



Ninth Grade On-Track Rates and Their Relationship to On-Time Graduation for First-Time SDP Ninth Graders in 2016-17 through 2018-19

Theodore Wills, Ph.D.

Key Findings

- SDP’s 9GOT metric continued to be strongly related to 4-year graduation.
- For all cohorts, the four-year graduation rates for 9th graders who were on-track were more than double that of 9th graders who were off-track (85% to 87% of 9th grade students who were on track graduated in four years compared to 36% to 40% of 9th grade students who were off track).
- There were large on-track/off-track differences in graduation rate for all student groups, regardless of race/ethnicity, gender, English learner status, IEP status, or economic disadvantage status.

Introduction

During the 2017-18 school year, the School District of Philadelphia (SDP) developed and launched a new metric to monitor the success of first-time 9th graders.¹ According to the new metric, students were considered to be On-Track if they earned at least one credit in English, math, science, and social studies, plus an additional fifth credit in any subject area (“four core plus one more”).

The SDP 9th Grade On-Track metric was developed after a review of existing research highlighted a metric used successfully by Chicago Public Schools (CPS). In Chicago, a large body of research has connected the on-track metric to positive student outcomes.² In particular, a student’s on-track status after their first year of high school is a strong predictor of whether they will graduate within four years.

However, while Chicago and Philadelphia share some important similarities, there are also differences. Therefore, the review of existing literature was followed by analyses of data from SDP students. These analyses helped to identify the SDP-specific 9th Grade On-Track metric and affirmed that the 9th Grade On-Track

¹ *Defining Success; A New 9th Grade On-Track Definition*

<https://www.philasd.org/research/2018/05/28/defining-success-a-new-9th-grade-on-track-definition/>

² For an extensive compilation of this research, see:

https://toandthrough.uchicago.edu/sites/default/files/uploads/components/NCS_FOT_Toolkit_URAD.pdf

(9GOT) definition described above was strongly correlated with on-time graduation within the specific context of SDP.^{3,4}

The launch of SDP's 9GOT metric was part of a period of transition, during which the District committed additional resources to the 9th grade experience.⁵ However, the adoption of the metric, implementation of related programs, and changes in practice did not occur all at once, but were introduced in phases across the 2016-17, 2017-18, and 2018-19 school years. This brief, therefore, spans a period that begins just before the metric was finalized and extends through the first year it was fully integrated.

The study described in this brief revisits SDP's 9th Grade On-Track metric to examine whether the relationship between 9GOT and on-time graduation remains strong for more recent cohorts of students. In the original study, we looked at first-time 9th grade cohorts from 2011-12, 2012-13, and 2013-14. In this study, we repeat the analyses for the first-time 9th grade cohorts of 2016-17, 2017-18, and 2018-19. Because the 2018-19 cohort was the first group of 9th grade students to have their on-track status monitored from the first day of school, and because it is the most recent cohort for which on-time graduation data has been finalized, we see this as an opportune time for further analysis. We include the 2016-17 and 2017-18 cohorts of first-time 9th graders to provide context about the period of transition, as SDP intensified its focus on 9th grade.

³ It was also remarkably similar to the metric developed by CPS, which specifies a student must accumulate five total credits, with no more than one semester F in a core subject.

⁴ For briefs and reports about 9GOT in SDP see: <https://www.philasd.org/research/category/college-career/high-school-graduation/on-track-to-graduation-metric/>

⁵ For example, a 9th grade academy model, supported with a full-time administrator, was gradually implemented into high schools beginning with pilot cohorts in 2016-17 and 2017-18. See the following report for more details: *Implementation of the Ninth Grade Academy in 2018-19* <https://www.philasd.org/research/2020/02/21/ninth-grade-academy-year-1-report/>

Box 1. Key Terms

9th Grade On-Track: A first-time 9th grader is considered to be *On-Track* if they earn at least one credit in each of the four core content areas (English, math, science, and social science), and also earn at least one additional credit in any content area. Students who are *On-Track* are further considered to be either *Firmly On-Track* or *On-Track but at Risk*. The overall On-Track rate is the sum of the *Firmly On-Track* and *On-Track but at Risk* rates.

Firmly On-Track: A first-time 9th grader is considered to be *Firmly On-Track* if they earn a grade of A or B in all 5 of the courses that contribute to their overall On-Track status.

On-Track but at Risk: A first-time 9th grader is considered to be *On-Track but at Risk* if they earn a grade of C or D in any of the courses that contribute to their overall On-Track status.

First-Time 9th Grader: A student who is enrolled as a 9th grader, and who has not previously been enrolled as a 9th grader. For example, if a student was enrolled as a 9th grader in 2017-18, was not promoted, so was again enrolled as a 9th grader in 2018-19, then that student would be considered a first-time 9th grader in 2017-18 only, and 2017-18 would be their first-time 9th grader cohort year. For this student, their 9GOT status would be their status in 2017-18, and the metric would not apply to that student in 2018-19.

On-Time Graduation: A student is an On-Time graduate if they graduate after four years in high school. In operational terms, this means that their graduation year is three years after their first-time 9th grade cohort year.⁶

Research Questions

This brief focuses on two research questions:

1. What was the relationship between students' 9th Grade On-Track status and their on-time graduation rates for the first-time ninth grade cohorts of 2016-17, 2017-18, and 2018-19?
2. In what ways, if any, did the relationship between students' 9th Grade On-Track status and their on-time graduation rates vary by student group?

In addition, descriptive summaries of on-track rates, by student group, can be found in Appendix A.

⁶ For briefs and reports about SDP graduation rates, how they are defined, and research related to graduation see: <https://www.philasd.org/research/category/college-career/high-school-graduation/>

Sample

Administrative records were first restricted to students who were first-time 9th graders during the 2016-17 through 2018-19 school years, for whom we had sufficient data to determine On-Track status. This yielded an initial sample of 28,497 students. This sample was then further restricted to those students for whom we could determine a definitive 4-year graduation status. This excludes students with incomplete data, or students with an affirmative record of leaving SDP prior to graduation. This yielded a final analytic sample of 26,161 students. For all analyses, demographic details are associated with students' last enrollment record in their first-time 9th grade year. For example, analyses involving English Learners (ELs) refer to EL status at the end of the first-time ninth grade year as opposed to, for example, at the time of graduation.

Findings

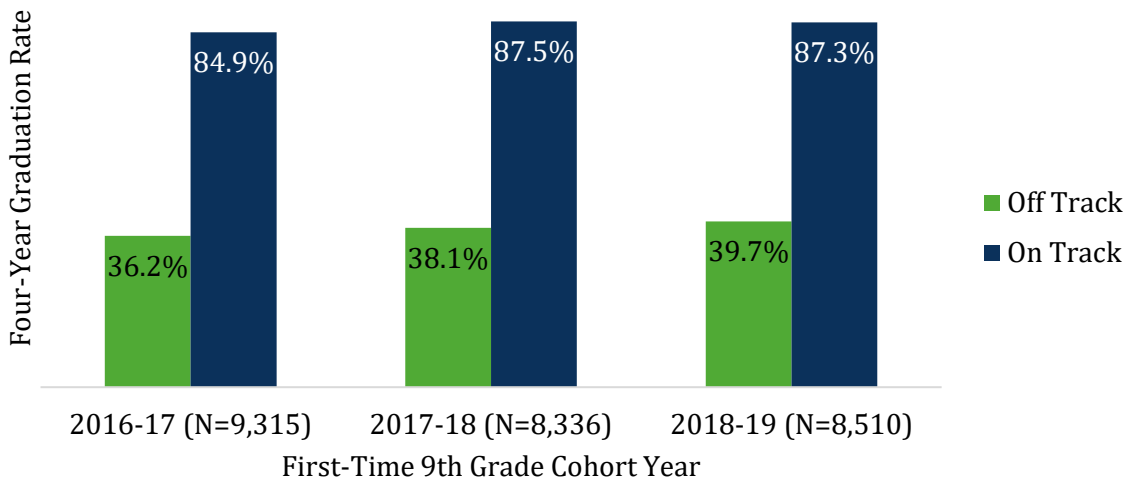
What was the relationship between students' 9th Grade On-Track status and their on-time graduation rates for the first-time ninth grade cohorts of 2016-17, 2017-18, and 2018-19?

For all cohorts, about 85% to 88% of on-track first-time ninth graders subsequently graduated within four years (Figure 1). In contrast, the on-time graduation rate for first-time ninth graders who were off-track ranged from 36% to 40%. For all cohorts, this means that students finishing 9th grade on-track graduated over two times as frequently as those who did not. This finding is consistent with prior research,⁷ and indicates that (at least for these cohorts) 9GOT status remained a useful predictor of on-time graduation.

⁷ *Defining Success; A New 9th Grade On-Track Definition*

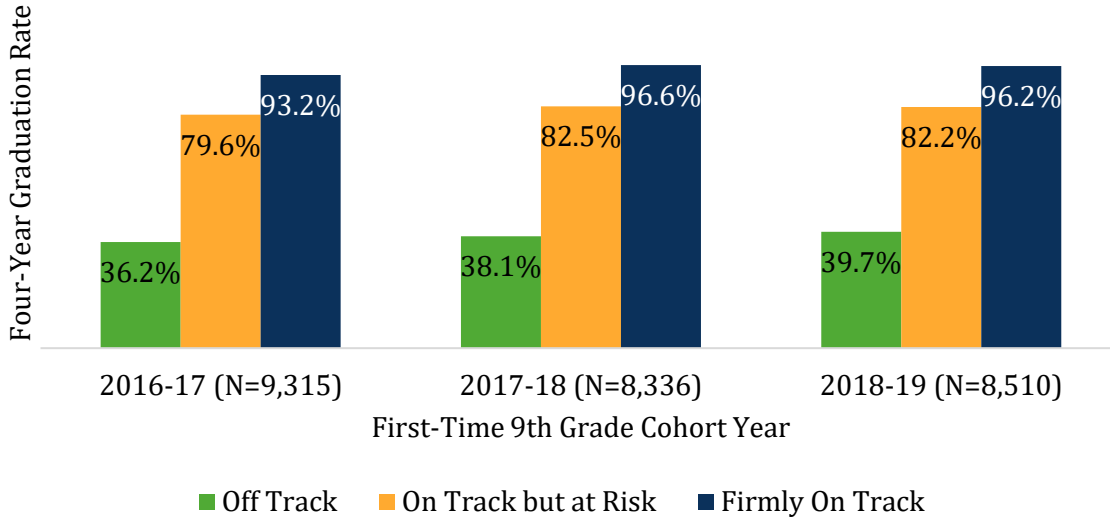
<https://www.philasd.org/research/2018/05/28/defining-success-a-new-9th-grade-on-track-definition/>

Figure 1. On-time graduation rates for students who were on- and off-track as first-time 9th graders in 2016-17 through 2018-19



Compared with the distinction between on- and off-track, the difference between firmly on-track and on-track but at risk is less pronounced (at least with respect to predicting on-time graduation; Figure 2). For each cohort, there was a difference of about 14 percentage points between the graduation rates of first-time ninth graders who were firmly on-track and those who were on-track but at risk (the difference between the blue and yellow bars). There was a much larger difference (43 to 44 percentage points) between students who were on-track but at risk and students who were off-track (the difference between the yellow and green bars). In other words, while being firmly on-track is associated with the best graduation outcomes, any variety of on-track status indicates a high likelihood of graduating in four years.

Figure 2. On-time graduation rates for students who were firmly on-track, on-track but at risk, and off-track as first-time 9th graders in 2016-17 through 2018-19



As described in Box 1, to be considered on-track, first-time ninth graders must earn credits in five distinct content areas (English, math, science, social studies, plus one additional credit). Another way, then, to think about students’ status is in terms of the number of requirements they are missing, from a minimum of zero (for on-track students), to a maximum of five (for students who do not earn any of the required credits). The largest decrease in on-time graduation rate occurs at the on-track/off-track threshold of zero versus one missing requirement (differences ranging from 27 to 29 percentage points; Table 1).

Table 1. On-time graduation rates for students who were first-time 9th graders in 2016-17 through 2018-19, by number of missing on-track requirements

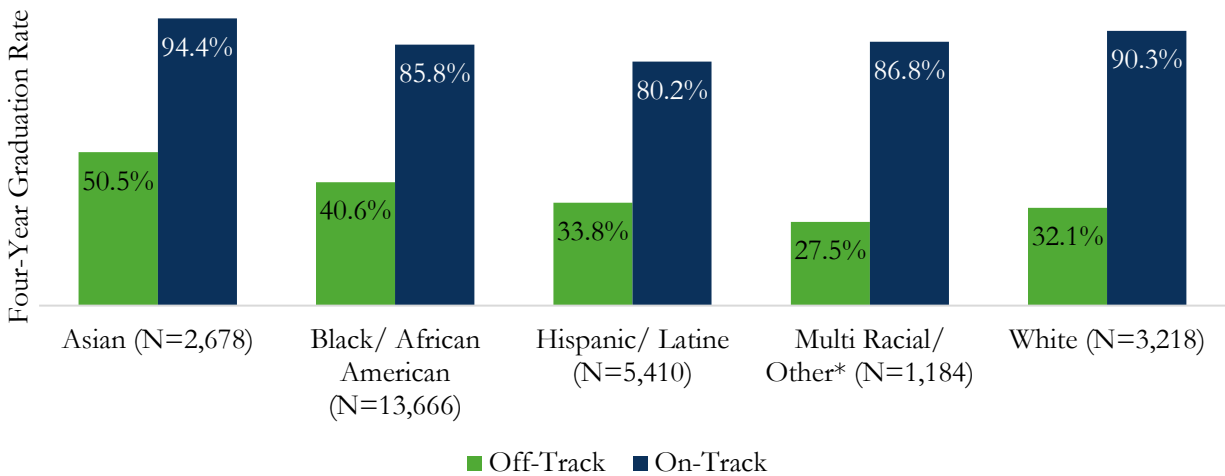
Number of Missing Requirements	On-Time Graduation Rate for On-Track Students in 2016-17 First-Time 9 th Grade Cohort	On-Time Graduation Rate for On-Track Students in 2017-18 First-Time 9 th Grade Cohort	On-Time Graduation Rate for On-Track Students in 2018-19 First-Time 9 th Grade Cohort	Average Percentage Point Decrease from Previous Row
0 (On track)	84.9%	87.5%	87.3%	NA
1	57.5%	58.5%	60.2%	27.9
2	36.7%	42.4%	35.5%	20.5
3	28.6%	27.1%	19.9%	13.0
4	16.4%	19.3%	11.5%	9.5
5	11.2%	12.5%	20.4%	1.0

How to read this table: The first column reflects the number of 9GOT requirements a student did not fulfill, out of a possible five (credits in one of the four core areas, or a fifth credit from any source).

In what ways, if any, did the relationship between students' 9th Grade On-Track status and their on-time graduation rates vary by student group?

Across different racial/ethnic groups, the graduation rates associated with being on- or off-track varied, but in all cases graduation rates were higher if students finished their first-time 9th grade year on-track than if they finished off-track (Figure 3).

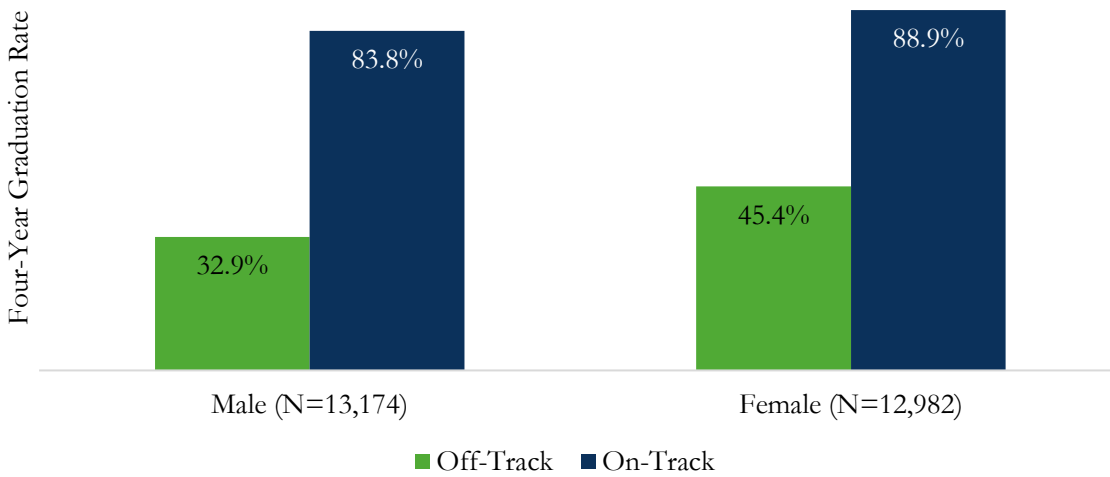
Figure 3. On-time graduation rates for students who were on- and off-track as first-time 9th graders in 2016-17 through 2018-19, by race/ethnicity



* Includes students identifying as Native Hawaiian/Pacific Islander or as American Indian/Alaskan Native

Four-year graduation rates were higher for on-track students who identified as female than for students who identified as male (Figure 4). The on-track/off-track difference in graduation rate was somewhat larger for students identifying as male (about 2.5 times) than for those identifying as female (about 2 times), though the graduation rates for both on- and off-track students were higher for students identifying as female.

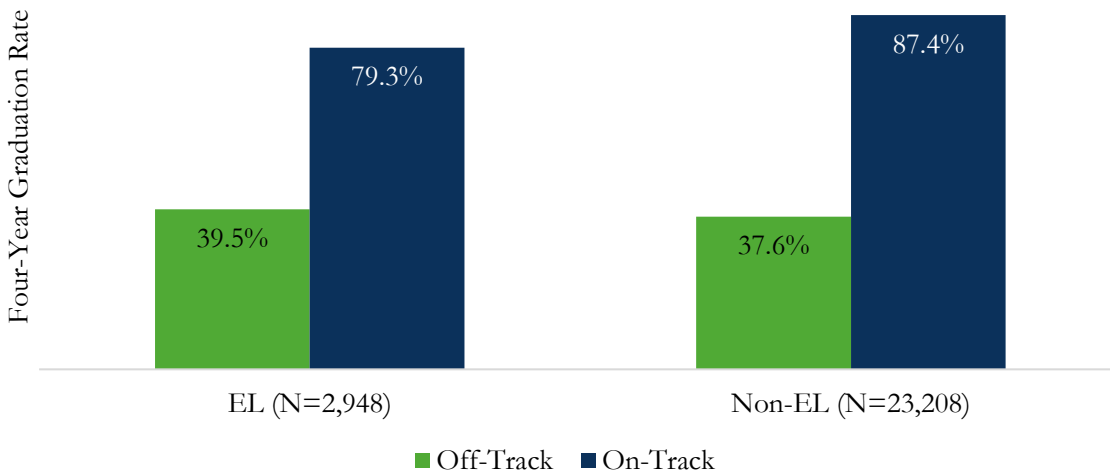
Figure 4. On-time graduation rates for students who were on- and off-track as first-time 9th graders in 2016-17 through 2018-19, by gender



Note: SDP currently provides an option for students to identify as non-binary, but this option was not in place during 2016-17 through 2018-19.

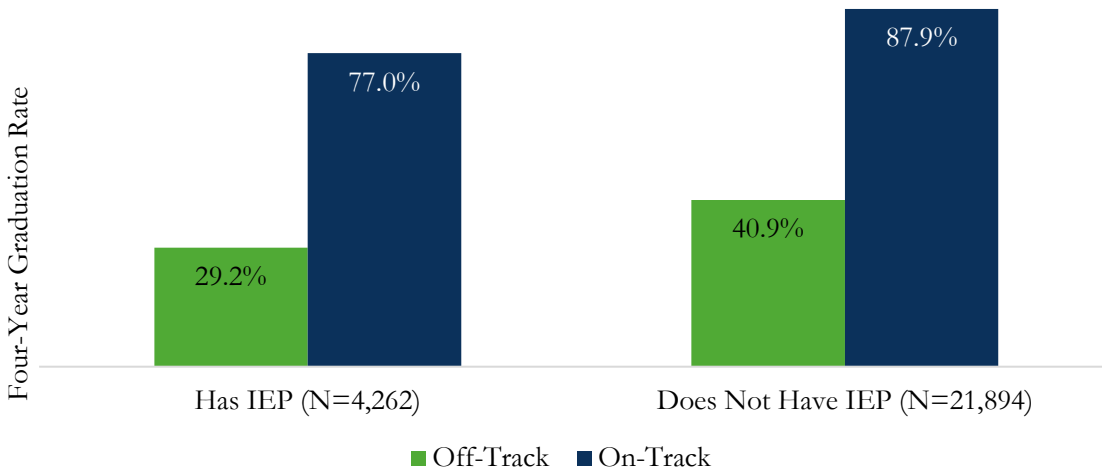
Four-year graduation rates were higher for on-track students who were not English Learners (ELs) as 9th graders than for students who were ELs (Figure 5). The on-track/off-track difference in graduation rate was somewhat larger for Non-ELs (about 2.3 times) than for ELs (about 2 times). The graduation rates for off-track students were similar for ELs and non-ELs, but the graduation rate for non-ELs who were on-track was about eight percentage points higher than the rate for ELs who were on-track.

Figure 5. On-time graduation rates for students who were on- and off-track as first-time 9th graders in 2016-17 through 2018-19, by EL status



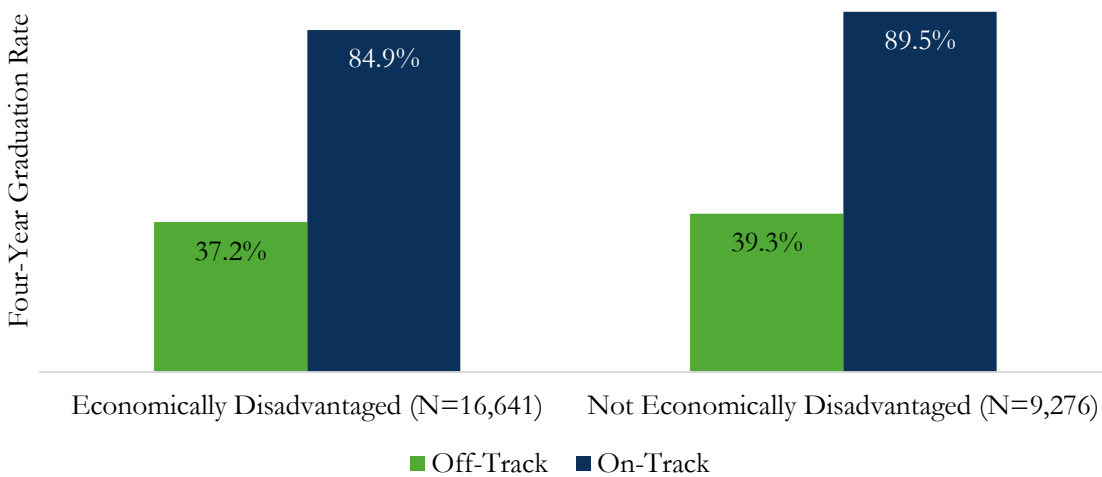
Four-year graduation rates were higher for students who did not have IEPs as 9th graders than for students with IEPs (Figure 6). The on-track/off-track difference in graduation rate was somewhat larger for students with IEPs (about 2.5 times) than for students without IEPs (about 2 times).

Figure 6. On-time graduation rates for students who were on- and off-track as first-time 9th graders in 2016-17 through 2018-19, by IEP status



Four-year graduation rates were higher for on-track 9th graders, regardless of whether they were or were not experiencing economic disadvantage (Figure 7). The on-track/off-track difference in graduation rate was similar for students experiencing economic disadvantage (about 2.3 times) and for students not experiencing economic disadvantage (about 2.3 times).

Figure 7. On-time graduation rates for students who were on- and off-track as first-time 9th graders in 2016-17 through 2018-19, by economic disadvantage status



Conclusions

SDP's 9th Grade On-Track metric was originally designed to provide a measurement of 9th grade success and act as an early warning indicator of students who might not experience that success. Characterizing the metric as measuring success is grounded in, and validated by, the strong relationship between 9GOT and graduating in four years. When developing the metric, it was necessary to base analyses on historical data from before the metric existed, and was therefore not yet directly monitored or emphasized. Once the metric was explicitly integrated into the planning, tracking, and practices of the SDP 9th grade experience, it was possible those very changes might fundamentally alter the link between "four core plus one more" and on-time graduation. For example, new practices might lead to more students meeting the on-track criteria, but at the expense of something equally important that the initial analyses did not identify.

This new analysis of the transition period, as 9GOT was initially adopted, suggest that such a change did not occur. For the first-time 9th grade cohorts of 2016-17 through 2018-19, the distinction between on- and off-track provided a strong indication of whether a student would graduate on time. The strength of that relationship is diminished if the standard is made more stringent (e.g., by emphasizing the firmly on-track category), and also if it is made less stringent (e.g., by allowing one missing requirement). Together, these findings reaffirm that "four core plus one more" performs well as a predictor of on-time graduation, and performs better than other plausible alternatives.

It is important to acknowledge that this analysis is narrowly restricted to the relationship between 9GOT and on-time graduation. Other contexts might favor the use of the firmly on-track designation, such as evaluating whether students are likely to access advanced coursework or matriculate into post-secondary education. Similarly, the number of missing requirements could be a valuable tool in differentiating supports among students who end ninth grade off-track.

Analyses of student groups provides some additional insights. Importantly, for *every* student group in this analysis, the relationship between on-track status and four-year graduation was clear and compelling. In every case, on-track students did not simply graduate on time more frequently, they graduated on time *much* more frequently.

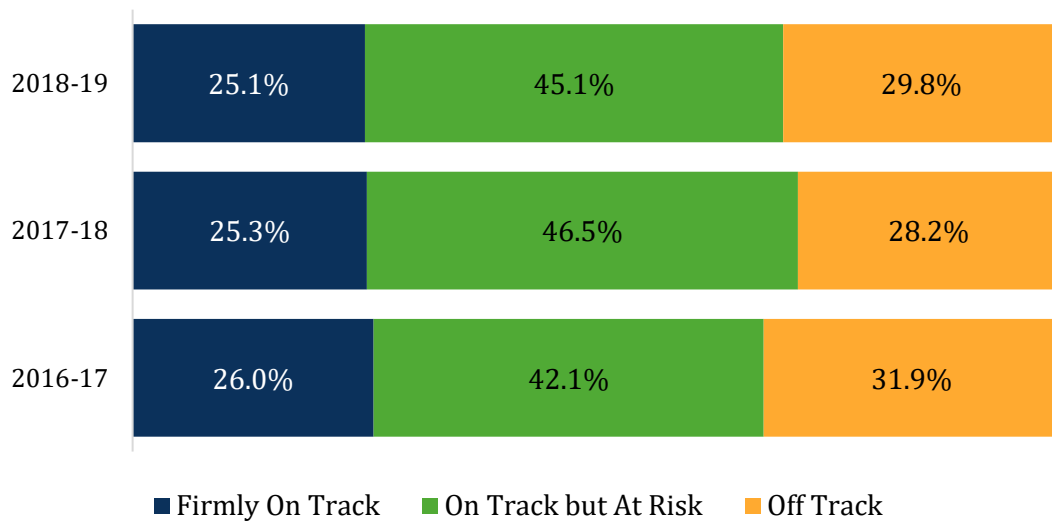
Digging deeper, there was variation across student groups, both in graduation rates themselves, and also in the degree of difference between the graduation rates of students finishing 9th grade on- or off-track. In some cases, the student group with lower overall graduation rates also had a wider difference in graduation rate for on- and off-track students (e.g., for gender, and for IEP status). In other cases, however, the student group with the higher overall graduation rate also had a larger on-/off-track difference (e.g., for EL status); and in the case of economic disadvantage the on-/off-track difference was the same for both groups.

Appendix A: Summaries of on-track rates

For the following summaries of on-track rates, the analytic sample consists of all students with a final on-track status (N=28,497). This differs from the analytic sample used in the body of the report, which was further restricted to students with a valid four-year graduation status.

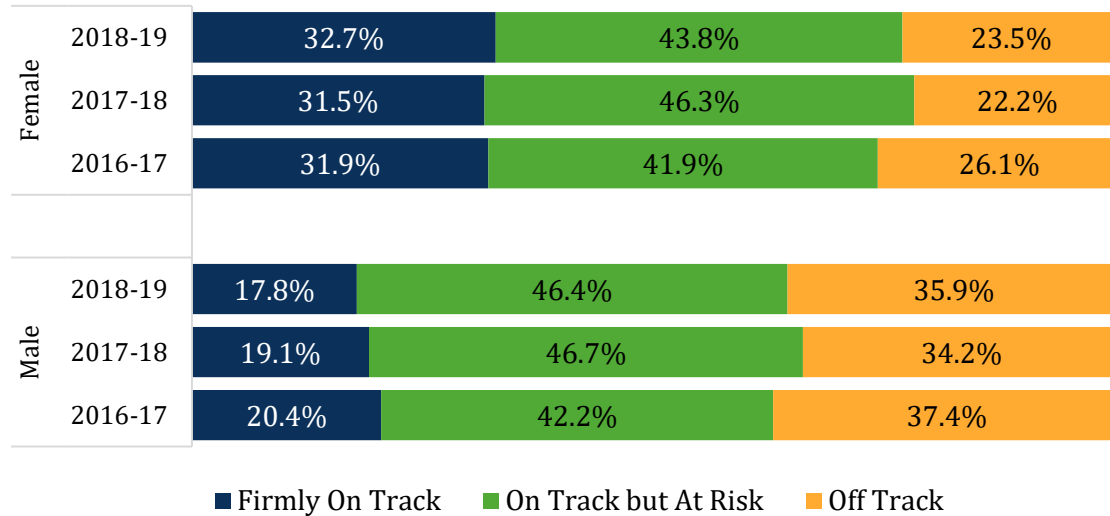
The firmly on-track rates were similar across the 9th grade cohorts of 2016-17 through 2018-19, ranging from 25.1% to 26.0% (Figure A1). The overall 9GOT rate increased by about four percentage points from 2016-17 to 2017-18 (attributable to an increase in the percentage of students considered to be on-track but at risk), then decreased by two percentage points in 2018-19.

Figure A1. Overall 9th Grade On-Track rates; 2016-17 through 2018-19



Across all years, students identifying as female had higher firmly on-track rates and higher overall on-track rates than students identifying as male (Figure A2). From 2016-17 to 2018-19, students identifying as female and male saw small increases in the overall on-track rate of 2.6 and 1.5 percentage points, respectively.

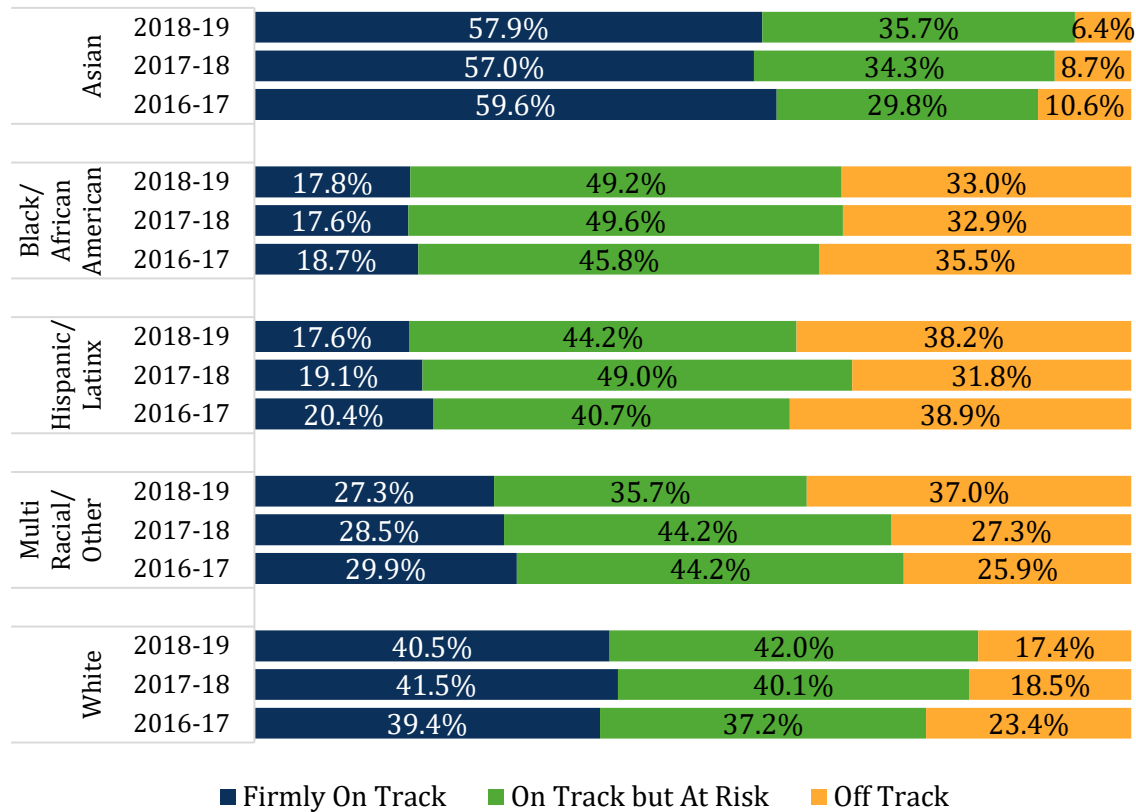
Figure A2. 9th Grade On-Track rates; 2016-17 through 2018-19, by gender



Note: SDP currently provides an option for students to identify as non-binary, but this option was not in place during 2016-17 through 2018-19.

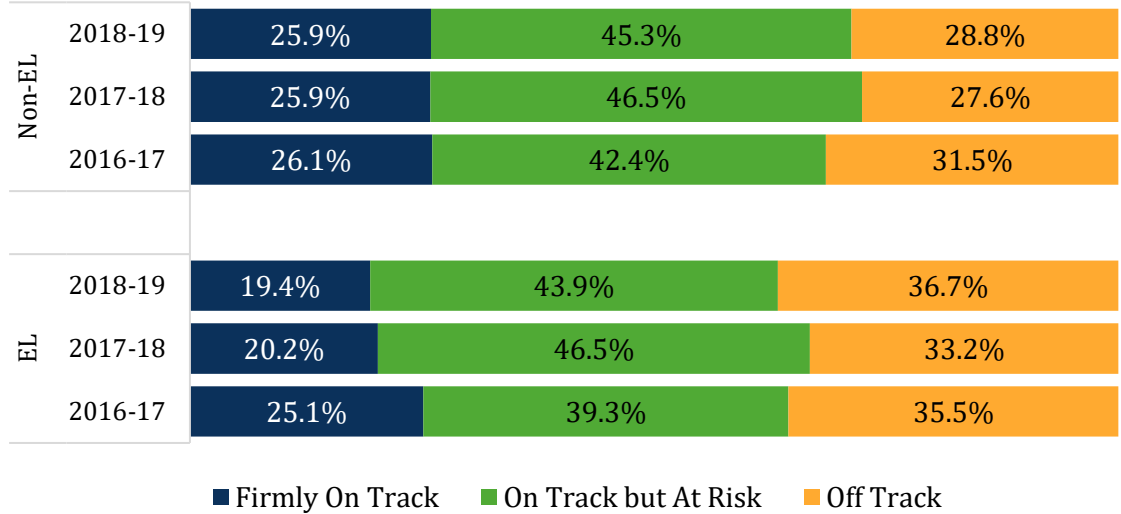
There was significant variation in on-track rates across students identifying with different races/ethnicities (Figure A3). Students identifying as Asian had the highest 9GOT, and firmly on-track rates across all years, while students identifying as Black/African American or Hispanic/Latinx had the lowest.

Figure A3. 9th Grade On-Track rates; 2016-17 through 2018-19, by race/ethnicity



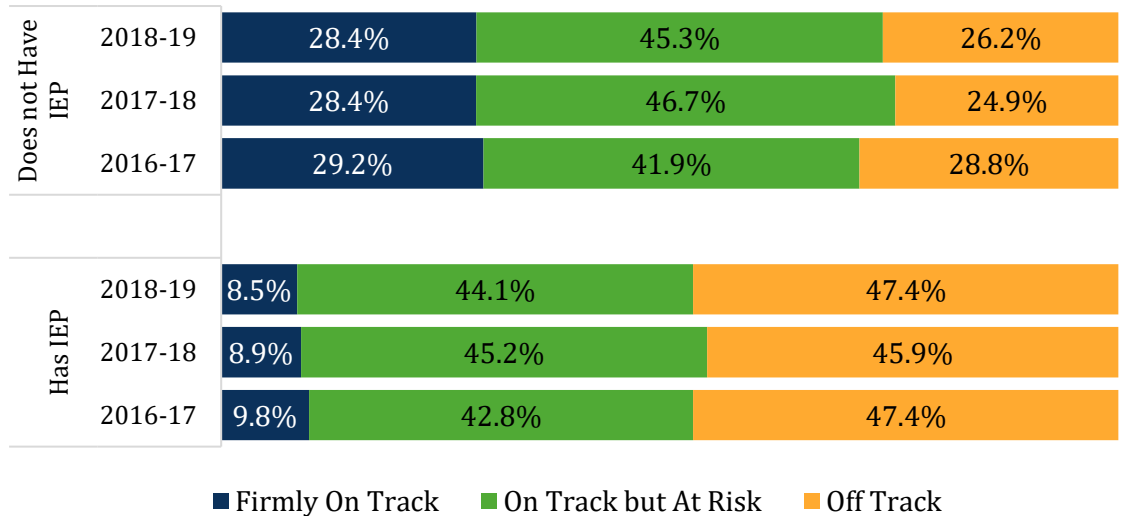
From 2016-17 through 2018-19 English Learners (ELs) had lower 9GOT and firmly on-track rates than their peers who were non-ELs (Figure A4). Further, from 2016-17 to 2018-19 the 9GOT rate increased among non-ELs (+2.7 percentage points) but decreased among ELs (-1.2 percentage points).

Figure A4. 9th Grade On-Track rates; 2016-17 through 2018-19, by EL status



In all years, students with IEPs had lower 9GOT and firmly on-track rates than their peers who did not have IEPs (Figure A5). Further, from 2016-17 to 2018-19 the 9GOT rate increased among students without IEPs (+2.6 percentage points) but was unchanged among students with IEPs.

Figure A5. 9th Grade On-Track rates; 2016-17 through 2018-19, by IEP status



In all years, students who were economically disadvantaged had lower 9GOT and firmly on-track rates than their peers who were not economically disadvantaged (Figure A6). In addition, each year from 2016-17 to 2018-19 the firmly on-track rate increased for students who were not economically disadvantaged, while the firmly on-track rate decreased for students who were economically disadvantaged.

Figure A6. 9th Grade On-Track rates; 2016-17 through 2018-19, by economic disadvantage status

