

Using Research-Backed Data to Drive Student Success and Boost Teacher Retention



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Agenda

- Housekeeping & Introductions
- Research -> Data -> Practice
 - *Predicting Student Dropout Risk*
 - *College and Career Readiness*
 - *Teacher Burnout/Attrition*
- Question & Answer



Research says...

Prevent Dropout

How can school districts use student data to predict which students are most at risk of dropping out?

Identifying Drop-out Risk with Early Warning Systems (EWS)

- Data-driven system to identify students at risk of dropping out
- Monitors key predictors: Attendance, Behavior, and Course Performance (ABC's)
- Enables early intervention before students disengage from school
- Supports strategic resource allocation to prevent dropouts
- Research-proven approach to increase graduation rates

Bowers et al. (2013); Frazelle & Nagel (2015); Bruce et al. (2011)

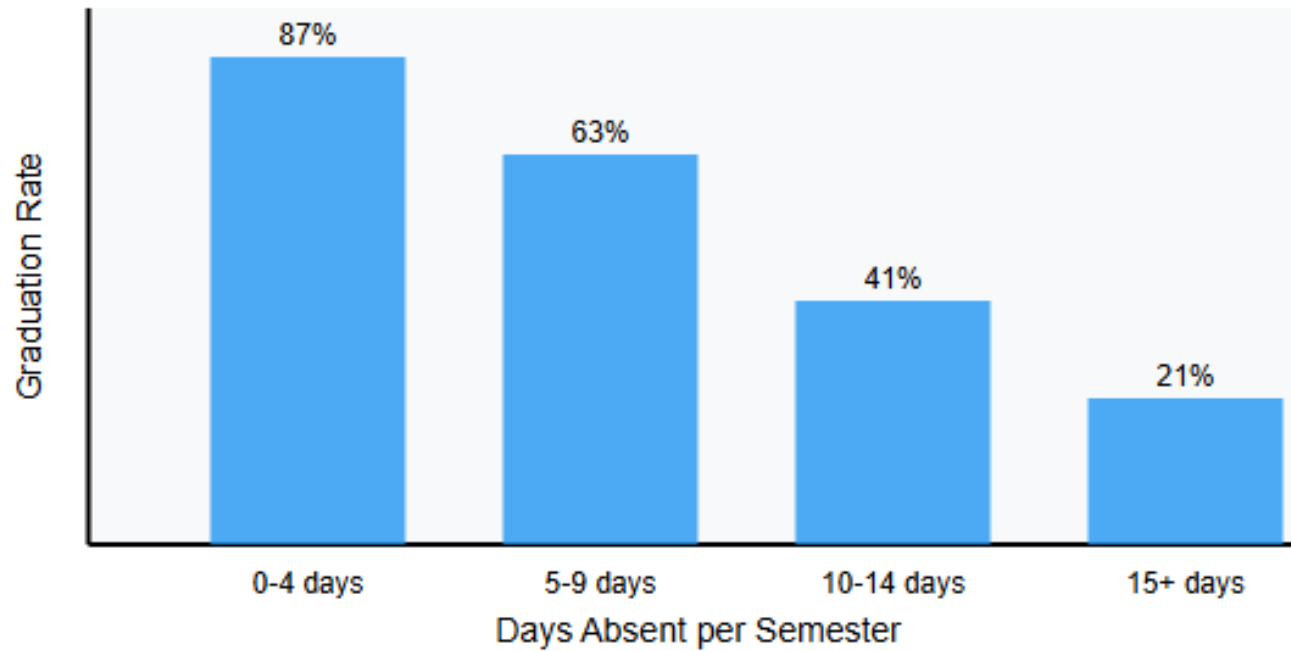


EWSS: Research-Based Evidence

- Bowers et al. (2013)
 - Analyzed 110 dropout indicators; found ABC measures most predictive
 - GPA and course failures strongest academic predictors
- Allensworth & Easton (2007)
 - 9th grade attendance better predicts graduation than test scores
 - Missing > 10 days per semester reduces graduation chance by 40%
- Balfanz et al. (2007)
 - Students with poor ABC indicators by 6th grade rarely graduate
 - Early identification enables successful intervention



9th Grade Attendance vs. Graduation



Based on data from Allensworth & Easton (2007)



ABCs vs. Risk

	Low Risk	Medium Risk	High Risk
Attendance	90% +	80-89%	< 80%
Courses	All Passing	1-2 Fs	3+ Fs
GPA	2.5+	2.0 – 2.4	< 2.0

Based on data from Allensworth & Easton (2007)

	Low Risk	Medium Risk	High Risk
Attendance	< 10 Days	10-20 Days	20+ Days
Suspensions	0	1-2	3+
Courses	All Passing	1 F	2+ Fs

Based on data from Mac Iver & Messel (2013)



The ABCs

- **Attendance**

- Missing 10% or more of school days (chronic absence)
- Missing 20+ days in previous year
- First 20 days attendance patterns

- **Behavior**

- Two or more office referrals
- Any suspension (in or out of school)
- Behavioral grades/marks below satisfactory
- Poor social adjustment scores

- **Course Performance**

- Failing any core course (especially Math/English)
- GPA below 2.0
- Two or more failed courses in first marking period
- Not reading at grade level by end of grade 3
- Failed state assessments

- **Other Indicators**

- Over-age for grade level
- Multiple school transfers
- Grade retention at any level

Balfanz et al. (2007); Allensworth & Easton (2007); Mac Iver & Messel (2013); Therriault et al. (2013); Davis et al. (2013)



Polling Question 1: Does your district utilize any of these early warning indicators?

Research says...

Ensure Readiness

How can school districts use student data to assess the extent that they are preparing their students for life beyond K-12?

Assessing “Readiness” for Life Post K12

- College and Career Ready (CCR) frameworks outline comprehensive sets of skills and/or knowledge that students need to succeed post K12, in college or elsewhere (workforce, military, etc)
- Combines academic achievement with practical competencies gained through advanced coursework, technical training, and hands-on experience
- Goes beyond traditional classroom learning to include workplace skills, technical certifications, and real-world experience through internships and apprenticeships
- Increasingly recognizes the importance of non-cognitive skills such as perseverance, teamwork, and time management for post-graduation success

Bowers et al. (2013); Frazelle & Nagel (2015); Bruce et al. (2011)



Existing Frameworks

- **California's College/Career Indicator (CCI):** Completion of college prep courses, dual enrollment, AP/IB exams, and career technical education pathway (*California Department of Education, 2021*).
- **New York's Multiple Pathways to Graduation:** Involvement in STEM, the Arts, Humanities, and Career and Technical Education (*New York State Education Department, 2020*).
- **Illinois' Postsecondary and Career Expectations (PaCE) Framework:** Structured approach from grade 8-12, outlining key benchmarks (*Illinois State Board of Education, 2021*).
- **Texas' College, Career, and Military Readiness (CCMR):** Uses several indicators including meeting TSI criteria, completing dual-credit courses, earning industry-based certifications, and demonstrating military readiness (*Texas Education Agency, 2021*).
- **AASAs “Redefining Ready!”:** Multiple measures approach, using GPA, advanced coursework, dual credit classes, industry credentials, and workplace learning experiences.



Examples of Indicators, Metrics, Skills, and Benchmarks

- Core academic performance
 - GPA, assessment scores, completion of rigorous courses (Algebra II, AP/IB, etc.)
- Advanced Coursework
 - Enrollment in AP, IB, dual credit courses
- Career and Tech Ed
 - Completion of CTE Pathways, earning Industry Credentials
- Work-Based Learning
 - Internships, apprenticeships, etc.
- Non-Cognitive Skills
 - Perseverance, time management, teamwork, motivation





Polling Question 2: Does your district utilize any of these CCR indicators?

Research says...

Prevent Attrition

How can school districts use student data to predict which teachers are most at risk of burnout and attrition?

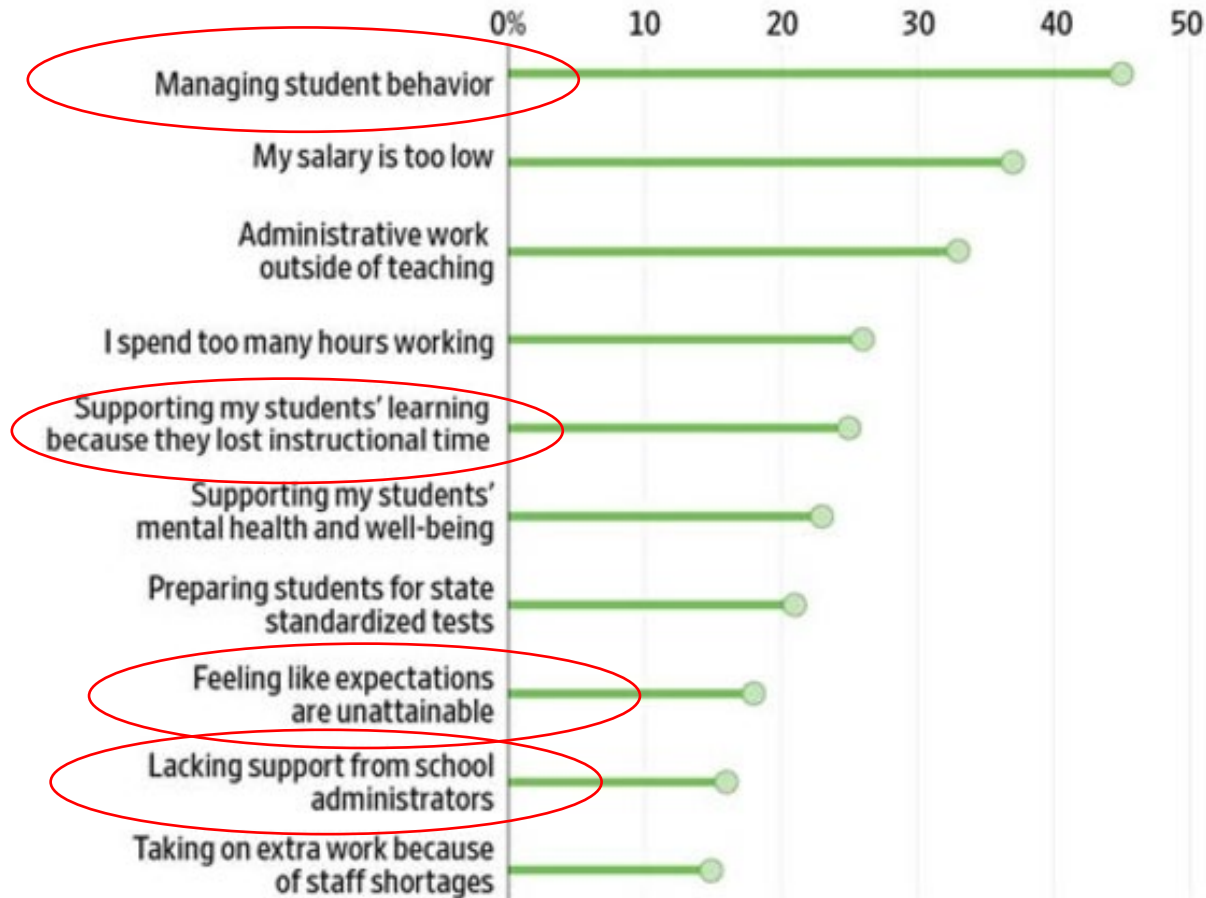
Teacher Burnout and Attrition

- About **8%** of teachers leave the profession each year with additional **8%** moving to a different school (*Carver-Thomas & Darling-Hammond, 2019*).
- **44%** of new teachers leave the profession within the **first five years** of teaching (*Ingersoll et al., 2018*).
- **78%** of teachers who left profession cited **stress** and **burnout** as a cause (*Carver-Thomas & Darling-Hammond, 2017*).
- **30%** of teachers who left the profession cited **stress** as the main factor (*Sutcher et al., 2016*).



Teachers Are Burning Out on the Job

Teachers' top sources of job-related stress



Note: Shows the weighted percentage of teachers selecting each source among their top three.
Source: Rand's survey of 1,479 K-12 teachers conducted January-February 2024

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Using Student Data to Predict Teacher Burnout

- **Teacher burnout** manifests as emotional exhaustion, depersonalization, and reduced sense of accomplishment, leading to increased attrition risk
- *Student absenteeism* forces teachers to constantly modify instruction and manage makeup work, causing frustration and exhaustion
- *Behavioral management* challenges drain emotional resources and decrease teacher self-efficacy
- Poor student *academic performance* creates pressure and anxiety, diminishing teachers' sense of professional accomplishment
- Combined stressors create a cycle of exhaustion and decreased job satisfaction, accelerating burnout and attrition

(Maslach et al., 2000; Gottfried, 2019; Aldrup et al., 2018; Steinhardt et al., 2011; Carver-Thomas & Darling-Hammond, 2019)



Research Based Metrics

- Student Attendance Impact:

- When chronic absenteeism increases by **10%**, teacher reported stress levels increase by approximately **15%** (*Gottfried, 2019*).
- Teachers spend an average of **2-3** extra hours per week managing makeup work for chronically absent students (*García & Weiss, 2018*).

- Behavioral Metrics:

- Teachers who handle **more than 3** major behavioral incidents per week show significantly higher burnout rates (*Aldrup et al., 2018*).
- Classrooms with high behavioral referral rates (**>2 per week**) correlate with decreased teacher self-efficacy scores (*Klassen & Chiu, 2010*).



Research Based Metrics

- Academic Performance:

- Teachers in schools with **>40%** failure rates report **30%** higher emotional exhaustion scores (*Klusmann et al., 2008*).
- Managing **more than 5** academic intervention plans simultaneously correlates with increased burnout risk (*Steinhardt et al., 2011*).

- Teacher Attendance/Retention:

- Schools with teacher absence rates **>15%** show significantly higher turnover in the following year (*Carver-Thomas & Darling-Hammond, 2019*)
- Teachers who report high stress for **3+** consecutive quarters are **2.5** times more likely to leave their position (*Skaalvik & Skaalvik, 2015*).





Polling Question 3: Does your district utilize any of these teacher burnout predictors?



Thank You

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