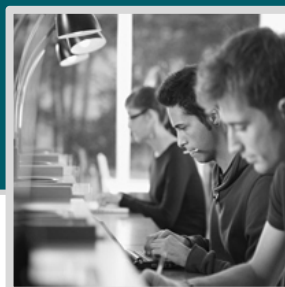
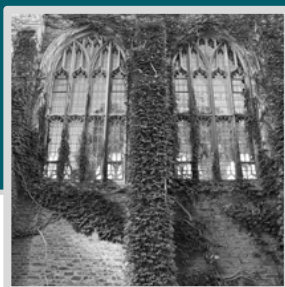


# Dual Enrollment: Models, Practices, and Trends

July 2014



In the following report, Hanover Research reviews models through which students can pursue dual high school and college enrollment. The report evaluates national trends, common practices, benefits, and challenges related to each model.

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# EXECUTIVE SUMMARY AND KEY FINDINGS

## INTRODUCTION

Programs involving dual enrollment in high school and college have become effective tools for preparing high school students for college success, decreasing the overall cost of attaining a college degree,<sup>1</sup> and developing effective “pipelines” of college-ready students for participating colleges.

To aid institutions of higher education in evaluating common practices for dual enrollment programs, this report is divided into three sections:

- **Section I** provides an overview of models for providing college credit to high school students. Not all listed models are considered in detail, as some do not involve dual enrollment elements.
- **Section II** addresses common practices and trends among institutions offering dual enrollment programs.
- **Section III** considers trends and successful practices among college high schools, which typically incorporate dual enrollment opportunities into a comprehensive curriculum including both high school and college credit.

## KEY FINDINGS

- **Dual enrollment programs are most commonly found at two-year institutions.** Over 70 percent of students who took college courses through dual enrollment programs used a two-year institution, and programs are available through 96 percent of two-year institutions. These institutions often accept applicants at different levels of achievement, ranging from grades 9 to 12.
- **Nonprofit four-year institutions, in comparison, hold a fairly small share of the dual enrollment market.** Only 7 percent of students who took college courses through a dual enrollment program used a nonprofit four-year institution, and only 35 percent of such institutions offer dual enrollment. These programs are mostly limited to students in grades 11 and 12.
- **Nonprofit four-year institutions are more likely to deliver college-credit courses on college campuses than on high school campuses.** Less than half of nonprofit four-year institutions offer high school campus delivery. Among those that offer high school campus delivery, about half rely on high school instructors to teach the courses. On the other hand, almost all two-year

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<sup>1</sup> Jobs for the Future’s recently released study on the success of early college high schools supports this and is further cited below. See: Webb, Michael and Carol Gerwin. “Early College Expansion.” Jobs for the Future. [http://www.jff.org/sites/default/files/publications/materials/Early-College-Expansion\\_031714.pdf](http://www.jff.org/sites/default/files/publications/materials/Early-College-Expansion_031714.pdf)

- institutions offer delivery on high school campuses and most use a mixture of high school and college instructors.
- **Dual enrollment programs, excluding College High Schools, most commonly fall under one of three models:**
    - **Simple Dual Enrollment:** Students earn either high school or college credit through coursework, but do not earn both for a single course.
    - **Dual Credit:** Students earn both high school and college credit for the same course.
    - **Concurrent Enrollment:** A type of Dual Credit program whereby high school students take college-credit-bearing courses taught by college-approved high school teachers on their high school campus.
  - **College High Schools are an additional specialized application of dual enrollment.** In this model, high school and college coursework are blended into a single, comprehensive, accelerated curriculum. Specific models of College High Schools include:
    - **Early College High School:** Enables high school students to earn both a high school diploma and an associate's degree.
    - **Middle College High School:** Enables high school students to earn both a high school diploma and college credit, but not a higher education award.
  - **Successful dual enrollment programs provide academic, social, and financial benefits to high school students and postsecondary institutions.** Such programs prepare students for college, and may be particularly helpful in increasing college participation by at-risk students. Further, students can reduce the cost of their college education by completing credits in high school. Institutions benefit through the establishment of pipelines of college-ready students.

## SECTION I: MODELS FOR COLLEGE IN HIGH SCHOOL

In this section, Hanover provides an overview of commonly used models for providing accelerated collegiate coursework to high school students.

### OVERVIEW OF MODELS

The current report focuses on dual enrollment, which is one of many paths available for students to accrue college credit before high school graduation. The following list outlines the most common models for accruing college credit while in high school:

- **Dual Enrollment** – Students are enrolled in both high school and in college. Students’ work generates a college transcript.<sup>2</sup> These types of programs will be considered further in Section II. Within this model, at least three types of dual enrollment can be distinguished:
  - **Simple Dual Enrollment:** Students earn either high school or college credit through coursework, but do not earn both for a single course.
  - **Dual Credit:** Students earn both high school and college credit for the same course.<sup>3</sup>
  - **Concurrent Enrollment:** A type of **Dual Credit** program whereby high school students take college-credit-bearing courses taught by college-approved high school teachers on their high school campus.<sup>4</sup>
- **College High School** – These programs blend high school and college coursework into a single, comprehensive, accelerated curriculum. They typically include opportunities for simple dual enrollment or dual credit coursework.<sup>5</sup> These unique comprehensive programs with dual enrollment elements are considered in Section III. At least two types of college high schools can be distinguished:<sup>6</sup>
  - **Early College High School:** This type of program enables high school students to earn both a high school diploma and an associate’s degree.
  - **Middle College High School:** Students usually take college courses, but do not receive a higher education award upon graduation from the institution’s program.

<sup>2</sup> Karp, Melinda. “Dual Enrollment for College Completion.” p.4. Presentation to Alaska education stakeholders, June 2013. Notes accessed at: <http://ccrc.tc.columbia.edu/media/k2/attachments/dual-enrollment-college-completion-alaska.pdf>

<sup>3</sup> Ibid.

<sup>4</sup> This distinction among dual credit programs is drawn by the National Alliance of Concurrent Enrollment Partnerships, which accredits only dual credit programs with this type of delivery. See: “What is Concurrent Enrollment?” National Alliance of Concurrent Enrollment Partnerships. <http://www.nacep.org/about-nacep/what-is-concurrent-enrollment/>

<sup>5</sup> Karp, Op. cit.

<sup>6</sup> “Middle – Early College Overview.” Middle College National Consortium. <http://www.mcnc.us/about/middle-early-college/#sthash.OpJsQcIA.dpbs>

- **Articulated Credit:** Students take courses for high school credit that may subsequently be accepted for college credit upon matriculation at a college. Students do not receive college credit upon course completion.<sup>7</sup> A prominent type of articulated credit program is:
  - **Tech Prep Credit** – An articulated credit program focusing on high school courses in technical areas that are accepted for credit at community colleges.
- **Credit by Exam** – High school students take standardized tests at the end of a course to assess their knowledge.<sup>8</sup> Colleges may grant credit based on the exam results.<sup>9</sup> Prominent examples include:
  - **Advanced Placement (AP) Tests**
  - **International Baccalaureate (IB) Exams**
  - **College Level Examination Program (CLEP) Tests**
- **Early Enrollment** – Program that allows high school students to bypass one or more years of high school to begin full-time college work without a high school diploma.

As mentioned, not all approaches have dual enrollment elements. Notably, **Articulated Credit** and **Credit by Exam** programs typically do not require or include college enrollment for high school students taking relevant classes or exams. **Early Enrollment** students, on the other hand, may not be enrolled in high school. For these reasons, this report does not further consider these three program types.

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<sup>7</sup> Karp, Op. cit.

<sup>8</sup> "What is Concurrent Enrollment?," Op. cit.

<sup>9</sup> Karp, Op. cit.

## SECTION II: DUAL ENROLLMENT

In this section, Hanover addresses common practices and recent trends in dual enrollment program practices among postsecondary institutions. This section also addresses the benefits and challenges of implementing a dual enrollment program.

### TERMINOLOGY

It is important to note that while “dual credit” and “dual enrollment” are often used as interchangeable program classifications, there are distinctions between the models. As mentioned above, “Dual credit” refers to dual enrollment programs in which students earn both high school and college credit for a single course. This distinction relates to credit outcomes. However, the essential characteristics and structural variables of dual credit and dual enrollment programs are generally similar.<sup>10</sup>

Furthermore, “concurrent enrollment” specifies dual credit programs that are offered at a student’s high school and taught by high school teachers. This distinction is significant insofar as the National Alliance of Concurrent Enrollment Partnerships (NACEP) accredits only dual credit programs with this delivery.<sup>11</sup>

### PROGRAM STRUCTURE

Dual enrollment programs can take on a variety of appearances depending on state, local, and institutional needs. The most significant common elements across dual enrollment programs, however, are:

- Students are enrolled in both high school and in college coursework; and
- Students receive college credit upon completion of college coursework, building a transcript at a postsecondary institution.

Figure 2.1 lists typical dual enrollment program features and options.

<sup>10</sup> Allen, D. “Dual Enrollment: A Comprehensive Literature Review and Bibliography.” CUNY Collaborative Programs Research and Evaluation Unit. pp. 1-2.

[https://www.cuny.edu/academics/evaluation/library/DE\\_LitReview\\_August2010.pdf](https://www.cuny.edu/academics/evaluation/library/DE_LitReview_August2010.pdf)

<sup>11</sup> “Mission and History.” National Alliance of Concurrent Enrollment Partnerships.

<http://www.nacep.org/about-nacep/mission-history/>

**Figure 2.1: Feature Considerations of Dual Enrollment Programs**

FEATURE	OPTIONS
<b>Funding</b>	▪ Funds and tuition can be paid by: the student, the state, the institution, or some combination of these three.
<b>Student Eligibility</b>	▪ Program access can be broad or restricted.
<b>Location</b>	▪ Courses can be taught: at high school, at college, or via distance learning.
<b>Timing</b>	▪ Classes can be taught: before, during, or after the high school day. ▪ Classes can be taught during: the school year or the summer
<b>Student Mix</b>	▪ Classes can be composed of students from: high school and college or high school only.
<b>Instructor</b>	▪ Classes can be taught by: college professors or certified high school instructors.
<b>Course Type and Content</b>	▪ Courses can focus on: academic content, student success, or career and technical education.
<b>Program Intensity</b>	▪ Courses of study can include: single courses, pathway programs, or comprehensive programs.
<b>Support Services</b>	▪ Services may be provided to meet student academic, behavioral, or college-knowledge needs. ▪ Services will be offered through: the high school, the college, or a collaboration.
<b>Method of Credit-Earning</b>	▪ Students will earn credit through dual enrollment or dual credit.

Source: Melinda Karp<sup>12</sup>

The extent to which college credit courses contribute to high school graduation requirements as dual credit courses is not uniform across programs. In addition, the extent of postsecondary institutional engagement is not uniform across all programs. For example, dual enrollment programs may draw directly from college resources for course locations and instructors. Alternately, courses may be taught at high schools by qualified high school teachers, with the partner college ensuring the teachers and courses meet the proper academic requirements.

This less-engaged method of delivery, using high school campuses and qualified high school teachers, has become a prevalent enough variation of dual enrollment to warrant a specific model title, “concurrent enrollment” and accrediting body, the NACEP. The accreditation standards are in place to ensure that college-level courses taught by high school teachers on high school campuses meets the same academic standards as courses taught by college faculty members on a college campus to college students.<sup>13</sup>

<sup>12</sup> Table adapted from: Karp, Op. cit., p. 5.

<sup>13</sup> “Standards.” National Alliance of Concurrent Enrollment Partnerships.  
<http://www.nacep.org/accreditation/standards/>



## PROGRAM TRENDS

A 2013 report by the National Center for Education Statistics (NCES) includes analysis of a large survey of dual enrollment programs from the 2010-11 academic year.<sup>14</sup> The report's findings address trends in dual enrollment programs with regard to many of the key features listed in Figure 2.1. Relevant trends are presented in this subsection to provide a clearer picture of the current dual enrollment landscape as well as prominent practices and program characteristics.

### PROGRAM PREVALENCE

Dual enrollment programs are relatively common. Almost half (46 percent) of postsecondary institutions surveyed by the NCES have students taking college credit courses through a dual enrollment program.

- **Two-year institutions** are, by-far, the most likely to have such students. Almost all (96 percent) reported having dually enrolled students.
- Most **public four-year colleges** (75 percent) also report dual enrollments.
- However, only 35 percent of **private nonprofit four-year institutions** report dual enrollment students.

Larger institutions are also more likely to have dual enrollments. Most (80 percent) of responding institutions with 3,000 or more students reported dual enrollments, while 28 percent of institutions with fewer than 3,000 students reported dual enrollments.<sup>15</sup>

### STUDENT ENROLLMENTS

**A low percentage of dual enrollment students (7.2 percent) participated in programs at private nonprofit four-year institutions.** The NCES survey found that over one million high school students took courses for college credit within a dual enrollment program during the 2010-11 school year.<sup>16</sup> As Figure 2.2 indicates, over 70 percent were enrolled at public 2-year institutions.

**Figure 2.2: Student Participation in Dual Enrollment Courses, 2010-11**

INSTITUTION	STUDENTS	PERCENTAGE
Public 2-Year	873,600	71.2%
Public 4-Year	259,800	21.2%
Private nonprofit 4-year	88,500	7.2%
Private for-profit 4-year	4,000	0.3%
Total	1,227,100	

Source: NCES

<sup>14</sup> Marken, Stephanie, et al. "Dual Enrollment Programs and Courses for High School Students at Postsecondary Institutions: 2010-11." National Center for Education Statistics. <http://nces.ed.gov/pubs2013/2013002.pdf>

<sup>15</sup> Marken, Op. cit., p. 6.

<sup>16</sup> Ibid.

## FUNDING

The survey found that, among institutions that do offer dual enrollment programs, private nonprofit four-year institutions were more likely than public institutions to contribute to students' dual enrollment program tuition (Figure 2.3). However, students participating in dual enrollment at these institutions were substantially less likely to receive tuition funding from the state or from their high school or school district.

**Figure 2.3: Sources of Dual Enrollment Student Tuition, 2010-11\***

INSTITUTION	POSTSECONDARY INSTITUTIONS	THE STATE	HIGH SCHOOLS/ PUBLIC SCHOOL DISTRICTS	PARENTS/ STUDENTS	SOME OTHER SOURCE(S)†
Public 2-Year	72%	46%	53%	61%	15%
Public 4-Year	71%	43%	49%	73%	8%
Private nonprofit 4-year	92%	24%	27%	72%	7%
Private for-profit 4-year	97%	-	-	-	0%
10,000 or more students	74%	40%	44%	61%	12%

Source: NCES<sup>17</sup>

\* Percentages do not sum to 100 because tuition could be paid by multiple sources.

† For example, private scholarships or grants.

## STUDENT ELIGIBILITY

**Almost all dual enrollment programs are open to students in grades 11 and 12.** However, programs at two-year institutions are most likely to admit 9<sup>th</sup> and 10<sup>th</sup> grade students (Figure 2.4).

**Figure 2.4: Grade Levels Eligible for the Program, 2010-11**

INSTITUTION	GRADE 9	GRADE 10	GRADE 11	GRADE 12
Public 2-Year	35%	53%	97%	97%
Public 4-Year	25%	43%	94%	98%
Private nonprofit 4-year	10%	20%	85%	98%
Private for-profit 4-year	-	-	61%	97%
10,000 or more students	31%	50%	96%	97%

Source: NCES<sup>18</sup>

Four additional academic eligibility requirements stand out:<sup>19</sup>

<sup>17</sup> Ibid., p. 15

<sup>18</sup> Ibid, p. 12.

<sup>19</sup> Data in bulleted list drawn from: Ibid., p. 13.

- **GPA** – Most programs at public and private four-year institutions have minimum high school GPA requirements (70-85 percent of programs). Less than half of two-year institutions (45 percent) have a GPA requirement.
- **National Standardized Exams** – Private nonprofit four-year institutions require standardized test scores much less frequently (20 percent of programs) than public 2- and 4-year institutions (49 and 57 percent respectively).
- **Institutional College Placement Exams** – These are relatively common among public two-year institutions (71 percent). However, they are uncommon in 4-year nonprofit institutions (9 percent).
- **High-risk Status** – Some programs are designed for the socioeconomically disadvantaged.<sup>20</sup> However, the NCES survey indicates that a relatively small percentage of dual enrollment programs are geared specifically toward high school students at risk of educational failure (9 percent).<sup>21</sup>

Different institutions use a variety of admissions requirements, even for programs with similar aims. For example, Lehigh University's High School Scholars program and Marquette University's Youth Options program are both designed to provide talented high school seniors access to courses that are not available in their high schools.<sup>22</sup> However, Lehigh's program is open only to rising seniors while Marquette does not explicitly require a minimum year of high school completion. However, Marquette applications must be completed with the student's high school counselor.

### LOCATION

NCES survey data in Figure 2.5 reveal that a majority of institutions offering dual enrollment programs offer at least some courses on their college campuses. Two trends stand out for nonprofit four-year institutions:

- **Relatively Low High School Campus Use** – They offer courses on high school campuses at a rate (47 percent) almost half of public two-year institutions (93 percent).
- **Low Distance Education Use** – A relatively low percentage offers courses via distance education (18 percent) when compared to public four-year institutions (42 percent) and public two-year institutions (68 percent).

<sup>20</sup> See: "Overview and FAQ." Jobs for the Future – Early College Designs.  
<http://www.earlycolleges.org/overview.html>

<sup>21</sup> Marken, Op. cit., p. 19.

<sup>22</sup> [1] "About High School Scholars." Lehigh University.

<http://www.lehigh.edu/~inacout/HSScholars/index.html>

[2] "Youth Options (Formerly PSEO)." Marquette University. <http://www.marquette.edu/explore/apply-today-youth.php>

**Figure 2.5: Dual Enrollment Delivery, 2010-11\***

INSTITUTION	DISTANCE EDUCATION	COLLEGE CAMPUS	HIGH SCHOOL CAMPUS	OTHER LOCATION†
Public 2-Year	68%	93%	93%	14%
Public 4-Year	42%	80%	54%	8%
Private nonprofit 4-year	18%	83%	47%	-
Private for-profit 4-year	69%	91%	15%	0%
10,000 or more students	53%	83%	69%	10%

Source: NCES<sup>23</sup>

\*Percentages do not sum to 100 because courses could have been offered by institutions at multiple locations.

† Other locations include satellite campuses and community centers.

### INSTRUCTORS

Among institutions with college-level courses taught on high school campuses, **private nonprofit four-year institutions were the most likely to use only high school instructors, and the least likely to use only college instructors** (Figure 2.6).

**Figure 2.6: Instructors for High School Campus Delivery, 2010-11**

INSTITUTION	COLLEGE INSTRUCTORS ONLY	HIGH SCHOOL INSTRUCTORS ONLY	BOTH HIGH SCHOOL AND COLLEGE INSTRUCTORS
Public 2-Year	24%	26%	50%
Public 4-Year	18%	43%	40%
Private nonprofit 4-year	16%	50%	34%
Private for-profit 4-year	79%	0%	-
10,000 or more students	26%	32%	42%

Source: NCES<sup>24</sup>

Institutions also consistently reported that high school teachers in dual enrollment programs must have similar qualifications to college instructors (87 percent of all programs).<sup>25</sup>

The NACEP's "2011 Standards" provide a useful set of benchmarks to evaluate the competency of high school instructors who teach college classes. In general, the NACEP recommends that instructors meet the minimum academic credentials required for any college instructor, that instructors be given proper training and feedback, and that postsecondary institutional partners deal with any instructor non-compliance.<sup>26</sup> See Figure 2.7 for NACEP's complete explanation of faculty standards.

<sup>23</sup> Marken, Op. cit., p. 7.<sup>24</sup> Ibid., p. 8.<sup>25</sup> Ibid., p. 9.<sup>26</sup> "National Concurrent Enrollment Partnership Standards." 2011. The National Alliance of Concurrent Enrollment Partnerships. p. 3. <http://nacep.org/docs/standards/NACEP-Standards-2011.pdf>

**Figure 2.7: Standards for Concurrent Enrollment Partnership Instructors**

STANDARD	EXPLANATION
1	CEP instructors are approved by the respective college/university departments and meet academic department requirements for teaching the college/university courses.
2	The college/university provides new CEP instructors with discipline-specific training and orientation regarding, but not limited to, course curriculum, assessment criteria, pedagogy, course philosophy and administrative responsibilities and procedures prior to the instructor teaching the course.
3	The CEP provides annual discipline-specific professional development activities and ongoing collegial interaction to address course content, course delivery, assessment, evaluation, and/or research in the development in the field. The CEP ensures CEP instructor participation.
4	CEP procedures address instructor non-compliance with the college/university's expectations for courses offered through the CEP (for example, non-participation in CEP training and/or activities).

Source: National Alliance for Concurrent Enrollment Partnership<sup>27</sup>

### *COURSE TYPE AND CONTENT*

Just as those providing college-level instruction to high school students must be qualified to teach at the college level, the college-level course curricula need to match those for regular college courses. In the NCES survey, most institutions (85 percent of all programs) use the same curricula used for regular college students, and very few (4 percent of all programs) use curricula specially designed for high school students.<sup>28</sup>

While curricula must be appropriate for college, each program's breadth of course offerings and topics can vary. For example, Baylor University offers only a summer program in mathematics.<sup>29</sup> However, the Catholic University of America, in addition to having specialized summer programs in engineering, architecture, and drama, allows high school juniors and seniors to enroll in any credit-bearing course they qualify for.<sup>30</sup>

### *PROGRAM INTENSITY*

**In the majority of programs at private nonprofit four-year institutions (68 percent), the typical enrollment pattern is for students to take one course per term.** Among other institutional types, significant numbers of programs reported that typical enrollment patterns vary, but public four-year institutions were also more likely than not to report one course per term as the typical enrollment pattern (Figure 2.8).

<sup>27</sup> Table contents quoted verbatim from: Ibid.

<sup>28</sup> Marken, Op. cit., p. 14.

<sup>29</sup> "High School Summer Science Research Program." Baylor University.  
<http://www.baylor.edu/math/index.php?id=56106>

<sup>30</sup> "CUA Summer – Admissions and Registration. The Catholic University of America.  
<http://summer.cua.edu/admissions/index.cfm>

**Figure 2.8: Student Enrollment Patterns, 2010-11**

INSTITUTION	ONE COURSE PER ACADEMIC TERM	TWO COURSES PER ACADEMIC TERM	THREE OR MORE COURSES PER ACADEMIC TERM	VARIES *
Public 2-Year	28%	25%	2%	44%
Public 4-Year	52%	13%	2%	33%
Private nonprofit 4-year	68%	10%	3%	17%
Private for-profit 4-year	48%	46%	-	-
10,000 or more students	45%	18%	3%	33%

Source: NCES<sup>31</sup>

\*The response option “Varies” could mean that the number of courses varied considerably within a single program, or that the number of courses varied considerably across multiple programs within an institution

**Comprehensive programs (i.e., college high schools) are still uncommon among private nonprofit four-year institutions.** Only 5 percent of such institutions with dual enrollment programs support comprehensive programs, which are more common among public two-year institutions (36 percent) and public four-year institutions (25 percent).<sup>32</sup> An example of such a program can be found in the Dunbar Early College High School, a project of Jobs for the Future in collaboration with the Dayton Public Schools and Sinclair Community College.<sup>33</sup> Comprehensive programs are addressed in further detail in the following section.

### SUPPORT SERVICES

The NCES survey also indicates the prevalence of support services available through dual enrollment programs. The survey tracks services offered through programs designed for at-risk students. Available data represent a small group of institutions, as only 9 percent of dual enrollment programs are designed for these students.

Among these institutions, most offer support services. However, the rates are highest among public four-year institutions (Figure 2.9).

**Figure 2.9: Support Services Offered by Programs for At-Risk Students, 2010–11 \***

INSTITUTION	TUTORING	ACADEMIC ADVISING	STUDY SKILLS WORKSHOPS	COLLEGE APPLICATION/ SELECTION COUNSELING	FINANCIAL AID COUNSELING	OTHER SUPPORT SERVICE(S) <sup>†</sup>
Public 2-Year	65%	72%	65%	60%	47%	40%
Public 4-Year	83%	87%	76%	64%	66%	34%
Private nonprofit 4-year	68%	75%	51%	51%	42%	54%
10,000 or more students	81%	80%	79%	73%	63%	51%

Source: NCES<sup>34</sup>

<sup>†</sup> For example, career counseling and mentoring programs.

\*Percentages do not sum to 100 because institutions may offer multiple services.

<sup>31</sup> Marken, Op. cit., p. 10.

<sup>32</sup> Ibid., p. 18.

<sup>33</sup> Webb and Gerwin, Op. cit., p. 17.

<sup>34</sup> Marken, Op. cit., p. 20.

### *METHOD OF CREDIT-EARNING*

The NCES survey found that almost all dual enrollment programs (95 percent) award college credit to students upon course completion.<sup>35</sup>

### **BENEFITS**

Dual enrollment programs have become popular because they are believed to accomplish two important goals:<sup>36</sup>

- Improving the poor academic preparation of many college entrants; and
- Improving low college graduation rates.

Current research indicates that dual enrollment programs are successfully addressing these issues.

### *STUDENT SUCCESS IN COLLEGE*

A 2014 paper by Brian An, “The Role of Academic Motivation and Engagement on the Relationship between Dual Enrollment and Academic Performance,” notes that students who participated in dual enrollment programs averaged 0.11 points higher in their college GPAs than those who did not. Students who participated in dual enrollment programs were also less likely to need remedial courses.<sup>37</sup>

Dual enrollment programs may also serve to socially prepare high school students for the college experience. An notes, “Socializing organizations, such as dual enrollment programs, may serve as a way to correct for inaccurate perceptions individuals developed during the anticipatory socialization process.”<sup>38</sup> Students who know what college courses entail will be able to “hit the ground running.” This is confirmed by other researchers who note that program participants “learn study skills and other habits related to college success.”<sup>39</sup>

### *LOW-INCOME, HIGH-RISK STUDENT SUCCESS*

A 2012 report from the Community College Research Center (CCRC) at Columbia University’s Teachers College, “Broadening the Benefits of Dual Enrollment,”<sup>40</sup> notes

<sup>35</sup> Ibid., p. 11.

<sup>36</sup> Bulleted list adapted from: An, Brian. “The Impact of Dual Enrollment on College Degree Attainment: Do Low-SES Students Benefit?” *Educational Evaluation and Policy Analysis*. Vol. 35. March, 2013. p. 58.

<sup>37</sup> An, Brian. “The Role of Academic Motivation and Engagement on the Relationship between Dual Enrollment and Academic Performance.” February, 2014. p. 4. Paper accepted for publication in *Journal of Higher Education*. Accessed at: <http://www.education.uiowa.edu/docs/default-source/crue-publications/the-role-of-academic.pdf?sfvrsn=2>

<sup>38</sup> Ibid., p. 6.

<sup>39</sup> Karp cites multiple additional reports to support her observation in: Karp, Op. cit., p. 11.

<sup>40</sup> Hughes, Katherine, et al. “Broadening the Benefits of Dual Enrollment.” Accessed through the Community College Research Center. <http://ccrc.tc.columbia.edu/media/k2/attachments/broadening-benefits-dual-enrollment-rp.pdf>

that dual enrollment can be an effective tool for helping underprepared and underachieving students gain career-focused training.

The study followed nine dual enrollment programs in California created to test the feasibility of using these types of programs to increase high school and postsecondary degree completion among low-income youths in the state.<sup>41</sup> The report found that program participants were:<sup>42</sup>

- More likely to graduate from high school;
- More likely to transition to a four-year college (rather than a two-year college);
- Less likely to take basic skills courses in college;
- More likely to persist in postsecondary education; and
- Accumulating more college credits than comparison students.

These findings are essentially confirmed by a 2012 article on students with low socioeconomic status and dual enrollment, which notes that college degree attainment rates saw “significant benefits” for students from low-income circumstances who participated in dual enrollment programs.<sup>43</sup>

Students from affluent households or with parents who attended college were not significantly more likely to complete college due to participation in a dual degree program. These students are very likely to persevere in college regardless.<sup>44</sup>

### *COLLEGE COST SAVINGS*

Due to government subsidies often associated with public school programs, dual enrollment also provides a cost-effective means for accruing college credits. Programs in some states are free for students.<sup>45</sup> The more college credits students accumulate during high school at discounted rates, the fewer they will need to accrue while attending college full-time and paying full-time tuition.

### *STUDENT RETENTION*

For postsecondary institutional partners, dual enrollment program arrangements also provide “new pathways to recruitment and retention.” In other words, students completing credits in high school may be more likely to continue their postsecondary educational program at the university, since they have already completed credits and established a relationship with the institution.<sup>46</sup>

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<sup>41</sup> Ibid., p. 4.

<sup>42</sup> Bulleted list copied verbatim from: Ibid., p. 5.

<sup>43</sup> An, 2013, Op. cit., p. 57.

<sup>44</sup> Ibid., p. 69.

<sup>45</sup> Ibid., p. 57.

<sup>46</sup> Allen, Op. cit., p. 27.



## CHALLENGES

While a body of research is building that recognizes the short- and long-term benefits of dual enrollment programs, it is important to consider challenges to successful programs:

- **Instructional Quality** – Studies suggest that quality control in dual enrollment programs is a central concern of institutional administrators, particularly if college courses are being taught by high school instructors.<sup>47</sup>
- **Student Preparation for Dual Enrollment** – While opportunities to earn college credit in high school may appeal to a growing body of students, high school students must be aware that the required work is advanced. If students are not prepared to begin college work, they may perform poorly in their courses, which will be reflected in their college transcripts.<sup>48</sup>
- **Program Access** – A desire for student success may lead program designers to appeal to the most advanced students. However, high entry standards, while they will increase overall program success, may not significantly increase college graduation rates among high school students.<sup>49</sup> Program designers may consider providing access to at-risk students.
- **Maintaining “Authenticity”** – Dual enrollment students should be able to “try on” being a college student so they can be socialized for college and prepared for college’s academic demands. For students to be best socialized into the college experience, a program would include classes on a college campus. However, this would limit program access for qualified students who could not attend classes at a college campus.<sup>50</sup>
- **Offering Student Support** – A program should include learning support, preferably built into class time.<sup>51</sup> Support services, such as those noted in Figure 2.9, above, will be particularly important to traditionally underrepresented or disadvantaged groups.<sup>52</sup>
- **Logistics** – The delivery of college courses could pose a number of logistical challenges to instructors, students, and administrators. Namely, teachers and students may have added commuting demands, depending on where students take their college courses. Teachers, students, and administrators may also face scheduling difficulties posed by varying semester lengths.<sup>53</sup>

<sup>47</sup> Ibid., p. 32.

<sup>48</sup> E.g., “Student Dual Enrollment Handbook.” University of Cincinnati.  
<http://admissions.uc.edu/highschool/dual-enrollment/student-dual-enrollment-handbook.html>

<sup>49</sup> Karp, Op. cit., p. 17.

<sup>50</sup> Ibid., p. 18-19.

<sup>51</sup> Ibid., p. 18.

<sup>52</sup> Cassidy, Lauren, et al. “Dual Enrollment: Lessons Learned on School-Level Implementation.” SRI International. p. 19. <http://www2.ed.gov/programs/slcp/finaldual.pdf>

<sup>53</sup> “College in High Schools.” *Inside Higher Ed*. February 1, 2012.  
<http://www.insidehighered.com/blogs/college-high-schools>

## SECTION III: COLLEGE HIGH SCHOOLS

In this section, Hanover addresses the essential program characteristics of college high schools, which incorporate high school and dual enrollment courses into a single, comprehensive, accelerated curriculum. The section also considers the benefits and challenges associated with these types of programs.

### TERMINOLOGY

This report follows the distinction between middle and early college high schools drawn by the Middle College National Consortium (MCNC).<sup>54</sup> These two types of schools are essentially identical, with one difference:

- **Middle College High School** – Students have the opportunity to take college classes while pursuing their high school diplomas.
- **Early College High School** – Students can take college classes, with the possibility of earning an associate’s degree, while pursuing their high school diplomas.

This difference does not have a significant impact on other program elements. General discussion of one type of program is almost always applicable to the other.<sup>55</sup> Since the Ohio Department of Education uses the term “early college high school” to the exclusion of “middle college high school” in its discussion of relevant early college programs, this report will also use the term predominantly.<sup>56</sup>

Based on MCNC’s characterization of these programs, this report defines early college high schools as:<sup>57</sup>

- Small programs that grant high school diplomas and allow students to earn up to two years of college credit in five years.

### STRUCTURE

Early college programs can be motivated by diverse purposes, such as providing higher-level courses for high-achieving students or a desire to assist under-performing students in obtaining a post-secondary degree. Such differences in the targeted student populations can contribute to differences in the structure of individual programs.

<sup>54</sup> “Middle – Early College Overview,” Op. cit.

<sup>55</sup> See: Ibid. Also, see the Michigan Department of Education, which discusses early and middle college high schools interchangeably. “Early/Middle College High School Opportunities.” Michigan Department of Education. [http://www.michigan.gov/mde/0,4615,7-140-43092\\_51178---,00.html](http://www.michigan.gov/mde/0,4615,7-140-43092_51178---,00.html)

<sup>56</sup> Ohio’s college high schools are mostly early college high schools, but middle college programs are available. For example, see Kent State University’s offerings: “Middle College (Dual Credit).” Kent State University Columbiana County. <http://www.eliv.kent.edu/academics/pseo/middle-college.cfm>

<sup>57</sup> This definition is derived from: “Middle – Early College Overview,” Op. cit.

The Bill and Melinda Gates Foundation’s Early College High School Initiative (ECHSI) is a key source of information about early college programs. Since its inception in 2002, the organization and its partners have created or redesigned over 280 schools across the country.<sup>58</sup> ECHSI currently provides early college design services through Jobs for the Future (JFF) to develop early colleges. JFF notes that early college high schools have the following characteristics:<sup>59</sup>

- **Students earn college credit** – Students have the opportunity to earn an Associate’s degree or up to two years of transferable college credit while in high school, typically over five years.
- **Students have a “college experience”** – Schools are located on or close to college campuses.
- **College courses are free** – Mastery and competence are rewarded with enrollment in college-level courses and the opportunity to earn two years of college credit for free.
- **Students are from “at-risk” populations** – Programs draw students from populations that have been historically under-served and underrepresented in college.
- **Programs reach out to middle school students** – The middle grades are included in the school, or there is outreach to middle-grade students to promote academic preparation and awareness of the early college high school option.
- **Programs provide student support** – Schools provide academic and social supports that help students succeed in a challenging course of study.
- **Students learn in small classes** – Learning takes place in small learning environments, with 100 or fewer students per grade level, that demand rigorous, high-quality work and provide extensive support.
- **Graduates face a seamless transition to full-time college enrollment** – The physical transition between high school and college is eliminated, and with it the need to apply for college and for financial aid during the last year of high school. After graduation many students continue to pursue a credential at the partner college.

As the structures of dual enrollment programs vary, so do early college high school design elements vary according to state, local, and institutional requirements. Essentially, the program characteristics for general dual enrollment programs addressed in Section II must be considered and determined for early college high school programs as well, with some exceptions. For example, “course timing” is a less

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<sup>58</sup> Webb and Gerwin, Op. cit.

<sup>59</sup> Bulleted list adapted from:

[1] “Overview and FAQ,” Op. cit.

[2] “Middle – Early College Overview,” Op. cit.

sensitive issue since all students in the school will be taking both college and high school courses.

However, a 2014 report from JFF, “Early College Expansion,” highlights three key program characteristics that contribute to student success:<sup>60</sup>

- **College Immersion** – School locations on or near college campuses provide the best opportunities for students to take in the college experience. Almost half (44%) of early college high schools are located on college campuses.
  - Students at schools not on a college campus often take college classes on campus, mixed with the college student body.
  - A minority (25 percent) of early college programs offer college courses in their own buildings (i.e., not on a college campus), typically because of distance or logistical issues.
- **Engaging Instruction** - Teachers strive to personalize instruction and make lessons engaging and relevant to all students. Practices include:
  - Working in small peer groups;
  - Conducting project- and inquiry-based learning;
  - Using examples in projects that ask students to solve problems relevant to them;
  - Requiring an interdisciplinary approach to project completion; and
  - Pursuing relevant internship or mentorship opportunities for students.
- **Support Services** - Schools should provide support both for the students’ immediate academic needs and for their anticipated needs in college. Commonly used supports include:
  - Tutoring;
  - Advising;
  - Test preparation;
  - Offering high school classes that parallel college courses for extra instruction;
  - Offering college courses with a cohort of students, who can often help one another; and
  - Supporting the development of mentor relationships between teachers and students.

Additional supports that aim specifically at improving college readiness include:

- Implementing college readiness programs such as Advancement Via Individual Determination, which helps students develop discipline, routines, and organization skills for college success.

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<sup>60</sup> Bulleted items copied or adapted from: Webb and Gerwin, Op. cit., pp. 4-7.

- Offering college preparation courses. Titles may include, “College Success” or “College Readiness.”
- Offering small seminars and advisories where students and teachers discuss topics like: applying for college and financial aid, learning how to use campus resources like the library and student centers, and other topics related to college success.

### *POSTSECONDARY INSTITUTIONAL INVOLVEMENT*

ECHSI indicates that a successful early college program requires “sustained involvement” from both the secondary and postsecondary partners. Specifically, it lists six areas in which the postsecondary institution regularly participates:<sup>61</sup>

- School planning processes and governing boards;
- Curriculum committees;
- Syllabus planning;
- Course delivery;
- Provision of tutors, mentors, and student teachers; and
- Creation of ‘scaffolded’ learning experiences (e.g. bridge courses to ease the transition to college-level work or mini-seminars for younger students).

Most postsecondary institutions pay a part- or full-time staff member to maintain a good working relationship with all of the early college program’s stakeholders.<sup>62</sup>

Postsecondary institutions may also provide support for high school faculty who teach college level courses. For example, institutions may also foster mentoring relationships between college and high school faculty.<sup>63</sup>

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<sup>61</sup> Bulleted list copied and adapted from: “Overview and FAQ,” Op. cit.

<sup>62</sup> Ibid.

<sup>63</sup> For example, see the University at Albany’s (SUNY Albany’s) program: “Smart Scholars Early College High School Program.” University at Albany. [http://www.albany.edu/outreach/Smart\\_Scholars%20.php](http://www.albany.edu/outreach/Smart_Scholars%20.php)

## BENEFITS

The JFF report, which also addresses success metrics, notes that early college high schools have “produced dramatic results.”<sup>64</sup> Participating students performed better than non-participating students in a number of important areas, including:

- **High School Graduation** – Ninety percent of early college students graduate from high school. This is 12 points higher than the national average of 78 percent.<sup>65</sup> Ohio sees 94 percent of early college high school students graduate, which is 13 points higher than the state average of 81 percent.<sup>66</sup>
- **College Course Passing Rates** - The pass rate for college courses taken in high school has remained consistently high, averaging more than 90 percent.<sup>67</sup>
- **College Credentials Earned in High School** – Almost one third (30 percent) of early college high school students earn a college award (associate’s degree) while completing high school, whereas very few other high school students earn college awards before graduation.<sup>68</sup>
- **College Enrollment** – Seventy-one percent of early college graduates enroll in college. This is slightly higher than the national average of 68 percent, but significantly higher than the average for low-income students (54 percent).<sup>69</sup>
- **Four-Year College Enrollment** – Nearly half (47 percent) of early college graduates enrolled in a four-year college or university immediately following graduation. The national average is 42 percent.<sup>70</sup>
- **College Persistence** – Eighty-six percent of early college graduates who enroll in college persist for a second year. The national average is 72 percent.<sup>71</sup>

In 2013, the American Institutes for Research released findings from their independent research into the success of early college high school programs, which also found they were effective in improving student outcomes.<sup>72</sup>

Additionally, as with dual enrollment programs generally, students see a tremendous cost savings for their college education. By completing an early college high school program, students can earn associate’s degrees for free, or save two years of tuition costs toward a bachelor’s degree. They may be able to start a career without college debt, or with much less debt than is typical.<sup>73</sup>

<sup>64</sup> Webb and Gerwin, Op. cit., p. 1.

<sup>65</sup> Copied from Webb and Gerwin, Op. cit., p. 1.

<sup>66</sup> Ibid., p. 11.

<sup>67</sup> Ibid.

<sup>68</sup> Ibid., p. 12.

<sup>69</sup> Ibid., p. 13.

<sup>70</sup> Ibid., p. 14.

<sup>71</sup> Ibid.

<sup>72</sup> Berger, Andrea, et al. “ Early College, Early Success: Early College High School Initiative Impact Study.”  
[http://www.air.org/sites/default/files/downloads/report/ECHSI\\_Impact\\_Study\\_Report\\_Final1\\_0.pdf](http://www.air.org/sites/default/files/downloads/report/ECHSI_Impact_Study_Report_Final1_0.pdf)

<sup>73</sup> Webb and Gerwin, Op. cit., p. 2.

## CHALLENGES

Challenges for early college high school programs can be similar to general dual enrollment program challenges, particularly with maintaining the instructional quality of college courses taught by high school teachers. Programs must also ensure the proper student supports are in place to facilitate student success. Early college high school students may also face reduced access to extracurricular activities and transportation challenges.<sup>74</sup>

However, other challenges for dual enrollment programs are eliminated. For example, students will almost surely have an opportunity for “authentic” college experiences since their schools and a number of courses will be on or near college campuses. Additionally, these programs are typically designed for traditionally at-risk students, which removes the challenge of determining program access.

Concerns about the ability of high school students to handle college-level work may be alleviated by the findings of the 2014 JFF report, which notes that, in 2009-2010, early college high school students maintained a B average (3.06 GPA) on their college courses, suggesting that high school students have been able to satisfy relevant academic demands.<sup>75</sup>

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<sup>74</sup> Berger et al., *Op. cit.*, p. 12,n.8.

<sup>75</sup> Webb and Gerwin, *Op. cit.*, p. 10.

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1700 K Street, NW, 8th Floor  
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P 202.559.0500 F 866.808.6585  
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