

Postsecondary Preparedness

Description of Request:

A high school that takes great pride in the fact that almost 87% of their graduates attend postsecondary education at either a two-year or four-year school submitted a group of questions regarding postsecondary preparedness and success. At no point has any member of the school district collected or analyzed information regarding the success of their graduates. They do not track whether or not their graduates drop out or complete college; if they drop out, the reasons why; the levels of success graduates achieve in college; whether their students take remedial courses in college; or if their graduates feel prepared for college courses.

Questions:

1. What strategies or methods are high schools using to collect postsecondary data on their graduates?
 2. Which strategies implemented during high school, including encouraging students to take college preparatory and honors courses, may ensure success in college?
 3. What strong predictors of college readiness have been identified through research?
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Report:

Following an established REL-NEI Reference Desk research protocol, we conducted a search for research reports as well as descriptive and policy-oriented briefs and articles in this area. The sources included federally funded organizations, additional research institutions, several educational research databases, and a general Internet search using Google and other search engines. We also searched for appropriate organizations that may act as resources on this issue. We have not done an evaluation of these organizations or the resources themselves, but offer this list to you for your information only.

Our Researchers have found that there is a significant body of research in the area of postsecondary preparation. The resources listed below describe potential types of postsecondary data to collect, strategies to implement during high school that may improve postsecondary outcomes, and predictors of college readiness.

Questions:

1. What strategies or methods are high schools using to collect postsecondary data on their graduates?

1.1. Data: Now What? Data Beyond High School. Washor, E., Arnold, K., and Mojkowski, C.; *Big Picture Learning*; December 2008/January 2009; Volume 66; Number 4

Source: Google

(<http://www.bigpicture.org/2008/12/data-now-what-data-beyond-high-school/>)

This article discusses the Alumni Database for schools affiliated with Big Picture – a network of schools dedicated to “educating one student at a time within a community of learners.” Big Picture schools track our students’ trajectories for about 12 years after they graduate. The article highlights:

- “an alumni manager database that connects key data on students during their high school years to information on their lives after high school.”
- “a series of Web-based surveys designed by our longitudinal research advisory team that we send electronically to all alumni. As alumni respond to these surveys, they enter answers directly into the alumni manager database. We therefore connect assembled data across information sources with a process that requires little administrative oversight.”
- “training in collecting data, preparing reports, and using data to guide program improvement and to communicate key information about student outcomes to stakeholders.”
- Collecting “qualitative data on selected students to gain insights beyond the group data.”
- Using “new technologies like Facebook or Twitter that engage contemporary youth and draw on relationships between Big Picture school staff and alumni.”

The resources listed below describe the type of postsecondary data collected through research, not by schools directly. Some of this methodology could be applied by high schools wanting to collect and analyze similar data.

1.2. Bridging the Gap: Academic Preparation and Postsecondary Success of First-Generation Students. *National Center for Education Statistics*; 2001.

Source: NCES

(<http://nces.ed.gov/pubs2001/2001153.pdf>)

This study examines the differences between first-generation postsecondary students with students whose parents have at least some college experience. The outcomes of interest include preparation for postsecondary education and postsecondary enrollment behavior, academic performance, and persistence. Below is a brief list of variables collected for analysis:

- a) Type of 4-year postsecondary institution in which students first enrolled;
- b) The number of remedial courses taken by students in their first year of college;
- c) Students’ postsecondary grade-point averages (GPAs) during their first year of enrollment;
- d) Retention—whether a student is still enrolled in the same institution 3 years later;
- e) Persistence track to bachelor’s degree— whether a student stays at the initial 4-year institution or makes a lateral transfer to a new 4-year institution;
- f) Persistence/attainment in postsecondary education—that is, whether students left without attaining their degree, remained enrolled, or had attained a degree; and
- g) Persistence behavior – the number of enrollment spells a student took since entering a 4-year institution.

1.3. NAEP High School Transcript Study.

Source: NCES

(<http://nces.ed.gov/nationsreportcard/hsts/howcollected.asp>,
<http://nces.ed.gov/nationsreportcard/hsts/>)

“The NAEP High School Transcript Study (HSTS) provides information about the types of courses that graduates take, how many credits they earn, their grade point averages, and the relationship between coursetaking patterns and achievement, as measure by the National Assessment of Educational Progress (NAEP).” A description of how the transcript data are collected follows:

“...NCES collects high school transcripts from a nationally representative sample of both public and private schools that have been selected to participate in NAEP. A representative sample of graduating seniors within each school is selected...”

In general, the following materials are collected from the participating schools

- a transcript for each student selected to participate in NAEP, that provides course information as well as general student background information (i.e., race/ethnicity, gender, and grade point average);
- a School Information Form, completed by the field worker or a school staff member, or sometimes by both, that provides general information about class periods, credits, graduation requirements, and other aspects of school policy;
- a course catalog (or if a catalog is not available, a list of courses) offered for each of four consecutive years, for example, from 2001-2002 through 2004-2005; and
- for schools not participating in NAEP, a NAEP School Questionnaire, completed by a school official, that provides information about school, teacher, and home factors that might relate to student achievement.

Information is also collected through NAEP background questionnaires for SD/LEP students in schools not participating in NAEP. Students do not have to fill out any forms. To maintain the privacy of student and school identities, students' names are removed from the transcripts and questionnaires and given a unique identification number. NCES ensures that the data collected from schools and students can be used for statistical purposes only.

After collection, the courses appearing on the student transcripts are coded using the Classification of Secondary School Courses, which contains over 2,200 course codes, and grade point average (GPA) is calculated.”

2. Which strategies implemented during high school, including encouraging students to take college preparatory and honors courses, may ensure success in college?

2.1. Helping Students Navigate the Path to College: What Schools can Do. Tierney, W. G., Bailey, T., Constantine, J., Finkelstein, N., & Hurd, N. F.; *IES Practice Guide, Institute of Education Sciences; Washington, DC; 2009*

Source: Institute of Education Sciences

(http://ies.ed.gov/ncee/wwc/pdf/practiceguides/higher_ed_pg_091509.pdf)

From page 1: “This guide is intended to help schools and districts develop practices to increase access to higher education. It can be useful for individuals who work in schools and districts in planning and executing strategies to improve preparation for, and access to, higher education. A panel of experts in college access programs and strategies and in research methods developed the recommendations in this guide. The guide contains specific steps on how to implement the recommendations that are targeted at school- and district-level administrators, teachers, counselors, and related education staff. The guide also indicates the level of research evidence demonstrating that each recommended practice is effective.”

2.2. What We Know About College Success: Using ACT Data to Inform Educational Issues.

ACT, Inc; 2008

Source: Data Quality Campaign

(http://www.dataqualitycampaign.org/files/publications-what_we_know_about_college_success.pdf)

The findings described in this publication “were obtained through multiple research studies. The data sources for these studies varied widely in terms of numbers and types of institutions, as well as in representativeness nationally.” Main points regarding high school course selection and strategies to increase the likelihood of success in college include:

- “Students who take upper-level high school courses are less likely to need remediation in English or mathematics, regardless of gender, race/ethnicity, and family income.”
- “Students who take the core curriculum in high school are more likely to succeed in specific first-year college courses than students who don't take the core. This is particularly true for

social science and science courses. The results across racial/ethnic and income groups are mixed.”

- “Taking additional English courses in high school, or taking one or more foreign languages with these courses, does not substantially affect success in first-year college English composition courses. The results across gender, racial/ethnic, and income groups are mixed.”
- “Taking additional reading-related courses in high school is associated with a slight increase in students’ chances of success in first-year social science courses. The results across racial/ethnic and income groups are mixed.”
- “Taking additional high school mathematics courses, especially those beyond Algebra 1, Geometry, and Algebra 2, is associated with increases in students’ chances of success in first-year mathematics courses. The results across gender, racial/ethnic, and income groups are mixed.”
- “Taking additional high school science courses is associated with increases in students’ chances of success in first-year science courses. The results across racial/ethnic and family income groups are mixed.”

2.3. Preparing High School Students for Successful Transitions to Postsecondary Education and Employment. *Michael Bangser; MDRC; National High School Center; August 2008*

Source: National High School Center

http://www.betterhighschools.com/docs/PreparingHSSStudentsforTransition_073108.pdf

“This Issue Brief reviews lessons from studies of selected policies and programs designed to improve students’ preparation for postsecondary pathways...A number of promising approaches are available to improve transitions from high school. However, effective implementation of these approaches will require sustained financial support along with appropriate investments in technical assistance and professional development.”

Take-away lessons at the district and school level include (More detail provided in the Issue Brief):

- Intervene early, when students are developing their college and career aspirations. “If students do not pass key “gatekeeper courses” such as Algebra I on time, it can be difficult to complete the full sequence of coursework needed for postsecondary education, particularly in 4-year colleges (Paul, 2005; Schneider, 2006).”
- Emphasize rigor and high expectations for all students, along with appropriate counseling and other supports.
- Integrate strong academic content into career-focused classes.
- Collaborate with postsecondary institutions, economic development agencies, and employers to help create smoother transitions to college and the workforce.

Pages 8-9 directly address the role that high school curricula and instruction play in preparing students for postsecondary education.

“High school curricula need to be rigorous, relevant, and engaging to prepare students for successful postsecondary activities.

High expectations and rigor. Students—including those with previously low achievement levels—who take more rigorous, academically intense programs in high school enroll and persist in postsecondary education at higher rates than similar students who pursue less challenging courses of study (Adelman, 2006; Oakes & Saunders, 2007). In addition, many students who enter the workforce immediately upon high school graduation now need the same level of skills and knowledge as students entering college (Kline & Williams, 2007). Therefore, it is important to create a culture of high standards with consistent, schoolwide messages about the standards needed for postsecondary success (Schneider, 2006; The Education Trust, 2005).

A number of factors, notably high expectations and efficient use of class time (The Education Trust, 2005), can contribute to a course’s level of rigor. In the case of dual-credit and other programs that link high schools with local colleges, the level of rigor might be influenced by the course’s location (whether at the college or the high school), the type of instructor (a college or a high school teacher), prerequisites, course length, and mix of high school and college students in the class. It is important to distinguish in these programs between courses that are “college like”

and courses that are truly “college level” (Lerner & Brand, 2006; National High School Center, 2007).

Expanded access to Advanced Placement (AP) courses is another means of increasing rigor. Six states (Alabama, Georgia, Kentucky, Maine, Nevada, and Wisconsin) have received grants to expand disadvantaged students’ participation in AP courses, and the Texas Advanced Placement Incentive Program has reportedly led to teachers viewing more students as ready for AP coursework (see www.collegeboard.com; www.nga.org).

2.4. On Course for Success: A Close Look at Selected High School Courses That Prepare All Students for College. *ACT; The Education Trust*

Source: The Education Trust

(http://www.act.org/research/policymakers/pdf/success_report.pdf)

This is a study of “high schools that succeed in preparing students for a measure of college readiness like the ACT Assessment. We were particularly interested in high schools with substantial populations of students underrepresented in postsecondary education. This Study Report recounts a 17-month cooperative project that thoroughly examined courses in English, mathematics, and science in 10 such high achieving schools across the nation.”

From the Executive Summary on page 6, “The results of this study are clear: In high schools with significant minority and low-income student populations, students can be prepared to succeed in credit-bearing first-year college courses. And we know that the skills expected for college are also the skills needed to enter today’s workforce. So whether students plan further education or work after high school graduation, they need to graduate college-ready. **These are the common components we found at the high schools we studied that put students On Course for Success:**

High-level college-oriented content. Successful students were enrolled in college-preparatory courses in their high schools and learning the skills they need to be ready for college-level work. The content of these courses put students on a trajectory toward college from Grade 9 through Grade 12.

Well-qualified teachers. Teachers of successful high school courses were qualified to teach their academic discipline in high school, and many held advanced degrees.

Flexible pedagogical styles. The teachers commanded flexible pedagogical styles, allowing informal rapport with their students. To assist in the comprehension of difficult concepts, the teachers made connections to former learning, to current events, to popular culture, and across the curriculum.

Tutorial support. In the 10 schools and 69 courses we studied, both the schools and the teachers of the courses supported students with tutorial help, both formally and informally. Our findings for each academic discipline give details about the components above that put students On Course for Success. The report includes model course syllabi and descriptions of key courses in English, mathematics, and science drawn from the materials submitted by the teachers, interview transcripts, and classroom observations. These sets of course-specific descriptions and materials can be used to facilitate reevaluation of high school curricula that will prepare all students for college and work.”

3. What strong predictors of college readiness have been identified through research?

3.1. Bridging the Gap: Academic Preparation and Postsecondary Success of First-Generation Students. *National Center for Education Statistics; 2001; cited above.*

Source: NCES

(<http://nces.ed.gov/pubs2001/2001153.pdf>)

This study examines the differences between first-generation postsecondary students with students whose parents have at least some college experience. The outcomes of interest include preparation for postsecondary education and postsecondary enrollment behavior, academic performance, and persistence.

From the section titled “Preparation for Postsecondary Education” on page 22:
“High School Mathematics

The level of mathematics coursetaking in high school is a significant predictor of students’

postsecondary enrollment and of attaining a college degree (Adelman 1999; Horn and Nuñez 2000; Riley 1997). This analysis uses a standardized mathematics coursetaking variable that presents the highest level of mathematics coursework completed, as reported by students on the application for the SAT/ACT test.

Academic Rigor of High School Courses

Another indicator of high school academic preparation is the overall difficulty of students' coursework. Using previous research as a guide, the variable "academic rigor" was created (Adelman 1999; Burkam, Lee, and Smerdon 1996). Academic rigor takes into account 1) the number of courses that students completed in academic subjects (mathematics, science, English, social studies, and foreign language); 2) the level of courses students took in mathematics and science; and 3) whether students took any honors or Advanced Placement (AP) courses.

The final indicators of high school academic preparation are the students' scores on college entrance examinations. These data include students' SAT I (or equivalent ACT) composite scores and SAT II scores."

3.2. Predicting Success in College: A Longitudinal Study of Achievement Goals and Ability Measures as Predictors of Interest and Performance from Freshman Year Through Graduation. *Harackiewicz, J.; Barron, K.; Tauer, J.; and Elliot, A.; Journal of Educational Psychology; 2002; Vol. 94; No. 3, 562-575*

Source: Google Scholar

http://www.psych.rochester.edu/research/apav/publications/documents/2002_HarackiewiczBarro nTauerElliot_Predictingsuccessincollege.pdf

In this study, "the authors examined the role of achievement goals, ability, and high school performance in predicting academic success over students' college careers... Achievement goals, ability measures, and prior high school performance each contributed unique variance in predicting initial and long-term outcomes, but these predictors were linked to different educational outcomes. Mastery goals predicted continued interest, whereas performance-approach goals predicted performance. Ability measures and prior high school performance predicted academic performance but not interest. The findings support a multiple goals perspective."

Additional Organizations to Consult

- **The Education Trust**

<http://www2.edtrust.org/edtrust/default>

The mission of The Education Trust is to work for, "the high academic achievement of all students at all levels, pre-kindergarten through college, and forever closing the achievement gaps that separate low-income students and students of color from other youth. Our basic tenet is this — All children will learn at high levels when they are taught to high levels." Their website links to several reports on the gap between high school course requirements and those required for admission and placement in postsecondary education.

Key words and search strings used in the search:

college; postsecondary AND preparedness; readiness; success

Search databases and websites:

Institute for Education Science Sites: Regional Educational Laboratory Program (REL); What Works Clearinghouse (WWC); Doing What Works (DWW); National Center for Education Statistics (NCES); Institute for Education Sciences (IES); IES Practice Guides

Other Federally Funded Sites: The National High School Center; National Center for Education Statistics (NCES) Datasets: K – 12; National Assessment of Educational Progress (NAEP); National Dropout Prevention Center/Network; Regional Comprehensive Centers; Regional Resource Centers

Additional Data Resources: The Campbell Collaboration; Data Quality Campaign; Education Development Center; The Education Trust; SRI International; ERIC; <http://www.google.com>;

Criteria for inclusion:

When Reference Desk Researchers review resources, they consider, among other things, four factors:

1. **Date of the publication:** The most current information is included unless in the case of nationally known seminal resources
2. **Source and funder of the report/study/brief/article:** Priority is given to IES, nationally funded, and certain other vetted sources known for strict attention to research protocols;
3. **Methodology:** i.e. Random control trial studies, surveys, self-assessments, literature reviews, policy briefs, etc. Priority for inclusion is given generally to random control trial study findings; however, the reader should note at least the following factors when basing decisions on these resources: Numbers of participants (just a few? Thousands?); Selection (did the participants volunteer in the study, or were they chosen?); Representation (were findings generalized from a homogeneous or a diverse pool of participants? Was the study sample representative of the population as a whole?)
4. **Existing knowledge base:** Although we strive to include vetted resources, there are times when the research base is slim or non-existent. In these cases we have included the best resources we could find, which may include newspaper articles, interviews with content specialists, organization websites, etc.

REL Northeast and Islands

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