pathway are more likely to be Black (20 compared to 11 percent), LatinX (11 compared to 6 percent), to be economically disadvantaged (48 compared to 30 percent) and to speak Spanish at home (11 compared to 5 percent).

**Next, I explore the relationship between participating in either pathway of the CCP and community college outcomes for Ever-Users in the program (Appendix: Table 3).** These statistical models control for student-level, school-level, and county-level characteristics, as described previously. One limitation worth noting at the outset, however, is that students who did not enroll at a community college after high school may actually be enrolled in a public four-year institution or private institution (these enrollment outcomes are not observed in the dataset used in this study).

Results show that students who participated in the CCP program in 2015-2016 and/or 2016-2017 had a 11.6 percentage point higher probability of enrolling in a North Carolina community college after high school compared to students who did not participate in CCP. Conditional on ever enrolling in a community college in the year immediately following high school ( $n = 22,560$ ), CCP participants had a 8.7 percentage point higher probability of persisting from the first year of community college enrollment to the second year, compared to students who did not participate in CCP. Graduation outcomes show a 14.1 percentage point higher probability of graduating from a North Carolina community college among CCP participants. CCP students also had a predicted first-year community college GPA that was 0.417 points higher than their peers who did not participate in CCP. Regression estimates also show a statistically significant and positive relationship between CCP and total number of community college credits earned where participation in CCP is related to earning about 12 additional credits compared to non-participation. Students who earn college credit through CCP have the potential to transfer these courses to a community college or University of North Carolina System school, possibly saving students money and a year of Pell eligibility.

## FOR DECISION MAKERS: IMPACT ON PRACTICE & POLICY

- » Results show that students in CCP who subsequently enroll in a community college earn on average 12 community college credits more than students who do not participate in CCP. Although the results presented here are correlational, they provide suggestive evidence that CCP has the potential to save students both time and money, since they can enter college after high school having completed a semester's worth of credit. In terms of real dollars at a North Carolina Community College, this has the potential to save students \$912, an entire semester of full-time tuition (North Carolina Community College System Office Website, 2019). In addition, for students at North Carolina State University, this has the potential to save students \$3,268, assuming all of the credits transfer. For students who receive full Pell grant awards, this saves the student an entire semester of Pell funding.
- » A key policy implication is to maximize the impact of the investment in CCP by increasing access to the program so that more students can experience its potential benefits. There is an opportunity for high schools and community colleges to further expand participation among LatinX, Black, and economically disadvantaged students and, by doing so, potentially promote credential attainment.

## CONCLUSION

To sustain the CCP program and its funding stream long-term, policymakers will need to know who CCP reaches. **This research offers possible answers to that question, and in particular sheds light on who is not reached, such as the Black and LatinX populations.** North Carolina's community colleges serve as a national reference for community college education due to the large number of students served in a diversity of rural and urban communities by the system (nearly 700,000) (Bill and Melinda Gates Foundation Website, 2019; NCCCS, 2019). The implications of this study reflect key considerations for other statewide dual enrollment programs, especially because North Carolina's dual enrollment participation reflects national dual enrollment participation rates (Fink et al., 2017).

### ABOUT THIS BRIEF

Deal, S. (2020). The Relationship Between Participation in Career and College Promise and Community College Attainment. Raleigh, NC: Belk Center for Community College Leadership and Research.

## REFERENCES AND FURTHER READING

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## APPENDIX

**Table 1**  
**Student Characteristics, All CCP Participants**

|  | All Students | Always-Users | Ever-Users | Never-Users |
|--|--------------|--------------|------------|-------------|
| <i>Students' Demographic Characteristics</i> |              |              |            |             |
| Female                                       | 50%          | 60%          | 58%        | 48%         |
| White  | 56%          | 75%          | 70%        | 53%         |
| African American/Black                       | 24%          | 13%          | 15%        | 26%         |
| Hispanic                                     | 12%          | 8%           | 9%         | 12%         |
| Economically Disadvantaged                   | 44%          | 38%          | 39%        | 45%         |
| <i>Home Language</i>                         |              |              |            |             |
| English                                      | 86%          | 92%          | 90%        | 85%         |
| Spanish                                      | 11%          | 7%           | 8%         | 11%         |
| Other  | 4%           | 2%           | 2%         | 4%          |
| <i>Mean Weighted High School GPA</i>         | 3.2          | 3.8          | 3.6        | 3.1         |
| <i>Observations</i>                          | 82,816       | 4,254        | 16,235     | 66,581      |

*Note.* Sample includes students in traditional North Carolina public high schools, excluding early college high schools, who were 10<sup>th</sup> graders in 2014-2015 and remained enrolled at the same high school through 12<sup>th</sup> grade. "Always-Users" are defined as the students who participated consistently for both their junior and senior years; "Ever-Users" are defined as those students who participated in CCP for any length of time during their junior and senior year; "Never-Users" are defined as the students who never participated in CCP. "Other" languages include more than 80 languages.

Source: The NC Department of Public Instruction, 2014-2015 academic year.

**Table 2**  
**Characteristics of Ever-Users by CCP Pathway**

|  | College Transfer Pathway | Career and Technical Education Pathway |
|--|--------------------------|--|
| <i>Students' Demographic Characteristics</i> |                          |  |
| Female                                       | 63%                      | 52%                                    |
| White  | 76%                      | 64%                                    |
| African American/Black                       | 11%                      | 20%                                    |
| Hispanic                                     | 6%                       | 11%                                    |
| Economically Disadvantaged                   | 30%                      | 48%                                    |
| <i>Home Language</i>                         |                          |  |
| English                                      | 93%                      | 87%                                    |
| Spanish                                      | 5%                       | 11%                                    |
| Other  | 2%                       | 2%                                     |
| <i>Mean Weighted High School GPA</i>         | 4.0                      | 3.2                                    |
| <i>Observations</i>                          | 7,446                    | 8,024                                  |

Note. Sample includes students who ever participated in CCP, were juniors in 2015-2016 in traditional North Carolina high schools, who remained enrolled at the same high school through 12<sup>th</sup> grade; "Other" languages include more than 80 languages. Observations by pathway are not mutually exclusive, there are n = 765 students enrolled in both pathways and are not included here.

Source: The North Carolina Department of Public Instruction, 2014-2015 academic year.

**Table 3**  
**Estimated Relationship between CCP Participation and Community College Success for Ever-Users**

| Outcome                                       | Coefficient Estimate |
|---|----------------------|
| Enrolled in Community College                 | 0.116<br>(0.004)***  |
| Persisted Year 1 to Year 2 (if not graduated) | 0.087<br>(0.007)***  |
| Graduated Community College                   | 0.141<br>(0.006)***  |
| # College Credits Earned                      | 12.599<br>(0.333)*** |
| 1 <sup>st</sup> Year Postsecondary GPA        | 0.417<br>(0.020)***  |

Note. Sample includes students who enrolled in a North Carolina community college the year immediately following high school (2017-2018). Students who ever participated in CCP, were juniors in 2015-2016 in traditional North Carolina high schools, who remained enrolled at the same high school through 12<sup>th</sup> grade. “Ever-Users” are defined as those students who participated in CCP for any length of time during their junior and senior year. Controls include student-level, school-level, and county-level characteristics. \*\*\*p < 0.001  
Source: NCCCS.