Connecting School and Students’ Futures With Actionable Early Warning Data

Jenny Scala
Senior Researcher

Megan Sambolt
Researcher

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Session Agenda

- Defining college and career readiness
- Early warning systems
- Implementing early warning systems
- Resources overview
Objectives

Participants will be able to do the following:

- Create a definition of *college readiness* based on actionable student expectations.
- Explain research-based indicators for high school graduation.
- Match interventions to students’ needs.
- Access resources designed to help with the process of using actionable early warning system (EWS) data.
Defining College Readiness
Growing numbers of students will need some college to be able to achieve a living wage.

- Researchers forecast that by 2018, approximately two thirds of the current jobs and 90 percent of all newly created jobs will require at least some postsecondary training (Carnevale, Smith, & Strohl, 2012).
- According to the U.S. Census Bureau, college graduates with a bachelor’s degree make nearly double the lifetime earnings of high school graduates (Julian, 2012).

Individuals without a college degree are at greater risk of unemployment.

- In 2013, the unemployment rate for individuals with a four-year college degree was 4.0 percent; for individuals without a degree, the unemployment rate was 7.0 percent to 7.5 percent (Bureau of Labor Statistics, 2014).
Students are not prepared for the demands of postsecondary education.

- Sixty percent of students who enroll in college are not prepared and require remedial coursework (Lebow, Harris, & Smerdon, 2012).
- The cost of remedial coursework to federal, state, and local governments is estimated at nearly $2.6 billion annually (Strong American Schools, 2008).

Districts and schools are increasingly pressured to prepare greater numbers of students for college.

States, districts, and schools are not sure what it means to be “college ready” and whether they are meeting this goal.
Why define college readiness?
- Definitions often revert to outcomes.
- Expectations inform measures.

What should students know and be able to do?
- Knowledge, skills, attributes, and dispositions
- All versus each

How does career readiness factor in?
- There is overlap in many skills.
- The ultimate goal for all students, regardless of path, is postsecondary success, which is either college or career.
Role-Alike Discussions

- What knowledge, skills, attributes, and dispositions do students need to be ready to succeed in college?
- Overarching categories:
  - Academic content
  - Pathways knowledge
  - Lifelong learning skills
Early Warning Systems
Background and Concept
What if readily available data could be used to early identify students who are off-track for being college ready?
What Is an Early Warning System?

- It is a methodological way of looking at students and their likelihood of meeting specific educational milestones.
- It is a tool for educators to better design and target student interventions in a timely way.
- Traditionally, it was implemented at the high school level to help predict which students were most likely to drop out.
  - Evidence-based dropout prevention strategy (Dynarski et al., 2008)
  - Validated indicators that flag ninth-grade students who are at risk of dropping out of high school
What Is an Early Warning System?

An EWS relies on readily available data housed at a school to do the following:

- Predict which students are at risk of missing key educational milestones.
- Target resources to support off-track students early.
- Examine patterns and identify school climate issues.
Early Warning System
Theory of Action

- EWS is grounded in research; indicators and thresholds are validated.
- EWS indicators are not another label or an accountability measure.
- Outcome measures must be meaningful and actionable by adults in the system.
Early Warning System Implementation Pathway

- Synthesize Research
- Validate Indicators
- Customize and Develop Tools and Supports
- Launch and Implement EWS
- Assess and Improve Processes
Anatomy of an Early Warning System

- Outcome measures are future milestone events or benchmarks on which students’ attainment or performance is being tracked (or measured).
- Indicators are validated through testing against the outcome measures and are predictive of whether a student will meet a future outcome measure.
- Thresholds are the tipping point below which a student is significantly less likely to meet the predefined desired outcome measure.
Common early warning indicators are based on the following:

- Attendance
- Course performance
- Grade point average (GPA)
- Disciplinary incidents

Sources: Allensworth & Easton (2005, 2007); Balfanz, Herzong, & Maclver (2007); Bruce, Bridgeland, Fox, & Balfanz (2011); Heppen & Therriault (2008); and Jerald (2006).
## Dropout Early Warning System

### Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Middle Grades</strong></td>
<td></td>
</tr>
<tr>
<td>Attendance</td>
<td>Missed 20 percent or more of instructional time</td>
</tr>
<tr>
<td>Course performance</td>
<td>Failure in an English language arts or mathematics course</td>
</tr>
<tr>
<td>Behavior</td>
<td>Locally validated thresholds</td>
</tr>
<tr>
<td><strong>Ninth Grade</strong></td>
<td></td>
</tr>
<tr>
<td>Attendance</td>
<td>Missed 10 percent or more of instructional time</td>
</tr>
<tr>
<td>Course performance</td>
<td>• Failure in one or more courses</td>
</tr>
<tr>
<td></td>
<td>• Earned 2.0 or lower GPA (on a four-point scale)</td>
</tr>
</tbody>
</table>

*Sources: Allensworth & Easton (2005, 2012); Balfanz et al. (2007); Bruce et al. (2011); Heppen & Therriault (2008); and Jerald (2006).*
College Ready and Enrollment

What about the middle?
College and Career Readiness Indicators

- **Academic content** (Hein, Smerdon, & Sambolt, 2013)
  - GPA is 3.0 or greater
  - Passing high school exit or college entrance examinations
  - Meeting thresholds on Advanced Placement, International Baccalaureate, SAT, ACT, or industry certification examinations

- **Pathway knowledge** (Hein et al., 2013)
  - Dual enrollment and transition program participation (Annenberg Institute for School Reform, John W. Gardner Center for Youth and Their Communities, & University of Chicago Consortium on Chicago School Research, 2014)
  - Completion of the Free Application for Federal Student Aid (FAFSA)

- **Lifelong learning skills**
  - Mission Skills Assessment (Soland, Hamilton, & Strecher, 2014)
  - National Workforce Readiness Credential (Hein et al., 2013)
  - Global Empathy Scale (Solan et al., 2014)
Measurement Gaps

- College readiness versus career readiness
- Generalizability of skills
- Lifelong learning skills
- Validation of skills as they relate to college and career readiness and success
Implementing Early Warning Systems

Early Warning Intervention Monitoring Systems
Early Warning System Implementation Pathway

1. Synthesize Research
2. Validate Indicators
3. Customize and Develop Tools and Supports
4. Launch and Implement EWS
5. Assess and Improve Processes
Early Warning System Implementation Pathway

Synthesize Research

Validate Indicators

Customize and Develop Tools and Supports

Launch and Implement EWS

Assess and Improve Processes
Lessons From Applying an Early Warning System

- An EWS is an important part of a system that uses data to flag students at risk of dropping out.
- An EWS allows states and districts to allocate resources.
- An EWS provides for the efficient allocation of supports and resources to students in need.
- Schools often use EWS indicators to improve schoolwide improvement strategies, climate, and academic supports.
- Users need user-friendly ways to quickly review these readily available data and identify students.
- EWS indicators flag symptoms but cannot diagnose students’ needs.
The Seven-Step Early Warning Intervention Monitoring System (EWIMS) Process

- Step 1: Establish roles and responsibilities
- Step 2: Use the EWS tool
- Step 3: Review the EWS data
- Step 4: Interpret the EWS data
- Step 5: Assign and provide interventions
- Step 6: Monitor students
- Step 7: Evaluate and refine the process
Step 1: Establish Roles and Responsibilities

- EWS teams should include individuals who have the following characteristics:
  - Authority to make decisions.
  - Knowledge of diverse students.
  - Expertise in managing and analyzing data.

- EWS teams should do the following:
  - Meet regularly.
  - Communicate EWS risk or dropout prevention issues to groups or individuals outside the team.
  - Solicit feedback from stakeholders.
  - Monitor students’ progress.
Step 2: Use the Early Warning System Tool

The following are important considerations for middle grades and high school:

- Data must be regularly entered throughout the school year.
- At least one individual should be responsible for ensuring that the EWS tool has the latest data.
- EWS team members must be trained to understand the use of the indicators within the tool.
- Reports must be used and accessible to make decisions about student needs.
- Student progress in interventions must be monitored.
Step 3: Review the Early Warning System Data

- Review and monitor EWS indicators to do the following:
  - Identify students at risk for dropping out.
  - Understand patterns in student engagement and academic performance.

- Questions to ask about EWS data:
  - **Student-level patterns.** What do the data tell you about individual students and groups of students who are at risk?
  - **School-level patterns.** What do the data tell you about how the school is doing?
Example 1: College- and Career-Ready Student Risk Status

### Student Risk Status

#### Filters
- Grading Period: Year-to-Date
- Demographic: All
- Ethnicity: All
- Grade: All

#### Controls
- Import Performance Data
- Export Risk Status
- Main Menu

#### Student Details

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Student ID</th>
<th>Incoming Risk Status</th>
<th>Total Absences</th>
<th>English Courses Failed</th>
<th>Math Courses Failed</th>
<th>GPA</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARISSA</td>
<td>MITCHELL</td>
<td>123456</td>
<td>2</td>
<td>14</td>
<td>0</td>
<td>2</td>
<td>3.5</td>
<td>10</td>
</tr>
<tr>
<td>JESSE</td>
<td>KEATING</td>
<td>654321</td>
<td>3</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>2.8</td>
<td>5</td>
</tr>
<tr>
<td>CLINTON</td>
<td>TIGER</td>
<td>765432</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>3.2</td>
<td>7</td>
</tr>
<tr>
<td>BENSON</td>
<td>SMITH</td>
<td>213456</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>2.5</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Total Flags by Category
- 47 Flags
- 16 Flags
- 14 Flags
- 43 Flags
- 45 Flags

### Early Warning Systems in Education

College & Career Readiness

at American Institutes for Research
Example 2: School-Level Report—Middle Grades Dropout Tool

Risk Indicator Summary Report

- Time Frame: Quarter 1
- Cohort: All
- Date: November 21, 2011
- Start Date: 9/1/2009
- End Date: 11/15/2009

This report shows the number of students who are flagged and not flagged for each indicator of risk for the selected grading period or time frame.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Not Flagged</th>
<th>Flagged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter 1 First 20 Day Attendance Flag</td>
<td>40</td>
<td>7</td>
</tr>
<tr>
<td>Quarter 1 Attendance Flag</td>
<td>43</td>
<td>4</td>
</tr>
<tr>
<td>Quarter 1 English Course Fail Flag</td>
<td>44</td>
<td>3</td>
</tr>
<tr>
<td>Quarter 1 Math Course Fail Flag</td>
<td>44</td>
<td>5</td>
</tr>
<tr>
<td>Quarter 1 Behavior Flag</td>
<td>47</td>
<td>0</td>
</tr>
<tr>
<td>Quarter 1 Any Flag</td>
<td>36</td>
<td>11</td>
</tr>
</tbody>
</table>
College Readiness Questions for Steps 1–3

- Step 1: Who needs to be represented on the EWS team, and what types of knowledge do team members need to have when thinking about college and career readiness?
- Step 2: What data will be used and how frequently will the EWS data be monitored for college and career readiness?
- Step 3: What do you need to have in place so you are confident that the data are accurate?
Step 4: Interpret the Early Warning System Data

- The EWS team must look beyond the indicators:
  - Indicators are observable symptoms, not underlying causes.
  - Examine additional data from sources beyond the EWS indicators to determine root causes.

- Looking at data beyond the EWS indicators can accomplish the following:
  - Help identify individual and common needs among groups of students.
  - Raise new questions and increase understanding of why students fall off track for graduation.
The EWS team matches individual students to specific interventions after gathering information about the following:

- Potential root causes for individual students who are flagged as at risk.
- The available academic and behavioral support and dropout prevention programs in the school, district, and community.

A tiered approach can be used to match students to interventions based on needs identified by the data.
Examples of Research-Based Interventions

<table>
<thead>
<tr>
<th>Dropout Prevention Program</th>
<th>Middle Grades</th>
<th>High School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accelerated Middle Schools</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>ALAS</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Financial Incentives for Teen Parents to Stay in School</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>National Guard Youth Challenge Program</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Talent Search</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>JOBSTART</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Job Corps</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>New Chance</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Check &amp; Connect</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Career Academies</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Talent Development High Schools</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Activity: Case Study

- How do we intervene for students in the middle?
- Student profile:
  - Tori is an 11th-grade student who has a straight C average.
  - Electives so far include art, dance, music, and one semester of French.
  - Tori is considering applying to the University of Arizona because her parents went there.
- What interventions do you know of that could support Tori?
Activity: Intervention Inventory

- Based on the possible interventions mentioned in the case study, work in small groups to identify possible interventions to support students’ postsecondary school success.
- Use the “College Readiness Intervention Mapping” handout to guide your conversations.
Step 4: What additional data sources should be used when interpreting EWS data for college readiness?

Step 5: How confident are you that the interventions are appropriate for your students?

Step 5: How can tiered interventions support college readiness?
Step 6: Monitor Students and Interventions

The EWS team monitors students who are participating in interventions to accomplish the following:

- Identify students whose needs are not being met or students who may no longer be struggling.
- Identify new interventions that will meet students’ needs.
- Use data to monitor interventions to determine if the interventions are working.
- Communicate with appropriate stakeholders and solicit their involvement.
Step 7: Evaluate and Refine the Process

- Refine the EWIMS implementation process
  - During the school year.
  - At the end of the school year.

- Identify short- and long-term needs and solutions
  - Student needs.
  - School climate.
  - Organizational needs (school or district).
College Readiness Questions for Steps 6–7

- Step 6: How are you using progress monitoring data for college readiness?
- Step 7: What are the short- and long-term needs for college readiness?
Resources
www.ccrscenter.org
College and Career Readiness and Success Organizer
Supplemental Brief

STRAND 1

GOALS AND EXPECTATIONS

What should learners know and be able to do to achieve college and career readiness?

PURPOSE

All college and career readiness and success initiatives should be derived from the fundamental consideration: What should learners know and be able to do to achieve college and career readiness? To achieve postsecondary readiness and success, learners must raise their expectations of themselves, identify rigorous educational and career aspirations, and meet goals.

The Goals and Expectations strand encompasses the work traditionally thought of as college and career readiness standards. This includes the necessary academic content to enroll in college without the need for remediation, the technical prerequisites to compete in the workforce, and the lifelong learning skills to succeed in both. In addition, as learners identify postsecondary interests, they will require specific skills to prepare for their chosen pathway. The Goals and Expectations strand, which includes the range of competencies and knowledge required to successfully meet educational and career goals, is organized into three threads: (1) Academic Content, (2) Pathway Knowledge, and (3) Lifelong Learning Skills.
The purpose of this brief is to provide information to state, district, and school personnel seeking support to determine whether their students are on a path to postsecondary success. The College and Career Readiness and Success Center (CCRS Center) has received technical assistance requests from a number of states regarding factors that predict postsecondary success, and this brief summarizes and expands on the information shared with those states. Specifically, we summarize early childhood through early postsecondary education research that identifies student skills, behaviors, and other characteristics that predict future academic and workplace success. We have attempted to focus on a variety of measures drawn from readily available data that schools, districts, and states are likely to have. Through this information, policymakers and practitioners can begin to inform the development and validation of factors to identify students who are not on a path to postsecondary success as early as prekindergarten and as late as their senior year of high school. These factors can inform practice and can be integrated into a longitudinal tracking mechanism to identify and monitor individual students who may need additional resources or supports at any point during their schooling. In addition, tracking and measuring factors of success across prekindergarten to early postsecondary education offer a prime opportunity to develop and evaluate systemwide improvement efforts. For example, these data may help identify
American Institutes for Research

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As one of the largest behavioral and social science research organizations in the world, AIR is committed to empowering communities and institutions with innovative solutions to the most critical challenges in education, health, workforce, and international development.
Early Warning Systems in Education

Educators need accurate and timely data to systematically identify students most likely to drop out of high school or graduate ill-equipped to succeed in college or careers. Early warning systems can be powerful tools that provide information to change educators’ practices and guide students back on track.

The College and Career Readiness team at AIR offers a complete set of services for early warning systems in education: research, design, implementation, and ongoing support. We understand that early warning systems are effective only if staff are able to act on the data. The end result is an early warning system that allows state-, district-, and school-level staff to intervene effectively and redirect their efforts so that students graduate on time and are prepared to succeed in college and careers.
References


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Jenny Scala
831-621-4003
jscala@air.org

Megan Sambolt
202-403-5223
msambolt@air.org

1000 Thomas Jefferson Street NW
Washington, DC 20007
General Information: 202-403-5000
TTY: 887-334-3499
www.earlywarningsystems.org | www.air.org