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RESEARCH BRIEF

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Early Warning Systems that Support Students at Risk of Dropping Out of High School

The Study

Allensworth, E. M., & Easton, J. Q. (2007). *What matters for staying on-track and graduating in Chicago Public High Schools: A close look at course grades, failures, and attendance in the freshman year.* Chicago, IL: University of Chicago, Consortium on Chicago School Research. Retrieved November 8, 2008, from http://ccsr.uchicago.edu/publications/07%20What%20Matters%20Final.pdf

Methodology

This study builds on the findings of an earlier one by the authors. In that 2005 study for the Consortium on Chicago School Research, Allensworth, Easton, and their colleagues analyzed longitudinal quantitative data from the Chicago Public Schools. They validated an "on-track" indicator by combining two factors that most strongly predicted which ninth graders would drop out of high school: Failure in core courses and number of credits completed during their freshman year. Students were considered on-track if they received at least five out of seven credits and failed no more than one core course.

The on-track indicator was shown to be a strong predictor of eventual graduation and could be used for early forecasting and targeted interventions. It was more predictive of graduation than were test scores or demographic characteristics. The 2005 study also showed that many students with high test scores fell off-track, making them less likely to graduate than students with low test scores who remained on-track by passing their courses.

In 2007, Allensworth and Easton studied how three additional indicators of ninth grade performance—course failure, overall grade point average (GPA), and attendance—as well as the on-track indicator developed in 2005 could predict high school graduation. Their findings indicated that these components could be used for earlier and more targeted intervention.

Allensworth and Easton examined data from 20,803 Chicago Public School students who entered ninth grade in fall 2000 and graduated (or dropped out) by spring 2005. In addition, they analyzed quantitative data from ninth graders in the 2004–2005 school year (24,894 students), and survey responses from students (14,045 students) and teachers in spring 2005 to determine if there were school characteristics associated with better than expected ninth grade attendance rates, failure rates, and grades.

Summary of the Study's Findings

The researchers analyzed these data to answer the following questions:

- How did course failure, overall grade point average, and number of absences predict students who would fall off-

track? Could the additional indicators be used for earlier intervention and more targeted intervention than the on-track indicator?

- What student and school factors contributed to course failure?
- What school climate factors affected student attendance?

This *Research Brief* summarizes findings from the 2007 Allensworth and Easton study and makes recommendations for supporting students at risk of dropping out of high school.

How did course failure, grade point average, and absences predict dropouts?

According to the 2005 study, on-track students were three-and-a-half times more likely to graduate from high school in four years than were off-track students. The researchers found that failure of a single course indicated the potential for dropping out. In general, students who failed one course were struggling in all of their courses.

Allenworth's and Easton's analysis found that there was a strong correlation between course failure and overall GPA. More than 75 percent of students who failed a course in ninth grade had a GPA at or below 2.0, and off-track students typically had a GPA of 1.5 in the courses they passed.

For students with no course failures, 62 percent with a 1.5 GPA, 74 percent with a 2.0 GPA and 86 percent with a 2.5 GPA would graduate. In contrast, for students with one course failure, only 76 percent with a 2.5 GPA would graduate, and the graduation rate for students with two course failures dropped to 68 percent. Although GPA was the strongest predictor of high school graduation, course failure also had a direct effect on whether a student graduated.

Attendance also was shown to be a predictor of graduation. The researchers found that absenteeism can be a cause for concern. Of students who missed five to nine days during the ninth grade, only 63 percent graduated, compared with 87 percent of those who missed fewer than five days.

What student and school factors contributed to course failure?

Attendance not only predicted graduation, but it also was highly predictive of course failure. In fact, the ninth grade attendance rate was "eight times more predictive of course failure" (Allensworth & Easton, 2007, p.16) than eighth grade test scores. For students with high rates of absenteeism, "incoming achievement is not at all predictive of failures" (Allensworth & Easton, 2007, p.17). Students with eighth grade test scores in the top quartile who had high absentee rates were more likely to fail than students in the bottom quartile who missed just one less week of school. The researchers found that ninth grade absenteeism in the Chicago Public Schools was so prevalent across all achievement levels that "half of the highest-achieving students … missed more than one week of classes per semester" (Allensworth & Easton, 2007, p.16).

Study behavior, as self-reported from the survey of ninth graders, also predicted course failure. Students who reported studying often failed fewer courses and had higher overall GPAs.

The effects of economic status, mobility rate, and age on the course failure rate largely disappeared when eighth grade test scores and absenteeism were considered. However, gender remained a factor even after accounting for eighth grade test scores and absenteeism. Boys in the same high school with similar backgrounds failed one semester more on average than girls. The researchers suggested that variations in failure rates between boys and girls are smaller in schools where more students report strong student-teacher relationships, personal support from teachers, schoolwide emphasis on preparation for the future, and peer support for academic achievement. The researchers concluded that "classroom conditions play a role in the gender gap" (Allensworth & Easton, 2007, p.22).

What school climate factors impacted student attendance?

A survey of students and teachers during the 2004–2005 school year measured school climate. The same factors that affected gender gap differences were shown to impact overall ninth

grade academic success and contribute to on-time graduation. In addition, teacher collaboration was an important factor in student course success. "Coherence in instructional programming … is associated with higher grades and lower rates of failure" (Allensworth & Easton, 2007, p.33).

The researchers concluded that:

- Attendance is the largest predictor of course failure.
- Boys fail more often than girls.
- Academic preparation (as measured by eighth grade tests) affects success.
- Students attend class more often and are more successful when they:
  - have strong relationship with teachers.
  - perceive school and their coursework as important to their future.
  - have support for academic achievement from their peers.
- Students are more successful in schools where teachers collaborate.

Suggestions for Supporting Students

In the 2007 study, the researchers found that school factors contribute substantially to keeping students in school and helping them graduate. They made the following recommendations:

- Use grades and course failure rates to target students. Students with a low GPA or one failed course are as likely to drop out as they are to graduate. They can benefit from modest interventions such as mentoring. Students with multiple failures need more intensive support.
- Intervention should be integrated and closely aligned with the instructional program of the school. Grades and attendance are better than expected in schools where the instructional program is more coherent.
- It is crucial to address attendance as a means to reduce course failures. Teachers and staff should be proactive in helping students as soon as they begin missing classes.
- Programs that support the transition to high school should closely monitor grades and attendance and intervene when students show signs of struggling.
- Students and parents need to know the impact of attendance on grades. Even small numbers of absences can have large effects on grades.
- Educators should make efforts to improve teacher-student relationships and help students understand the connection of their coursework to future goals.

Challenges

The 2007 study illustrates that student attendance significantly affects student outcomes: grades, failure rates, and graduation. Increasing attendance requires schools to build a climate of high academic achievement and relevance. It requires collaboration among administrators and teachers to establish a system that tracks attendance and provides supports for students who have more than a week of absences in a semester. Increasing attendance also requires engaging parents and ensuring that they value schooling and their child's education. Ultimately, increasing attendance requires students to believe that their education is important and that the school can provide them with the education they need for a successful future.

Bottom Line

Allenworth's and Easton's 2007 study, *What Matters for Staying On-Track and Graduating in Chicago Public High Schools,* built on their earlier research. The aim was to understand more deeply the school factors that contribute to dropping out of high school. It emphasizes the importance of attendance in overall academic success, and it reveals the need for students having strong relationships with teachers, seeing school as important to their future, and having peer support for academic achievement.

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Additional Resources

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