Issue Brief: Competency-Based Advancement

Introduction

In 2014–15, the high school graduation rate reached a record high of 83 percent (U.S. Department of Education 2016). Despite the gains, over half a million students still drop out of high school each year (U.S. Department of Education 2015). High schools have adopted various strategies designed to keep students who are at risk of not graduating in school and on track for earning the credits required to graduate. "At-risk" students are defined as those failing to achieve basic proficiency in key subjects or exhibiting behaviors that can lead to failure and/or dropping out of school. Dropout prevention strategies are diverse; they vary in type of program, services offered, frequency, intensity, and duration of contact with target students.

The U.S. Department of Education (Department) sponsored the **National Survey on High School Strategies Designed to Help At-Risk Students Graduate (HSS),** which aimed to provide descriptive information on the prevalence and characteristics of dropout prevention strategies for at-risk students. The survey collected data in the 2014–15 school year from a nationally representative sample of 2,142 public high schools and focused on 13 specific high school improvement strategies[1] identified by a panel of external experts and senior Department officials. This brief on **competency-based advancement** is the fourth in a series of briefs being released this year with key findings about these high school improvement strategies.

Definition of Competency-Based Advancement

The HSS defined **competency-based advancement (CBA)** as a way for high school students to earn credit toward graduation through demonstrated mastery of content (e.g., knowledge, skills, or tasks known as "competencies") rather than through seat time[2] and tests that all students take at a specified time. Students demonstrate mastery by meeting state-identified standards and local competencies. Specifically, a long-term project or independent research, a portfolio of student work products and experiences, and/or assessments taken at any time can be used to assess student mastery of the subject and award course credit. A central goal of the CBA approach is to better engage and personalize students' learning to ensure they can graduate from high school.

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[1] The survey examined 13 strategies designed to improve high school outcomes for at-risk students. These strategies are: (1) academic support classes, (2) academic tutoring, (3) accelerated academic programs, (4) career-themed curriculum, (5) case manager, (6) competency-based advancement, (7) credit recovery, (8) early warning systems, (9) mentoring, (10) middle to high school transitions, (11) personalized learning plans, (12) social services, and (13) student support teams. See http://www2.ed.gov/about/offices/list/opepd/ppss/reports-high-school.html for the series of briefs.

[2] The standard metric for awarding course credit in high school is the Carnegie unit, which measures the amount of time a student spends in school or "seat time." The Carnegie unit standardizes the amount of instruction students received; CBA offers an alternative to this metric.

Research on Competency-Based Advancement

Studies that have examined CBA have primarily used correlational research designs or have focused on describing implementation strategies. For example, a recent correlational study suggests that a CBA model that emphasized student participation in a long-term project had a positive association with student attendance (Steele et al. 2014). While these results seem promising, more research is needed to establish the causal effects of CBA, particularly the effects on academic outcomes. Most of the literature on CBA focuses on qualitative research such as implementation "lessons" (Sturgis 2015; Sturgis and Patrick 2010), assessment methods (McClarty and Gaertner 2015; McClarty et al. 2013), and the history and theory of CBA (Le, Wolfe, and Steinberg 2014).

Survey Findings on Competency-Based Advancement

This brief describes the prevalence of CBA as a high school dropout prevention strategy. It does not measure the effectiveness of the strategy but instead describes the kinds of schools that offer CBA and their approaches to implementing it. This analysis included an examination of four school characteristics: (1) size, (2) poverty, (3) locale, and (4) graduation rate. Only statistically significant differences within a school characteristic (at $p < .05$) are discussed; non-statistically significant differences are not reported. School categories were defined as follows.

School size. School size categories consisted of small schools (fewer than 500 students), medium schools (500–1,199 students), and large schools (1,200 or more students) based on 2013–14 Common Core of Data (CCD) student enrollment data.

School poverty. Poverty levels were based on 2013–14 free or reduced-price lunch (FRPL) and total CCD school enrollment data. The poverty categories were low-poverty schools (below 35 percent students with FRPL), medium-poverty schools (35–49 percent students with FRPL), and high-poverty schools (50 percent or more with FRPL).

School locale. School locale included three mutually exclusive locales from the CCD: rural schools, suburban/town schools, and city schools.

Graduation rate. School classification by graduation rate was based on three categories: low graduation rate (67 percent or lower graduation rate), medium graduation rate (68 to 89 percent graduation rate), and high graduation rate (90 percent or higher graduation rate).

Summary of Key Findings

- One-third of all high schools (32 percent) offered CBA to students. High-poverty schools were more likely than low-poverty schools to offer CBA; a higher proportion of city schools than either suburban or rural schools offered CBA; and low-graduation-rate schools were more likely than high-graduation-rate schools to offer CBA.

- Eleven percent of high school students nationwide were estimated to have participated in some form of CBA.

- High schools more frequently offered CBA to students based on their academic performance (53 percent of schools considered performance above standards, and 52 percent considered performance below standards), followed by staff referrals (50 percent). High schools less

frequently offered CBA to English learners (22 percent) and reentry students (26 percent). Low-graduation-rate schools were more likely than high-graduation-rate schools to offer CBA to students performing below standards, students with attendance or discipline problems, and reentry students.

- End-of-course exams and successful completion of a specific course, as determined by the teacher, were the most frequently cited options for determining student competencies under CBA.

What is the prevalence of competency-based advancement?

In 2014–15, 32 percent of all public high schools nationwide offered some form of CBA to at least some of their students, although the prevalence of this strategy varied by school poverty, school locale, and graduation rate (Exhibit 1).

Exhibit 1. Percentage of high schools that offered competency-based advancement, 2014–15
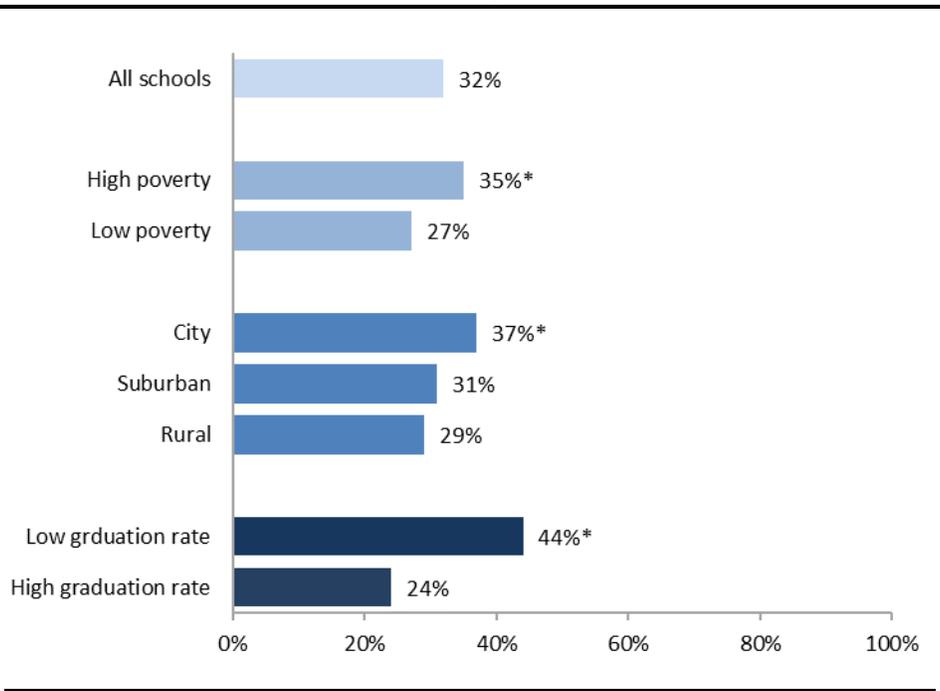

Exhibit reads: In 2014–15, 32 percent of all high schools offered competency-based advancement.

* $p < .05$.

NOTE: The asterisk is placed on one case per comparison. Differences across school characteristics with two categories were based on comparisons between the two groups. Differences across school characteristics with three categories were based on goodness-of-fit across all three categories.

Unweighted n = 1,925.

SOURCE: HSS survey of high school administrators, 2015 (Question 104).

Differences by school poverty. High-poverty schools were more likely than low-poverty schools to offer CBA (35 percent compared with 27 percent).

Differences by school locale. Larger proportions of city schools (37 percent) offered CBA than suburban or rural schools (31 percent and 29 percent, respectively).

Differences by graduation rate. Low-graduation-rate schools were more likely than high-graduation-rate schools to offer CBA (44 percent versus 24 percent).

How many students participated in competency-based advancement?

Although 32 percent of high schools offered CBA in 2014–15, the percentage of students participating in CBA was considerably smaller. Eleven percent of students nationwide were estimated to have participated in some form of CBA in 2014–15, according to principals.

How did high schools target students for participation in competency-based advancement?

High schools more frequently reported offering CBA to specific students based on their academic performance, performing either above or below standards[3] (53 percent and 52 percent, respectively), followed by staff referrals (50 percent). High schools less frequently offered CBA to specific student groups like English learners (22 percent) and reentry students (26 percent).

Exhibit 2: Percentage of high schools that targeted specific student subgroups or issues for participation in competency-based advancement, 2014–15
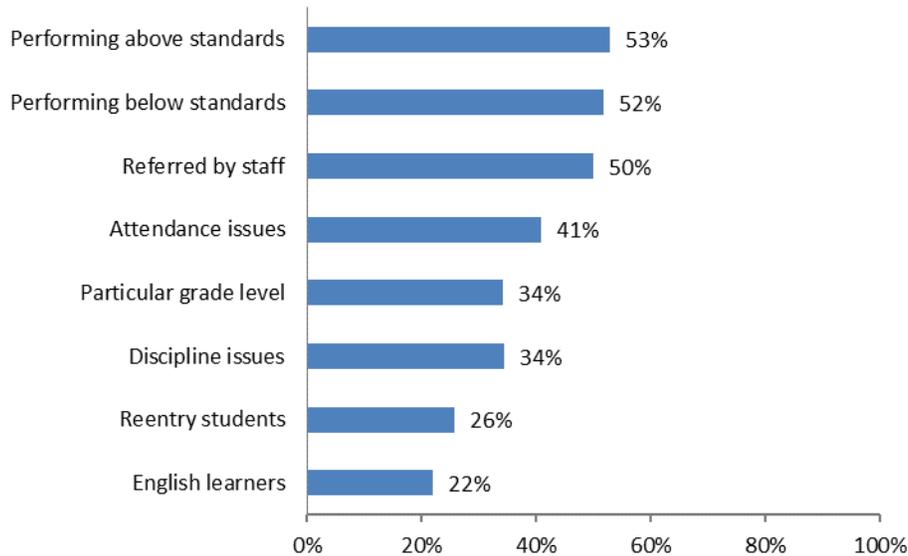

Exhibit reads: Among high schools that implemented competency-based advancement in 2014–15, 53 percent targeted students based on the student performing above standards.

Unweighted *n* = 544.

SOURCE: HSS survey of high school administrators, 2015 (Question 107).

There were differences in schools that offered CBA to students based on school size, school locale, and graduation rate.

School size. Small schools were more likely than large schools to offer CBA to students with attendance or discipline issues or who were performing below standards.

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[3] Among schools that offered CBA, 31 percent reported targeting both students performing above standards and students performing below standards.

School locale. More city schools offered CBA to English learners than suburban or rural schools.

Graduation rate. Low-graduation-rate schools were more likely than high-graduation-rate schools to offer CBA to students performing below standards, students with attendance or discipline problems, and reentry students.

How did high schools determine student competencies?

High schools used different methods to determine student mastery of specific knowledge and skills under CBA (Exhibit 3). In 2014–15, schools most frequently reported the use of end-of-course exams (69 percent) as a method for CBA, followed by successful completion of a specific course (67 percent).[4] Methods varied somewhat by school size and locale.

School size. Small schools were more likely than large schools to use a student's completion of a project assignment or successful course completion as a method for determining mastery of specific knowledge and skills.

School locale. A higher proportion of rural schools (74 percent) used end-of-course exams as a method for determining mastery of specific knowledge and skills than suburban and city schools (62 percent and 72 percent). However, a higher proportion of city schools (68 percent) used completion of a project assignment as a method for determining mastery than suburban and rural schools (both 53 percent).

Exhibit 3: Percentage of high schools that reported the methods they used to determine student mastery of specific knowledge or skills under competency-based advancement, by school size and school locale, 2014–15

Method for determining mastery	Percentage of all schools that offered	Large schools	Small schools	City schools	Suburban schools	Rural schools
End-of-course exam	69%	71%	67%	**72%***	**62%**	**74%**
Successful course completion	67%	**55%***	**72%**	70%	64%	69%
Completion of project assignment	57%	**49%***	**63%**	**68%***	**53%**	**53%**
National / standardized test	43%	37%	44%	46%	39%	46%
Portfolio of student work	42%	42%	43%	50%	39%	37%

Exhibit reads: Among high schools that implemented competency-based advancement in 2014–15, 69 percent determined student mastery of specific knowledge or skills through an end-of-course exam.

* $p < .05$.

NOTE: The asterisk is placed on one case per comparison. Differences across school characteristics with two categories were based on comparisons between the two groups. Differences across school characteristics with three categories were based on goodness-of-fit across all three categories.

Unweighted n = 615.

SOURCE: HSS survey of high school administrators, 2015 (Question 108).

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4 Successful course completion (e.g., earning a passing grade) is a valid way to demonstrate mastery under CBA as long as the passing grade is not wholly dependent on seat time or a test administered to all students at a specified time.

Methodology

The **National Survey on High School Strategies Designed to Help At-Risk Students Graduate** was a survey of 13 high school strategies designed to improve graduation rates among students at risk of dropping out and was administered in the 2014–15 school year. The 13 strategies are: (1) academic support classes, (2) academic tutoring, (3) accelerated academic programs, (4) career-themed curriculum, (5) case manager, (6) competency-based advancement, (7) credit recovery, (8) early warning systems, (9) mentoring, (10) middle to high school transitions, (11) personalized learning plans, (12) social services, and (13) student support teams.

The purpose of the survey was to inform education practitioners and policymakers about the prevalence, characteristics, and students served by these strategies in U.S. public high schools. The descriptive study did not measure the effectiveness of particular strategies but instead examined implementation factors in high schools across the country. The study team identified the 13 strategies and designed survey items for each strategy with input from a panel of external experts in the field and senior Department officials.

The researchers selected a nationally representative sample of high schools[5] using a random sampling approach, stratifying high schools based on graduation rate (from ED*Facts*)[6] and locale code (from NCES 2013–14 Common Core of Data). The survey collected data from high school principals (or designees knowledgeable about programs and strategies) at sampled schools. The survey response rate was 90 percent. The survey responses, after cleaning and processing, were analyzed in SAS and Stata using descriptive techniques that apply the appropriate statistical population weights to account for stratification by graduation rate and locale.

Results reported in this brief reflect the full survey sample unless otherwise noted and are representative of U.S. public high schools nationwide. References in the text to differences between subgroups based on sample data refer only to differences that are statistically significant using a significance level of 0.05.

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[5] All U.S. public high schools providing instruction to 12th grade students in the fall of 2010 were included in the sampling frame unless (1) the lowest offered grade was 11th grade or higher, (2) there were fewer than five students in grades 9 through 12, (3) the percentage of students enrolled in grades 9 through 12 was under 20 percent of the total school enrollment and the total number of students in grades 9 through 12 was fewer than 20, or (4) the school name contained one of nine keywords indicating juvenile detention center or hospital. Of the 103,813 total schools listed in the 2010–11 CCD, 22,447 high schools met the criteria to be included in the sampling frame.

[6] There were 3,302 schools without graduation rate information in the 2010–11 ED*Facts* public use data set. The researchers used an imputation approach to assign these schools to either the high- or low-graduation-rate stratum. The imputation process began by examining the distribution of the high/low graduation rate classification for the 19,145 schools by sampling locale. The percentage of schools classified as high graduation rate was calculated separately for each locale sampling stratum; 68.4 percent of rural schools were classified as high graduation rate, 63.0 percent of suburban schools were classified as high graduation rate, and 41.0 percent of city schools were classified as high graduation rate. The research team randomly assigned each of the 3,302 schools with unknown graduation rates to the high graduation rate stratum with probability 68.4 if the school was classified as rural, with probability 63.0 if the school was classified as suburban, and with probability 41.0 if the school was classified as urban. The sample size was adjusted upwards to account for potential misclassification due to this method. In analysis, the researchers used the restricted-use 2013–14 ED*Facts* data and graduation rates published on school and district websites to fill in this missing data.

References

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U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. 2015. "Table 219.57. Population of 15- to 24-Year Olds Enrolled in Grades 10 through 12, Number Who Dropped Out (Event Dropouts), Percentage Who Dropped Out (Event Dropout Rate), and Percentage Distribution, by Selected Characteristics: 2014." https://nces.ed.gov/programs/digest/d15/tables/dt15_219.57.asp

Appendix: Competency-Based Advancement (Survey Excerpt)
National Survey on High School Strategies Designed to Help At-Risk Students Graduate

> This section asks about **Competency-Based Advancement**. For the purposes of this survey, competency-based advancement is students receiving grades based on demonstrated mastery of content (knowledge, skills, tasks) rather than on seat time and tests that all students take at a specified time.

		Yes	No
1.	**In the 2014-15 school year, does your school provide students with opportunities for competency-based advancement?** (Please select only one) {Only allow one selection}	☐	☐

If the user responds "Yes" to Q1, ask Q2 through Q0. Otherwise, skip to Q113.

		All students (school-wide)	Subset of students
2.	**Is competency-based advancement offered to all students (school-wide) or to a specific subset of students?** (Please select only one) {Only allow one selection}	☐	☐

3.	**On average, approximately what percentage of high school students in your school participates in competency-based advancement opportunities in the 2014-15 school year?**	{Slide bar for 0% to 100%}

4. **Are any of the following subsets of students targeted for competency-based advancement?**
(Check all that apply)

Students with attendance issues (e.g., truancy)	☐
Students with discipline or behavioral issues	☐
Students performing <u>below</u> standards or grade level	☐
Students performing <u>above</u> standards or grade level	☐
Students in a particular grade level, regardless of performance	☐
Students recommended by high school staff (e.g., counselor or teacher)	☐
Re-entry students	☐
English Language Learners	☐
Other	☐

(Please Specify_____)

5. How do students demonstrate mastery of specific knowledge or skills?
(Check all that apply)

Through a national/standardized test	☐
Through an end of course exam	☐
Completion of project or assignment (e.g., assigned project, independent research, performance task)	☐
Portfolio of student work products and/or experiences	☐
Successful completion of a specific course	☐
Other	☐
(Please Specify_____)	

The full survey is available at: http://www2.ed.gov/about/offices/list/opepd/ppss/reports-high-school.html