

# Seattle School District 2006 Cohort Study

A Briefing for the Seattle School Board

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Northwest Decision Resources  
September 16, 2009

## 2006 Cohort Study: Goals and Products

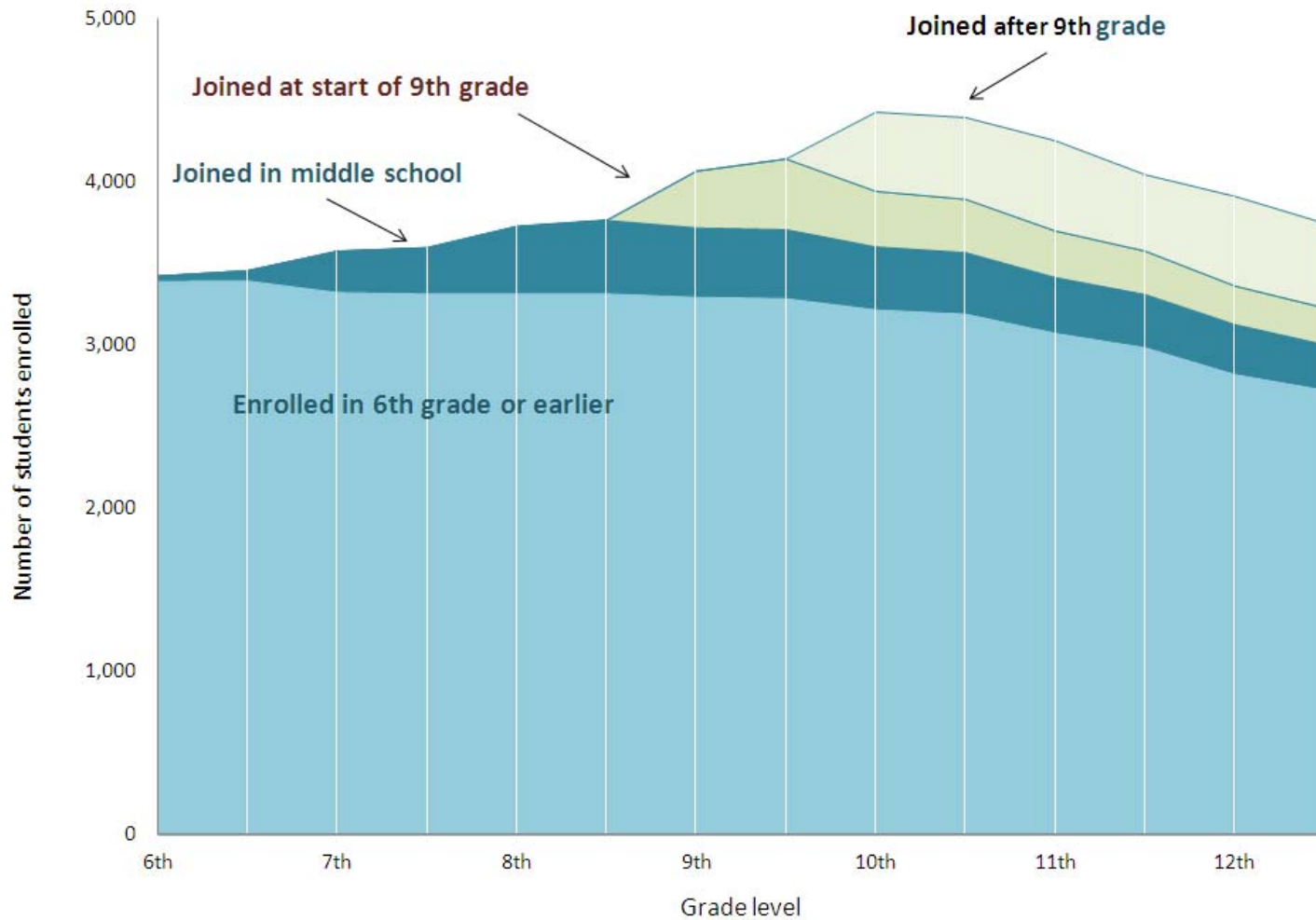
Too many young people leave high school without a diploma, and thus enter adulthood with a handicap. The Seattle '06 Cohort Study was designed to use available, quantifiable measures to improve graduation rates by:

1. **Developing middle school/high school early warning indicators**—the best combination of student characteristics to be used to predict withdrawal from high school without a diploma,
2. **Identifying 'tipping points'** –critical times/events that predict imminent withdrawal from school, and
3. **Segmenting the potential dropouts** according to the nature and timing of indicators so that interventions can be tailored and targeted.

# Identifying the cohort

- SPS provided a comprehensive data base containing all available personal, academic and behavioral variables for Class of 2006: 5,241 students were eligible for analysis
- Researchers determined an outcome for each student in the cohort based on the (sometimes conflicting) information available
- **Students who transferred out of district schools and did not return were dropped from the cohort at the time they left the district for the final time**
- Regular graduates (on-time or within 2 years of expected graduation)
- Non-graduates:
  - Students in the cohort who dropped out of school and were recognized as dropouts by SPS
  - Students who left the school system after attending four or more years without earning a diploma
  - Students who earned a GED
  - Students who left the school district without providing evidence of transfer to another out-of-district school

# A Challenge to all: Students come and go in waves.



# A “Class Picture” of the Class of 2006

Demographic Profile	Number	Percent
American Indian/Alaskan Native	172	3.3%
Asian/Pacific Islander	1,122	21.4%
African American	1,238	23.6%
Hispanic/Latino	587	11.2%
Caucasian/White	2,122	40.5%
Not eligible for free or reduced lunch	2,471	47.1%
Eligible for free or reduced lunch (ever)	2,770	52.9%
Male	2,691	51.3%
Female	2,550	48.7%
At expected age on 8/31/02	2,621	50.0%
One year overage	2,186	41.7%
Two years overage	299	5.7%
Three or more years overage	135	2.6%
Never enrolled in special education classes	4,439	84.7%
Enrolled in special education classes	802	15.3%
Never enrolled in bilingual classes	4,442	84.8%
Enrolled in bilingual classes atleast once	799	15.2%
<b>Total</b>	<b>5,241</b>	<b>100.0%</b>

Graduation rates are the new metric for school district success. Seattle's cohort rate was a by-product of this research.

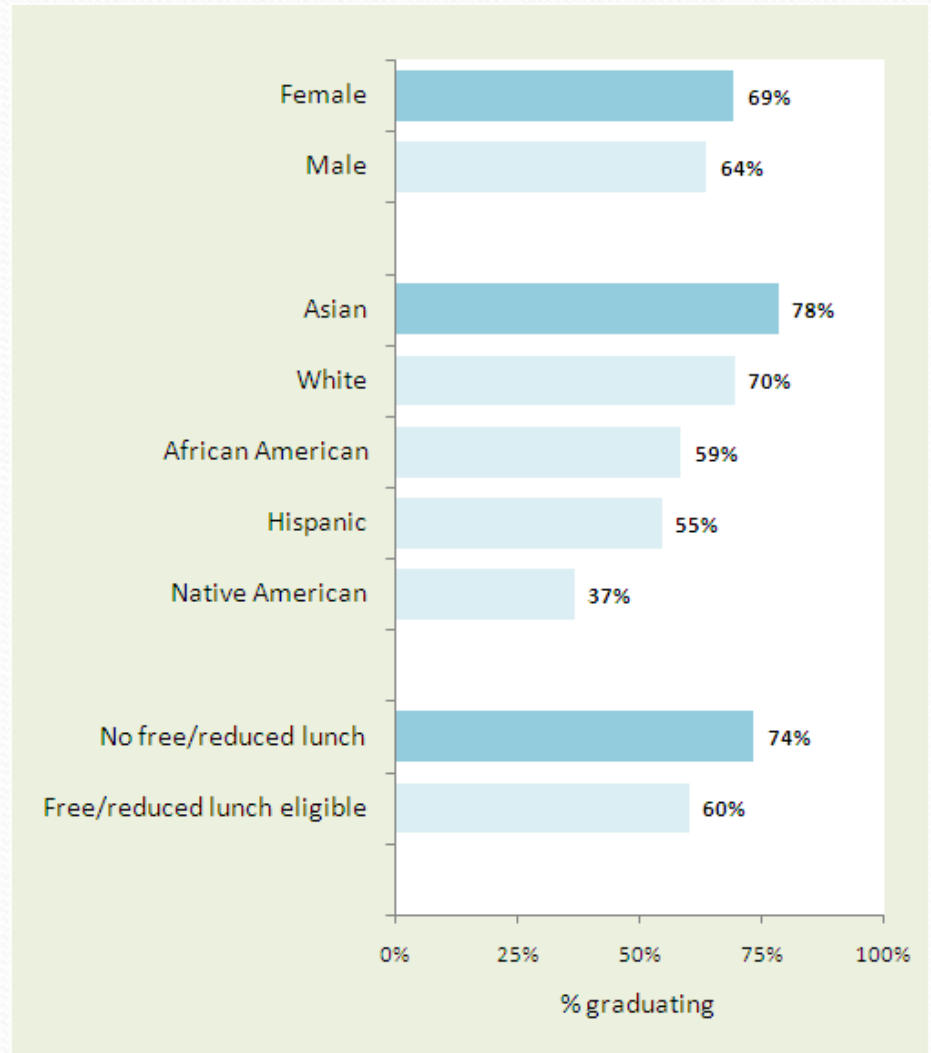
Status at the End of 2008-09 School Year	Number	Percent	Percent net of transfers and still enrolled
<b>Total graduates</b>	<b>2,816</b>	<b>53.7%</b>	<b>66.5%</b>
On-time graduate	2,564	48.9%	<b>60.5%</b>
Late graduate	252	4.8%	<b>6.0%</b>
<b>Transferred out</b>	<b>1,006</b>	<b>19.2%</b>	
Transfer at end of 12th grade or before	990	18.9%	
Transfer after 12th grade	16	0.3%	
<b>Total non-graduates</b>	<b>1,419</b>	<b>27.1%</b>	<b>33.5%</b>
Dropped out at end of 12th grade or before	1,045	19.9%	<b>24.7%</b>
Left without a diploma end of 12th grade	69	1.3%	<b>1.6%</b>
Earned a GED before end of 12th grade	36	0.7%	<b>0.9%</b>
Earned a GED after 12th grade	5	0.1%	<b>0.1%</b>
Unknown/No show at end of 12th or before	221	4.2%	<b>5.2%</b>
Unknown/No show after 12th grade	43	0.8%	<b>1.0%</b>

# Competing rates exist, producing confusion.

Alternative Approaches to Graduation Rates	SPS 2006 Graduation Rate by this method	Methodology
CCD Averaged Freshman	78.5%	2006 grads ÷ ((8th graders 01-02 + 9th graders 02-03 + 10th graders 03-04) ÷ 3)
Manhattan Institute (Jay Greene)	74.4%	2006 grads ÷ (2002-03 9th graders + estimated population growth)
2006 Cohort Study Extended	66.5%	On-time + late diplomas 2006 ÷ All non-transfer students in 2006 cohort
Cumulative Promotion Index (Ed Week/Swanson)	62.6%	(10th Fall 07 ÷ 9th Fall 06) * (11th Fall 07 ÷ 10th Fall 06) * (12th Fall 07 ÷ 11th Fall 06) * (Grads spring 2007 ÷ 12th Fall 06)
National Governors Association Compact	52.9%	On-time grads in 2005-06 ÷ ((1st time 9th graders in 2002-03) + (transfers in) - (transfers out))
Washington State (OSPI) Extended	48.6%	100 * (1-grade 9 dropout rate) * (1-grade 10 dropout rate) * (1-grade 11 dropout rate) * (1-grade 12 dropout rate - grade 12 continuing rate)

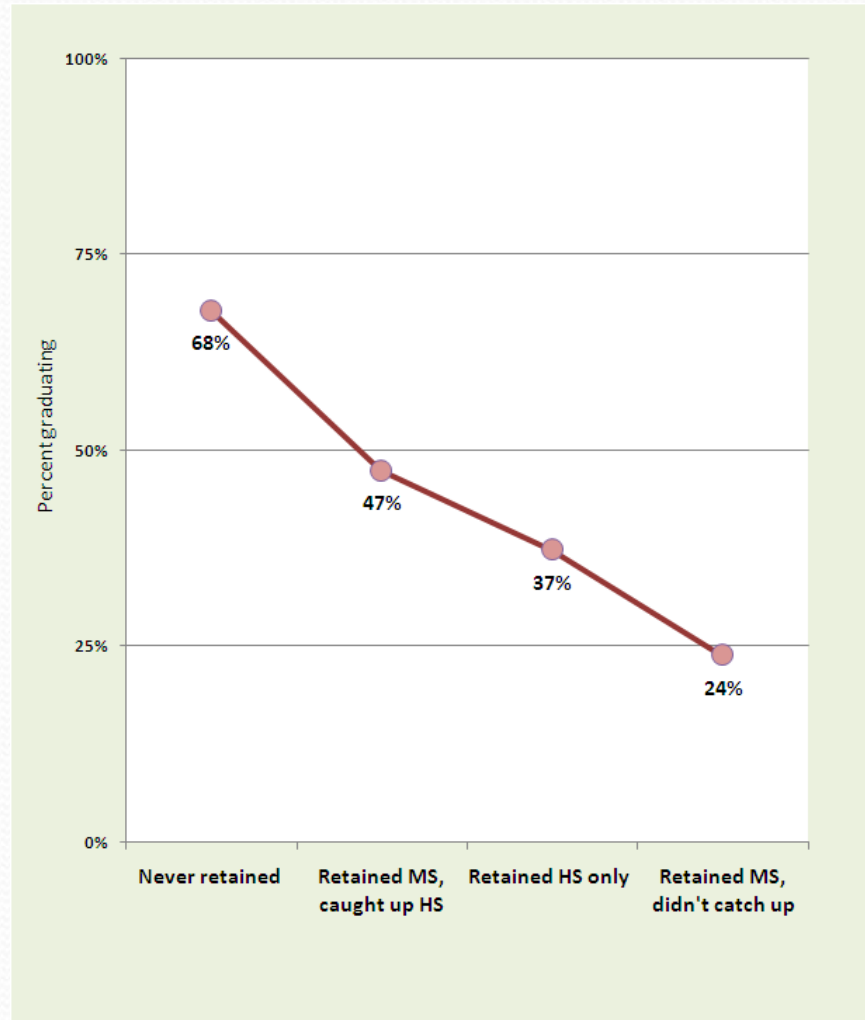
# Why an early warning indicator?

- In the absence of specific indicators of risk for individual students, schools have sometimes relied on racial/economic profiling: “poor kids, especially poor kids of color, are the likely dropouts.”
- Although dropout rates are higher among poor children of color, this stereotype is neither accurate nor prescriptive:
  - Race, sex and free lunch status alone can predict only a small proportion of future dropouts.
  - Knowing only race, sex and free lunch status does not provide adequate information on which to build strategic interventions.



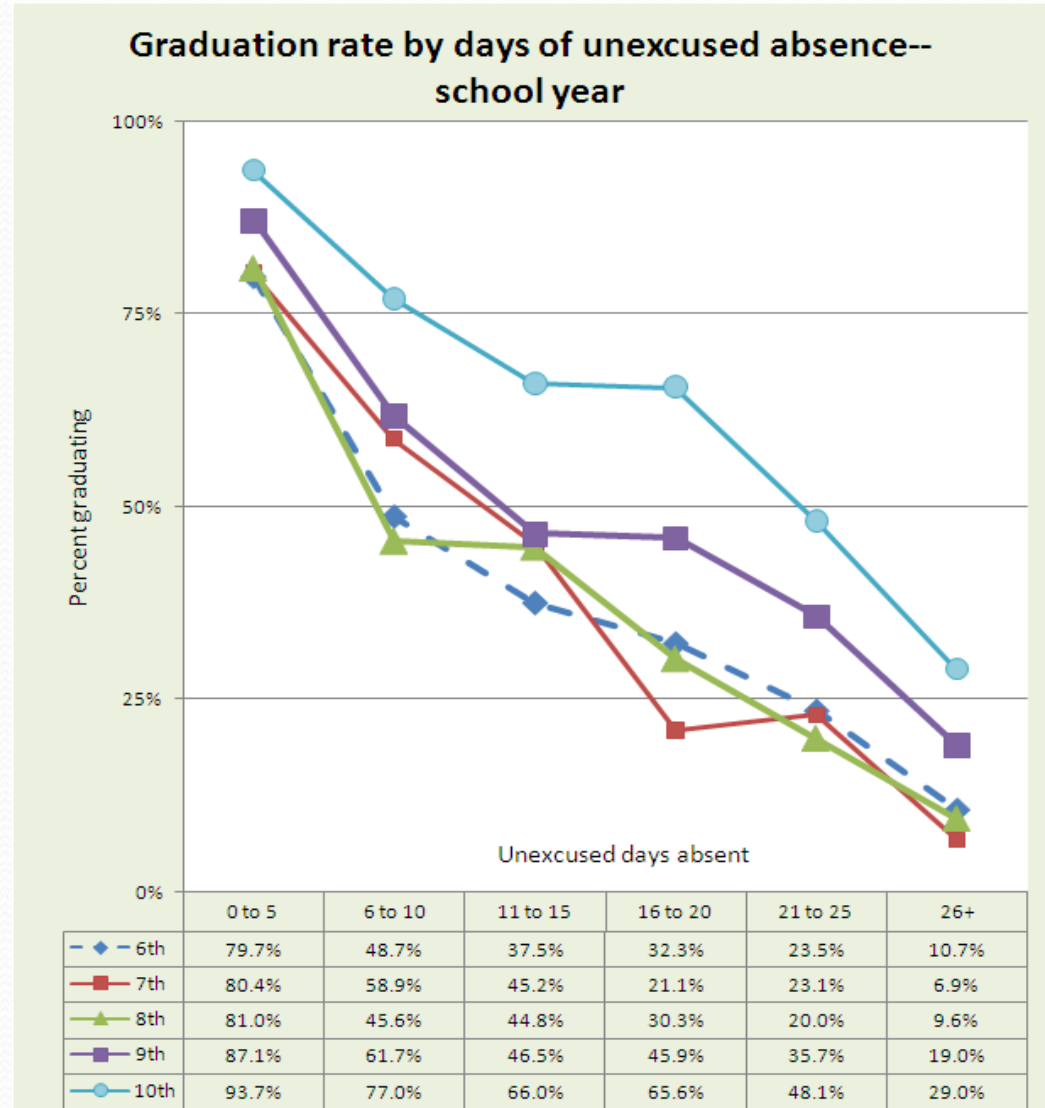
# What happens to students who were retained/demoted?

- Students may have been retained in grade for a number of reasons, but most likely for lack of academic progress.
- Students who were retained in any earlier grade are significantly less likely than other students to graduate.
- Students who “catch up” with peers are twice as likely to graduate as those who don’t.



# Unexcused absences are extremely important as early warning indicators/tipping points

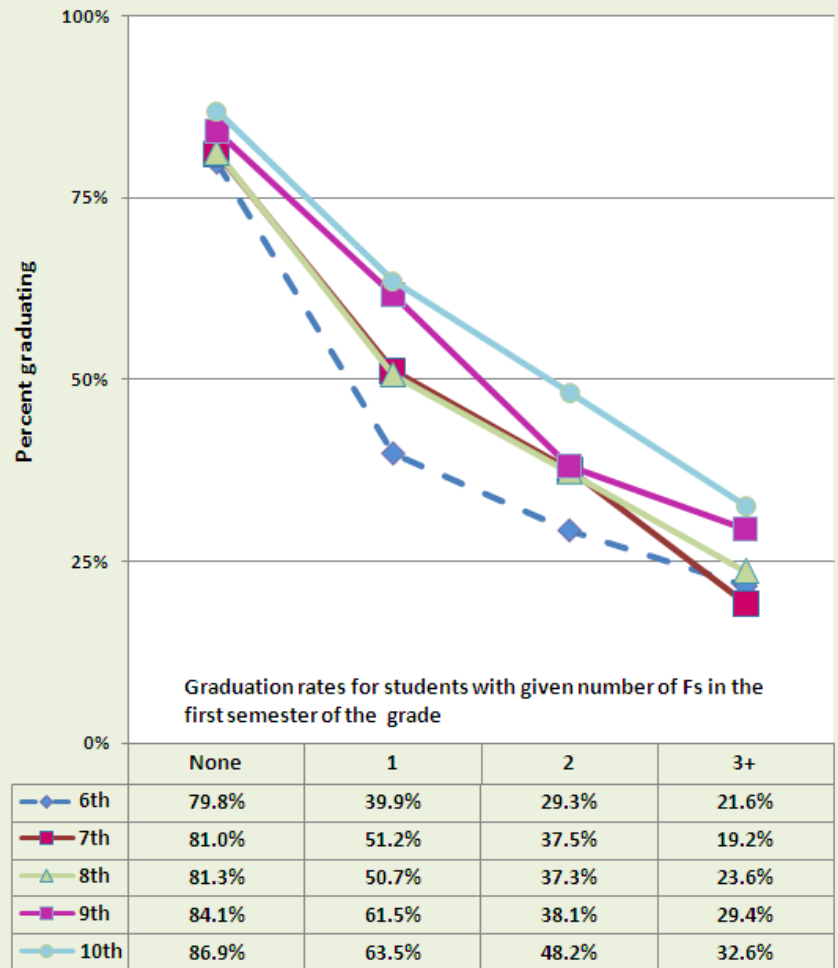
- Unexcused absences (in groups of five) in any grade are highly predictive of eventual high school failure.
- Unclear whether unexcused absences (a.k.a. skipping) causes or is a result of poor school performance. Either way, they are highly predictive.
- Definitions of absences (excused/unexcused) are unclear and differentially applied. . . but relationship strong nevertheless.
- The graduation rate drops 20-35 percentage points after 5 unexcused absences in any school year.



# Fs in core courses are strongly predictive of leaving high school without a diploma.

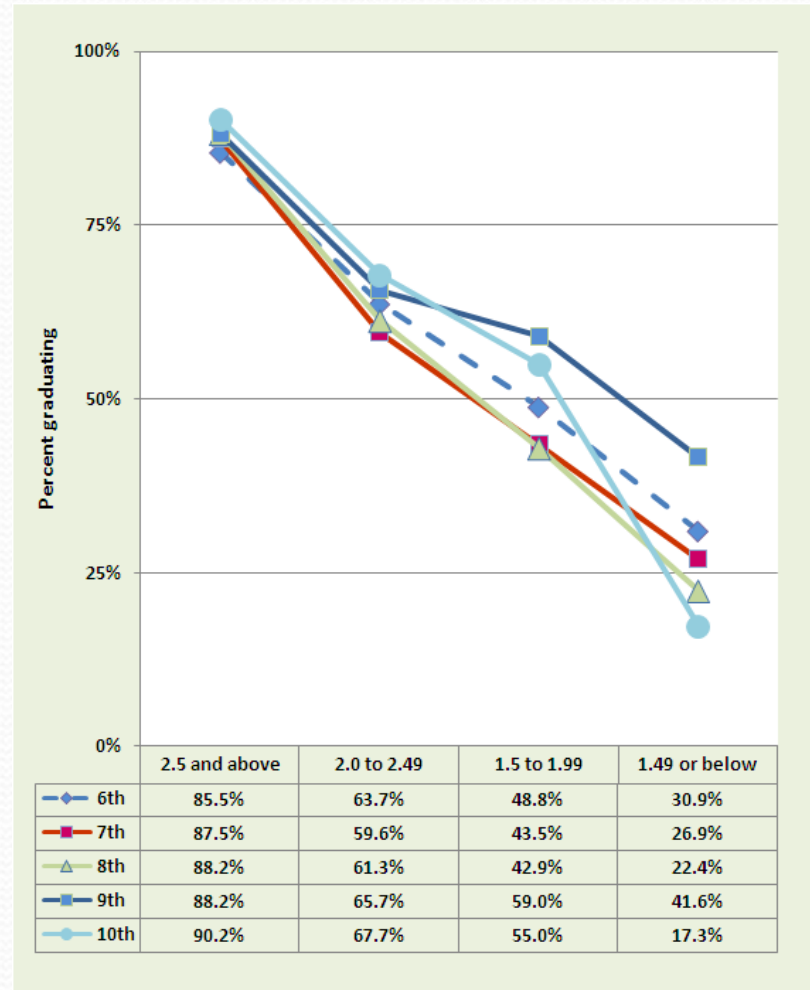
- Earning 1 or more Fs in core courses in 9<sup>th</sup> grade has been identified in other urban school research as a very strong predictor of dropping out.
- However, **Fs in middle school are just as dangerous and predictive.**
- Earning 1 core course F in any grade (6 to 10) reduces the chances of graduating; earning 2 or more almost dooms them.

Relationship of Fs earned (first semesters of Grades 6 to 10) to graduation rate



# GPA's are common currency—and can provide additional information

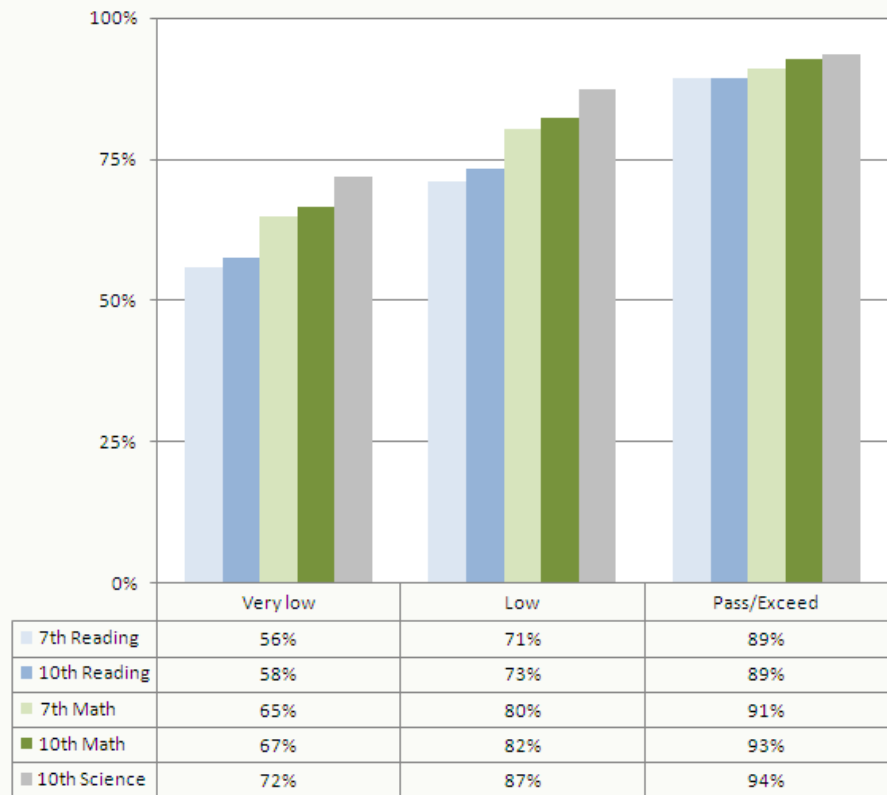
- Some students never receive an F but still fail. They pass, but with a low GPA that predicts leaving high school without a diploma.
- GPA's in middle school are less reliable than those in high school, but a very low middle school GPA is highly predictive of later dropping out of high school.
- Students with cumulative GPA's below 1.5 at any grade are about half as likely to graduate as students with GPA's at or above 2.0.



There is a weak relationship between meeting standards on 7<sup>th</sup> and 10<sup>th</sup> grade WASL tests and getting to graduation.

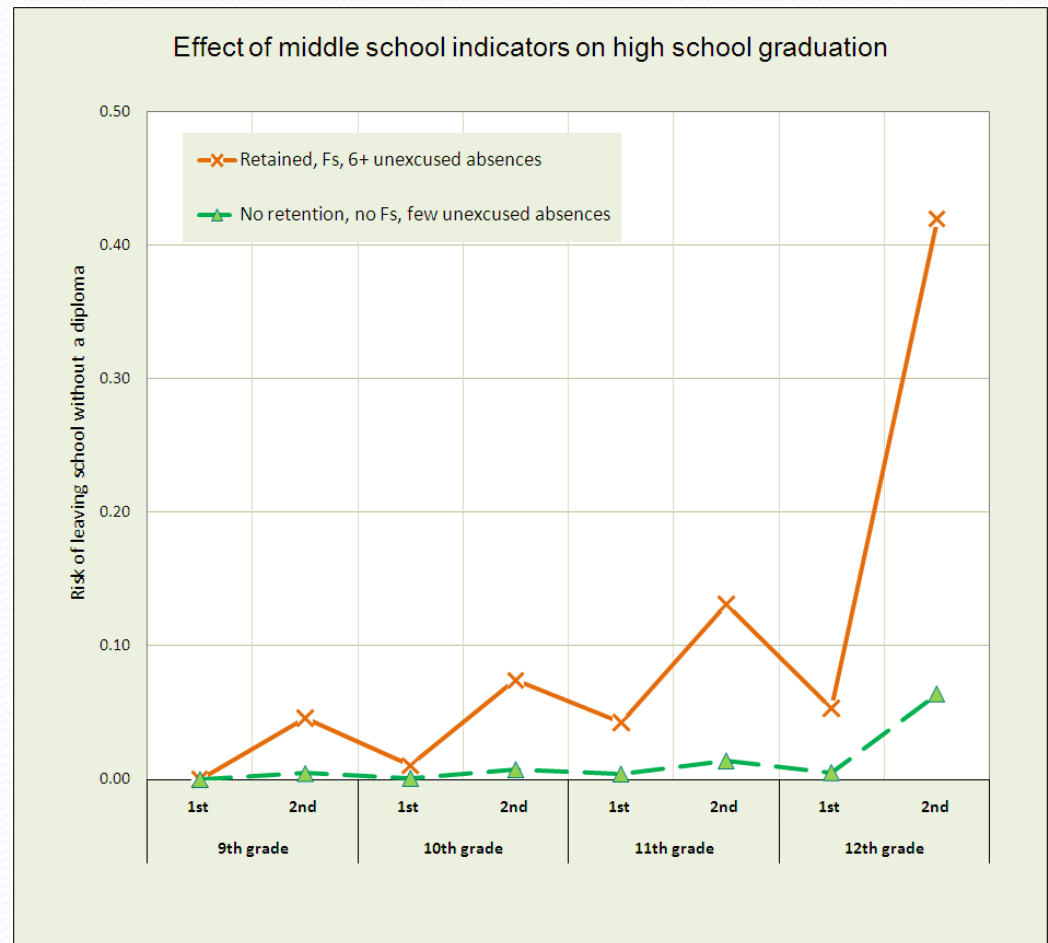
- **Note:** Although not predictive on their own, WASLs can provide additional information and/or can act as surrogates for missing GPAs for students transferring into the district.
- Scores in reading at 7<sup>th</sup> and 10<sup>th</sup> grades are more powerful than scores in other subjects.

**Relationship between WASL Scores and Graduation Rates**



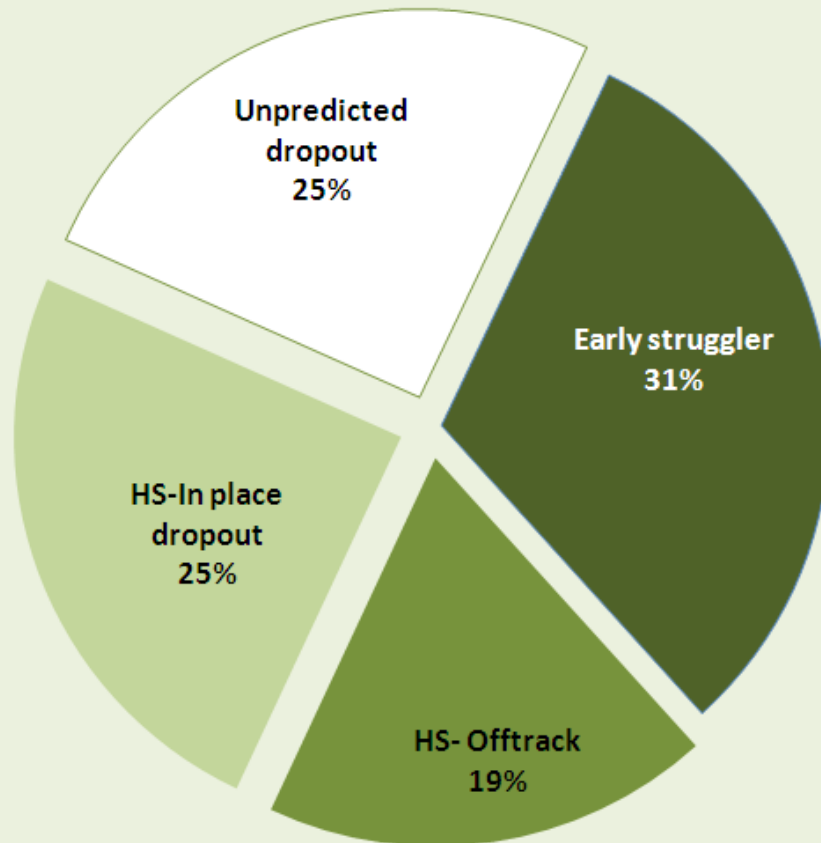
# Longitudinal analysis clarifies/displays timing and level of risk

- Answers two questions about students in the SPS:
  - When are students most at risk of dropping out?
  - What events/behaviors increase risk?
- Taking into account race, gender and free lunch status, risk for students coming from SPS middle schools is:
  - 1.5 times higher if student repeated a grade,
  - doubles again with 1+ core course Fs in MS, and
  - doubles again with 6+ unexcused absences in MS.



# The Subgroups/Segments of SPS Dropouts

Segments defined by timing of both prediction and dropping out



- **Early strugglers:** students who have academic or behavioral risk factors in middle school that continue into high school.
- **HS Off-track:** students who enter SPS without evidence of risk or enter after 9<sup>th</sup> grade and then get off-track—usually within the 1<sup>st</sup> year.
- **In-place dropouts:** students who have relatively low measures of risk and remain in school through 12<sup>th</sup> grade (or longer) and then disappear or drop out.
- **The unpredictables**

# Segment profiles can provide insight/direction.

- Early Strugglers (slightly less than 1/3<sup>rd</sup> of all dropouts) can be identified in or before middle school and are much more likely than other dropouts to be poor children of color.
- The unpredictable are just that: 1/4<sup>th</sup> of dropouts can't be predicted with current data.
- Multivariate analysis indicates that performance trumps demographics for prediction, but demographics clearly play a role.

Student Characteristics	Early struggler	HS Off-track	In-place dropout	Unpredicted dropout	Graduate	Total cohort	
Male	61.9%	55.1%	55.6%	48.4%	48.3%	51.3%	
Eligible for free/reduced lunch	92.7%	40.3%	39.5%	59.0%	47.9%	52.9%	
African American, Hispanic or American Indian	65.6%	42.3%	39.2%	41.0%	31.1%	38.1%	
Retained and/or overage	23.0%	2.6%	7.9%	6.3%	2.9%	9.3%	
Entered after 9 <sup>th</sup> grade	N.A.	53.4%	62.3%	6.5%	9.0%	17.2%	
Enrolled in special education	34.2%	8.2%	9.2%	17.1%	13.2%	15.3%	
1+ Fs in core courses	6th grade	62.6%	13.1%	23.3%	11.5%	8.3%	17.7%
	7th grade	75.7%	26.2%	39.8%	18.6%	12.0%	22.2%
	8th grade	77.4%	34.7%	35.0%	19.5%	12.0%	21.8%
	9th grade	85.8%	94.0%	91.6%	44.2%	22.6%	35.7%
	10th grade	88.0%	89.3%	93.6%	53.2%	25.1%	36.7%
WASL Reading - Very low	7th grade	43.7%	36.4%	30.7%	20.0%	13.6%	19.7%
	10th grade	48.2%	56.9%	39.8%	29.2%	13.5%	19.5%
>5 Unexcused absences	6th grade	42.8%	19.1%	25.5%	4.8%	6.0%	12.5%
	7th grade	53.1%	13.2%	17.9%	8.5%	7.6%	15.1%
	8th grade	55.8%	17.0%	17.9%	6.6%	5.7%	13.8%
	9th grade	78.2%	80.5%	79.5%	24.1%	14.4%	27.9%
	10th grade	83.0%	98.0%	89.5%	50.3%	21.3%	34.3%

# Implications of, and next steps for, Seattle '06 cohort data/findings

- Improve quality/reliability of student data, especially re absences
- Revise student data system to format key data items for use in an early warning system
- Use tipping points to build in triggers in the data system and create intervention strategies around triggers
- Assess risk early and often using SPS-specific risk prediction equations
- Create targeted interventions for different segments of at-risk students
- Repeat study with Class of 2008 /2009 to assess effects of new policies and programs, identify “best chance” schools