

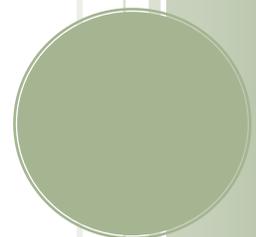
Getting to Graduation and Beyond

Identifying Indicators of Risk of Failure for Students in the Spokane Public Schools

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GETTING TO GRADUATION AND BEYOND

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A high school diploma has long been seen as necessary, but not sufficient, for a young person who wishes to earn a living wage in today's economy. The fact that many young people do not succeed in this initial goal means that particular attention needs to be paid to those students who are at risk of dropping out before graduation. Faced with a relatively low graduation rate, the Spokane Public Schools contracted for a study of two cohorts of students from the district, the Classes of 2008 and 2010, in order to develop indicators of academic risk that could be used to identify students who might drop out of high school early enough to intervene and improve their chances of graduation. This study summary provides information about about the warning signs of risk that appear as early as elementary school.

Our Goal: All students succeed at each grade level and graduate from high school well prepared for a variety of post-secondary pursuits in our democratic society.¹

Although special attention has been paid in this study to those students who may leave school without a diploma, this has not been its only focus. Concentration on the old dichotomy of high school graduate/dropout is no longer seen as sufficient to describe the desired outcomes of a high school education. Surveys of students, parents, teachers and potential employers all reveal a common understanding that today's economy requires that a student leave high school with a diploma and with the skills and attitudes that will lead to some level of postsecondary education and, sooner or later, a career.¹ The goal that all American students graduate from high school ready for college and/or a career does not constitute a new goal; it is simply a clearer definition of what it should mean to graduate from high school.

While college-career readiness has become a mantra among educators, politicians and philanthropists, there is no universal agreement about what this means in practice. It is generally accepted that graduates who wish to succeed at a college or university should have mastered certain academic skills, but less testable skills are seen by some as equally or more important: e.g. persistence, critical thinking, problem solving.² Defining career readiness is even more difficult, although the increased emphasis on and availability of career technical education (CTE) is providing more direct paths to career readiness for many students.³

DEFINITION OF TERMS

Two of the outcomes considered in the Spokane Cohort Study are straightforward and unambiguous, e.g. those of high school dropout and high school graduate. One of these two events actually occurred for all students in the two cohorts who did not transfer out of the district. Students' college-career readiness, however, cannot be known for sure until they have succeeded in post-secondary education and/or entered a career. National research efforts⁴ are now underway to link student post-high school success to courses and behavior in high school, but such links have yet to be established. In the absence of a generally accepted measure of college-career readiness, a definition was developed for this study that reflected current thinking on that goal while taking advantage of data that was currently available. The relevant definitions are given below:

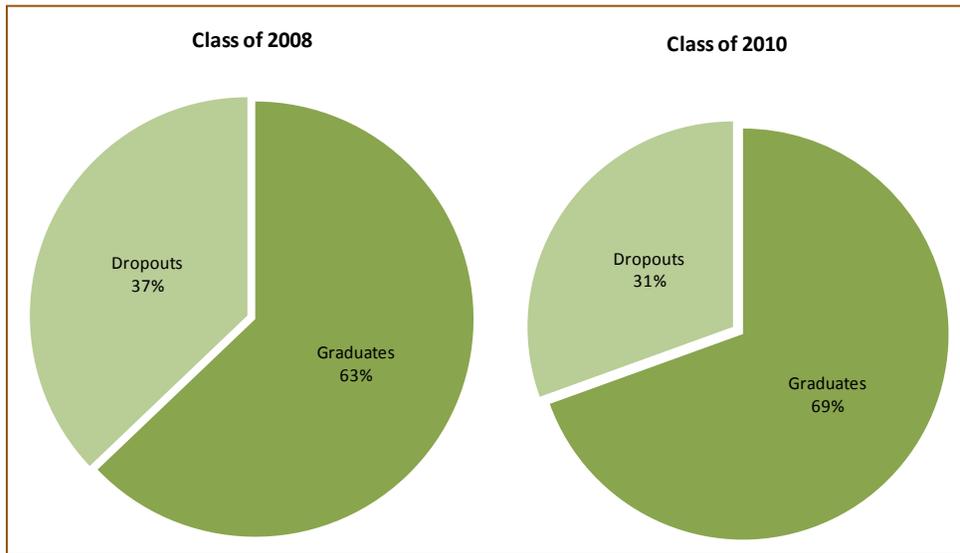
1. **Dropout**: a student who left school without transferring out of the district or receiving a diploma. Following State and Federal guidelines, students who left school without formally withdrawing and students who earned a GED but not a diploma, are defined as dropouts.
2. **Graduate**: a student who earned the credits and grades required by the Spokane Public Schools, either on time (four years after starting 9th grade) or later.
 - a. **College-ready graduate**: student who graduated with the credits and GPA specified by the Higher Education Coordinating Board as minimum criteria for application to a four-year public college or university in the state;⁵
 - b. **Career-ready graduate**: student who completed the Core Academic Requirements suggested by ACT but who may not have the credits to apply to a four-year public college. An additional path to career readiness is successfully completing an established sequence of career preparation courses.⁶
 - c. **Non-CCReady graduate**: student who met the criteria for graduation but failed to earn the kinds of credits and/or the grade point average that would qualify for college and/or career ready status.

GRADUATES AND DROPOUTS

Figure 1 displays the percentage of each cohort that dropped out or graduated in 2008 and 2010.⁷ The graduation rate increased by 6 percentage points between 2008 and 2010, a significant improvement. In the remainder of this report, data for both cohorts will be merged because the predictors for the outcomes, both positive and negative, are much the same across cohorts. The first section will provide findings on dropouts, including:

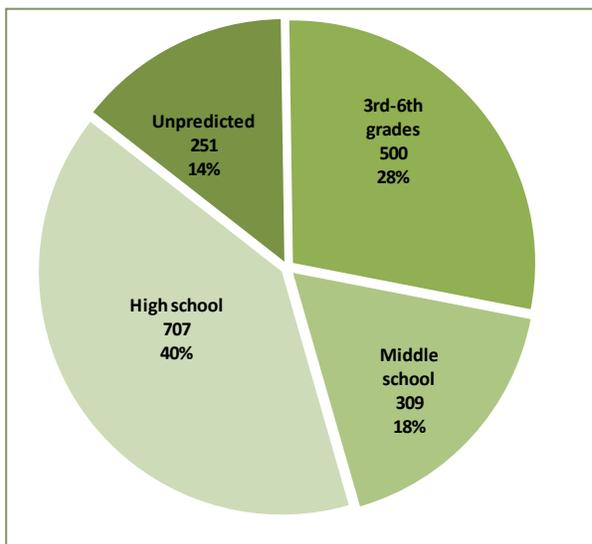
1. The differences among dropouts by the timing of both earliest prediction and of leaving school, and
2. The indicators of risk for dropping out before graduation that are strongest and most predictive for the three types of dropouts.

Figure 1: Outcomes for 2008 and 2010 cohorts



Dropouts differ from graduates, but they differ among themselves as well. On the basis of student performance and behavior, dropouts were divided into three groups according to the grade levels at which school failure could first be predicted. A fourth group is composed of students for whom there were no predictors of school failure in the available data

Figure 2: When indicators of dropping out are first detectable



The research conducted for this study suggests that over 85% of dropouts could have been identified by their school performance and behavior before 11th grade in high school, and almost half could have been identified at the elementary or middle school level. Only 14% of dropouts would probably not have been able to be identified with the data now being collected by the school district. Figure 2 shows the percentages of the dropouts from the combined cohorts that could (or could not) have

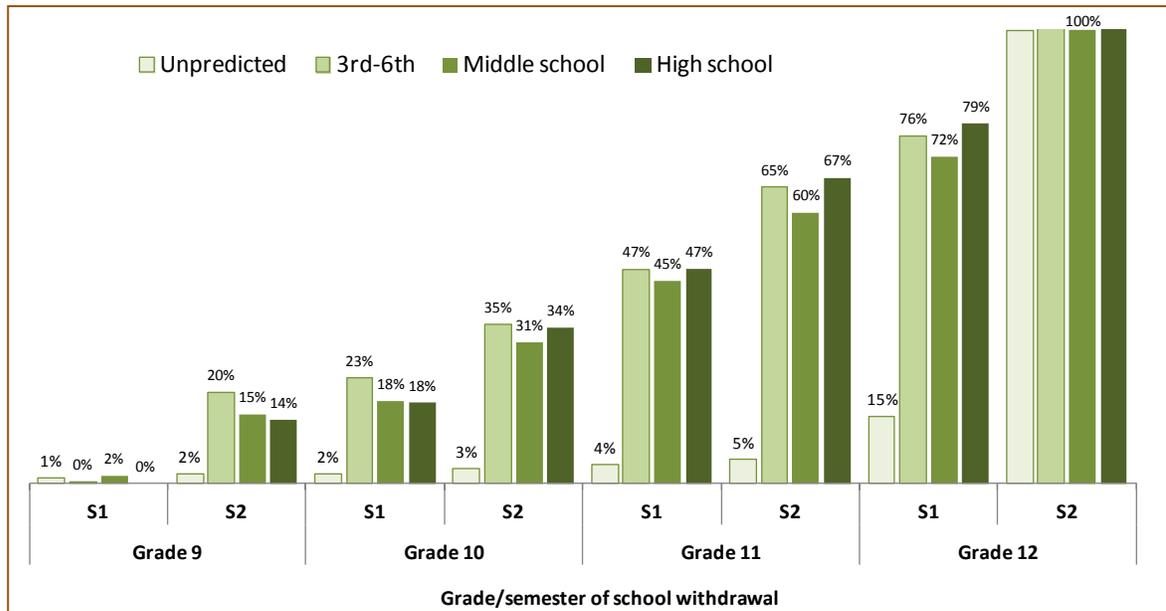
been identified at the different grade levels.

Students withdraw from high school—officially or unofficially—across the high school years and is a key piece of information for educators interested in intervening to

prevent failure at critical times. The study found that the timing of withdrawal was related to when the prediction occurs, as can be seen in Figure 3.

- Most of the students who couldn't be predicted as dropouts using currently available data sources (i.e., grades, absences, test scores) did not actually leave school until the end of their senior year. At the beginning of the 12th grade, only 15% of the unpredicted dropouts had actually left school.
- In contrast, almost a fourth of the dropouts who could have been predicted as dropouts prior to middle school stopped attending school before or during the first semester of 9th grade and over one third had left before or during second semester of 10th grade.
- Approximately three-fourths of all predicted dropouts had withdrawn from high school by or just before 12th grade.

Figure 3: Timing of school withdrawal by grade level at which dropout could be predicted



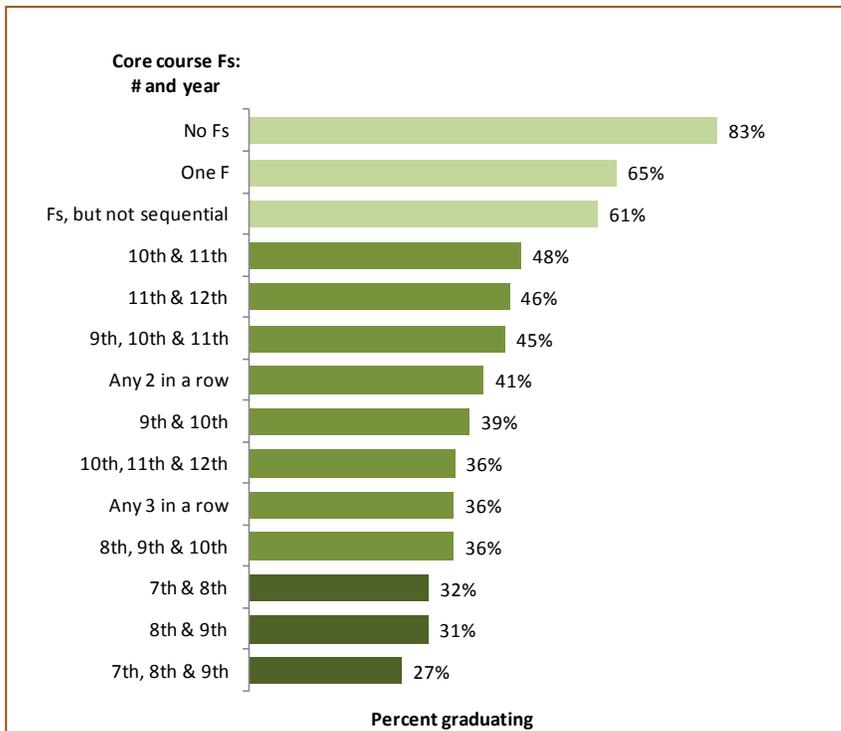
There are four areas of performance and behavior that are most powerful as predictors of leaving school without a diploma. Each will be briefly described below.

- Failing grades in core courses (English/Language Arts, Math, Science and Social Studies);
- Performance on standardized or standards-based tests (e.g., WASL, MSP, HSPE, ITBS);
- Unexcused absences; and
- Serious disciplinary actions.

Failing grades

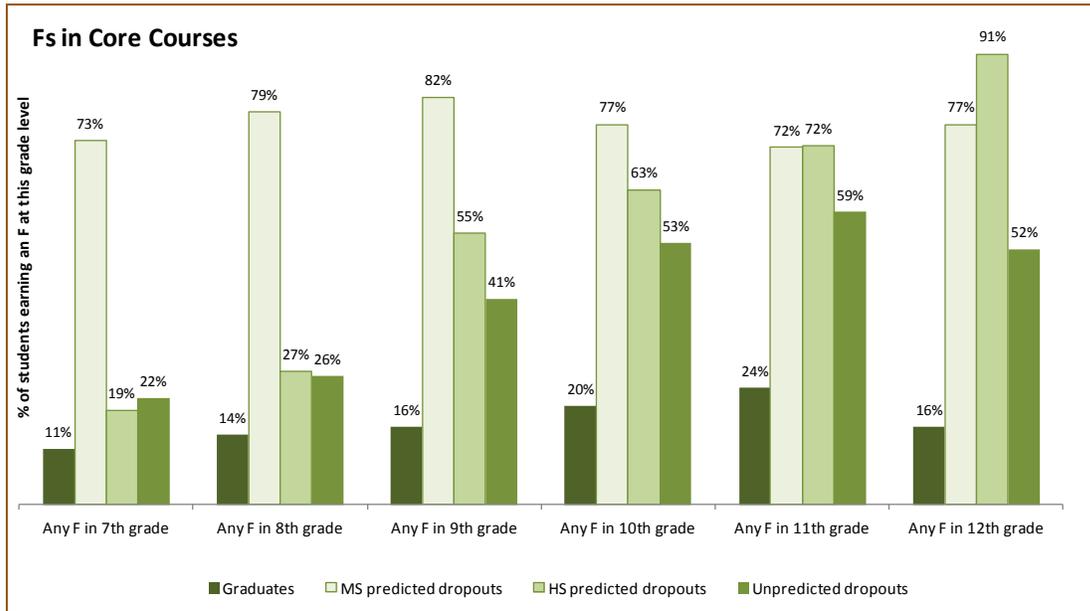
- Even a single core course F in middle or high school dropped the graduation rate from 83% to 65%. On average, 83% of middle and high school students with no core course Fs graduated, while a single core course F dropped the graduation rate almost 20 percentage points.
- Although research has shown that a core course F in the 9th grade can have a particularly strong effect on the risk of dropping out, a failure at any grade level was found to be a significant barrier to eventual graduation.
- Earning core course Fs two or three semesters or years in a row drops graduation rates below 50%. Sequential Fs in middle school and early high school are especially dangerous.

Figure 4: Graduation rates by patterns of Fs in core courses



- A large majority of students who were able to be predicted as dropouts from their middle school years received Fs in one or more core courses in every school year in which they remained enrolled.
- Students who could have been predicted as dropouts from their high school performance, but not from their elementary or middle school records, did not typically earn core course Fs in middle school, but over half earned at least one F in every year in high school.

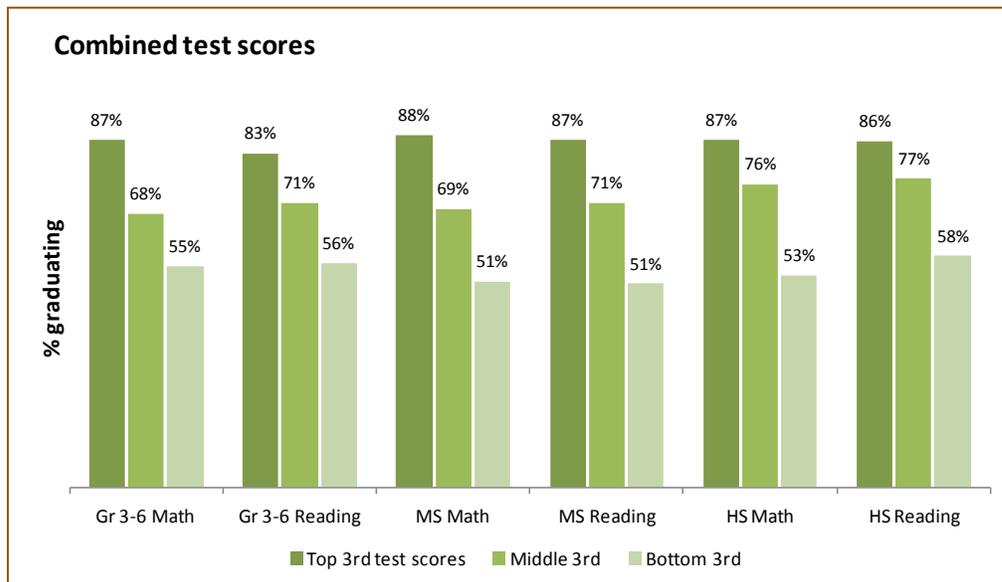
Figure 5: Percent of students in each dropout prediction group who earned one or more core course Fs in each grade



Test scores

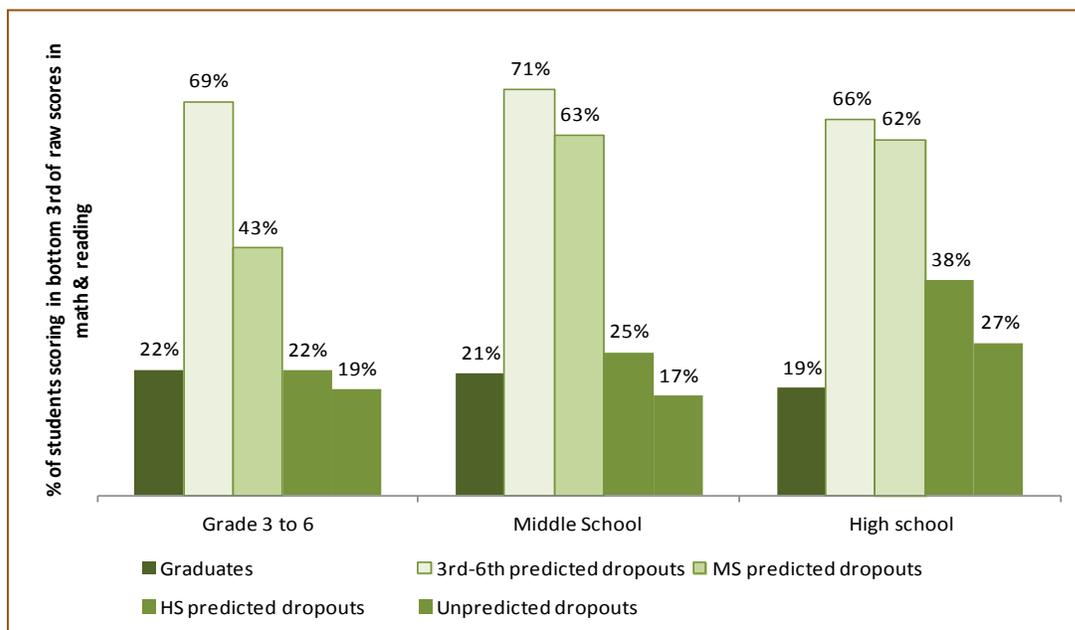
The number and source of test scores available for students in the two cohorts varied substantially. Some students had reading and math scores on the early WASLs and other standardized tests like the ITBS while others had raw scores from the MSP and HSPE but few earlier scores. Research determined that scoring in the lowest third of the district distribution of raw scores on a majority of the reading and/or math tests taken by a particular student was highly predictive of leaving school without a diploma.

Figure 6: Graduation for students by their combined raw scores at three grade levels



- Overall, 80% or more of those students who scored in the top third of the raw scores on most or all of the standardized or standards-based tests they took at any of the three grade levels eventually graduated from high school.
- Students who scored in the middle third of raw scores were less likely to eventually graduate, but the graduation rates were still ranged from 68% to 77%, i.e. above the average cohort graduation rates.
- Only about half of those students who scored in the bottom third on most or all of their standard tests eventually graduated from high school. Scores in the bottom third of the district score distribution appeared to be most predictive, in general, for math and for middle school students.

Figure 7: Percent of students who dropped out who scored in bottom third of combined reading and math scores



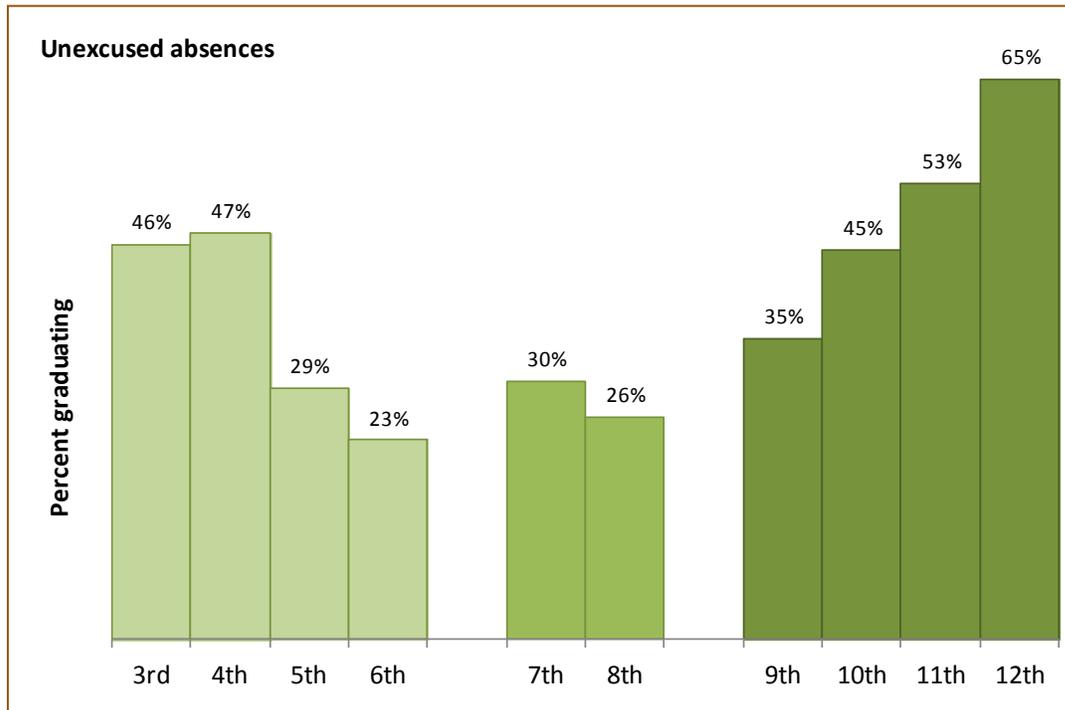
- Over two-thirds of dropouts who could be predicted from the earliest data available (grades 3 to 6) had scored in the bottom third of most or all of the tests they took in those grades, and they continued to be over-represented among the bottom third of test takers at every subsequent school level.
- Dropouts who could not be predicted by current data tended to perform well in their standardized tests, as did students who could be predicted as dropouts until high school.
- In general, test scores appeared to be most powerful as predictors for risk among elementary and middle school students.

Unexcused Absences

Missing school almost inevitably has a negative effect on school performance because the student misses out on instruction as well as support. However, unexcused absences (however they are defined and measured in a school district) are the best indicators of risk at every level.

- Fewer than half of students who had 4+ unexcused absences in any school year from 3rd to 10th grade eventually graduated from high school.
- Unexcused absences appear to have the most negative effects on students from 5th through 9th grades. A third or fewer of those students end up graduating from high school.

Figure 8: Percent of students with 4+ unexcused absences who eventually graduated

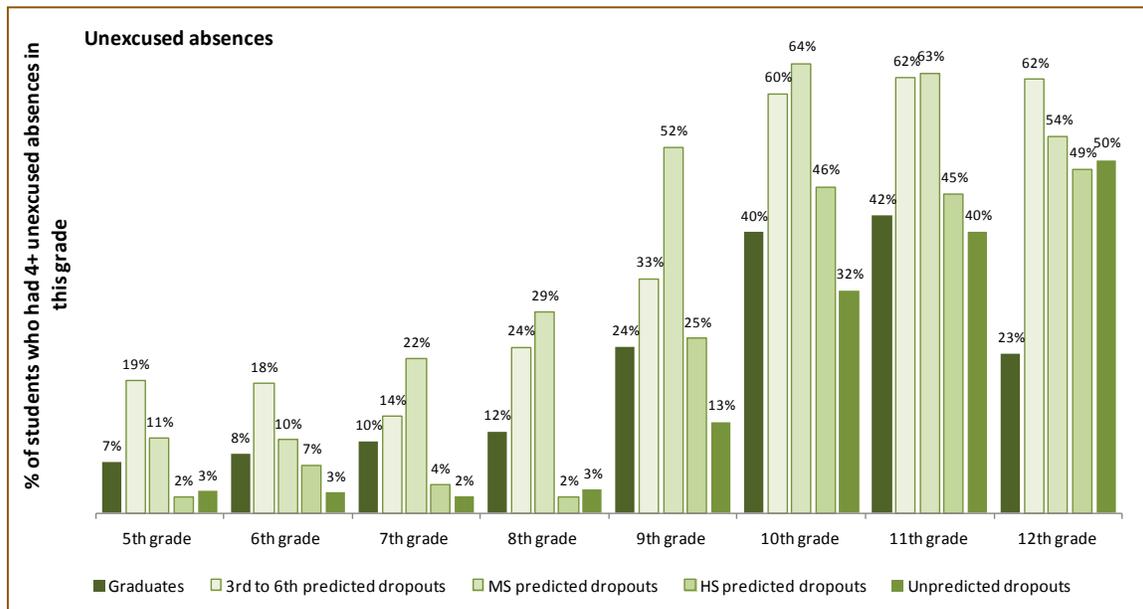


Unexcused absences are relatively rare at the lower grade levels, but the experience of such absences had a particularly negative effects.

- The percentage of students who had unexcused absences almost doubled from elementary to middle school and again from middle school to high school: from under about 6% of students in elementary school to 30% or more in sophomore year.

- Although fewer than 6% of all students in the 5th and 6th grades had 4+ unexcused absences, three times that percentage of dropouts predictable at that level had that many absences. The same thing is true in the 7th and 8th grade: while about 6-8% of students in those grades had 4+ unexcused absences, four times that proportion of dropouts had that many.

Figure 9: Percent of students in each dropout category who had 4 or more unexcused absences in the given school year



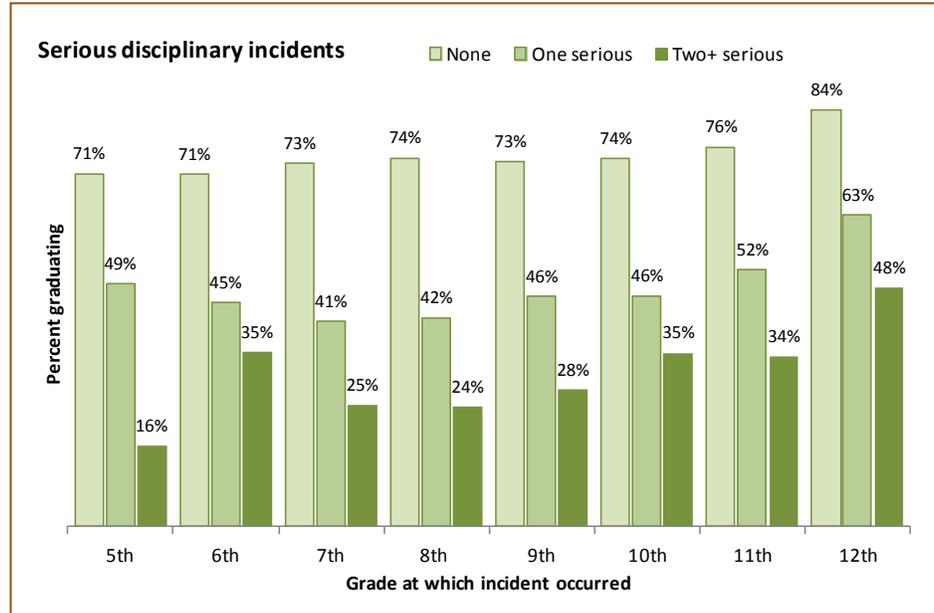
Discipline

Disciplinary events (i.e., incidents that result in some form of school disciplinary action, from detention to expulsion), like unexcused absences, can be defined in many different ways. However, independent of the application of rules and regulations across different school, an out-of-school suspension or an expulsion is strongly predictive of eventual withdrawal from high school without a diploma.

- For this research, all disciplinary events not related to attendance or truancy were divided into serious incidents (resulting in out-of-school suspensions or expulsion) and less serious incidents (those resulting in other punishments).
- Almost three out of four students who had never had a disciplinary event graduated from high school, while only about one-fourth of students who experienced one or more serious events in elementary, junior high and high school eventually graduated from high school.
- Students who experienced one or more serious disciplinary events in any two contiguous school levels (e.g., junior high and senior high) also graduated at a very low rate: between 28% and 33%.

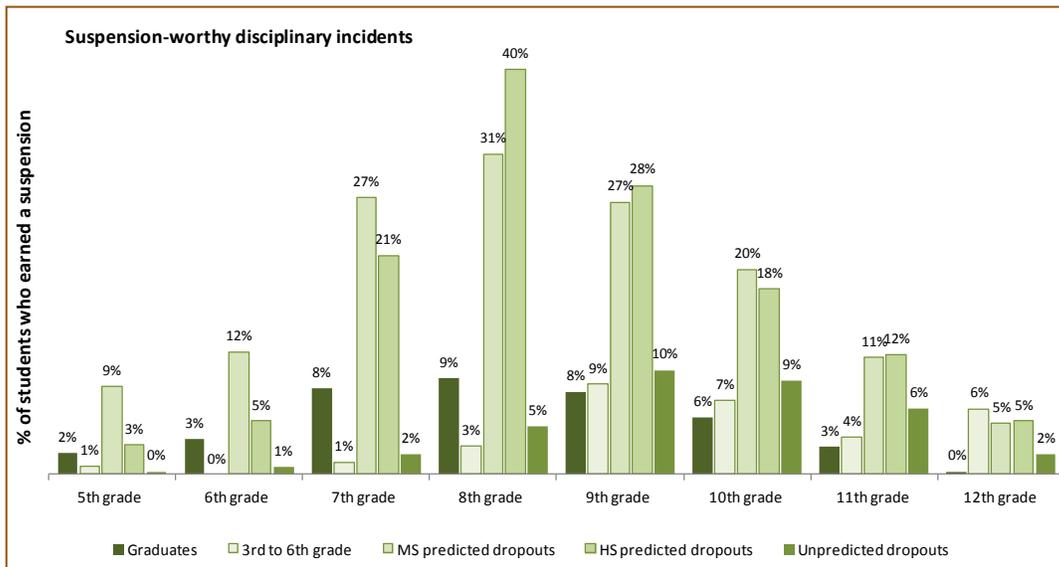
- Any less serious disciplinary event had a negative effect on chances of graduating, although not as negative as a serious event. Less than half of students who experienced any disciplinary event at all three levels eventually graduated, but graduation rates for students with less serious events did not fall as fast or as steeply as rates for students with serious disciplinary events.

Figure 10: Graduation rate for students by number and grade level of serious (i.e. resulting in suspension) disciplinary incidents



As with unexcused absences, the proportion of students experiencing serious disciplinary events (i.e., ones that resulted in an out-of-school suspension or expulsion) was small in the lower grades. However, those students who would eventually drop out had far more such experiences than students who eventually graduated or whose withdrawal could not be predicted.

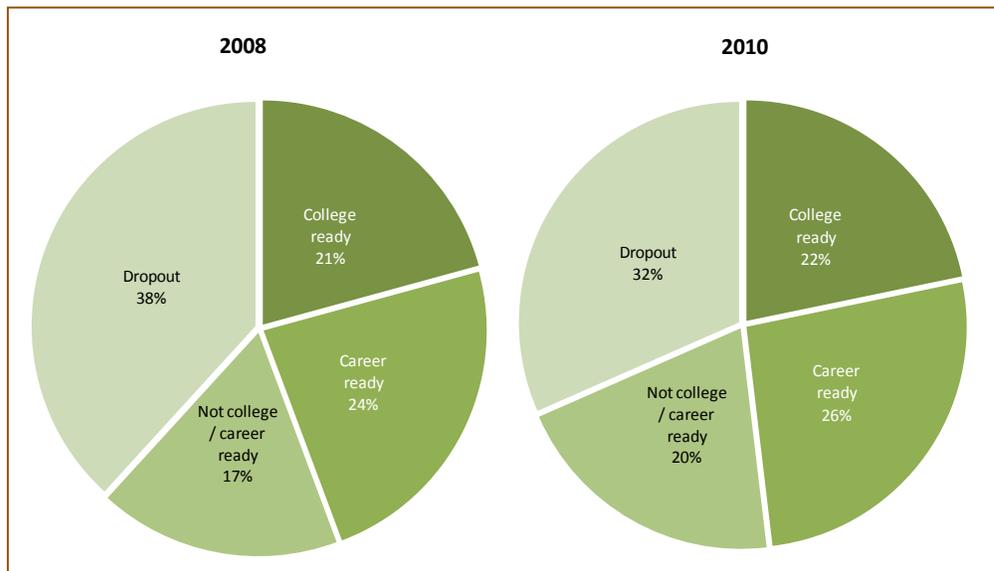
Figure 11: Percent of students who earned out-of-school suspensions (had serious disciplinary incidents) according to grade and level at which dropout could be predicted



COLLEGE AND CAREER READY GRADUATES

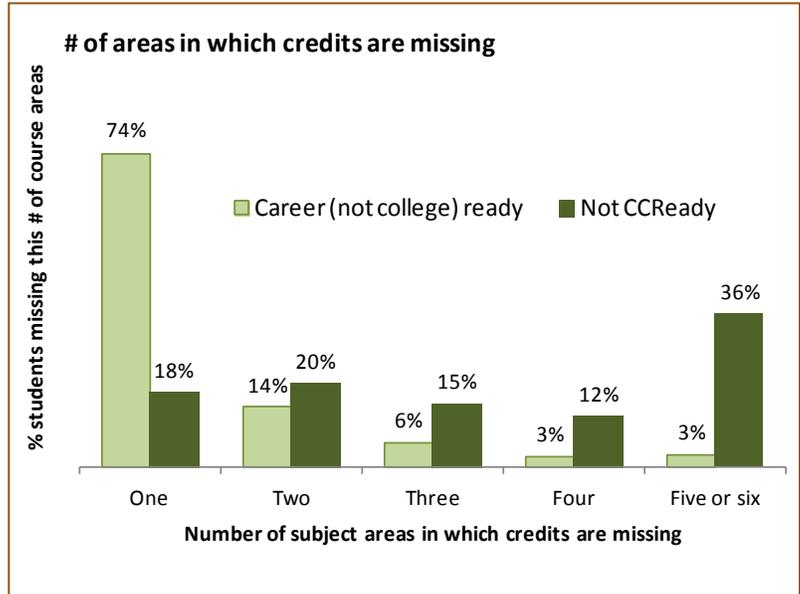
Just as dropouts can be grouped according to timing of prediction, graduates in the two cohorts can be broken out into three groups: college ready, career ready and not college/career ready. As discussed at the beginning of the report, research is underway linking college and career readiness to high school performance. In the absence of clear definitions and links, some observations can still be made about the three categories of graduates. Figure 12 displays the breakdown of the two cohorts into dropouts and the three categories of high school graduates.

Figure 12: College/Career Ready and Dropout Distribution by Cohort



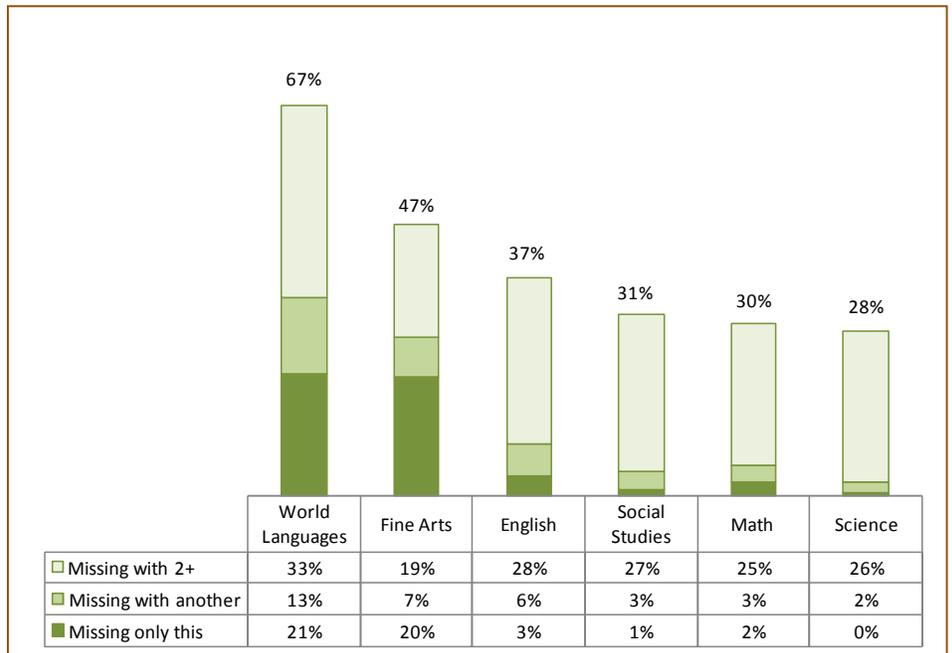
As discussed earlier, college-ready students are defined as those students who graduated with the course credits and the GPA (2.00 on the 4.00 scale) that would qualify them for application to a 4-year state college or university. Among those students who lacked the types of credits needed for college application, the majority (74%) were missing credits in only one area. Students who did not meet the definition of either college or career ready were likely to be missing credits in more than one area.

Figure 13: Number of subjects in which credits are missing for students not meeting the definition of college ready



World languages and/or Fine Arts are the two subject areas most likely to be standing in the way of students who might otherwise be able to apply to a four-year state college or university. However, more than a third of the students are missing a fourth credit in English and almost as many are missing credits in social studies, math and science. It is unclear whether failure to take the courses generally seen as important to college/career readiness is due to informed choice, lack of information or lack of guidance. Whatever the reason, some students are missing out on future opportunities because of courses not taken.

Figure 14: Subject areas in which credits are missing by students not meeting the definition of college ready



CONCLUSION

The findings from this study are currently being incorporated into an Early Warning System that will assist teachers and principals to recognize the warning signs of academic difficulty in time to intervene effectively with individual students. These students, along with their parents and the larger community, will benefit from the District's commitment to helping all students receive a high school diploma. Beyond that, and in light of the District's clear goal of preparing all students for "a variety of post-secondary pursuits in our democratic society," the study extended beyond the graduate/dropout dichotomy to begin an exploration of the characteristics of students may not be graduating ready for some form of post-secondary education or a career. These findings should assist school counselors, as well as parents, in their efforts to guide students as they plan for their lives as productive citizens. Working together, the schools and the community can fulfill the mission of Spokane Public Schools: to develop the skills and talents of all its students.

¹ MetLife survey of teachers, students, parents and Fortune 1000 Executives: *Preparing Students for College and Careers*. May, 2011.

² David T. Conley, *What is college and career ready? How to help all students succeed beyond high school*. . https://www.epiconline.org/files/pdf/2011_0502UCCI.pdf

³ J. Offenstein, C. Morre and N. Shulock, *Pathways to Success: Lessons from the Literature on Career Technical Education*. http://www.csus.edu/ihelp/PDFs/R_PathwaysToSuccess_1209.pdf

⁴ Wayne Camara and Rachel Quenemoen, *Defining and Measuring College and Career Readiness and Informing the Development of Performance Level Descriptors*. January 2012. <http://www.parcconline.org/sites/parcc/files/PARCC%20CCR%20paper%20v14%201-8-12.pdf>

⁵ This study used the credits requirements found in 2010 HECB standards, even though these were not the requirements in force when the 2008 and 2010 cohorts were beginning their high school years. The difference between the 2010 standards and those used prior to that time consists of an additional science credit. [http://www.hecb.wa.gov/sites/default/files/MCASMarch2011Revised_1.pdf#search="admissions"](http://www.hecb.wa.gov/sites/default/files/MCASMarch2011Revised_1.pdf#search=)

⁶ ACT defines college readiness as the level of achievement a student needs to be ready to enroll and succeed—without remediation—in credit-bearing first-year postsecondary courses. *Ready for College and Ready for Work: Same or Different?* 2006 www.act.org/research/policymakers/pdf/ReadinessBrief.pdf

⁷ The percentages are based on those students enrolled in the Spokane Public Schools for at least two full semesters in high school and who did not officially transfer out-of-district before the expected graduation: 27% of the 2008 cohort (N = 2,653) and 31% of the 2010 cohort (N = 2,552) transferred.