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Stacking the Deck: Using Early Warning Data to Improve High School Outcomes

American Youth Policy Forum

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Ambitious Goals

- Federal policy calls for dual goals at the high school level:
 - Improve academic achievement: All graduates leave prepared for college and the modern workplace
 - Improve educational attainment: All students graduate from high school
- Traditionally seen in terms of tradeoffs: Sacrifice one to improve the other.



Data Can Help

- Policymakers and educators often make decisions based on gut instinct, guesswork, or—even worse—myths and stereotypes.
- Using data can help us make better decisions & pursue those dual goals more effectively and more efficiently.



Historical Lessons

- Interest in dropout prevention surged in 1980s after publication of *A Nation at Risk*
- By late 1980s, most major school systems and many states had launched programs to reduce dropout rates—identifying students at risk and providing interventions of some kind
- Feds kicked in \$214M from 1988-1994 for School Dropout Demonstration Assistance Program

... but with discouraging results.



Why?

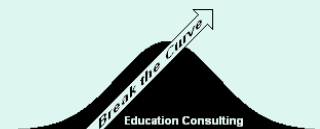
- To some extent, due to weak interventions. (We know more now).
- BUT, just as importantly, also due to poor identification of students “at risk.”



Mathematica, Inc., Study

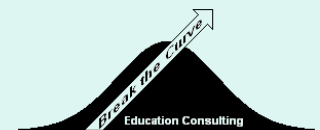
- Examined the risk factors used by federally-funded dropout prevention programs to identify students for interventions.
- Programs “often serve more students who do not need dropout prevention services than students who do need them.”

Source: Gleason, P. & Dynarski, M. (2002). Do We Know Whom To Serve? Issues in Using Risk Factors To Identify Dropouts. *Journal of Education for Students Placed at Risk*, 7, 25–41 (p. 37).



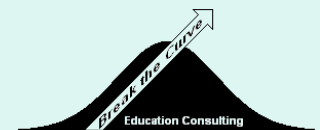
More Recent “Cohort Studies” Suggest How to Do Better

- Chicago
- Philadelphia
- Boston



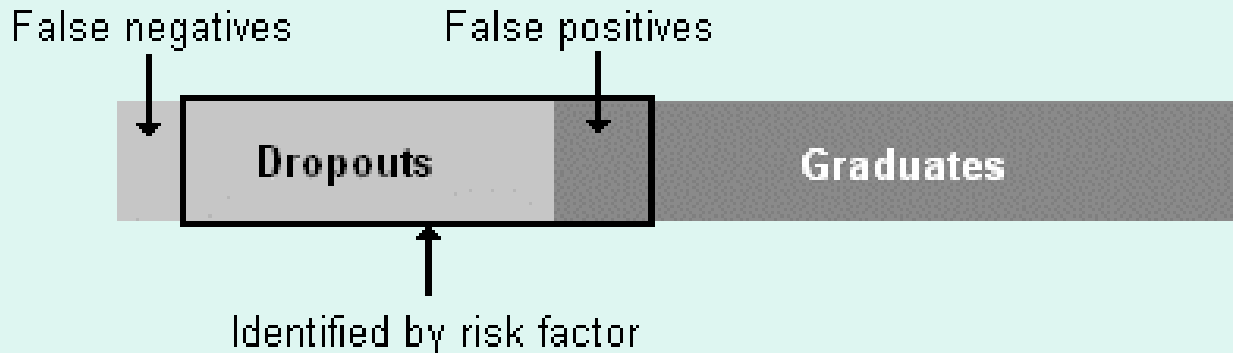
Some Lessons from Longitudinal Studies

- School systems can conduct their own “cohort analyses” to identify patterns in how their students drop out.
- That yields much more highly predictive “risk factors” for identifying potential dropouts: You learn **WHAT** warning signs to look for and **WHEN** to look for them (e.g., transition years).
- That, in turn, can help target interventions much more effectively and efficiently.



Saving Dollars ... and Students!

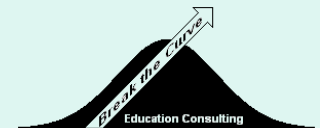
How Risk Factors Identify False Negatives and False Positives



- Reducing "false positives" is the key to saving money, because it means not spending dollars on students who would graduate on their own without additional help.
- Reducing "false negatives" is the key to raising graduation rates, because it means identifying more students who will drop out unless they receive additional help.

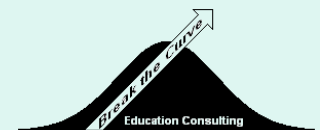
A Hypothetical Example

- Chicago decides to provide assistance to all students based on 9th grade “on track” indicator, which predicts dropouts accurately about 85% of time. Because 30,000 freshmen enter each year and 58 percent fall off track, system provides interventions to 17,370 students.
- Lost Students: Indicator identifies 2,400 false negatives. Those students would not receive the help they need and would drop out.
- Lost Money: Indicator identifies 3,821 false positives who would have recovered and graduated anyway. If intervention costs average of \$350 per student, total cost of the program is \$6,079,500, of which \$1,337,490 (or 22 percent) spent on false positives.



A Hypothetical Example, Continued

- However, because the indicator is very reliable, accurately identifying 85% of all eventual dropouts ... *even if the interventions turned out to be only 50% effective*, the system would:
 - Reduce the number of dropouts from 15,948 to 9,174 (a 42 percent reduction);
 - Increase the number of graduates from 14,052 to 20,826 (a 48 percent increase); and
 - Increase the district's graduation rate from 47 percent to 69 percent (i.e., to about the national average).



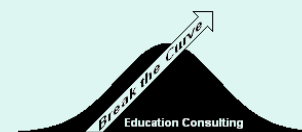
Effective Interventions Are Intensive ... and Expensive

- Low intensity programs that provide occasional tutoring or activities to boost self esteem are ineffective.
- Intensive interventions can help even those most at risk.
- Check and Connect
 - Experimental studies show greatly reduced dropout rates among male, minority, low-income, special education students.
 - \$1,600 per student.



Ensure Efficiency and Effectiveness

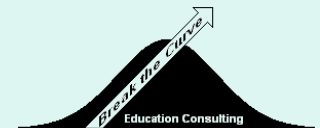
- Finding the right indicators saves students and saves money. Avoid shortcuts!
- In Chicago and Philadelphia, test scores not as predictive as classroom grades and attendance.
- Can't just intervene on basis of test scores.
- Need measures of academic and social engagement to predict dropping out.



Schools Matter, Too

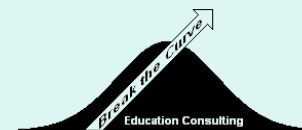
- CCSR: Chicago high schools vary greatly in on-track rates and graduation rates even after taking into account individual student risk factors like race, poverty, gender, prior academic achievement, and being overage for grade.
- Roderick and Camburn (1999): Chicago high schools vary widely in rates of *recovery* from 9th grade failure—again, even after controlling for a wide array of individual student risk factors.

Sources: Allensworth, E. & Easton, J.Q. (2005). *The On-Track Indicator as a Predictor of High School Graduation*. Chicago: Consortium on Chicago School Research. And Roderick, M. & Camburn, E. (1999). "Risk and Recovery from Course Failure in the Early Years of High School." *American Educational Research Journal*, 36, 303–343.



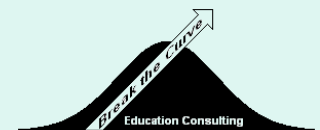
Use Data to Target *Schools* for Assistance or Interventions As Well

- Concentration of risk factors: Which middle schools and high schools enroll especially high numbers of students with highly predictive risk factors?
- Contribution to risk factors: Which middle and high schools compound the problem, making it even harder for “at risk” or other students to graduate? For example, schools with:
 - Unusually high numbers of students who exhibit declines in academic performance or educational engagement during transition years;
 - Unusually high numbers of students falling off track or failing ninth grade; and
 - Much higher (or lower) than predicted graduation rates,
 - based on students’ individual risk factors.



Federal Policy

- Enact greater accountability for graduation rates based on strong definitions.
- Provide support for states and districts to implement early warning data systems along with interventions.
- Success in the Middle Act: Funds for “early identification data systems”:
 - Individual student identifier
 - Data on predictive risk factors



Resources



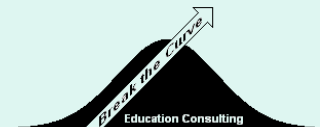
Identifying Potential Dropouts: Key Lessons for Building an Early Warning Data System

A Dual Agenda of High Standards and High Graduation Rates

A white paper prepared for
Staying the Course: High Standards and Improved Graduation Rates,
a joint project of Achieve and Jobs for the Future,
funded by the Carnegie Corp. of New York

Prepared for Achieve, Inc., by
Craig D. Jerald
President, Break the Curve Consulting

Available from
www.achieve.org



Resources

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♦ Findings from research

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- **Dropouts**
- High-performing, high-poverty schools
- High-stakes testing
- Homework
- Math and science
- Pre-Kindergarten
- Teacher quality
- Time and scheduling
- English Language Learners

♦ Stories from school districts

♦ Guides to issues

♦ Good measures for good schools

Home > Research and Practice > Findings from research > Dropouts > **Keeping kids in school: Lessons from research about preventing dropouts**

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Keeping kids in school: Lessons from research about preventing dropouts

Also in this research packet on dropouts

[Research Review](#). A synthesis of research about what works to keep kids in school.

[Dropouts: Myths v. Realities](#). Many widespread ideas about dropouts miss the mark.

In recent years, states have focused much attention on student achievement, but little on how many students ultimately leave school with a diploma in hand. This is changing: Nearly every governor has pledged to develop tougher ways to measure graduation rates at the same time that the No Child Left Behind Act has begun requiring states to hold schools and districts accountable for the results.

Of course, one prerequisite for shepherding more students successfully to graduation means keeping them in school in the first place.

Available from www.centerforpubliceducation.org

