In the following report, Hanover Research examines factors that impact student success at the elementary, middle, and high school levels. The report identifies academic and non-academic indicators associated with student success and reviews literature on early warning systems that use longitudinal data to identify at-risk students.
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EXECUTIVE SUMMARY AND KEY FINDINGS

INTRODUCTION

The United States have changed significantly since the release of the 1983 federal report A Nation at Risk, but yet school systems continue to face comparable difficulties in academic underperformance as they did thirty years ago. Barriers to student success exist at all grade levels, but a growing field of research is enabling educators to predict low achievement in students, deliver targeted instructional interventions, and improve student outcomes.

In the following report, Hanover Research reviews literature on factors related to student success and key predictors of struggle at the elementary, middle, and high school levels. The report examines both academic and non-academic factors associated with student success and describes an early warning system approach to identifying at-risk students. The report is divided into three sections:

- **Section I: Introduction** provides an overview of academic indicators associated with student success or failure at the elementary, middle and high school levels.
- **Section II: Overview of Early Warning Systems** reviews literature on early warning systems that districts use to identify struggling students.
- **Section III: Overview of Support Systems** examines literature on student support systems in schools. The section identifies trends in the provision of student support services, with a particular focus on mental health and drug abuse prevention programs. Finally, the section profiles Diplomas Now, an integrated student support program designed to increase graduation rates and academic achievement.

KEY FINDINGS

- **Key indicators, including absenteeism, student behavior, and academic course performance, are predictive of student success or struggle at all levels of schooling.**
  - The exact level of absenteeism that predicts student success varies by grade level and local context, but students who miss more than 10 percent of the school year often struggle academically and are at risk of dropping out or failing.
  - Behavioral indicators such as classroom misconduct, low participation in extracurricular activities, and negative relationships with teachers are also indicative of student struggle at all levels. However, the threshold of “at-risk” social behaviors varies considerably by local definitions, and there is not a single best indicator of behavior that predicts future success.
  - Course performance (i.e., grade point average, exit exams, grade promotion, etc.) strongly predicts future academic success, but academic warning signs vary by grade level and the availability of academic data. High school graduation may be forecasted as early as elementary school via third grade reading proficiency.
Similarly, indicators at the end of ninth grade such as failed course benchmarks, a grade point average of 2.0 or less, and low credit accumulation indicate a greater likelihood of dropping out.

- **Early warning systems enable school districts to use longitudinal student-level data to identify at-risk students.** By using research on factors associated with student failure and dropout, early warning systems can identify students who fall below critical levels, exhibit patterns of underachievement, and may be likely to drop out. Early warning systems align to research-based indicators of student success – particularly attendance, behavior, and course performance.

- Although early warning systems commonly use attendance, behavior, and course performance indicators, **districts should develop additional or customized indicators that are relevant to their unique situations.** When developing early warning systems, districts should examine the factors that are most strongly linked to the dropout or graduation rates of their past students. In particular, behavioral indicators should be locally defined since districts vary in their behavior codes and disciplinary procedures.

- **While students’ demographic characteristics may be correlated with student success or failure, academic performance and student engagement are the strongest predictors of educational success.** Moreover, student engagement and academic performance are factors that can be supported through targeted interventions.

- **Districts should provide comprehensive student services that support students’ psychological, social, and emotional needs.** Effective student support systems may involve multidisciplinary support teams that promote student success and an adequate ratio of students for every support staff member.
  - The National Association of School Psychologists recommends that districts train all staff members to respond to mental health needs of students, provide mental health prevention programming and intensive interventions, and formally and informally assess the mental health of students on a regular basis.
  - Research on school-based drug abuse prevention and interventions suggests that a combination of classroom-based instruction, non-classroom activities, and intervention services can effectively reduce student drug use. In particular, brief psychoeducational sessions delivered by paraprofessionals, are considered a viable treatment option for drug-using teens.
SECTION I: PREDICTORS OF STUDENT SUCCESS

A growing body of research suggests that all educators can use student-level data and characteristics to predict academic success or failure. The American Institutes for Research (AIR) recently published a comprehensive literature review of academic success research and identified predictors of proximal success at the elementary, middle, high school, and postsecondary levels. Educators may track these indicators to identify barriers to success in their own schools, which may then inform instructional and intervention services.

The current section starts with the AIR publication as a foundation to review indicators of academic success and struggle across the K-12 spectrum. While non-academic factors such as mental health, drug abuse, and student demographics are related to academic outcomes, this section chiefly focuses on academic indicators. We discuss non-academic factors that impact student success in Sections II and III of the report.

ACADEMIC INDICATORS

A wide variety of academic, social, and behavioral factors may contribute to students’ success or struggle. However, by focusing on specific indicators of student progress, districts may identify students who are disengaged or at increased risk for dropping out as early as the elementary grades. The AIR review of academic indicators identified factors that contribute to student success. Figure 1.1 lists the variables identified by the AIR review that affect student success at elementary, middle, and high school levels.

**Figure 1.1: Variables Affecting High School Completion and Postsecondary Achievement by School Level**

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>INDICATORS, PREDICTORS, AND OTHER FACTORS</th>
</tr>
</thead>
</table>
| Elementary School | - Reading by the third grade  
                  | - Absenteeism  
                  | - Teacher ratings of attention span and classroom participation  
                  | - Social skills  
                  | - Social competence |
| Middle School  | - Absenteeism  
                  | - Remaining at the same school  
                  | - Behavior grades in grade 6  
                  | - Passing ELA and mathematics courses and meeting benchmarks on state exams  
                  | - Passing Algebra I in grade 8  
                  | - NAEP mathematics scores in grade 8  
                  | - Benchmarks on college preparatory exams  
                  | - Rigorous coursework  
                  | - Grit  
                  | - Social-emotional and decision-making skills |

---


3 Ibid., p. 4.
<table>
<thead>
<tr>
<th><strong>LEVEL</strong></th>
<th><strong>INDICATORS, PREDICTORS, AND OTHER FACTORS</strong></th>
</tr>
</thead>
</table>
| **High School** | - Absenteeism  
- No more than one failure of ninth-grade subjects  
- Mathematics course sequence  
- GPA over 3.0  
- Passing scores on AP and IB exams  
- Dual enrollment  
- Passing state exams  
- FAFSA completion  
- Benchmarks on national assessments  
- Benchmarks on college preparatory exams  
- Participation in college readiness programs  
- Few school transfers  
- Early Assessment Program (EAP and PSAT completion  
- Participation in intervention  
- Meeting with academic advisor  
- Career readiness assessments and certifications |

Source: AIR

The elements listed in Figure 1.1 generally address attendance, academic performance, and participation – all of which may predict success or high school dropout. These elements may also be framed as related barriers to academic success – for example, chronic absenteeism (missing 10 percent or more of the school year) is a particularly strong indicator of dropout and is often associated with lower academic performance. Similarly, disruptive or anti-social behavior may be a telltale indicator of an at-risk student. While key indicators, generally related to absenteeism, academic performance, and student behavior, are predictive of student success or struggle at all levels of schooling, specific benchmarks vary by grade level and local context. The following subsections expound upon the indicators predictive of student success in elementary, middle, and high school.

**Elementary School**

Students exhibit behaviors predictive of their academic futures as early elementary school. When elementary students are engaged in school, their positive behaviors are “likely to persist, to become elaborated, and to be accompanied by a sense of belonging in school and valuing school-related outcomes” while disengaged elementary school students may be at risk of failure. However, the AIR found that there are very few elementary-level indicators that may predict long-term success at the postsecondary level. Instead, researchers identified several factors related to “proximal, future academic success.”

In the short term, there appear to be distinct benefits to reading proficiently in the third grade and attending school frequently in kindergarten. According to a study by the

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http://www.ccrscenter.org/sites/default/files/CCRS%20Center_Predictors%20of%20Postsecondary%20Success_final_0.pdf  
National Center for Children in Poverty (NCCP), when students in kindergarten through third grade are absent less than 10 percent of the time, they are more likely to advance to the next grade level and score higher grades in core subject areas. Conversely, chronic absenteeism in kindergarten is associated with lower grade 1 and grade 5 achievement in reading, mathematics, and general knowledge. Students who missed 10 percent or more of the school year in kindergarten scored substantially lower on academic achievement measures in grade 1 than students who were absent for 0-3.3 percent of the school year.  

While long-term predictions of academic success are limited at the elementary level, the third grade reading indicator may be a crucial indicator of high school success. A study by the Annie E. Casey Foundation (AECF) examined the reading abilities of young children across 10 years (1979-1989), and found substantial differences in graduation rates between proficient and non-proficient readers in grade 3. The AECF concluded that “one in six children who are not reading proficiently in third grade fail to graduate from high school on time, four times the rate for children with proficient third-grade reading skills.”¹¹ Sixteen percent of students who were non-proficient readers at grade 3 failed to graduate by age 19, compared to only four percent of proficient third-grade readers who did not graduate by age 19.¹² Hence, research suggests that grade 3 reading proficiency may be a long-range predictor of student success, including high school graduation.

**Middle School**

Robert Balfanz, an expert on dropout prevention, considers the middle school grades to be “pivotal years that can either place a student successfully on the path to high school, college, and career, or begin a downward trajectory of disengagement and low achievement in key subjects.”¹³ Thus, districts should consider identifying students who are at risk of dropping out during the middle school years and implement targeted strategies to increase student engagement.¹⁴

**At the middle school level, absenteeism is a strong indicator of future high school dropout or failure.** Elementary school students who miss 20 percent or more of the academic year are at risk of “falling off track,” according to a 2006 analysis of Philadelphia school students by Balfanz and Herzog.¹⁵ Moreover, only 14 percent of low-attending sixth graders (missing 36 to 54 school days per year) graduate on time. Sixth grade students with poor attendance

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¹²Ibid.


have a one in five chance of reaching grade 12 on time.\textsuperscript{16} Other indicators of risk for students in grade 6 also include failure of a core English or mathematics course, out of school suspension, and low behavior grades.\textsuperscript{17} Together, these flags could be used to identify 60 percent of sixth graders who would not graduate within one year of the on-time benchmark in the School District of Philadelphia. Students with at least one flag in grade 6 had a 29 percent five-year graduation rate.\textsuperscript{18} Figure 1.2 summarizes the predictive power of each indicator at the middle school level.

**Figure 1.2: Grade 6 Indicators and Predictive Power in School District of Philadelphia**

<table>
<thead>
<tr>
<th>FLAG IN GRADE 6</th>
<th>Attendance ≤ 80%</th>
<th>Failed Mathematics</th>
<th>Failed English</th>
<th>Out of School Suspension</th>
<th>Unsatisfactory Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduated on time</td>
<td>13%</td>
<td>13%</td>
<td>12%</td>
<td>16%</td>
<td>24%</td>
</tr>
<tr>
<td>Graduated 1 year late</td>
<td>4%</td>
<td>6%</td>
<td>6%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Did not graduate within one year of on-time graduation</td>
<td>83%</td>
<td>81%</td>
<td>82%</td>
<td>80%</td>
<td>71%</td>
</tr>
</tbody>
</table>

**Yield: percent of non-graduates flagged**

- 23%
- 21%
- 17%
- 10%
- 50%

*Source: Educational Psychologist*\textsuperscript{19}

**HIGH SCHOOL**

A large body of research focuses on predictors of high school student success and indicators of struggle. The AIR study found the most frequently noted indicators at the high school level are attendance, GPA, and test scores.\textsuperscript{20} In their pivotal 2005 study, “The On-Track Indicator as a Predictor of High School Graduation,” Allensworth and Easton of the Consortium on Chicago School Research at the University of Chicago identify factors at the end of ninth grade that suggest whether a student is on-track to graduate from high school. Rising tenth graders are considered on-track to graduate if they have completed five full course credits and have received no more than one F in a core subject area.\textsuperscript{21}

Expanding on their research in a 2007 study, Allensworth and Easton found that, in addition, high school students who miss no more than 10 percent of school are more likely to be on-track for graduation.\textsuperscript{22} However, analyzing course grades and failure rates during grade

\textsuperscript{16}bid., p. 17.
\textsuperscript{18}bid., p. 227.
\textsuperscript{19}bid., p. 228.
9 strengthens predictors of graduation more than relying solely on attendance rates. Grade point average is an especially robust predictor of students who are likely to struggle and drop out.²³ Maintaining a grade point average of 3.0 or higher and passing high school exit exams are correlated with postsecondary success.²⁴ The following figure summarizes the indicators used by the Consortium on Chicago School Research to predict high school student graduation rates in Chicago Public Schools.

**Figure 1.3: CCSR Indicators of High School Graduation Rates in Chicago Public Schools**

<table>
<thead>
<tr>
<th>Graduation Rates by Freshman On-Track Status</th>
<th>Graduation Rates by Freshman Absence Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/graph1" alt="Graph showing graduation rates by on-track status" /></td>
<td><img src="https://example.com/graph2" alt="Graph showing graduation rates by absence rates" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graduation Rates by Freshman GPA</th>
<th>Graduation Rates by Freshman Course Failures</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/graph3" alt="Graph showing graduation rates by GPA" /></td>
<td><img src="https://example.com/graph4" alt="Graph showing graduation rates by course failures" /></td>
</tr>
</tbody>
</table>

Source: CCSR²⁵

*Graduation rates refer to four-year graduation rates.

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Finally, research on social and emotional development also suggests characteristics linked to student success. For instance, **high school students who possess five core qualities (including self-awareness, self-management, social awareness, relationship skills, and responsible decision-making)** demonstrate higher postsecondary academic performance **compared to students who do not** possess these skills. Similarly, these social skills are considered valuable to employers and are often included in work standards, so students who possess these skills may have an employment advantage over those who do not.\(^{26}\)

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SECTION II: OVERVIEW OF EARLY WARNING SYSTEMS

Drawing on the research discussed in Section I, districts may identify key academic indicators or barriers in their schools and implement early warning systems. Operational early warning systems compare actual student data against off-track signs to identify students with a high probability of dropout, failure, or any local variable of interest. Using longitudinal data systems, districts can recognize patterns in barriers to success and continually identify at-risk students as early as first grade. This section presents an overview on the application of early warning systems.

EARLY WARNING SYSTEMS

Student engagement consists of a complex interplay of behavioral, cognitive, and emotional factors that affect school involvement and investment in learning. Fortunately, disengaged and at-risk students often display similar, predictable patterns of characteristics and identifiable behaviors—they are more likely to be absent from school, demonstrate behavioral problems, and fail assignments and courses. Effective early warning systems use real time student-level data to identify these patterns in at-risk students in need of focused support, and can improve student outcomes.

Many predictive academic indicators and early warning systems focus on identifying potential high school dropouts, although systems should be customized and developed specifically for local conditions. For example, researchers at Montgomery County Public Schools in Maryland have developed early warning indicators to predict college readiness and on-time graduation. Regardless of their purpose, early warning systems use indicators gleaned from student level data to define and identify at-risk situations. At-risk patterns are usually established by analyzing trends in the attendance, behavior, and course performance of historical student cohorts that either dropped out or graduated high school. When critical cut points are identified between the populations of graduates and dropouts, districts may apply these cut points to their student records and flag current students that fit the profile of a likely dropout (or failure, depending on the definition). Research discussed in Section I of this report suggests that the most powerful warning indicators for

28 Ibid., p. 1.
high school students are related to attendance, behavior, and course performance. According to a brief by the John W. Gardner Center for Youth and their Communities at Stanford University, effective early warning systems should use indicators that are “efficient predictors of high school graduation, relevant to the school district, and linked to supports.”

DEVELOPING EARLY WARNING INDICATORS

The National High School Center at the American Institutes for Research emphasizes the importance of local context in designing effective early warning systems. As Heppen and Therriault note, “school districts are uniquely positioned to initiate the development of strong early warning systems by starting with a retrospective, longitudinal analysis of their own students' dropout and graduation patterns.” Similarly, a report on the Montgomery County Public Schools’ early warning system recommends that educators study risk factors in the context of the specific school system. However in customizing an early warning system, districts may be faced with a deluge of student data and the analysis of student risk factors may seem daunting. Fortunately, by starting with key factors such as student GPA, standardized test scores, attendance, and discipline, districts can begin to predict which students are at the highest risk and implement targeted intervention programs.

As the National High School Center notes, useful early warning systems use student information at the school level and integrate two primary types of data: attendance and course performance. While some districts may store this information in electronic databases, others may have to enter it into the early warning system for the first time. Databases should include two cohorts (one to identify risk patterns and at least one more to validate cutoff values) of students and information on demographics, academic performance, and educational engagement factors. Figure 2.1 displays the indicators that the National High School Center early warning system tool uses to predict which high school students are off-track for graduation.

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36Sparks, S.D. “Data System Flags Dropout Risks by 1st Grade.” Education Week, August 7, 2013.
### Figure 2.1: Indicators of “At-Risk” High School Students

<table>
<thead>
<tr>
<th>Type of Information</th>
<th>Indicator</th>
<th>Description</th>
<th>Benchmark*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>Absenteeism rate</td>
<td>Number of days absent during the first 20 days, and each quarter of the first year of high school.</td>
<td>The equivalent of more than 10 percent instructional time missed during the first year indicates student may be at risk.</td>
</tr>
<tr>
<td>Course Performance</td>
<td>Course failures</td>
<td>Number of Fs in any semester-long course during the first year of high school.</td>
<td>Even one failed course indicates students may be at risk.</td>
</tr>
<tr>
<td></td>
<td>Grade point average (GPA)</td>
<td>GPA for each semester and cumulative GPA.</td>
<td>GPA under 2.0 indicates student may be at risk.</td>
</tr>
<tr>
<td></td>
<td>On-track indicator</td>
<td>Combination of the number of Fs in core academic courses and credits earned during the first year of high school.</td>
<td>Two or more Fs in core academic courses and/or fewer than one-fourth of the credits required to graduate minus one indicate that student is off-track to graduate.</td>
</tr>
<tr>
<td>Behavior</td>
<td>Locally defined</td>
<td>Discipline indicators such as number of office and counseling referrals and suspensions.</td>
<td>Disciplinary referrals at the end of each grading period or academic year; benchmark locally defined</td>
</tr>
</tbody>
</table>

Source: National High School Center

*Screening benchmarks may vary from district to district. Each district should establish its own, custom benchmarks.

### ATTENDANCE

According to Heppen and Therriault, early warning systems should include attendance rates or the number of days a student is absent during an academic year or grading period. Schools do not need to collect additional attendance records beyond the standard attendance protocol, but they should ensure that student attendance patterns are recorded correctly in order to enable an accurate early warning system. Research suggests different cutoff values for high-risk attendance patterns, but generally the students who miss more than 10 percent (nearly two weeks per semester) of the school year are likely at risk of dropping out. The National High School Center recommends that districts build early warning systems that identify students who miss more than ten percent of instructional time.

### COURSE PERFORMANCE

Academic performance data that districts collect for their early warning systems are typically already collected in district’s student information systems. It is advisable for schools to collect accurate data on grades in core academic subjects, standardized assessments, number of high school credits (earned by semester and year), grade point average (by semester, year, and cumulatively), promotion to each grade level, end-of-

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41Ibid.
42Ibid.
course exams, and exit exams. Heppen and Therriault recommend districts track the following course performance indicators:

- **Failed Course Benchmarks**: students with one or more Fs in any course should be flagged for possible early intervention.
- **Grade Point Average Benchmarks**: students with a GPA of 2.0 or less at the end of their first year of high school should be considered at risk for dropping out.
- **On-track Indicator**: students who fail one or more courses or accumulate fewer credits than the number required for promotion to grade 10 are considered off track for graduation.

**Behavior**

Behavior is another sign of student engagement that should be used as an indicator in an early warning system. A study sponsored by Achieve, Inc., a nonprofit education organization that is committed to improving career and college readiness, identified the following risk factors in dropouts’ behavior patterns: poor classroom behavior, low participation in extracurricular activities, and negative relationships with teachers. In a 2008 policy brief on dropouts in California, Rumberger and Lim observe misbehavior in school, drug and alcohol use, and delinquent behavior outside of the classroom to be “significantly associated with higher dropout and lower graduation rates.” Specifically, a study by Balfanz and Herzog of dropouts in the School District of Philadelphia found that a failing mark for classroom conduct in grade 6 was a powerful predictor that students would fall off the track to graduation.

While behavioral problems have been linked to students at risk of dropping out, behavior is often a locally defined variable in early warning systems. The NHSC early warning system tool, for instance, does not have a default threshold for screening behavior indicators, requiring districts to enter a locally defined indicator into the system settings. Similarly, the Texas Comprehensive Center Early Warning Data System allows districts to track student behavior, but notes that “due to the diversity of behavior codes and procedures found in high schools across the state of Texas — and the United States — there are no research-defined thresholds for this indicator.”

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43 Ibid.
44 Bulleted points adapted from: Ibid.
49 “About the EWDS.” Texas Comprehensive Center. http://txcc.sedl.org/resources/ewds/
**DEMOGRAPHICS**

While demographic characteristics, such as students’ race, ethnicity, gender, and Free and Reduced-price Meals System status, may be correlated with student success or failure, the academic characteristics described above are the strongest predictors of high school completion.\(^{50}\) Disengaged students may be at risk of school failure regardless of their demographic and socioeconomic characteristics. As Jeremy Finn notes in his study on student engagement, “in contrast to status risk factors, participatory behaviors comprise a set of behavioral risk factors that may be more amenable to manipulation through school and home processes.”\(^{51}\) Similarly, the Montgomery County Public Schools report on early warning systems underscores the point: “because student engagement is based on what students do, think, and feel, it is a stronger predictor of whether students will drop out than students’ demographic characteristics.”\(^{52}\)

**DEVELOPING A DATA SYSTEM**

While academic indicator research and predictions of barriers to success are conceptually aligned to identify off-track students, educators must have access to a data system to analyze student records and discern between on- and off-track behaviors. The AIR presents the following recommendations for districts interested in improving student outcomes:

- **Continue building comprehensive, user-friendly state, district, and school data systems that allow data linkages across prekindergarten to workforce** in order to identify indicators for readiness and success that are applicable across grade levels and in both career-related and academic postsecondary environments.

- **Create measures that correlate with postsecondary success and other proximal outcomes, and test the measures with multiple cohorts of students who have moved or are moving through your system.** This testing will ensure these measures are valid and reliable in your local context. Examine potential differences, by student subgroups, to make sure the measures work for all students in your schools, and adjust as necessary if there are subgroup differences.

- **Integrate measures of readiness and success into your data systems, and use these measures and data systems to identify and intervene with struggling students and to evaluate the effectiveness of interventions and school reform initiatives.**\(^{53}\)

**NATIONAL HIGH SCHOOL CENTER – EARLY WARNING SYSTEM TOOLS**

For districts that are exploring the development of early warning systems, the National High School Center at the American Institutes of Research (NHSC) offers free, publically available Early Warning System Tools (one for high schools and another for middle schools), which

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\(^{50}\)“Using Early Warning Systems to Predict and Prevent Dropout.” Op. cit., p. 1


may be used to load student data, calculate risk for potential dropouts, generate reports on off-track students, and track associated interventions. The tools are based in Microsoft Excel and do not require additional data points beyond typical student records (attendance, grades, etc.) Figure 2.2 demonstrates the default settings for the NHSC High School Early Warning System Tool.

Figure 2.2 NHSC High School Early Warning System Tool

However, the NHSC early warning system tool does not necessarily fit all local conditions and may be adapted for customization. In fact, the Texas Comprehensive Center (TXCC) at the Southwest Educational Development Laboratory (SEDL) developed a Texas-specific early warning system tool based on the NHSC’s tool. The TXCC’s tool, developed in collaboration with the NHSC, is called the Early Warning Data System and exemplifies a high-impact system for predicting high school student dropout.

The TXCC developed its Early Warning Data System (EWDS) specifically for districts involved in the Texas Ninth Grade Transition and Intervention Program, a program that provided support for at-risk eighth grade students before they transitioned to high school. Like the original NHSC tool, the system tracks attendance and academic data and then flags students who are at-risk of dropping out. The EWDS generates leading indicators which may identify

55 Ibid.
an off-track student within the first 30 days of school, and was updated to incorporate behavioral referrals (although behavioral indicators are determined at the local level). The EWDS tool allows staff to add data points each grading period and at the end of the school year so that they may plan timely interventions. The EWDS allows districts to track students’ progress throughout an intervention period, allowing staff to evaluate the impact of the intervention and adjust strategies to ensure student success. The system uses customized, school-level data and generates both standard and custom reports that show which students are below defined benchmarks for each indicator.

**Bringing it All Together: Integrated Student Support System**

This section has discussed the theory of early warning systems, the selection of academic indicators, and general recommendations on how to develop the data system. However, in order to effectively address barriers to success, school districts must translate the screening and identification of students into action via targeted interventions. The present subsection describes Diplomas Now, a national initiative to implement early warning systems and interventions to increase graduation rates.

Diplomas Now, an initiative that partners with school communities to support at-risk students, exemplifies an effective integrated student support system, aligned to an early warning system. Diplomas Now reorganizes school schedules to provide at-risk students with additional support services. Using the research and experience of Johns Hopkins University’s Talent Development Secondary, City Year, and Communities in Schools, the program supports at-risk students through the following practices:

- Connecting students with caring adults who have the tools to improve achievement,
- Setting goals based on students’ attendance, behavior, and course performance,
- Implementing an early warning system to identify struggling students and regularly reviewing the data,
- Creating individual student plans with more math and English time and teacher teams with shared planning time,
- Connecting low-income students with support groups and community resources, such as counseling, health care, housing, food, and clothing, and
- Engaging students with homework help and after school service and enrichment programs.

Diplomas Now currently operates in 40 schools in 14 cities across the United States. At Detroit Collegiate Prep High School in Detroit, MI, Diplomas Now held quarterly report card

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56 About the EWDS.” Texas Comprehensive Center. http://txcc.sedl.org/resources/ewds/
57 Ibid.
59 “Where we work.” Diplomas Now. http://diplomasnow.org/about/where-we-work/
conferences with students to analyze students’ academic performance and set goals for improvement. Community leader volunteers and business professionals met with students one-on-one to review report cards and discuss students’ goals. Volunteers offered students advice about academics and careers and inquired about students’ personal and school interests. The report card conferences allowed students to reflect on their goals and provided encouragement and support that many students do not receive at home.  

Diplomas Now interventions have reduced absenteeism, behavior problems, and course failure at schools across the country.  

In 2012, Diplomas Now schools experienced a 68 percent reduction in student suspensions and a 45 percent reduction in students with less than 85 percent attendance. Moreover, the program reduced the number of students failing English by 61 percent and reduced the number of students failing math by 52 percent. Overall, Diplomas Now programs have demonstrated improvements in student attendance, behavior, and course performance in participating schools.

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SECTION III: OVERVIEW OF SUPPORT SYSTEMS

In addition to supporting students who are at risk of academic failure or dropout, educators may also support students’ social and emotional wellbeing. Non-academic factors, such as mental health, drug use, and family support contribute to student success or struggle.\(^{63}\) This section reviews literature on non-academic student support systems and identifies trends in school counseling, student mental health support, and drug abuse prevention programs.

TRENDS IN SCHOOL COUNSELING AND SUPPORT

In addition to providing targeted interventions for students who are at risk of academic failure, districts may provide emotional and psychological support for struggling students. Districts may provide comprehensive services that meet students’ academic and emotional needs.\(^{64}\) Before implementing targeted interventions, districts should create supportive school environments with effective non-instructional programs. The National Association of School Psychologists (NASP) recommends that student services programs contain certain critical elements. Figure 3.1 summarizes critical elements of student services programs.

**Figure 3.1: NASP’s Critical Elements of Student Services Programs**

- Programs should be developed from identified needs of students, recognizing potential contributions from all stakeholders, including students, parents, special service providers, teachers, administrators, and other support personnel.
- Effective programs necessitate a comprehensive approach, including a focus on developmental, preventative, and remedial activities that facilitate the educational process for students.
- Effective programs recognize that learning takes place within environmental and social contexts, and they take steps to assist schools in maintaining safe environments that support teaching and learning.
- Effective programs within the school are best delivered through multidisciplinary mental health teams that ensure culturally competent practice.
- Effective programs recognize that not all services can be provided in the school and include effective linkages with various community resources.
- Accountability through consistent, continuing, and effective program evaluation is crucial in both the development of effective programs and the ensuring of continuing community support.

Source: NASP\(^ {65}\)


Research suggests that interventions that support students’ social and emotional health positively affect their academic achievement on standardized test scores and grades. A common approach to supporting students’ social and emotional health is the use of multidisciplinary support teams. NASP recommends that schools establish crisis response teams with administrators, security personnel, and mental health professionals to ensure student safety and provide “mental health prevention, intervention, and postvention services.” Similarly, schools may form support teams that promote student success in key areas of need. The Success for All Foundation’s Schoolwide Solutions Teams, for instance, promote student success through teams focused on interventions in attendance, cooperative culture, interventions, parent and family involvement, and community connections. Members of the team include representatives from all areas of the school. Teams meet after each grading period to evaluate the effectiveness of interventions and make changes based on student grades and data.

**MENTAL HEALTH**

Mental health issues often contribute to a host of academic, social, and emotional problems for students. According to the National Alliance on Mental Illness (NAMI), 13 percent of youth aged eight to 15 have a mental illness severe enough to impair their day-to-day lives. However, only 20 percent of students with mental illnesses are identified and receive services. NAMI supports the provision of mental health services in schools, stating “schools can play a key role in the early identification of mental illness and in linking students with effective services and supports.”

Students experiencing mental health problems may “struggle to attend school, have difficulty completing assignments, and have more frequent conflicts with peers and adults.” To support the mental health of students, the National Association of School Psychologists (NASP) recommends the following practices:

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- **Step 1:** Build the capacity of staff members to respond to the mental health needs of students. It is important to provide all staff members, including teachers, bus drivers, and paraprofessionals, with appropriate professional development and training to interact with students with emotional and behavioral needs.

- **Step 2:** Hire adequate numbers of school mental health professionals and empower them to take leadership roles in the provision of mental health services in the school. Professional student services organizations recommend staffing ratios of 250 students per counselor, 400 students per social worker, and 1,000 students per psychologist. Poor staffing ratios compromise the ability of professionals to meet students’ mental health needs.

- **Step 3:** Promote a continuum of services that includes school-wide mental health prevention programming and intensive interventions. Research suggests that students in schools that use schoolwide positive behavior interventions and supports benefit from reduced problem behaviors, improved social skills, and improved academic performance.

- **Step 4:** Create opportunities to regularly assess the mental health needs of students and the effectiveness of school-based services. Schools may use both informal and formal methods to assess students’ mental health. Informal methods include checking in with at-risk students daily, discussing student needs and issues during weekly leadership meetings, and observing student interactions in the hallways. Formal methods include collecting school climate data, screening for depression and other mental illnesses, and administering surveys to query student beliefs and behaviors.\(^{72}\)

**Drug Abuse Prevention**

Drug abuse among school-age children may be a common challenge for school districts, with 10 percent of students ages 12 to 17 using illicit drugs and 26.4 percent of students ages 12 to 20 participating in underage drinking.\(^ {73}\) According to a recent research brief by the RAND Corporation, “school-based drug prevention is... a cost-effective tool for improving public health and for making incremental progress in the effort to manage mature drug epidemics.”\(^ {74}\) Districts often combine classroom-based prevention instruction with non-classroom activities and support services. **Effective student support services that can prevent and mitigate the prevalence of drug use include student support groups, counseling, mentoring programs, conflict mediation, assemblies, and drug-free school events.** Research suggests that prevention programs that teach students to resist social influences of drug use have the greatest potential to positively influence students.\(^ {75}\)

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Recent psychiatric research demonstrates the potential of brief interventions (BIs) as a promising treatment option for drug-using adolescents. Brief interventions, or short sessions that emphasize self-help and self-management delivered by nonspecialists or paraprofessionals, are appropriate for both experimental and regular drug-using adolescents. BIs include screening, guidance, and psychoeducational interventions. According to Winters et al, brief interventions can be implemented successfully in in-school settings. Similarly, a recent RAND Corporation study found that a voluntary after school substance abuse prevention program can reduce alcohol use among adolescents. Findings suggest that developmentally appropriate, engaging content can help middle school-aged students avoid alcohol. Consistent with the findings of the RTI study, programs that dispel myths about drug and alcohol use and teach students to resist peer pressure reduce alcohol use for all students at a school, including those who did not actually attend the program.

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