THE TRANSITION FROM HIGH SCHOOL TO COLLEGE IN NORTH CAROLINA

EXECUTIVE SUMMARY

The transition from high school to further postsecondary education is a joint in the educational pipeline with the clear potential to leak. The K-12 sector needs to consider whether students are prepared with the knowledge and skills they need to be successful in postsecondary education, while the postsecondary sector needs to consider the types of supports that are needed to facilitate the transition and ensure that students are successful in postsecondary education.

Data show that North Carolina has made improvement in some areas relevant to the transition to college but challenges remain, particularly in the area of mathematics achievement and in reducing performance gaps between different groups of students. North Carolina has undertaken key policy initiatives facilitating the transition to college, including requiring a college preparatory course of study for high school graduation, providing access to dual enrollment, supporting innovative school models such as early college high schools, and providing college admissions assistance and financial aid.

Additional steps the state could take would be to: increase the emphasis on college and career planning in middle and high school; work with high school faculty to align instruction and content to college expectations; assess college readiness in high school and provide supports to students not seen as ready; embed advanced course enrollment in the high school accountability system; incorporate reminders and "nudges" into postsecondary admissions and enrollment systems; improve alignment across postsecondary institutions; and connect financial aid to more comprehensive support programs.

A more radical re-envisioning of the system would involve merging the high school and college experiences in an approach similar to early colleges. Students would be expected to leave high school with a high school diploma and some sort of postsecondary credential or the core general education college courses required for a four-year degree.



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POLICY BRIEF

As with any transition point in the educational pipeline, the entrance into postsecondary education represents a student's transition **FROM** something existing (high school) **TO** something new (college). This means that both sides of the transition have responsibilities. The high school or secondary side has responsibility for preparing students to be successful in college. The postsecondary side has responsibility for assisting students in making that transition successfully. This brief summarizes the skills and supports that students need to make the transition and explores North Carolina's status on some key measures related to the transition. It also includes research indicating what should be in place to support students' transition. Finally, the brief concludes with recommendations for consideration as North Carolina moves to expand the number of adults with postsecondary credentials.



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"Out of every 100 9th grade students in North Carolina, 86 graduate from high school, and 57 enroll in postsecondary education within 16 months of graduation."

(Facts and Figures, Education in North Carolina, 2018. BestNC. ncedfacts.org)

What are important factors to consider in the transition to college?

Students need a core set of skills and knowledge to make a successful transition from high school to college. As considered under My Future NC, college is defined as education beyond secondary school; this includes community colleges, four-year institutions, or institutions that provide industry-validated credentials such as industry or occupational groups.

Skills and knowledge the K-12 sector should provide

Test scores get a lot of attention at the high school level, and people sometimes think that a single test score can determine whether a student is ready for college. Educators and researchers recognize that college readiness is actually much more complex and multi-faceted. For students to be ready for postsecondary education, they need to develop skills in a core set of areas (most of which are seen as also critical to the 21st-century workforce²):

- Academic knowledge. Students need to master specific content in order to be successful in college classes. This content is often represented by the courses that are included in a high school college preparatory course of study. Research shows that if a student does not get on track for college in 9th grade, it is very hard for her or him to graduate with the courses needed for college. For example, a study in California found that if a student had not taken Algebra I in 9th grade, she or he only had a 6 percent change of completing the courses required in college.³
- Academic skills. In addition to content knowledge, students need a broad range of academic skills. They need to be able to think critically and problem-solve. They need to be able to







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comprehend a variety of texts as well as write and communicate clearly. They also are more likely to be successful if they are organized and manage their time effectively.

- "Soft" skills/21st-century skills, sometimes called "Employability skills."

 These skills include the ability to work on teams and the ability to use technology to solve problems. They also include the ability to advocate for oneself.
- Understanding the college or certificate application process. Students also need to understand the process of actually applying to college or for a certification, including taking the necessary exams, completing applications, filing for financial aid if needed, and completing the final steps in enrollment.

Many people believe that students also need to develop college-going *aspirations*. However, research indicates that students already have very high aspirations, with approximately 90% of 8th graders planning to attend some postsecondary education. The challenge is ensuring that they gain the skills listed above that will allow them to transform aspirations into reality.⁴

Skills and knowledge the postsecondary sector should provide

Postsecondary institutions increasingly have recognized that they also bear some responsibility for students' successful transition to college. Below are some factors that research has identified as being associated with successful enrollment and persistence in college.

- Financial support. Research is clear that many students do not complete college because of insufficient financial support, especially students from low-income backgrounds or who are the first in their family to go to college. The challenge is not just about the amount of support available, though; a critical role for postsecondary institutions is helping students seek out and apply for aid. An estimated one in five low-income students enrolled in college qualifies for financial aid but never applies for it.⁵
- **College knowledge.** Students need to know how to maneuver the often-complicated logistics of college, including understanding what a major is, how to register for courses, and how to pay tuition. These are factors that might be obvious to students of parents who went to college, but may be much more opaque for students whose parents did not have a college experience.
- **Support and engagement.** Students are more likely to persist when they are academically and socially integrated into their college community, particularly in the first year.⁶

How is North Carolina doing relative to the transition to college?

Overall, data show that North Carolina is making progress in some areas of the transition to college — for instance, in expanding access to college courses — but still faces substantial challenges related to academic performance, particularly in mathematics and for certain groups of students. This section includes key data points relevant to the transition from high school to college.

Academic preparation. North Carolina has seen a substantial increase in the percentage of students graduating from high school with graduation rates increasing from 74.2% in 2010 to

Why is a successful transition to college important to educational attainment?

If we continue the metaphor of education as a pipeline that contributes to success in the workforce and creation of a productive and involved citizenry, then each transition between parts of the educational system can be considered as joints in the pipeline with the potential to leak. Thus, the stronger we can make each transition point, the less likely the pipeline is to leak and the more likely it is that North Carolina can expand the number of adults with postsecondary credentials.











86.5% in 2017. However, academic performance measures still indicate that not all of North Carolina's students are achieving at desired levels

The percentage of high school students testing at College and Career Readiness levels on North Carolina's end-of-course exams has increased slightly over the past four years but is still at approximately only 50% (Figure 1).⁷ There are also large gaps in readiness between different populations of students. For example, approximately 63% of White students tested at the College and Career Readiness level compared to 30% of Black students and 39% of Hispanic students. Additionally, less than a third of economically disadvantaged students are performing at levels that indicate readiness for college.

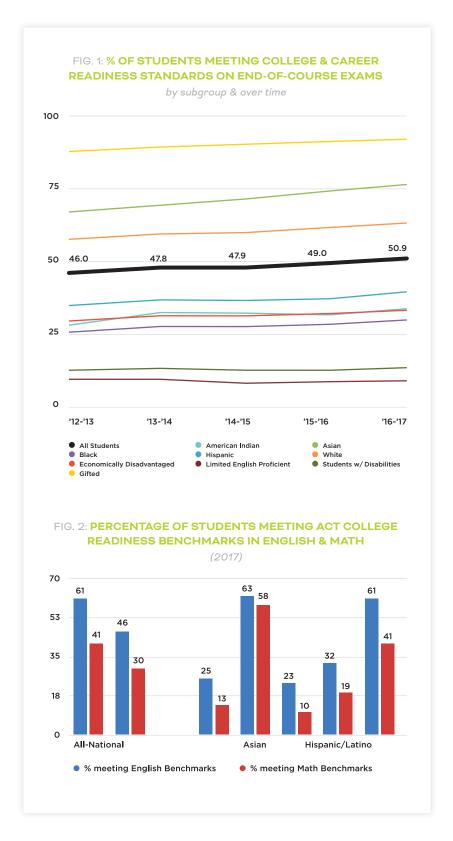
In addition, less than half of North Carolina's high school students are considered college-ready when looking at ACT scores (Figure 2), a rate that is 10-15 percentage points below the national average.⁸ Out of the 17 states with 100% participation rates on the ACT, North Carolina's average score is ranked 14th.

On both achievement measures (state and ACT), the challenges are greater in math with less than a third of North Carolina's students meeting the ACT benchmark in math.

Given the demographics in North Carolina, the state will not be able to meet educational attainment goals without improving the performance and outcomes of struggling populations, including Black and Hispanic/Latino students and students who are economically disadvantaged. It should also be noted that there are many additional subgroups of students, such as refugees or homeless students, for whom we do not currently have data but who may also face substantial challenges in making the successful transition to college.

Academic preparation and college

knowledge. One way to prepare students is to have them take college-level courses while in high school. This is an area in which North Carolina has made a concerted effort and the percentage of high school students







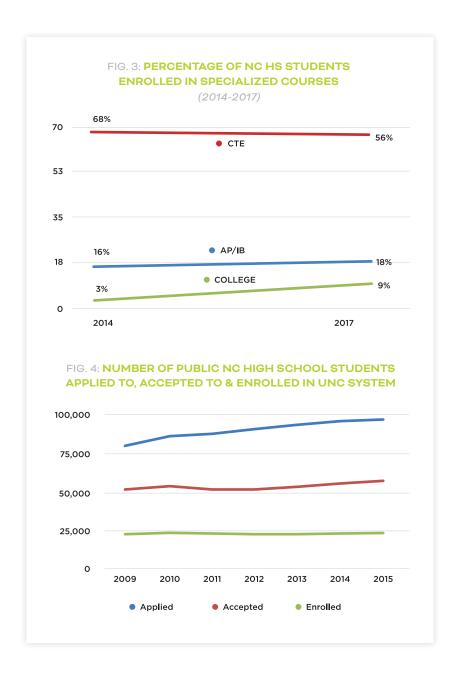




taking college-level courses has almost tripled in the last three years, up from 3.3% in 2014 to 8.9% in 2017. A slight increase has also occurred in Advanced Placement/ International Baccalaureate (AP/IB) courses, but there has been a slight decline in Career and Technical Education course taking (Figure 3).9 Although NCDPI does not provide public data disaggregating advanced course taking by sub-group, other studies have found that low-income and minority students are less likely to enroll in advanced courses, particularly dual enrollment. For example, a study of advanced course taking in Florida found that while 41% of the student population was Black or Hispanic, 36% of AP enrollees were Black or Hispanic but only 19% of students taking dual enrollment courses were.10

Financial support. Postsecondary education is different from public secondary education in that students are expected to pick up at least a portion of the costs of schooling. As noted earlier, a lack of financial support can inhibit many students from successfully completing postsecondary education. In 2017, 52 of North Carolina's 115 school districts saw fewer than 60% of their students complete the Federal Application for Financial Student Aid (the FAFSA), the key form by which the federal government, the state, and colleges determine students' eligibility for financial support. Polk County was the only county in the state with a FAFSA completion rate of over 80%.¹¹

58% of NC four-year college graduates leave school with debt. Despite these statistics, North Carolina graduates do have some of the lowest levels of debt in the United States. The average debt is \$25,562, ninth-lowest in the country.¹²



Enrollment and performance in postsecondary education. As noted under the pipeline statistics presented earlier, 57 of every 100 9th graders enroll in some sort of postsecondary education (either two-year or four-year) within 18 months of graduating from high school. There has been a substantial increase in the number of students applying to the UNC system and an increase in students being accepted. However, despite the increase in interest, actual enrollment in UNC system schools of recent NC high school graduates declined slightly over the same time period (Figure 4).¹³ Overall, the UNC system served a total of 224,991 degree-seeking undergraduate and graduate students in 2016-2017, an amount that has increased since 2010-2011 when a total of 208,756 were enrolled.¹⁴









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Once students enroll in the UNC system, student performance has been improving. In 2015, first-year GPA for students in the UNC system was 2.98 and GPA has been slowly increasing over time. In 2014, 84.0% of students in the UNC system remained in the same institution from the first to the second year. Persistence does differ dramatically across institutions, with rates ranging from 66.0% to 96.8%. In 2016, the UNC system schools had an average four-year graduation rate of 41.4% and a six-year graduation rate of 63.8%.

Private colleges are also an important part of North Carolina's postsecondary educational system, enrolling an estimated 97,000 undergraduate students in 2016. In 2016, the private colleges had an average retention rate of 74%, a four-year graduation rate of 49.3% and a six-year graduation rate of 58.3%.¹⁸

North Carolina's community college system provides a pathway to a degree or credential for many students, as well as providing retraining for displaced workers. In the 2016-2017 school year, 295,639 individuals were enrolled in North Carolina's community colleges as curriculum students, defined as students enrolled in a program that leads to a credential or degree.¹⁹ This number has been declining steadily since the recession; for example, in 2010-2011, a total of 338,431 curriculum students were enrolled. Because community colleges are open-access institutions that serve anyone who chooses to enroll, their success rates are lower than four-year institutions. In 2016, the overall success rate for community college system students in college-level English was 52%; in college-level math, it was 30%.²⁰ 44% of community college degree curriculum students either graduated, transferred to another institution or were still enrolled in college after six years.²¹

What does research say should be done to facilitate the transition to college, and what is North Carolina doing?

Supporting the transition at the high school level

Strengthen curriculum rigor. To prepare students for college, researchers recommend that high schools offer a default college-preparatory curriculum that will allow students to enroll in college without needing remediation.²²

In North Carolina, state-level high school graduation requirements were increased (starting
with the freshman cohort of 2012-2013) to require a default college preparatory course of study
aligned to UNC system requirements.

Researchers also recommend that schools offer advanced courses (such as Advanced Placement or dual enrollment courses) that can expose students to college-level expectations, but with the supports of a high school.²³ Some states, such as Texas, are even including measures of college-level course taking in their high school accountability measures.

• In North Carolina, eligible high school students have access to free college courses as authorized under the states' Career and College Promise legislation (www.nccommunitycolleges.edu/academic-programs/career-college-promise). Dual-enrollment courses are required to be on one of a set of pathways that lead students to a technical certificate or provide the general education courses necessary to transfer to a four-year college.

Develop other college readiness skills. In addition to the importance of academic knowledge, researchers recommend that schools help students develop academic skills — such as organization and time management, writing and communication skills, familiarity with technology — that are critical to success in college.²⁴





• Individual NC high schools have college access programs, such as AVID or Gear Up, that provide students with college readiness skills, but there is no systemic emphasis.

One approach that many states use is to assess the college readiness of students via college placement exams. The theory is that schools would then intervene appropriately if students had not attained a college readiness score. There is limited research on the effectiveness of this approach, although a study of a program that coupled early assessment with supports found that it slightly reduced the likelihood of remedial math enrollment.²⁵

In North Carolina, the ACT is required of all 11th graders in North Carolina. New state legislation
requires high school seniors who have not met community college readiness standards to take
developmental education and remediation courses in high school. In 2016-2017, pilots were being
implemented with seven community colleges.

Assist with college applications and financial aid. A stronger research base indicates that students are more likely to enroll in college when they have support in completing the logistical steps necessary for college entry and applying for financial aid. This includes helping students take college entrance exams, helping students identify colleges that might be a good fit for their goals, and providing assistance in filling out college applications and the Federal Application for Student Financial Aid.²⁶

The North Carolina State Education Assistance Authority provides North Carolina residents with
assistance in paying for education at all levels. The Authority hosts a comprehensive website
(CFNC.org) focused specifically on helping students in North Carolina apply to college and for
financial aid. The NC Community College System is implementing a legislatively mandated Career
Coaching program to help students identify careers aligned to local needs and community college
programs that can fill those needs. A total of 28 coaches associated with 15 community colleges
were proposed for 2017-2018.

Supporting the transition at the college level

Do early outreach to students. Approximately 10 to 20% of students who have been accepted to college and indicated their intent to enroll never matriculate at college in the following year. Research has shown that outreach, particularly if done by college staff, can help students who are most at risk of not enrolling in the following year.²⁷

• Individual NC colleges do outreach efforts but there is no systemic approach.

Connect students to college early. A successful first year in college is critical to retaining students. Many colleges offer programs at the start of school to orient new students to college and to build their academic skills if necessary. These "bridge programs" or "boot camps" have a sparse research base, with only one study finding a slightly positive (but not statistically significant) outcome.²⁸ More positive impacts have been found with "first year experience" courses or courses such as freshman seminars that are intended to provide academic and social support to students. Results showed mostly positive impacts on achievement and educational attainment for these activities, although some programs did not demonstrate any impact.²⁹

Many NC colleges provide summer bridge programs to get students used to college. More
colleges also are providing comprehensive academic/social supports such as "Living and Learning
Communities" that allow students to make connections and become more engaged in school.

Provide students with financial assistance coupled with supports. As noted earlier, many students leave college because of financial challenges. Recent research has suggested that financial support by itself primarily improves **access** to postsecondary education but is not necessarily





associated with increased **success**. Researchers have recommended supplementing financial aid with comprehensive supports or providing supplemental scholarships tied to students' completion of certain benchmarks, such as completing a number of credits with a "C" or better.³⁰

• In 2015, North Carolina offered more than \$300 million in need-based financial aid, although that amount has declined 9% since 2011.³¹ There is no system-wide approach connecting financial aid to other supports.

A third way: eliminating the transition

The approaches described above maintain the separation between high school and college, thereby requiring a transition. There are newer models of schooling that are seeking to essentially eliminate this transition. Early colleges are relatively recent models of schooling in which students are enrolled in high school and college at the same time. Targeted at students who are underrepresented in college including students who are low-income, the first in their family to go to college, or members of racial or ethnic groups underrepresented in college, these schools are focused on college readiness for all the students in the school. The goal is for the student to graduate in four or five years with a high school diploma and an associate degree or two years of college credit.

Rigorous studies, including one conducted on North Carolina's early college model, have found that these schools improve students' college readiness, increasing the percentage of students completing the courses required for four-year college entry and having small positive impacts on ACT English and writing scores. The model has a large impact on attainment of postsecondary credentials, with a North Carolina experimental study showing positive impacts of approximately 20 percentage points on associate degree attainment (28.4% of early college students in the study had attained an associate degree within 8 years after 9th grade compared to 8.8% of students in the study's control group) and a 5 percentage point impact on bachelor's degree attainment (18.1% vs. 12.8%).³²

Preliminary analysis of the costs and benefits of North Carolina's model has shown that the early college route costs North Carolina approximately \$10,000 more than the traditional route if a student is only getting a high school diploma. However, savings are realized with attainment of postsecondary credentials. Getting an associate degree under the early college route costs society approximately \$2,500 less than the traditional route while getting a bachelor's degree under the early college route saves society approximately \$30,000.³³

 North Carolina has been a national leader in the early college movement. State legislation supports "Cooperative Innovative High Schools," high schools with strong postsecondary partnerships in which students have the opportunity to earn a college degree and a high school diploma simultaneously. In 2017, there were 125 of these schools throughout the state.

What could North Carolina do to minimize leaks from the pipeline?

Any time students interact with multiple systems, there can be challenges reconciling differences between the systems. Thus, we need to consider ways of increasing the alignment and coordination between the K-12 and postsecondary systems to make the experience more seamless for students. This section is designed to provoke thinking and discussion about the transition to college. The first set of proposals could be considered more incremental in nature while the second set reflects a potentially more radical reconceptualization of the educational system.





More incrementally

Within the existing systems, there are some additional steps North Carolina could take with the goal of smoothing the transition.

Engage middle and high school students in college and career planning. Having students develop a clear picture of what they would like to do after high school should help them understand the relevance of their high school curriculum in addition to preparing them to more successfully navigate this transition. One systemic way to do this would be to modify graduation requirements so that all students are required to develop a post-high school plan. Included in this plan could be elements such as results of career interest inventories, a reflective essay on what the student would like to do after graduating from high school, a resume, applications to college/job, and an indication that the student has filled out a FAFSA. This would need to be supplemented by expanded funding for counselors so that students receive sufficient attention and assistance in this planning process. This is also an area where the school system can work in partnership with employers, community groups, or postsecondary institutions. For example, under the College Advising Corps, universities such as Davidson, Duke, North Carolina State or UNC-Chapel Hill provide college counselors to local high schools. Businesses can also partner with schools to offer work-based learning opportunities such as internships or apprenticeships where students can be exposed to different careers while also learning college- and career-relevant skills.³⁴ It may be worth considering ways to make support for these types of business and community partnerships more systemic.

Aligning content and skills. North Carolina already has made substantial progress aligning the K-12 and postsecondary systems through the high school course requirements and the expectation that college courses taken in high school are part of a pathway. Yet teachers are still often unclear about college expectations, particularly relative to the level of thinking, writing, and reading required. This is often the case in more rural, remote areas with low numbers of advanced courses. One system-level approach might be to identify high schools with above-average percentages of students requiring remediation in both community colleges and the UNC system. These high schools could then be paired with postsecondary institutions that would work with them to ensure that high school faculty understand the expectations of college courses and can assist in aligning curriculum content so that high school courses can adequately prepare students.

Administer clear assessments of college readiness in high school coupled with interventions for students identified as not ready. North Carolina already has a law requiring schools to test students for college readiness and provide remedial coursework to students who are not ready (S.L. 2015-241, Career and College Ready Graduates). As part of this, the Community College System and Department of Public Instruction are developing remedial courses to support students. Testing the effectiveness of this approach (as is currently planned) will allow the state to determine whether this work should be continued and expanded.

Embed advanced course enrollment in the high school accountability system. North Carolina has significantly expanded access to dual enrollment courses through the Career and College Promise program, and the number of students taking college courses increases every year, but it is still only at 9%. North Carolina's high school accountability system already includes measures of college readiness including percentage making a UNC-system qualifying score of 17 on the ACT and percentage of CTE concentrators who meet the standard for the Silver Key on the WorkKeys assessment. Adding a measure of the proportion of students taking college-level courses (dual enrollment, Advanced Placement) into the high school accountability measures may encourage high schools to expand access to the free dual credit courses provided in North Carolina. Texas has done something similar, where the number of students taking advanced or dual credit





courses is considered an indicator of college readiness in their accountability system. This increase in expectations also should be accompanied by an increase in support, such as an increase in counselors or support for a college liaison-type position in each school.

Incorporate reminders and "nudges" into admissions systems. Funding could be provided to amend community college and university application systems as necessary to provide customized nudges to accepted students to remind them to complete other parts of the application process. A customized reminder could go out indicating that a student still needs to complete the FAFSA or needs to register for classes. For example, an effort at Georgia State that used artificial intelligence to send customized reminder texts to students resulted in an increase in the number of students enrolling on time.³⁵

Improve alignment across postsecondary institutions. Through its Comprehensive Articulation Agreement, North Carolina has made tremendous strides in identifying community college courses that will automatically transfer for credit when a student enters the UNC system. However, there remain additional challenges for the postsecondary educational system to consider given the number of students who are earning college credits while in high school. For example, different UNC institutions have different policies related to acceptance of Advanced Placement credits. It might be worth discussing the utility of a common standard for AP credits. Similarly, the same majors in different institutions might have different prerequisite courses, which may mean that transfer students might be in different places in their major depending on the college they enter. For example, students taking nursing prerequisites in an early college that are aligned with the requirements of their local UNC institution may find that they are missing certain prerequisites if they enroll in a different UNC school.

Connect financial aid to more comprehensive support programs. Given that recent research has highlighted the limitations of simply providing financial support to students, North Carolina may want to revisit its financial aid programs to incorporate strategies that have been found to be more successful at increasing persistence and success in college. Examples noted earlier include connecting supplemental student aid to successful progress in school or connecting aid with more comprehensive social and academic supports.

More radically

A more radical re-envisioning of the system borrows from the early college work that is already being successfully implemented. What if we considered high school and college as part of a continuum of education, not necessarily two separate systems? In this conceptualization of schooling, high school and college courses are interwoven to allow students to progress more rapidly toward a degree or a credential, providing sufficient preparation in a way that avoids unnecessary redundancies.

Students are given guidance early in the process such that they develop a clearer sense of their future after high school. Starting in middle school, students could work with counselors to create an individualized plan that is intended to lead both to a high school diploma and one (or more) of a choice of additional credentials at the end of four or five years:

- a technical credential that enables students to go directly into the workforce,
- an associate degree, or
- two years of transferable credit that meet the general education requirements of all UNC system schools. If a student is clear about a major, she or he could graduate with credits relevant to the major. Advanced Placement courses could count as transferable credit.





An underlying tenet of this approach should be to allow for "focus with flexibility." In other words, students focus course-taking in a way that allows them to take advantage of the next step but the approach also allows flexibility at multiple points along the way, so that students are not trapped in a career option that turns out not to be of interest to them.

If such an integrated system, as is currently available to early college students, were to become the norm, there would be a substantial number of challenges that would have to be addressed, including (among others):

- Providing funding to high schools for five years;
- Clarifying the core courses that all students should be required to take. This might be the same or different than the current default college preparatory course of study;
- Expanding the capacity of postsecondary institutions to provide college courses at the secondary level. This could include preparing more high school teachers to be adjunct faculty who are qualified to teach college courses at the high school, an approach used by many other states but not as common in North Carolina;
- Ensuring that all schools have access to the necessary technology for online courses and that students are able utilize technology from their homes; and
- · Increasing the number of counselors/advisors to help students through this process.

What are the potential concerns about such an approach? One concern might be that moving aspects of college down into the high school level would result in a watering down of college-level material. The conventional wisdom is that high school instructors will not engage in the same level of rigorous instruction as college instructors; however, there is actually very little research testing this idea. There is some limited research to show that adjunct faculty and graduate students have a small, negative impact on students' subsequent enrollment in a college subject (as compared to Ph.D.-holding faculty) but no impact on students' performance in subsequent courses.³⁶ One early college study that conducted observations of instruction in high school and college classes found an overall higher quality of instruction in the high school classes.³⁷ Nevertheless, concerns about the quality of adjunct faculty remain and states have developed different policies to address these concerns.³⁸

The most significant concern is that revising the educational system in such a way would require a substantial increased investment at the K-12 level. However, the expectation would be that these increases at the high school level actually would reduce the costs associated with attaining a degree and reduce overall state expenditures, while also increasing the benefits to society realized by more people attaining the advanced training necessary to function in the 21st century and beyond. As noted above, evidence from North Carolina's early college model showed the cost to society was higher at the high school level but was substantially reduced at the postsecondary level.

A concluding note: The importance of evaluation

When possible, any ideas that the state wishes to try out should be implemented as pilots or in ways that allow for rigorous assessment of impacts. For example, an effort to assess students for college readiness and provide them with developmental courses should be piloted and examined for impacts prior to being rolled out to the entire state. All programs, even those that have been implemented successfully in other settings, need ongoing monitoring and evaluation to identify whether they are being implemented as intended and whether they are having the desired impact.





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