



# FORUM GUIDE TO EDUCATION INDICATORS



## **National Cooperative Education Statistics System**

The National Center for Education Statistics established the National Cooperative Education Statistics System (Cooperative System) to assist in producing and maintaining comparable and uniform information and data on early childhood education and elementary and secondary education. These data are intended to be useful for policymaking at the federal, state, and local levels.

The National Forum on Education Statistics, among other activities, proposes principles of good practice to assist state and local education agencies in meeting this purpose. The Cooperative System and the National Forum on Education Statistics are supported in these endeavors by resources from the National Center for Education Statistics.

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Task force members review all products iteratively throughout the development process. Documents prepared, reviewed, and approved by task force members undergo a formal public review that is designed to reflect the nature of the product. Public review can consist of focus groups (of representatives of the product's intended audience), review sessions at relevant regional or national conferences, or technical reviews by acknowledged experts in the field. In addition, draft documents are posted on the Forum website prior to publication so that other interested individuals or organizations can provide feedback. After task force members oversee the integration of public review comments and review the document a final time, all publications are subject to examination by members of the Forum standing committee that sponsors the task force. Finally, the entire Forum (approximately 120 members) must review and vote to formally approve a document prior to final publication.

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# Table of Contents

<b>Task Force Members</b> .....	<b>iii</b>
<b>Acknowledgments</b> .....	<b>v</b>
<b>Table of Contents</b> .....	<b>viii</b>
<b>Foreword</b> .....	<b>xi</b>
Who Should Read This Guide? .....	<b>xi</b>
How to Read this Document .....	<b>xii</b>
Indicator Layout.....	<b>xiii</b>
Additional Conventions .....	<b>xiii</b>
<b>Chapter 1. Introduction to Education Indicators and Indicator Systems</b> .....	<b>1</b>
What is an Education Indicator? .....	<b>1</b>
The Role of Indicators in Education .....	<b>1</b>
Aligning Indicators with Policy Goals and Objectives .....	<b>2</b>
Bodies of Indicators.....	<b>3</b>
Using Context to Interpret Indicator Values .....	<b>4</b>
Generating Indicators .....	<b>5</b>
Ideal Indicators and Real World Tradeoffs .....	<b>6</b>
Making Tradeoffs .....	<b>9</b>
Who Develops Indicators .....	<b>10</b>
Unintended Consequences .....	<b>11</b>
Other Important Best Practices .....	<b>11</b>
Training Users .....	<b>11</b>
Reporting Indicator Data.....	<b>12</b>
Securing Data and Information.....	<b>12</b>
Statistical Integrity and Public Presentation .....	<b>13</b>
<b>Chapter 2. Catalog of Education Indicators</b> .....	<b>15</b>
Absence Rate (Class), Teacher.....	<b>19</b>
Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories.....	<b>21</b>
Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories .....	<b>23</b>
Adequate Yearly Progress (AYP), Percentage Schools Making.....	<b>25</b>



Alcohol-Related Incidents Reported Per 100 Students.....	27
Assessment, Average Student Score .....	29
Assessment, Percentage Student Participation.....	30
Assessment, Percentage Students Demonstrating Proficient or Advanced Performance.....	31
Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field .....	33
Class Size, Average .....	35
College Entrance Testing, Percentage Graduate Participation .....	37
College Entrance Testing, Student Average Score .....	39
Courses (Advanced), Percentage Student Completion .....	41
Courses (Advanced), Percentage Student Enrollment.....	43
Criminal Offense Incidents Reported Per 100 Students .....	45
Drug-Related Incidents Reported Per 100 Students .....	47
Education Level, Mother .....	49
Education Level, Teacher .....	51
Experience Level, Teacher .....	53
Expulsion Incidents Per 100 Students .....	55
High School Completion/Graduation Rate, Cohort Rate.....	57
High School Completion/Graduation Rate, Leaver Rate .....	59
High School Dropout Rate, Annual Student .....	61
High School Dropout Rate, Cohort Rate.....	63
"Highly Qualified" Teachers, Percentage .....	65
Instructional Time, Allotted.....	67
"Persistently Dangerous" Schools, Percentage .....	68
Placement of Students With Disabilities .....	69
Promotion Rate, Student .....	72
"Qualified" Paraprofessionals, Percentage .....	73
Retention Rate, Teacher .....	75
School Capacity, Percent Used.....	77
Stability Rate, Student Enrollment .....	79
Student:Instructional Computer Ratio .....	80
Student:Staff Ratio.....	82
Suspensions (Out-of-School), Actions Per 100 Students .....	84

Suspensions (Out-of-School), Average Duration .....	86
Suspensions (Out-of-School), Percentage Students Receiving .....	88
Teacher:Administrator Ratio .....	90
Transportation Services, Percentage Students Receiving .....	92
Truancy Rate, Schoolwide .....	93
Violent Incidents Reported Per 100 Students.....	94
Vocational/Technical Programs, Percentage Nontraditional Completers .....	96
Vocational/Technical Programs, Percentage Nontraditional Participation .....	98
<b>Appendix A: Additional Context Measures .....</b>	<b>101</b>
<b>Appendix B: Statistical Terms and Concepts .....</b>	<b>105</b>
<b>Appendix C: Display and Presentation Options for Indicators .....</b>	<b>111</b>
<b>Appendix D: Data Elements Used to Create Indicators .....</b>	<b>117</b>
<b>Appendix E: Additional Resources.....</b>	<b>129</b>
<b>Alphabetical Index.....</b>	<b>133</b>
<b>Topical Index .....</b>	<b>137</b>
Financial Resources .....	137
Opportunity to Learn.....	137
School Climate .....	137
School Performance .....	137
Student/School Characteristics .....	138
Staff Characteristics.....	138

# Foreword

The *Forum Guide to Education Indicators* will help readers better understand how to appropriately develop, apply, and interpret education indicators. More specifically, this document strives to

- > describe the appropriate role of indicators as tools for measuring educational status and progress;
- > recognize standard definitions and calculations for education indicators; and
- > identify common misuse of education indicators.

During the early development of this *Guide*, the Task Force identified hundreds of performance and context indicators used throughout the United States to assess educational inputs, processes, and outcomes. Among these many indicators, however, a core group were commonly used at all levels of the education system. This document focuses on those commonly used education indicators. More specifically, all of the indicators in this document were selected because they met one or more of the following criteria.

These education indicators

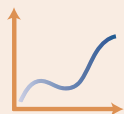
- > help develop a picture of the elementary/secondary education system by measuring system inputs, processes, or outcomes;
- > are commonly accepted and frequently used in some form;
- > produce valid and reliable information;
- > provide measures that identify trends and inform policy and practice in a timely manner; and
- > can be derived from typical elementary/secondary administrative record systems.

## Education indicators are sometimes

- > confusing (e.g., is Average Class Size the same as Student:Staff Ratio?);
- > defined differently (e.g., does per pupil refer to the student count on a given date, the average daily membership over a given period, the average daily attendance, or the cumulative enrollment?); and/or
- > misinterpreted (e.g., does Drug-Related Incidents Reported measure all drug incidents that actually occurred?).

## Who Should Read This *Guide*?

The *Forum Guide to Education Indicators* will benefit anyone with an interest in elementary and secondary education. However, individuals who develop or directly use education indicators will obviously find it most useful. The *Guide's*



This *Guide* focuses on indicator terminology, definitions, and usage as commonly applied in elementary and secondary education institutions across the nation. This includes a focus on performance indicators that measure the status of, or change in, an education system; and context indicators needed to generate or interpret the significance of these performance indicators.

primary audience includes policymakers, legislators, school board members, superintendents, and the research and evaluation specialists who support them. In addition, the Forum hopes this *Guide* will also be useful to a much wider audience of teachers, principals, parents, members of the media, and even business people—in short, anyone who may ask, or be asked, “How good are our local schools?”

## How to Read this Document

The *Guide* is divided into two chapters and five appendices.

### Chapter 1: Introduction to Education Indicators and Indicator Systems

Defines the concept of an education indicator and describes the process of establishing a body of education performance and context indicators that will support decisionmaking by supplying useful, valid, reliable, timely, and cost-effective information.

### Chapter 2: Catalog of Education Indicators

Provides encyclopedia-type “entries” for 44 education indicators. Each indicator entry contains a definition, a recommended use, a policy question, caveats and cautions, additional information, related indicators, data element components, a formula, commonly reported subgroups, and display suggestions.

Chapter 2 contains the bulk of this *Guide*’s content, including detailed information for developing, applying, and interpreting commonly used education indicators. In addition to an alphabetical listing, the indicators are indexed in chapter 2 by the following major policy and content strands:

#### Inputs

- ✓ Student/School Characteristics
- ✓ Financial Resources
- ✓ Staff Characteristics

#### Processes

- ✓ School Climate
- ✓ Opportunity to Learn

#### Outcomes

- ✓ School Performance

### Appendix A: Additional Context Measures

Identifies related measures that help with the interpretation of the education indicators in this document.

### Appendix B: Statistical Terms and Concepts

Describes statistical terms and concepts commonly used to conceptualize, develop, and interpret education indicators.

### Appendix C: Display and Presentation Options for Indicators

Offers guidance for preparing indicator reports and displaying indicator data.

### Appendix D: Data Elements Used to Create Indicators

Presents all data elements and definitions identified as components of the education indicators in this document, as available in the NCES Handbooks Online (<http://nces.ed.gov/programs/handbook/index.asp>).

### Appendix E: Additional Resources

Lists related resources, including web materials, available from the National Forum on Education Statistics, the National Center for Education Statistics (NCES), and other organizations.

The indicators in this *Guide* have slightly varying definitions across the nation. Therefore, the definitions, formulas, and characteristics of each indicator included here represent examples of good practice used by some, but not all, education organizations. This *Guide* provides recommendations that support the creation of useful, valid, reliable, timely, and cost-effective education data. While these recommendations are not a federal mandate, for comparability purposes, the task force recommends that consistent definitions be used nationally.

## Indicator Layout

Each indicator in chapter 2 is described by the following characteristics:

- > *Cross References*: Lists any alternative title or name commonly used for the indicator; these alternatives are listed in the index and cross-referenced to the primary indicator name used in this document.
- > *Definition*: Describes or defines the indicator.
- > *Recommended Uses*: Provides suggestions for appropriately applying the indicator.
- > *Policy Questions*: Identifies one or more broad policy questions that may be supported by the indicator.
- > *Caveats and Cautions*: Introduces specific issues that should be considered to avoid the indicator's misapplication or misinterpretation.
- > *Additional Information*: Explains other issues that could influence the use of the indicator.
- > *Related Indicators*: Identifies other indicators that may be used with the listed indicator to enhance understanding or provide additional information.
- > *Components*: Lists the data elements and aggregate, calculated, or derived statistics needed to generate the indicator. To accurately characterize the indicator, components may be separated into a numerator and denominator. The document also attempts to mention when multiple definitions can be used for a given component, although a recommended practice will usually be identified.
- > *Formula*: Provides the actual mathematical formula for computing an indicator value.
- > *Commonly Reported Subgroups*: Identifies subgroups (e.g., student and school-level factors such as grade level, disability status, and school type) that are frequently reported for an indicator.
- > *Display Suggestions*: Presents recommendations about the type(s) of graphical or tabular display(s) most appropriate for the indicator. Additional details about display options, including accepted standards for graphical display and formatting, are included in appendix C.

## Additional Conventions

- > With few exceptions, text presented in *italics* is either the title of a document or a term defined somewhere else in the *Guide*.
- > When the graphic to the right appears for an indicator entry, substantial variations exist in the way states define the indicator. In practical terms, this signifies that the indicator should not be compared across states.



## Commonly Reported Student Level Subgroups Used in this Guide

*Age:* Age at last birthday on, or prior to, a specified date.

*Grade Level:* The grade level or primary instructional level at which a student receives services in a school or an educational institution.

*Special Population Status:* Individuals or groups of students who have been identified as being members of special populations. Criteria for identifying special student populations might include the following characteristics and classifications:

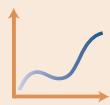
- > *Disability Status:* A designation of a physical or cognitive impairment that substantially limits one or more major daily life activities.
- > *Economic Disadvantage Status:* An indication of the inadequate financial condition of an individual's family, as determined by family income; number of family members and dependents; participation in public assistance programs; and/or other characteristics considered relevant by local, state, and federal policy.
- > *English Proficiency:* An individual's adeptness at English as indicated by:
  - a) reading skills (the ability to comprehend and interpret text); b) listening skills (the ability to understand verbal expressions of the language); c) writing skills (the ability to produce written text with content and format); and
  - d) speaking skills (the ability to use oral language appropriately and effectively). Designations of English proficiency can include: native English speaker, fluent English speaker, limited English proficient/English language learner, non-English speaking, and redesignated as fully English proficient.
- > *Migrant Status:* A student who:
  - > a) is younger than 22 and has not graduated from high school or does not hold a high school equivalency certificate, but b), if the child is too young to attend school-sponsored educational programs, is old enough to benefit from an organized instructional program;
  - > is a migrant agricultural worker or a migrant fisher, or has a parent, spouse, or guardian who is a migrant agricultural worker or a migrant fisher;
  - > performs, or has a parent, spouse, or guardian who performs, qualifying agricultural or fishing employment as a principal means of livelihood;
  - > has moved within the preceding 36 months to obtain, or to accompany or join a parent, spouse, or guardian to obtain, temporary or seasonal employment in agricultural or fishing work; and
  - > has moved from one school district to another; or in a state that is comprised of a single school district, has moved from one administrative area to another within such a district; or resides in a school district of more than 15,000 square miles, and migrates a distance of 20 miles or more to a temporary residence to engage in a fishing activity.
- > *Race/Ethnicity:* The general racial category that most clearly reflects the individual's recognition of his or her community or with which the individual most identifies. The five federal categories for race currently include: American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; and White. Additionally, a separate ethnicity element can be used to identify whether an individual traces his or her origin or descent to Hispanic or Latino sources.
- > *Sex:* A person's gender, female or male.

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The original source for the above definitions is the *NCES Handbooks Online*, available from NCES at <http://nces.ed.gov/programs/handbook/index.asp>.

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## A Cookbook for Education Indicators



There are deliberate similarities between a cookbook and this *Forum Guide to Education Indicators*. Just as many cookbooks begin by discussing the importance of balance in a healthy diet, this document begins with the importance of balance when selecting education indicators. In other words, matching performance indicators with context indicators is vital to ensuring the appropriate interpretation of status and trends in education organizations.

Cookbooks sometimes show more than one way to prepare the same dish (for example, with or without meat, more or less spicy, regular or low calorie). Similarly, the *Guide's* authors acknowledge that multiple ways of calculating the "same" indicator may exist (e.g., using the October 1 student count, average daily attendance, average daily membership, or cumulative enrollment to define "per pupil"), depending on user preference and the requirements of what is being measured.

Thus, this document is like a "cookbook" for education indicators. This Foreword explains how best to use the document. Chapter 1 will help you strike a "balance" between performance indicators and related context indicators to make your indicator system thorough and robust. And, finally, chapter 2 offers "recipes" for your favorite indicators, including descriptions of the "ingredients" and the steps to follow for their "preparation"; as well as possible variations to meet your unique tastes, preferences, and information needs.

**This *Forum Guide to Education Indicators* is a reference tool and not a data collection instrument. It does not represent federal reporting requirements.**

**Users can modify, customize, or reproduce any part of this document.**





# Chapter 1 INTRODUCTION TO EDUCATION INDICATORS AND INDICATOR SYSTEMS

This chapter defines the concept of an “education indicator” and describes the process of establishing a body of education performance and context indicators that will support decisionmaking by supplying useful, valid, reliable, timely, and cost-effective information.

## What is an Education Indicator?

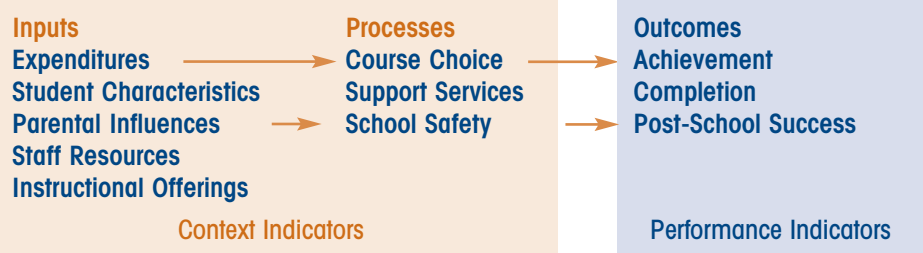
An education indicator is a measure of the status of, or change in, an educational system with regard to its goals. Examples include average student scores on assessments, graduation and completion rates, and teacher retention rates. Many users of education data focus on performance indicators—those indicators that measure the outcomes of the education system (i.e., student achievement and success). But because of the complexity of the education enterprise, sound education indicator systems must also include context indicators—those measures of system inputs and processes that aid in the interpretation of performance indicator (i.e., outcome) data. (See figure 1.)

An education performance indicator is a measure of the status of, or change in, an education system with regard to its goals.

## The Role of Indicators in Education

Educators, parents, community members, politicians, business leaders, and the media use education indicators to compare schools against themselves over time, schools against peers (e.g., within a district or state), districts within states, and

**Figure 1.** Education indicator categories as system inputs, processes, and outcomes.



**The advent of high stakes education indicators requires the generation of high quality indicator data. Thus, indicators should be**

- > **useful** (i.e., relevant to the issues in question);
- > **valid** (i.e., measure what they purport to measure);
- > **reliable** (i.e., produce consistent measures over time);
- > **timely** (i.e., available in time to inform decisionmaking); and
- > **cost-effective** (i.e., produce information that is valuable enough to justify any collection burden).

states across the nation. To varying degrees, individual school leaders—including board members, superintendents, principals, and teachers—support the use of education indicators as the primary mechanism for measuring whether elementary and secondary schools are accomplishing stated goals. In fact, many local school boards, most state legislatures, and the federal government have established education accountability systems focused on achieving student and school performance targets. Those who favor using education indicators for accountability purposes argue that baselines, standards, and “hard” data are necessary to evaluate the status and progress of our education system and its “product,” student learning.

While education leaders and policymakers appreciate the instructional and administrative need for the information provided by education indicators, not everyone has expertise in the development of useful, valid, reliable, and timely education indicators. Moreover, even properly constructed indicators may be misinterpreted. Evaluating education organizations based on sometimes confusing terms that are almost always inconsistently defined and interpreted may lead to unproductive comparisons of “apples to oranges.” Rarely do such comparisons lead to the impartial, data-driven decisionmaking envisioned by educational and political leaders.

Selecting a body of education indicators should be driven by ongoing policy questions related to an education organization's goals and objectives.

## Aligning Indicators with Policy Goals and Objectives

Although the use of indicators should be driven by policy needs, an indicator system does not need to answer every policy question. In fact, the considerable effort required to develop and refine indicators is warranted only to address ongoing policy needs rather than to answer infrequent or even one-time questions.

### Aligning Indicators with Policies, Goals, and Objectives

- Policy Goal:** Prepare students to lead successful lives.  
**Assumption:** To lead successful lives, students need to earn a high school diploma.  
**Objective:** Focus support on keeping students in school.

**Performance Indicators needed to assess efforts:**

- Performance Indicator = *High School Graduation Rate*
- Performance Indicator = *High School Completion Rate*
- Performance Indicator = *High School Dropout Rate*

**Context Indicators that might inform the interpretation of performance indicators:**

- Context Indicator = *Student Stability Rate*
- Context Indicator = *Student Truancy Rate*
- Context Indicator = *Student Course Enrollment*

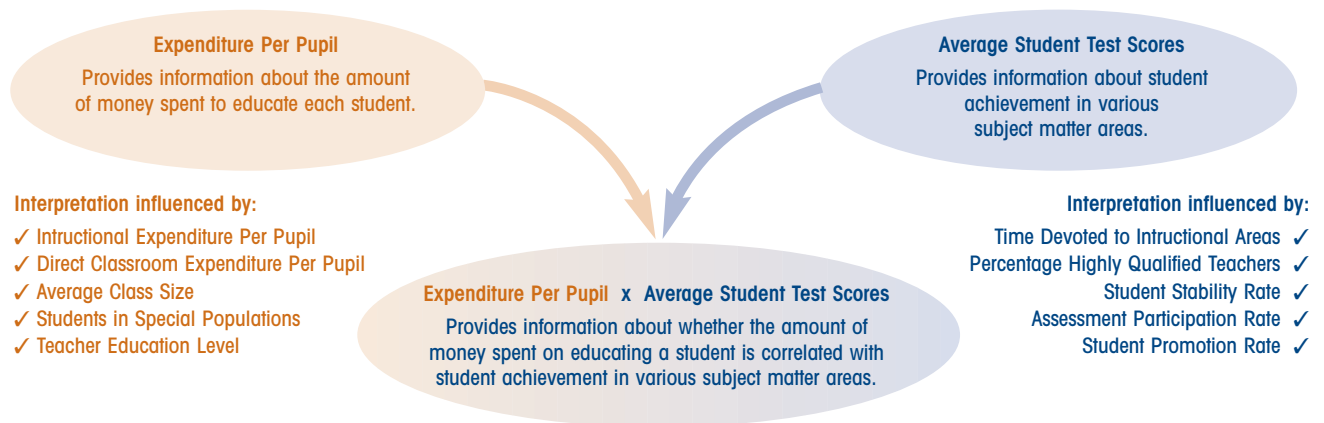
## Bodies of Indicators

Not all indicators provide information about educational performance. Therefore, input and process indicators—context indicators—are sometimes needed as building blocks for performance indicators. They also offer insight into the interpretation of performance indicators. Because a single education indicator cannot possibly supply all the information needed to assess the status of, or change in, an education system, painting an accurate picture of the K–12 education enterprise requires a body of both performance and context indicators, with each individual indicator imparting a complementary piece of the puzzle. When a body of indicators is developed, the result is a well-integrated, multidimensional indicator system whose total value is greater than the sum of its parts.

For example, figure 2 illustrates how information provided by context indicators would enhance the interpretation of two commonly used performance indicators, Expenditure Per Pupil and Average Student Test Scores. Taken individually, or even in combination, Expenditure Per Pupil and Average Student Test Scores provide a limited perspective on what is happening in an education system. A more complete and accurate understanding requires additional information provided by context indicators.

Suppose two schools had roughly the same Average Student Test Scores but radically different Expenditures Per Pupil. In the absence of any additional context, you might infer that the school with the lower Expenditure Per Pupil was run more efficiently. From a policy perspective, you might even determine that this school should serve as a model for the one that spent more money per student to achieve the same results. While this might be true, student demographics could explain the difference as well. For example, a small student population will increase a school's Expenditure Per Pupil because there are fewer students to absorb overhead costs (for example, a school needs to have a principal regardless of how many students it has). Another explanation for the discrepancy between the two schools could be found by comparing indicators describing differences in teacher characteristics (for example, teachers with more experience usually earn more than teachers with less experience). Or maybe resource supplements from a parent-teacher organization could account for some of the disparity. In other words, the environments in which schools function may vary substantially. Therefore, any information that adds context or meaning to the performance indicators will lead to more appropriate data interpretation.

**Figure 2. Context indicators.**



Graphical presentation of how the combination of multiple context indicators is necessary to interpret the meaning of even apparently straightforward performance indicator findings.

## Numbers versus Information



A high Total Expenditure Per Pupil may be interpreted as wasteful spending. Another explanation could be a large population of special needs students. Or, perhaps, a small total student population has required basic overhead costs associated with running a school to be distributed over a smaller number of students. Either way, these circumstances may greatly affect the interpretation of this commonly used indicator. They also illustrate the importance of using additional context measures to interpret education indicator data.

## Using Context to Interpret Indicator Values

Indicators are value neutral until interpreted in light of their context. For example, “air temperature” is an indicator that we use every day, but it is just a number unless put into context. After all, 50 degrees would be considered quite balmy on a January day in Boston, whereas the same 50 degrees in Los Angeles in June would be considered unseasonably cold. Value judgments about indicators (e.g., whether it is warm or cold when it is 50 degrees) are external to indicator measurements and generally are assigned during interpretation rather than during collection.

School and community leaders should therefore consider organizational context when establishing appropriate goals and targets for indicator values. Doing so demands a thorough understanding of both indicators and the organization. For example, what is the “ideal” value for Teacher Class Absence Rate? Zero percent might be an immediate, but ill-considered, reply. After all, teachers get sick like everyone else. Moreover, teachers need professional development to improve their skills, and this will also cause them to miss class on occasion. Indicator developers and interpreters must somehow establish goals that take into account the real-world context in which their data are generated. Until they do, an indicator is only a number whose significance may or may not be properly interpreted.

*The greatest danger of indicators is the ease with which they can give false impressions because they are misunderstood or interpreted in invalid ways.*

*—Accountability Mechanisms in Big City School Systems (ERIC/CUE Digest No. 71.).*

Context indicators can also provide a system of checks and balances within an accountability reporting effort. For example, a school might be able to report improved achievement results if its low-achieving students do not participate in an assessment (perhaps because they were retained in a class that was not tested). This practice might go undetected unless nonachievement data, such as class enrollment, are available to provide additional context about school operations and processes. This phenomenon of improving one indicator value at the expense of another (intentionally or not) can be quite real and may certainly affect the interpretation of indicator meaning.

Finally, planners must also be aware that an organization’s context may change over time. Student and staff characteristics change under many circumstances, and this is especially true in organizations with high student mobility and staff turnover rates. Curriculum may also change. Community resources may increase or decrease as overall economic conditions fluctuate. In addition to actual changes to traditional context indicators, expectations can also change. Meeting this year’s target might be interpreted as a victory, but hitting the same target three years in a row could be viewed as stagnation.

Because context is so important in the interpretation of education indicators, this document includes context indicators as a vital component of any comprehensive education indicator system (figure 3).

Although this document focuses on indicators derived from administrative records systems, other resources may provide valuable data as well. For example, the *Youth Risk Behavior Surveillance System* survey provides information to policymakers that cannot otherwise be gathered by administrative records systems.

### The Balloon Effect

Push a system in one place and it will expand in another place. This “balloon” effect can occur when an organization improves one indicator value at the expense of another, whether intentionally or not. For example, a school that successfully implements a policy to keep students from dropping out may, in fact, decrease its dropout rate (a good thing); but it should not be surprised to find a related decrease in the percentage of students going to college (not such a good thing, without an explanation).

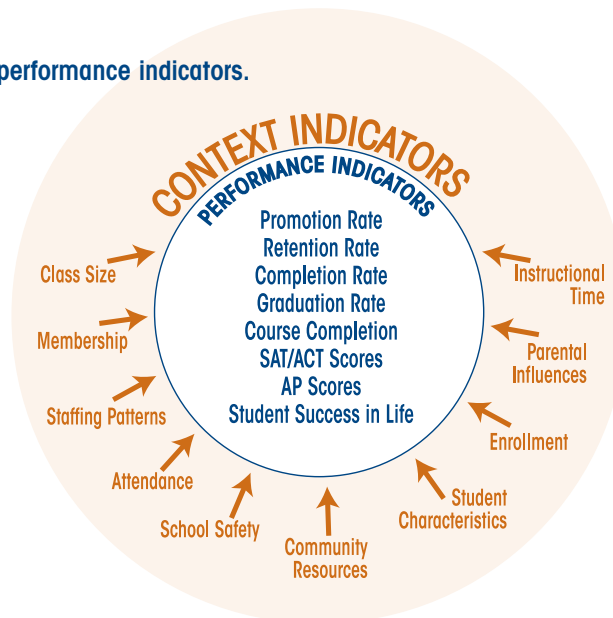
## Generating Indicators


In our education data system, information is collected, analyzed, and reported at the local, state, and national levels, most frequently via transfer from the schools and school districts where it is collected to state education agencies and the federal government. Each level of administration has a different need for the information. Schools and school districts certainly need longitudinal records for individually identifiable students to monitor and evaluate the educational services they provide. In recent years, however, many state education agencies have also moved to a data model that benefits from maintaining individual unit records for students and staff. Unit records provide high data resolution when needed (e.g., for tracking highly mobile students between districts and verifying data submissions), while also allowing for aggregation when analysis and reporting do not require (or permit) individual identification. In fact, the vast majority of public reporting by state agencies occurs at the school and district level in the form of aggregate student information (e.g., the number of students completing high school in a given school or district). This emphasis on aggregate data is virtually complete by the time education data reach the U.S. Department of Education, the Bureau of the Census, and other federal agencies. Nonetheless, nationally reported aggregates are based on data that originated in individual student records in schools and classrooms across the country.

In general terms, a “system”—a national education data system as described above, an ecosystem, or even our solar system—is merely a set of regularly interacting parts that form a unified whole. Within an administrative records system in

**Figure 3. Context versus performance indicators.**

Examples of context indicators that might affect the interpretation of performance indicators.





**An aggregate statistic in one data system may be a data element in another. For example, a count of student membership in a school district is an aggregate of individual school counts that reside in the district data system; this same number stands alone as a data element in a state education agency data system.**

**Similarly, an aggregate may become a data element even within the same data system. For example, Average Daily Membership in a school district might be calculated once for an academic year, then stored as a data element for future use.**

an education organization, the “parts” have the highest resolution at the level of the “data element.” A data element is the lowest level of information (i.e., data) that gets stored. For example, within a student record system (see figure 4), Quiz 1 Student Score is (1) a singular data element for an individual student on a given quiz. This element may then be (2) aggregated for multiple students, creating Quiz 1 Class Average Score, (3) calculated over time, creating Average Score on Quizzes for a Student, (4) combined to derive Class Average Score and, ultimately, (5) configured to create the performance indicator Average Student Score.

In this way, a piece of data in an individual student, staff, or education institution record may be aggregated, combined, and calculated until new information is derived. When managed in a consistent fashion, each of these pieces of new information may, in turn, be scaled by class, school, district, state, and country to add other dimensions of analysis from a single data element. The key to aggregating data from different records is collecting the data in a consistent manner. While it might be reasonable to assume that the registrar, teacher, or school secretary who records student attendance in a school does so consistently from day to day, month to month, and year to year, the same is not necessarily true across schools, districts, and states throughout the nation. For example, some education institutions might report that individual students attended school on a given day only when they were present for four or more hours. Other institutions might define “attendance” as a student being present at any point during the school day. Clearly, the significance of a “95 percent average daily attendance rate” would then vary substantially, which illustrates the need for standard data element and indicator definitions if statistics from different organizations are to be compared.

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**The *Forum Guide to Building a Culture of Quality Data: A School and District Resource* provides best practice recommendations for generating high quality data in schools. It is available at no cost at [http://nces.ed.gov/forum/pub\\_2005801.asp](http://nces.ed.gov/forum/pub_2005801.asp).**

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## **Ideal Indicators and Real World Tradeoffs**

The quality of an indicator cannot surpass the quality of its components (data elements). In addition to normal data quality issues (e.g., student misreporting, entry errors, and changing assessment tools), at least two other factors affect the quality of education indicators: (1) the complexity of the issue being measured and (2) previous experience studying the issue (*Monitoring School Quality: An Indicators Report*, NCES 2001). One way of assessing the quality of an education indicator is to consider its utility, validity, reliability, timeliness, and cost-effectiveness:

### **Utility**

An indicator should be useful for answering, or helping to answer (as with a context indicator), an important policy question. If the indicator does not provide

**Figure 4. Turning data elements into indicators.**

QUIZ SCORES (in percent correct)						
	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Average Score
Jose	95 <sup>1</sup>	95	90	95	90	93
Emma	95	90	75	85	85	86
Angelique	90	100	85	90	90	91
Amy	95	80	95	75	80	85
Terrence	95	95	90	90	95	93 <sup>3</sup>
Nancy	90	90	90	95	100	93
Paul	100	75	90	90	85	88
Audrey	100	90	90	85	90	91
Omar	90	85	75	80	95	85
Maria	100	100	85	90	90	93
Class Average	95 <sup>2</sup>	90	86.5	87.5	90	89.8 <sup>4</sup> = Class Average Score 89.8 <sup>5</sup> = Average Student Score

- 1> Singular data element
- 2> Aggregated (column calculation)
- 3> Calculated (across columns)
- 4> Derived (rows and columns)
- 5> Performance indicator

A single data element (Quiz 1 Student Score<sup>1</sup>) may be aggregated (Quiz 1 Class Average Score<sup>2</sup>), calculated over time (Average Score on Quizzes for a Student<sup>3</sup>), combined to derive new information (Class Average Score<sup>4</sup>), and formatted as a performance indicator (Average Student Score<sup>5</sup>).

useful information, there is little reason to collect or calculate it, even if doing so can be accomplished accurately, reliably, cost-effectively, and in a timely manner.

### Validity

*“To say that any important educational outcome is measurable is not to say that satisfactory methods of measurement now exist.”*

—Robert Ebel, *Practical Problems in Educational Measurement*

Validity is the degree of correspondence between a measurement and the process or product being studied. In other words, is the indicator accurate? Does it measure what it purports to measure? Is it free from bias (i.e., a systematic error in data generation or collection)? If so, the indicator is considered valid.

### Reliability

Reliability refers to a measure’s consistency, reproducibility, and dependability. In other words, if the same indicator were to be measured multiple times, would the same results be generated? Without consistent measurement methods, results from

#### How many paper towels per student mile based does your district use?

Most state education agencies (SEAs) publish vast amounts of data about their schools and districts. A taxpayer advocacy organization in one state cross-tabulated all the data published by its SEA in order to create a volume of indicators for measuring and comparing the state’s schools and districts. Because the organization compared all available data elements and aggregates, the report included meaningless “indicators” such as Paper Towel Use Per Student Mile Based.

Education indicators grow out of data elements (figure 4), the lowest level of data stored in an administrative records system. But not every data element may be aggregated, calculated, or combined into a piece of information that helps an education organization measure its status or progress in a meaningful way.

Haphazard approaches to producing indicators confuse student and school assessment rather than illuminate it, illustrating that considerable thought must go into developing useful education indicators.

Just because technology enables exhaustive comparisons of data in administrative records systems does not mean that doing so in a random manner is helpful. In fact, it may cloud rather than clarify our understanding of how our schools and students are performing.

**Straightforward indicators such as Average Teacher Experience and Average Class Size usually generate high quality data, as do measures that have been studied for a long time, such as Assessment Score Results. Data about new areas of interest, however—including professional development, student discipline, and technology availability—generally produce lower quality data, as do particularly complex topics such as “leadership” and “pedagogy.”**

*—Monitoring School Quality: An Indicators Report (NCES 2001)*

different organizations or even from within the same organization at different points in time (e.g., longitudinal or time-series data) cannot be compared. Standard or “best practice” collection methods, therefore, are vital to any data/indicator system from which information will be drawn for the purpose of making comparisons (e.g., among groups of students, schools, school districts, states, pedagogical practices, reform strategies, or other entities). Similarly, comparing the progress of an individual or institution against itself over time is pointless without ensuring that the measurement practice itself has not changed (i.e., it is reliable).

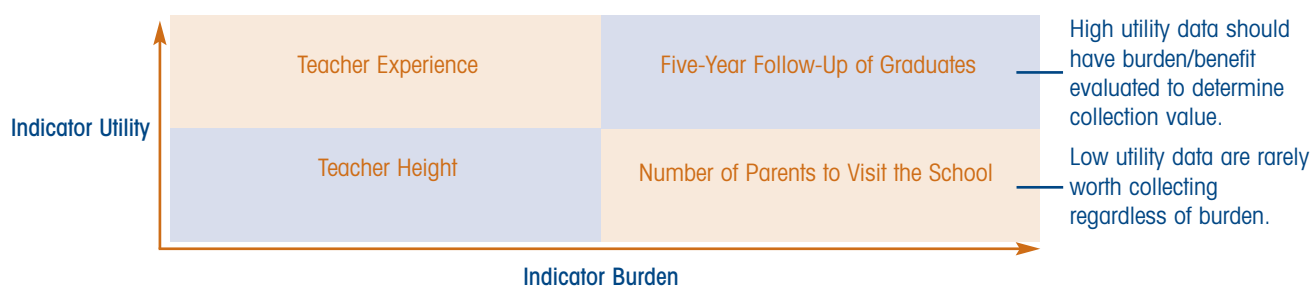
### Timeliness

Data are most valuable when they are readily available for informing decisionmaking, which means that the data have to arrive in time to influence decisionmakers (e.g., board members should receive fiscal data in time to inform budget planning just as teachers should receive test results in time to inform instructional planning). At the same time, policymakers should not be hasty in using indicators to make changes. Change should not be haphazard. Trends in indicator data are far more revealing than findings for a single year. Thus, changes to policies and procedures should be in response to indicator trend analysis rather than inferences about one or two years’ worth of indicator results.

### Cost-Effectiveness

Although what is easy to collect may not be what is desirable to collect, expensive data collections such as one-time surveys are usually not appropriate as inputs into performance indicators that will be generated year after year. Conversely, some good data (i.e., important or necessary to have) that are expensive to collect are still worth the effort (see figure 5). Data “burden” may be defined as collecting or manipulating data for a requester in a way that is of little value to, or demands significant financial or human resources from, the provider.

**Figure 5. Indicator data collection: utility versus burden.**



Indicator utility should be weighed against burden to determine the relative benefit of collection.



### Data burden may arise in at least two dimensions:

**Attitudinal:** “Why do they want me to collect and report it this way when doing so doesn’t help me and I am so busy?”

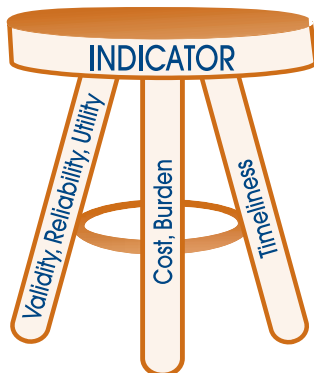
**Financial:** Money spent directly on a collection or indirectly on staff time and equipment to support a collection.

In our computer-driven world, even the transfer of electronic records to paper may be perceived as a burden.

This burden to the provider may be measured in terms of both time and real dollars spent on the endeavor. For example, burden arises when a data provider is asked (or required) to complete multiple data requests, each for the same type of information in a slightly different form—after all, the utility of the information is not improved for the provider by taking time to modify its format solely to meet the needs of an external request. Placing a burden on data providers should be of great concern to data requesters. Data providers who see little value in a collection may be less likely to allocate the resources necessary to ensure they are collecting and reporting high quality data.

### Making Tradeoffs

Ideally, indicators in an education data system are useful, valid, reliable, timely, and cost-effective. But these, too, are relative terms. What is useful for one organization may not be so for another. Similarly, different organizations might have differing definitions of what is cost-effective or burdensome. While sharing information and expertise is always a good idea, an education institution, with its own goals, priorities, policies, and circumstances, simply cannot borrow a list of indicators from its neighbor, even if the institutions are peers in many respects. Instead, data- and policy-leaders must consider the information needs unique to the organization’s goals and priorities and, subsequently, the costs and benefits of indicators that may meet those needs. For example, if an indicator is particularly useful (e.g., Five-Year Follow-Up of Graduates), maybe a relatively substantial burden is worthwhile. Perhaps it is not, however, if the indicator’s validity or reliability is questionable, or if data needed to generate the indicator are not available in time to be useful. When real world constraints kick in, as they generally do, tradeoffs between quality, reliability, and utility become inevitable. The job of the indicator system development team is to ensure that these tradeoffs are made reasonably and responsibly (see figure 6).



**Figure 6. Selecting good indicators.**

Selecting “good” indicators is like building a stool. Consideration must be given to the three legs: Quality (Validity, Reliability and Utility), Burden, and Timeliness. In the real world, tradeoffs may be necessary, but at least two of the characteristics must always retain their integrity, with as little compromise to the third as possible to keep the indicator feasible.

### Opening a dialogue between those who make policy and those who develop indicators should:

- > inform indicator developers about policy goals, objectives, and evaluation strategies; and
- > inform policymakers about the capabilities and limitations (including a cost-benefit analysis) of various indicator options.

## Who Develops Indicators

Education indicators should be developed by people who understand the:

- > institution's policies, goals, and objectives;
- > information needed to evaluate the status of, or progress toward, those goals and objectives;
- > capabilities and limitations of the organization's data system;
- > external reporting demands (e.g., to the school district, state, or federal government); and
- > best practices for selecting and developing education indicators.

Unfortunately, very few individuals have mastered all these areas of expertise. On the positive side, however, staff who possess a thorough understanding of the organization's data system, its external reporting responsibilities, and best practices for selecting and developing education indicators may be available. Their job becomes to communicate with the policymaking personnel in the organization to ensure that they (the indicator developers) learn about policies, goals, and objectives and their corresponding information needs. In other words, indicator producers and indicator users must engage in a discussion. Politicians, policy analysts, board members, senior administrators, and researchers must explain their information needs to those responsible for developing the indicator system. Conversely, as the indicator developers improve their understanding of the policymakers' information needs, they should, in turn, explain the costs, benefits, implications, and limitations of alternative approaches to producing indicators (see Making Tradeoffs).

For example, suppose school leaders set as a priority the improvement of student academic performance on state assessments, and that one approach to attaining this goal would be to decrease class sizes in an effort to enrich student-teacher interaction. Once the indicator development team understands this policy target (learned through dialogue with the policymakers), they may explore the policymakers' information needs: Are policymakers interested in Average Class Size, Maximum Class Size, or Median Class Size? Are they focused on core subject areas or all courses? Is the interest centered on elementary or high school classes?

Once these and other questions are answered, indicator developers will have a much better understanding of policy needs. They can then proceed to explain data options to the policymakers.

For example, they may suggest that class size be measured on a per-class basis, but as this is not an indicator the organization currently maintains, calculating it would carry both time and financial burdens. Policymakers might decide that assessing the initiative is worth the staff and monetary costs. Alternatively, they may choose to use Student:Teacher Ratio as a proxy for Average Class Size after the indicator developers explain that calculating it would be relatively burden-free (the organization already collects the data element components), it would provide a reasonable approximation of Average Class Size (average class size corresponds with the total-student-to-total-staff ratio, albeit not perfectly),

and it accurately reflects increases and decreases over time (even though it is only an approximation). If the indicator development team adequately explains the possible indicators and related data elements, policymakers should fully understand the utility, validity, reliability, timeliness, and burden aspects of their options. They should also understand the capabilities and limitations of the indicator data they eventually choose.

## Unintended Consequences

Many people believe that indicators are simply numbers that represent something (e.g., a dropout rate) and that these numbers, on their own, do not inherently convey judgment or consequence. Rather, judgment and consequences are imposed when indicator values are interpreted and, in response, policies are changed. While this is true, the establishment of an indicator can nevertheless result in unintended consequences that can be very real. For example, indicators perceived to suggest inadequate student achievement might lead to a policy of high-stakes testing. While this may seem reasonable, this indicator-driven policy may have the unintended consequence of increasing student retention rates as teachers become more cautious about promoting students who may not fare well on high-stakes assessments. It could also lead to changes in course offerings (e.g., less time for subject matter not on the test) or other unintended outcomes.

While unintended consequences are very hard to predict, planners must nevertheless try to explore the potential ramifications of the indicators they use. Some ramifications may prove tolerable, others unacceptable. Either way, planners should proactively consider the desirable and undesirable effects of indicator use and policy response.

## Other Important Best Practices

### Training Users

As described above, dialogue between data and policy specialists is beneficial for an organization on several fronts. Indicator developers are better able to provide the right data for informing policy decisions when they learn about information needs directly from those responsible for making and evaluating policy. Moreover, policymakers learn something as well—the characteristics of the data, including capabilities and limitations—which minimizes mistakes in interpretation and use.

In addition to this initial dialogue, formal training for using and interpreting indicators is essential. Staff must be properly prepared to answer questions likely to arise about the data (e.g., when a parent or newspaper reporter calls). Indicator



### Proxy Data



A “proxy” is basically a substitute for the real thing. For example, in education data, the element Free and Reduced Price Meal Eligibility is frequently used as a proxy for a student’s status as economically disadvantaged. Admittedly, this (and every) proxy does not correlate perfectly with its principal information target; some children (especially high school students) choose not to participate in the meal program even though they are eligible. Nonetheless, Free and Reduced Price Meal Eligibility is a reasonable estimation of a student’s status as economically disadvantaged—without carrying the burden of asking families to report their income.

Indicator systems that use proxy elements must confirm that these proxy elements relate to the principal issue they are meant to estimate. This does not mean that a school district must conduct original research to support the relationship, but the organization should be able to document the choice with relevant studies or other standards within the field. Moreover, the organization should be aware of any limitations associated with using the proxy data.

staff at the local and state education agency levels have an added training responsibility: they must ensure that data providers (e.g., school or LEA staff) are warned about the release of potentially controversial or otherwise high-profile public information. It often makes sense to embargo data for several days to a week (or even a month or longer for particularly high-stakes data) so that school and district staff may process the data's implications and prepare to deal with the sometimes very public ramifications of releasing indicator results (be they positive or not).

### Reporting Indicator Data

Indicator data must be reported and shared with the same cautions and concerns other education data warrant. If, for example, an education organization collects unit records (i.e., individual student or staff records) to generate an education indicator, the organization should still comply with the privacy guarantees afforded students and staff by local, state, and federal laws. Even if indicators are reported in aggregate form, commonly accepted statistical procedures must be followed to protect individuals from inadvertent identification. These standard procedures include cell size limitations to prevent the identification of individual students within small groups of "aggregates."

Furthermore, an organization should not tell its data providers it is collecting data for a specific purpose, then use the information for a different purpose. For example, an SEA should not tell LEAs it is collecting data for federal reporting, then use the data to compare LEA performance. In order to reduce the unexpected (or unacceptable) use of indicator results, any organization collecting data should develop and maintain policies governing the distribution and use of indicator data by its own staff as well as by outside agencies and organizations with access to the data.

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**The *Forum Guide to Protecting the Privacy of Student Information* provides best practice recommendations for ensuring the privacy of information collected for, and maintained in, student records. It is available at no cost at [http://nces.ed.gov/forum/pub\\_2004330.asp](http://nces.ed.gov/forum/pub_2004330.asp).**

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### Securing Data and Information


Given the time, energy, and money that goes into collecting data, an organization's information system is one of its most valuable assets. Yet threats to an organization's data exist in the form of natural events (e.g., lightning strikes, floods, aging media), intentional acts of destruction (e.g., computer hacking, software viruses, dissatisfied employees), and unintentionally destructive acts (e.g., programming errors, spilled coffee). It is no understatement to suggest that the three fundamental goals of data security are especially applicable to high-profile and high-stakes indicator data. Organizations must ensure data:

- > **confidentiality**—preventing unauthorized disclosure and use of information;
- > **integrity**—preventing unauthorized creation, modification, or deletion of information; and
- > **availability**—preventing unauthorized delay or denial of information.

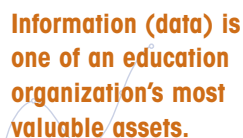
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**The *Forum Unified Education Technology Suite* presents a comprehensive approach to acquiring, implementing, managing, securing and using technology in education settings. It is available at no cost at [http://nces.ed.gov/pubs2005/tech\\_suite/](http://nces.ed.gov/pubs2005/tech_suite/).**

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**Policies must be established to govern indicator reporting in order to protect the privacy of individual students and staff.**



**Information (data) is one of an education organization's most valuable assets.**

## Statistical Integrity and Public Presentation

Two other issues of great importance to developing and preparing indicator data are statistical integrity and public presentation. Because these issues are critical to the responsible management of indicator systems (but not directly within the scope of this *Guide*), they are addressed in detail in appendices to this document:

- > **Appendix B: Statistical Terms and Concepts**  
Describes statistical terms and concepts commonly used to conceptualize, develop, and interpret education indicators.
- > **Appendix C: Display and Presentation Options for Indicators**  
Offers guidance for preparing indicator reports and displaying indicator data.





## Chapter 2

# CATALOG OF EDUCATION INDICATORS

This chapter describes 44 education indicators commonly used to measure the status of, or change in, education institutions across the nation.

Detailed descriptions of education indicators comprise the bulk of this chapter. An alphabetical list of common education performance and context indicators is also provided, as is an index by topic area. As illustrated in figure 7 below, each indicator entry contains a definition, a recommended use, a policy question, caveats and cautions, additional information, related indicators, data components, a formula, commonly reported subgroups, and display suggestions.

**Figure 7. Illustration of the framework and conventions used to describe indicators.**

**Indicator Name** Identifies the primary indicator name used in this document.

**Cross References** Lists any alternative name that is commonly used for the indicator, and is cross-referenced to the indicator in this *Guide*.

**Definition** Describes or defines the indicator.

**Recommended Uses** Provides suggestions for the appropriate application of the indicator.

**Policy Questions** Identifies one or more broad policy questions that may be informed by the indicator.

**Caveats and Caution** Introduces specific issues to be considered in order to avoid misapplication or misinterpretation of the indicator.

**Additional Information** Explains other issues that may influence the use of the indicator.

**Related Indicators** Identifies other indicators that may be used in conjunction with the indicator to provide additional information.

**Components** Lists the data elements and aggregate, calculated, or derived statistics needed to generate the indicator.

**Formula** Provides the actual mathematical formula for computing the indicator value.

**Commonly Reported Subgroups** Identifies subgroups commonly reported for the indicator.

**Display Suggestions** Presents recommendations about the types of graphical or tabular display that are appropriate for the indicator (see appendix C).

### Sample indicator layout

#### **Assessment, Percentage Student Participation** *Participation Rate in Student Assessment* *Percentage Students Participating in State Assessment* *Student Participation Rate in Assessment*

##### **Definition**

A measure of student participation on an assessment (i.e., the percentage of students taking a test). "Participation" is often measured by the number of exams generating a valid score.

##### **Recommended Uses**

This indicator may be used to identify whether all students participated in an assessment. It may also be used to determine whether performance results might be biased (e.g., if an unusually high number of students did not take the exam).

##### **Policy Question**

Are assessment results based on a fair picture of students in our school or district?

##### **Caveats and Cautions**

➤ This indicator does not distinguish between students who were tested without modifications and students who took alternative assessments or for whom special test-taking modifications were allowed.

➤ Not all states use equivalent definitions to identify students eligible for participation in state assessments.

➤ Under some circumstances, organizations may choose to report, in the denominator, the number of "eligible" test takers (e.g., excluding students enrolled in the school or district less than a full academic year, or non-English speaking students in the United States for one year or less).

➤ In some jurisdictions, parents may refuse to allow their children to participate in assessments.

##### **Additional Information**

➤ This indicator does not distinguish between students who were tested without modifications and students who took alternative assessments or for whom special test-taking modifications were allowed.

##### **Related Indicators**

*Adequate Yearly Progress (AYP): Percentage Schools Making*

*Adequate Yearly Progress (AYP): Percentage Schools in Improvement Categories*

*Adequate Yearly Progress (AYP): Percentage Local Education Agencies (LEAs) in Improvement Categories*

*Assessment, Average Student Score*

*Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*

**Components** *italicized terms are defined in chapter 2, appendix A or appendix D*

Components include the total number of assessments generating a valid score (i.e., the total number of test takers) and the total enrollment on the date of test administration.

**Numerator:** Number of assessments generating a valid score

**Denominator:** Enrollment on the date of testing.

##### **Formula**

*Assessment, Percentage Student Participation* is calculated by dividing the number of assessments generating a valid score (i.e., the total numbers of test takers) by the total enrollment on the date the test was administered, and multiplying by 100 to create a percentage value:

$$\frac{\text{Number of assessments generating a valid score}}{\text{Student enrollment on test date}} \times 100$$

##### **Commonly Reported Subgroups**

Age, grade level, disability status, economic disadvantage status, English proficiency, migrant status, race, sex, and full- versus part-academic year enrollment status.

##### **Display Suggestions**

Generally presented as a number in the form of XX.X percent, this indicator may be displayed in tables or bar charts by subgroup. Each subject matter area is usually shown separately, but rates from multiple subjects may be compared in the same table or graph.

element components, a formula, commonly reported subgroups, and display suggestions. In addition to an alphabetical listing, the 44 indicators in this *Guide* have been indexed based on the following major policy and content strands:

- |                                  |                        |                      |
|----------------------------------|------------------------|----------------------|
| <b>Inputs</b>                    | <b>Processes</b>       | <b>Outcomes</b>      |
| ✓ Student/School Characteristics | ✓ School Climate       | ✓ School Performance |
| ✓ Financial Resources            | ✓ Opportunity to Learn |                      |
| ✓ Staff Characteristics          |                        |                      |

**Table 1. Index of indicators by policy strand.**

Page	Indicator Name (Alphabetical)	Common Name	Inputs			Processes		Outcomes
			Student/School Characteristics	Financial Resources	Staff Characteristics	School Climate	Opportunity to Learn	School Performance
19	Absence Rate (Class), Teacher	Class Absence Rate (Teacher)			✓	✓	✓	
21	Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories	Percentage LEAs in Adequate Yearly Progress (AYP) Improvement Categories						✓
23	Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories	Percentage Schools in Adequate Yearly Progress (AYP) Improvement Categories						✓
25	Adequate Yearly Progress (AYP), Percentage Schools Making	Percentage Schools Making Adequate Yearly Progress (AYP)						✓
27	Alcohol-Related Incidents Reported Per 100 Students	Reported Alcohol-Related Incidents Per 100 Students				✓		
29	Assessment, Average Student Score	Average Student Assessment Score						✓
30	Assessment, Percentage Student Participation	Percentage Students Participating in State Assessment						✓
31	Assessment, Percentage Students Demonstrating Proficient or Advanced Performance	Percentage Students Demonstrating Proficient or Advanced Performance						✓
33	Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field	Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field Certificates			✓		✓	
35	Class Size, Average	Average Class Size		✓		✓	✓	
37	College Entrance Testing, Percentage Graduate Participation	Percentage Graduate Participation in College Entrance Testing						✓



Page	Indicator Name (Alphabetical)	Common Name	Inputs			Processes		Outcomes
			Student/School Characteristics	Financial Resources	Staff Characteristics	School Climate	Opportunity to Learn	School Performance
39	College Entrance Testing, Student Average Score	Average Student Score on College Entrance Testing						✓
41	Courses (Advanced), Percentage Student Completion	Percentage Students Completing (Advanced) Courses					✓	✓
43	Courses (Advanced), Percentage Student Enrollment	Percentage Students Enrolling in (Advanced) Courses					✓	✓
45	Criminal Offense Incidents Reported Per 100 Students	Reported Criminal Offense Incidents Per 100 Students				✓		
47	Drug-Related Incidents Reported Per 100 Students	Reported Drug-Related Incidents Per 100 Students				✓		
49	Education Level, Mother	Mother's Education Level	✓					
51	Education Level, Teacher	Teacher's Education Level			✓			
53	Experience Level, Teacher	Teacher's Experience Level			✓	✓	✓	
55	Expulsion Incidents Per 100 Students	Number of Expulsion Incidents Per 100 Students				✓	✓	✓
57	High School Completion/ Graduation Rate, Cohort Rate	Completion Rate/ Graduation Rate	✓				✓	✓
59	High School Completion/ Graduation Rate, Leaver Rate	Completion Rate/ Graduation Rate	✓				✓	✓
61	High School Dropout Rate, Annual Student	Annual High School Dropout Rate	✓				✓	✓
63	High School Dropout Rate, Cohort Rate	Cohort High School Dropout Rate	✓				✓	✓
65	"Highly Qualified" Teachers, Percentage	Percentage "Highly Qualified" Teachers			✓		✓	
67	Instructional Time, Allotted	Allotted Instructional Time				✓	✓	
68	"Persistently Dangerous" Schools, Percentage	Percentage Schools Identified as "Persistently Dangerous"				✓		
69	Placement of Students With Disabilities	Disabilities, Placement of Students With	✓			✓	✓	
72	Promotion Rate, Student	Retention Rate (Student)						✓
73	"Qualified" Paraprofessionals, Percentage	Percentage "Qualified" Paraprofessionals			✓		✓	
75	Retention Rate, Teacher	Teacher Retention Rate			✓			
77	School Capacity, Percentage Used	Percentage School Capacity Used	✓	✓				

Page	Indicator Name (Alphabetical)	Common Name	Inputs			Processes		Outcomes
			Student/School Characteristics	Financial Resources	Staff Characteristics	School Climate	Opportunity to Learn	School Performance
79	Stability Rate, Student Enrollment	Student Enrollment Stability Rate	✓			✓	✓	
80	Student:Instructional Computer Ratio	Instructional Computer:Student Ratio		✓			✓	
82	Student:Staff Ratio	Student:Teacher Ratio		✓		✓	✓	
84	Suspensions (Out-of-School), Actions Per 100 Students	Number of Out-of-School Suspension Actions Per 100 Students				✓	✓	✓
86	Suspensions (Out-of-School), Average Duration	Average Duration of Out-of-School Suspension Incidents				✓	✓	✓
88	Suspensions (Out-of-School), Percentage Students Receiving	Percentage of Students Receiving Out-of-School Suspensions				✓	✓	✓
90	Teacher:Administrator Ratio	Administrator:Teacher Ratio		✓				
92	Transportation Services, Percentage Students Receiving	Percentage Students Receiving Transportation Services	✓	✓				
93	Truancy Rate, Schoolwide	Schoolwide Truancy Rate				✓	✓	✓
94	Violent Incidents Reported Per 100 Students	Reported Violent Incidents Per 100 Students				✓		
96	Vocational/Technical Programs, Percentage Non-traditional Completers	Percentage Nontraditional Completers of Vocational/ Technical Programs					✓	✓
98	Vocational/Technical Programs, Percentage Non-traditional Participation	Percentage Nontraditional Participation in Vocational/ Technical Programs					✓	

## Absence Rate (Class), Teacher

### Class Absence Rate

### Faculty/Staff Absence Rate

### Teacher Absence Rate

#### Definition

The *class* absence rate per Full-Time Equivalency (FTE) teacher. "Class absence" is defined as any time a teacher must miss an assigned class (and/or a substitute teacher must replace a teacher in class), even when the teacher is performing other assigned duties. This includes professional development days, personal days, and extended illnesses and leave. Field trips or other off-campus activities with students are not defined as class absences.

#### Recommended Use

This indicator provides information about teachers' availability to students. Another use might be to study whether teacher attendance is related to student achievement results.

#### Policy Question

Are teachers available to students? How much instruction do students receive from their regularly assigned teachers?

#### Caveats and Cautions

- > This indicator does not measure teacher attendance because professional development days are counted as absences. Instead, this indicator is a measure of how often the teacher assigned to a classroom is actually in the classroom.
- > Care must be given to establishing targets for this indicator. For example, 100 percent class attendance is not a reasonable, or even desirable, goal given that professional development is valuable out-of-class time (but still an absence), and some sick leave is unavoidable.

#### Additional Information

- > Elementary school environments that do not hold separate "classes" may measure this indicator in units of time (e.g., minutes present/total class minutes offered).
- > Decreasing professional development time is not recommended as a method of "improving" the results of this indicator.
- > Some organizations may also choose to collect "unexplained class absence rate" for teachers.
- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.

#### Related Indicators

*Instructional Time, Allotted*

*Retention Rate, Teacher*

**Components** *All italicized terms are defined in Chapter 2, Appendix A or Appendix D.*

Components include leave substitution status and unique course code or course title (if a unique course code is not maintained).

**Numerator:** *Leave Substitution Status (code = Substitution by an individual with or without proof of required credentials), Unique Course Code (Course Title)*

**Denominator:** *Unique Course Code (Course Title)*

#### Formula

*Absence Rate (Class), Teacher* is calculated by dividing the total number of assigned classes in which the teacher is not in attendance by the total number of assigned classes held (with the teacher or a substitute teacher), and multiplying by 100 to create a percentage value.

$$\frac{\text{Leave Substitution Status (code = Substitution by an individual with or without proof of required credentials) for all class meetings for each Unique Course Code (Course Titles)}}{\text{Total number of class meetings for all Unique Course Codes (Course Titles)}} \times 100$$

---

### **Commonly Reported Subgroups**

School level, subject matter area, absence reason (e.g., sick day, professional development, extracurricular activity), day of week absent, school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity), and school locale.

### **Display Suggestions**

This indicator is presented as a number in the form of XX.X percent attendance, and may be displayed in a table or bar chart by subgroup.

# Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories

## Percentage LEAs in AYP School Improvement Categories School District AYP Status



### Definition

The percentage of Local Education Agencies (LEAs) in each Adequate Yearly Progress (AYP) Improvement Category under provisions of the No Child Left Behind (NCLB) Act of 2001.

### Recommended Use

This indicator may be used to determine how LEAs are performing in terms of attaining and maintaining adequate yearly progress.

### Policy Question

How well are our LEAs performing? How many LEAs need improvement? How serious is the problem of underperforming LEAs?

### Caveats and Cautions

- > Under the provisions of NCLB, AYP Status is determined by demonstrating advanced and proficient, but not basic, student performance on state assessments. However, the meaning behind this designation may vary across states because each state uses its own assessment tools and criteria to define basic, proficient, and advanced performance on assessments.
- > Improvement category thresholds change from year to year. Longitudinal records should not be used for trend analysis purposes.
- > This indicator does not identify the reasons that LEAs do not make AYP. Under the provisions of the NCLB, reasons may include failure to assess 95 percent of the eligible test taking population, or the performance of a single subgroup within the larger student population.
- > Under some conditions, AYP Status may not be an appropriate indicator of "success." For example, an alternative district serving only students at risk of dropping out may only graduate 50 percent of its students; this would prevent the district from making AYP, but perhaps still qualify it as "successful" under other criteria.
- > When there is not enough information to make a reliable determination of AYP Status (e.g., too few student test scores), multiple grades' or multiple years' worth of data may be combined to construct more statistically reliable information.

### Related Indicators

*Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories*

*Adequate Yearly Progress (AYP), Percentage Schools Making*

*Assessment, Average Student Score*

*Assessment, Percentage Student Participation*

*Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of LEAs in each improvement category, as defined in NCLB or state-designated equivalents, and the number of LEAs for which AYP is reported.

**Numerator:** Number of LEAs in each improvement category: LEA Improvement I, LEA Improvement II, Corrective Action I

**Denominator:** Total number of LEAs for which AYP is reported

**Formula** *This is a composite indicator calculated for each improvement category.*  
*Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories* is calculated by dividing the number of LEAs in each improvement category by the total number of LEAs for which AYP is reported, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number LEAs in AYP Improvement Category} = \text{LEA Improvement I}}{\text{Total number of LEAs for which AYP is reported}} \times 100$$

$$\frac{\text{Number LEAs in AYP Improvement Category} = \text{LEA Improvement II}}{\text{Total number of LEAs for which AYP is reported}} \times 100$$

$$\frac{\text{Number LEAs in AYP Improvement Category} = \text{LEA Corrective Action I}}{\text{Total number of LEAs for which AYP is reported}} \times 100$$

**Commonly Reported Subgroups**

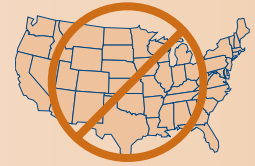
LEA enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity), LEA locale, and year in given improvement category.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup. A pie chart might be used to show the AYP categories of a complete set of LEAs (e.g., in a state): percentage making AYP in addition to percentages in LEA improvement I, LEA improvement II, and LEA corrective action I.

## Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories

### Percentage Schools in AYP Improvement Categories School AYP Status



#### Definition

The percentage of schools in each School Improvement Category under the provisions of the No Child Left Behind (NCLB) Act of 2001.

#### Recommended Use

This indicator may be used to determine how schools are performing in terms of attaining and maintaining adequate yearly progress (AYP).

#### Policy Questions

How well are our schools performing? How many schools need improvement? How serious is the problem of underperforming schools?

#### Caveats and Cautions

- > Under the provisions of NCLB, AYP Status is determined by demonstrating advanced and proficient, but not basic, student performance on state assessments. However, the meaning behind this designation may vary across states because each state uses its own assessment tools and criteria to define basic, proficient, and advanced performance on assessments.
- > School improvement category thresholds change from year to year. Longitudinal records should not be used for trend analysis purposes.
- > School improvement category titles may vary from state to state.
- > This indicator does not identify the reason that schools do not make AYP. Under the provisions of NCLB, reasons may include failure to assess 95 percent of the eligible test taking population, or the performance of a single subgroup within the larger student population.
- > Under some conditions, AYP Status may not be an appropriate indicator of "success." For example, an alternative school serving only students at risk of dropping out may only graduate 50 percent of its students; this would prevent the school from making AYP but perhaps still qualify it as "successful" under other criteria.
- > When there is not enough information to make a reliable determination of AYP Status (e.g., too few student test scores), multiple grades' or multiple years' worth of data may be combined to construct more statistically reliable information.

#### Additional Information

- > For a school to make AYP under NCLB,
  - > each student subgroup must have at least a 95 percent participation rate in the statewide assessments;
  - > each student subgroup must meet or exceed the state's Annual Measurable Objectives (AMOs); and
  - > the school as a whole must show progress on the Other Academic Indicators (OAI), including graduation rates for public secondary school students and at least one other academic indicator, as determined by the state for all public elementary school students.
- > All schools, regardless of grade range, size, or assessment administration, are assigned an AYP Status. However, the assigned AYP Status may be based on an alternative indicator. For example, a K–2 school may be assigned the AYP Status of the school where its students matriculate.

#### Related Indicators

*Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories*  
*Adequate Yearly Progress (AYP), Percentage Schools Making*  
*Assessment, Average Student Score*  
*Assessment, Percentage Student Participation*  
*Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of schools in each school improvement category, as defined in NCLB or state-designated equivalents, and the number of schools for which AYP is reported.

**Numerator:** Number of schools in each improvement category: Alert/Warning, School Improvement I, School Improvement II, Corrective Action I, Restructuring I, Restructuring II

**Denominator:** Total number of schools for which AYP is reported

**Formula** *This is a composite indicator calculated for each school improvement category.*

*Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories* is calculated by dividing the number of schools in each school improvement category by the total number of schools for which AYP is reported, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of schools in School Improvement Category} = \textit{Alert/Warning}}{\text{Total number of schools for which AYP is reported}} \times 100$$

$$\frac{\text{Number of schools in School Improvement Category} = \textit{School Improvement I}}{\text{Total number of schools for which AYP is reported}} \times 100$$

$$\frac{\text{Number of schools in School Improvement Category} = \textit{School Improvement II}}{\text{Total number of schools for which AYP is reported}} \times 100$$

$$\frac{\text{Number of schools in School Improvement Category} = \textit{Corrective Action I}}{\text{Total number of schools for which AYP is reported}} \times 100$$

$$\frac{\text{Number of schools in School Improvement Category} = \textit{Restructuring I}}{\text{Total number of schools for which AYP is reported}} \times 100$$

$$\frac{\text{Number of schools in School Improvement Category} = \textit{Restructuring II}}{\text{Total number of schools for which AYP is reported}} \times 100$$

### Commonly Reported Subgroups

School level, school type (e.g., Title I school), school enrollment characteristics (e.g., categories representing percent of students by economic disadvantage status and race/ethnicity), school locale, and year in given school improvement category.

### Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup. A pie chart could be used to show the AYP categories of a complete set of schools: percentage making AYP in addition to percentages in Alert/Warning, School Improvement I, School Improvement II, Corrective Action I, Restructuring I, and Restructuring II.



## Adequate Yearly Progress (AYP), Percentage Schools Making



### Percentage Schools Making Adequate Yearly Progress (AYP)

#### Definition

The percentage of schools making adequate yearly progress (AYP).

#### Recommended Use

This indicator may be used to determine how schools are performing in terms of making and maintaining adequate yearly progress (AYP).

#### Policy Questions

How well are our schools performing? How many schools need improvement? How serious is the problem of underperforming schools?

#### Caveats and Cautions

- > Although the term "Adequate Yearly Progress" (AYP) is frequently associated with the No Child Left Behind (NCLB) Act of 2001, it has historically had a broader usage and is not necessarily limited to an NCLB context.
- > Under the provisions of NCLB, AYP Status is determined by demonstrating advanced and proficient, but not basic, student performance on state assessments. However, the meaning behind this designation may vary across states because each state uses its own assessment tools and criteria to define basic, proficient, and advanced performance on assessments.
- > School improvement category thresholds change from year to year. Longitudinal records should not be used for trend analysis purposes.
- > A school may be making academic progress in absolute terms and still not be "making AYP" if student performance is not increasing at the rate required to be designated as "making AYP."
- > This indicator does not identify the reason that schools do not make AYP. Under the provisions of NCLB, reasons may include failure to assess 95 percent of the eligible test taking population, or the performance of a single subgroup within the larger student population.
- > Under some conditions, AYP Status may not be an appropriate indicator of "success." For example, an alternative school serving only students at risk of dropping out may only graduate 50 percent of its students; this would prevent the school from making AYP but perhaps still qualify it as "successful" under other criteria.
- > When there is not enough information to make a reliable determination of AYP Status (e.g., too few student test scores), multiple grades' or multiple years' worth of data may be combined to construct more statistically reliable information.

#### Additional Information

- > For a school to make AYP under NCLB,
  - > each student subgroup must have at least a 95 percent participation rate in the statewide assessments;
  - > each subgroup must meet or exceed the state's Annual Measurable Objectives (AMOs); and
  - > the school as a whole must show progress on the Other Academic Indicators (OAI), including graduation rates for public secondary school students and at least one other academic indicator, as determined by the state for all public elementary school students.

#### Related Indicators

*Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories*  
*Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories*  
*Assessment, Average Student Score*  
*Assessment, Percentage Student Participation*  
*Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the AYP Status for each school and the total number of schools.

**Numerator:** Number of schools making AYP as indicated by their *Adequate Yearly Progress (AYP) Status*

**Denominator:** Total number of schools for which AYP is reported

### **Formula**

*Adequate Yearly Progress (AYP), Percentage Schools Making* is calculated by dividing the number of schools making AYP by the total number of schools for which AYP is reported, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of schools making AYP as indicated by } \textit{Adequate Yearly Progress Status}}{\text{Total number of schools for which AYP is reported}} \times 100$$

### **Commonly Reported Subgroups**

School level, school type (e.g., Title I school), avenue for making AYP (e.g., confidence interval, safe harbor, percentage proficient), school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity), and school locale.

### **Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

## Alcohol-Related Incidents Reported Per 100 Students

### Rate of Alcohol-Related Incidents Reported Reported Alcohol-Related Incidents Per 100 Students

#### Definition

The number, per 100 students, of suspected alcohol-related incidents reported to police during a given academic year. Reportable violations of laws or ordinances include the manufacture, sale, purchase, transportation, possession, or consumption of intoxicating alcoholic beverages or substances represented as alcohol.

Violations may be specifically coded as:

- > *Sale of alcohol*—selling alcoholic beverages.
- > *Distribution of alcohol*—distributing (i.e., giving away) alcoholic beverages.
- > *Drinking alcohol*—drinking alcoholic beverages.
- > *Possession of alcohol*—having alcoholic beverages in one's pocket(s), bag(s), car, locker, etc.
- > *Suspicion of alcohol use*—exhibiting behaviors suggesting that an individual consumed alcohol.
- > *Other alcohol*—involving an alcohol violation, but unable to be coded in one of the above categories.

An incident is "alcohol-related" if the individuals involved were under the influence of alcohol at the time of the incident; if there is evidence, based on testing or investigation by a police officer at the scene, that they have been drinking; or if the incident is somehow related to the possession, use, or sale of alcohol.

An "incident" is defined as any offense reported to police that is perpetrated by students at school, on school property, or during a school-sponsored activity.

#### Recommended Use

This indicator may be used to help assess school safety and climate.

#### Policy Questions

Is there a substance abuse problem in our schools? Are alcohol education programs effective?

#### Caveats and Cautions

- > This is an institution-based indicator; it does not present data about individuals or groups of students other than at the institution level.
- > Only incidents reported to police are included; variation in reporting practices by school staff will therefore affect the indicator's measure.
- > Some institutions include all reported incidents regardless of perpetrator (e.g., students and nonstudents alike), thereby increasing the number of incidents. Comparisons between institutions that do and do not distinguish between student and nonstudent perpetrators are discouraged.
- > Repeat offenders (i.e., individual students suspected of multiple violations) may bias measures.
- > School Resource Officers (SROs) are legally considered "police officers" in some communities; all incidents involving SROs in these districts have, by definition, been "reported" to the police, increasing the number of "incidents." Comparisons between institutions with SROs and those that must actively contact an outside authority are therefore discouraged.
- > This indicator is incident-based rather than student-based.

#### Additional Information

- > Tobacco and alcohol use generally are reported separately.
- > The unit of analysis may vary depending on school size. Some organizations may choose to normalize to, and report, "per 1,000 students."
- > The *Youth Risk Behavior Surveillance System* survey administered by the Centers for Disease Control (see appendix E) may help inform the interpretation of data generated by this indicator.
- > Alternative indicators include Percentage of Students Involved in Reported Alcohol-Related Incidents.

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More information about this issue may be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools (NCES 2002–312)*. This free resource from the National Forum on Education Statistics can be accessed at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).

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### Related Indicators

*Criminal Offense Incidents Reported Per 100 Students*  
*Drug-Related Incidents Reported Per 100 Students*  
*Expulsion Incidents Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspensions (Out-of-School), Actions Per 100 Students*  
*Suspensions (Out-of-School), Average Duration*  
*Suspensions (Out-of-School), Percentage Students Receiving*  
*Violent Incidents Reported Per 100 Students*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of alcohol-related incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year; and a count of student membership normalized to a "per 100 students" denominator.

**Numerator:** The number of alcohol-related incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year.

**Denominator:** *Count of Student Membership (e.g., October 1)*  
Some states or localities may use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

### Formula

*Alcohol-Related Incidents Reported Per 100 Students* is calculated by dividing the total number of alcohol-related incidents reported by a count of student membership, and multiplying by 100 to normalize to a "per 100 students" count.

$$\frac{\text{Number of alcohol-related incidents reported}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$$

### Commonly Reported Subgroups

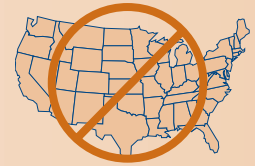
This indicator may be disaggregated by school characteristics. For example, the number of alcohol-related incidents at elementary, middle, and high schools may be compared. At the institutional level, common subgroups include: school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

### Display Suggestions

This indicator is presented as a number in the form of XX.X, with a notation that the number is "per 100 students," and displayed in tables by subgroup.

## Assessment, Average Student Score

**Assessment Results**  
**Average Student Assessment Score**  
**Student Performance**  
**Test Results**



### Definition

The average score earned by students taking an assessment.

### Recommended Uses

This indicator may be used to measure student performance on an assessment, including student subgroup performance and subsequent “achievement gaps.”

### Policy Questions

Are students meeting academic goals? Is performance improving over time?

### Caveats and Cautions

- > This indicator does not distinguish between students who were tested without modifications and students who took alternative assessments or for whom special test-taking modifications were allowed.
- > Average student performance may improve within a reporting category (i.e., basic, proficient, and advanced) without students advancing from one reporting category to the next. This may lead *Assessment, Average Student Score* to improve without a corresponding change in *Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*.

### Related Indicators

*Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories*  
*Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories*  
*Adequate Yearly Progress (AYP), Percentage Schools Making*  
*Assessment, Percentage Student Participation*  
*Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the score results for all students taking the assessment, and the total number of assessments generating a valid score (i.e., the total number of test takers).

**Numerator:** Sum of all *Score Results*

**Denominator:** Number of assessments generating a valid score

### Formula

*Assessment, Average Student Score* is calculated by dividing the sum of all student scores on an assessment by the total number of exams generating a valid score (i.e., the total numbers of test takers).

$$\frac{\text{Sum of student } \textit{Score Results}}{\text{Total number of assessments generating a valid score}}$$

### Commonly Reported Subgroups

Age, grade level, disability status, economic disadvantage status, English proficiency, migrant status, race, sex, and full- versus part-academic year enrollment.

### Display Suggestions

This indicator is often, but not always, presented in the form of XX.X (or other appropriate format based on the scoring scale); and displayed in tables or bar charts by subgroup. Generally, each subject matter area is shown separately, but scores from multiple subjects may be compared in the same table or graph if the subject area assessments use the same scale.

## Assessment, Percentage Student Participation

Participation Rate in Student Assessment  
Percentage Students Participating in Assessment  
Student Participation Rate in Assessment



### Definition

A measure of student participation on an assessment (i.e., the percentage of students taking a test). "Participation" is often measured by the number of exams generating a valid score.

### Recommended Uses

This indicator may be used to identify whether all students participated in an assessment. It may also be used to determine whether performance results might be biased (e.g., if an unusually high number of students did not take the exam).

### Policy Question

Are assessment results based on a fair picture of students in our school or district?

### Caveats and Cautions

- > This indicator does not distinguish between students who were tested without modifications and students who took alternative assessments or for whom special test-taking modifications were allowed.
- > Not all states use equivalent definitions to identify students eligible for participation in state assessments.
- > Under some circumstances, organizations may choose to report, in the denominator, the number of "eligible" test takers (e.g., excluding students enrolled in the school or district less than a full academic year, or non-English speaking students in the United States for one year or less).
- > In some jurisdictions, parents may refuse to allow their children to participate in assessments.

### Related Indicators

*Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories*  
*Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories*  
*Adequate Yearly Progress (AYP), Percentage Schools Making*  
*Assessment, Average Student Score*  
*Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*

**Components** *Italicized terms are defined in chapter 2, appendix A or appendix D.*

Components include the total number of assessments generating a valid score (i.e., the total number of test takers) and the total enrollment on the date of test administration.

**Numerator:** Number of assessments generating a valid score

**Denominator:** Enrollment on the date of testing

### Formula

*Assessment, Percentage Student Participation* is calculated by dividing the number of assessments generating a valid score (i.e., the total numbers of test takers) by the total enrollment on the date the test was administered, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of assessments generating a valid score}}{\text{Student enrollment on test date}} \times 100$$

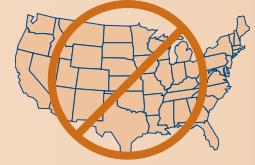
### Commonly Reported Subgroups

Age, grade level, disability status, economic disadvantage status, English proficiency, migrant status, race, sex, and full- versus part-academic year enrollment status.

### Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup. Each subject matter area is usually shown separately, but rates from multiple subjects may be compared in the same table or graph.

## Assessment, Percentage Students Demonstrating Proficient or Advanced Performance



### Academic Proficiency

### Assessment Performance

### Percentage Students Demonstrating Proficient or Advanced Performance

### Student Academic Proficiency

#### Definition

The percentage of students demonstrating proficient or advanced performance on an assessment.

#### Recommended Use

This indicator may be used to identify student performance on an assessment, including student subgroup performance and subsequent "achievement gaps."

#### Policy Questions

Are our schools succeeding in taking students beyond basic competency? Are all children performing at high levels?

#### Caveats and Cautions

- > Some states and localities use performance categories other than, or in addition to, basic, proficient, and advanced.
- > Not all states use equivalent definitions to identify students eligible for participation in state assessments.
- > Under some circumstances, organizations may choose to report, in the denominator, the number of "eligible" test takers (e.g., excluding students enrolled in the school or district less than a full academic year, or non-English speaking students in the United States for one year or less).
- > In some jurisdictions, parents may refuse to allow their children to participate in assessments.
- > Assessment reporting standards may vary depending on the assessment's purpose or reporting requirement (e.g., all students versus full-year students).
- > Average student performance may improve within a reporting category (i.e., basic, proficient, and advanced) without students advancing from one reporting category to the next. This may lead *Assessment, Average Student Score* to improve without a corresponding change in *Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*.

#### Additional Information

- > This indicator's sensitivity to change will decrease if data for "proficient" and "advanced" performance categories are collapsed into a single, "proficient or advanced" category.

#### Related Indicators

*Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) in Improvement Categories*

*Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories*

*Adequate Yearly Progress (AYP), Percentage Schools Making*

*Assessment, Average Student Score*

*Assessment, Percentage Student Participation*

#### Components *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the total number of students taking an assessment who score in the proficient or advanced range, based on established thresholds, and the total number of exams generating a valid score (i.e., the total number of test takers).

**Numerator:** *Score Results in Performance Rating (code = Proficient or Advanced)*

**Denominator:** Number of assessments generating a valid score

**Formula**

*Assessment, Percentage Students Demonstrating Proficient or Advanced Performance* is calculated by dividing the number of students scoring in the *proficient* or *advanced* range by the total number of assessments generating a valid score (i.e., the total numbers of test takers), and multiplying by 100 to create a percentage value.

$$\frac{\text{Total number of students with } \textit{Score Results} \textit{ and } \textit{Performance Rating} \textit{ (code = } \textit{Proficient or Advanced}) \textit{ on an assessment}}{\text{Total number of assessments generating a valid score}} \times 100$$

**Commonly Reported Subgroups**

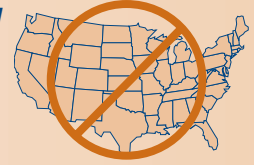
Age, grade level, disability status, economic disadvantage status, English proficiency, migrant status, race, sex, and full- versus part- academic year enrollment status.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup. Each subject matter area is usually shown separately, but rates from multiple subjects may be compared in the same table or graph.



## Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field



### Out-of-Field Teaching Assignments

### Percentage Classes Taught by Teachers with Emergency, Provisional, or Out-of-Field Certificates

### Percentage Teachers with Emergency, Provisional, or Out-of-Field Certificates Teaching Assignments Out-of-Field

#### Definition

The percentage of classes with teachers who hold emergency or provisional credentials, or credentials that do not match the teaching assignment (i.e., out-of-field).

#### Recommended Use

This indicator may be used to assess the availability of qualified teaching staff.

#### Policy Question

Do students have access to well-qualified teachers?

#### Caveats and Cautions

- > This indicator does not measure teacher quality but, rather, teacher qualifications for a given class. Teachers with exactly the same credentials may be 100 percent qualified or 0 percent qualified to teach their classes, depending on the teaching assignment.
- > When calculating this indicator, some education organizations count only teachers of record, even when there is a long-term substitute in a class; others count teachers on the day of a collection, whether they are teachers of record or substitutes.
- > Indicators that focus on staff rather than courses may be confusing given the complexities associated with prorating teaching loads and multiple class assignments.
- > The terms "certification," "licensure," and "endorsement" are used inconsistently across the nation; this may lead to misreporting or to indicator values that should not be compared across organizations.
- > This indicator's validity depends largely on the quality of the data reported for class-by-class teaching assignments.

#### Additional Information

- > In departmentalized schools, a teacher may have less than complete certification for some, but not all, of the classes assigned. The FTE (Full-time equivalency) of teachers assigned to classes for which they have emergency, provisional, or out-of-field certification divided by the total FTE teachers may be used as a proxy for this indicator.

#### Related Indicators

*Education Level, Teacher*

*Experience Level, Teacher*

*"Highly Qualified" Teachers, Percentage*

#### Components *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include teaching credential type and teaching field or area authorized for each teacher with a classroom assignment, and the total number of classes offered.

**Numerator:** *Teaching Credential Type (code = Emergency, Provisional, Temporary), Teaching Field or Area Authorized, Teaching Assignment*

**Denominator:** *Total number of classes (Unique Course Code or Course Title if unique course codes are not maintained)*

## Formula

*Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field* is calculated by dividing the number of classes with teachers holding emergency or provisional credentials, or credentials that do not match the teaching assignment, by the total number of classes offered; and multiplying by 100 to create a percentage value.

$$\frac{\text{The number of classes with teachers with } \textit{Teaching Credential Type} \text{ (code = } \textit{Emergency, Provisional, Temporary}) + \text{ the number of classes with teachers with a } \textit{Teaching Field or Area Authorized} \text{ different than the } \textit{Teaching Assignment}}{\text{The total number of classes taught (} \textit{Unique Course Code or Course Title})} \times 100$$

## Commonly Reported Subgroups

Subject matter area, school level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

## Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

# Class Size, Average

## Average Class Size

### Definition

Average Class Size is defined as the total number of students enrolled in classes on a given date, divided by the total number of classes.

### Recommended Uses

This indicator may be used to help allocate resources (e.g., teaching positions and classroom space) based on student demand for courses. It also may be a factor in assessing the adequacy of the learning environment (e.g., it could be correlated with student performance).

### Policy Questions

Are students getting the teacher attention they need? Are classes the optimal size for instruction?

### Caveats and Cautions

- > This measure may be skewed when some classes allow for limited or unlimited enrollment (e.g., special education, band, gym, and distance learning). Therefore, it is recommended that *Class Size, Average* be calculated only for academic or core classes.
- > *Student:Teacher Ratio* is sometimes used as a proxy for Average Class Size. While the two indicators are not identical, *Student:Teacher Ratio* is often less burdensome to calculate, and provides a reasonable approximation that reflects increases and decreases in class size over time.
- > This indicator may be misleading when different courses are taught within the same class setting (e.g., one teacher, in one classroom, simultaneously teaching two separately listed courses—“Introduction to Keyboarding” and “Advanced Keyboarding”).
- > Because class organization in elementary schools is homeroom-based and high schools offer departmentalized courses, it may be difficult to compare this indicator between school levels.

### Additional Information

- > For students taking multiple courses within the same class (e.g., as above, one teacher, in one classroom, simultaneously teaching “Introduction to Keyboarding” and “Advanced Keyboarding”), a “class” may be defined as an instructional offering with a unique course name, class period, and location.
- > Course titles may be used to identify classes when a unique course code is not maintained. A separate measure is recommended for classes that are limited with respect to class size (e.g., special education classes).
- > Median class size may present a more meaningful picture of the learning environment.

### Related Indicators

*Placement of Students with Disabilities*  
*School Capacity, Percentage Used*  
*Student:Staff Ratio*

### Components *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students enrolled in all classes (often identified in student record systems by a unique course code or course title) and the total number of classes offered.

**Numerator:** Number of students enrolled in all classes (based on *Unique Course Code* or *Course Title*)

**Denominator:** Total number of classes (based on *Unique Course Code* or *Course Title*)

## Formula

*Class Size, Average* is calculated by dividing the total number of students enrolled in a class (for all classes) by the total number of classes, and multiplying by 100 to create a percentage value.

$$\frac{\text{Students enrolled in a each } \textit{Unique Course Code (Course Title)}}{\text{Total number of } \textit{Unique Course Codes (Course Titles)}} \times 100$$

Alternatively, *Class Size, Average* may also be calculated by dividing the sum of enrollment in all classes by the total number of classes offered, and multiplying by 100 to create a percentage value.

$$\frac{\text{Sum of student course enrollment}}{\text{Total number of classes offered } (\textit{Unique Course Code or Course Title})} \times 100$$

## Commonly Reported Subgroups

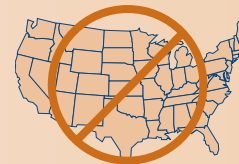
Subject matter area, school level, instructional level, core/noncore classes.

## Display Suggestions

This indicator is presented as a number in the form of students per class (XX:1).

Class-size ranges may help with the interpretation of class-size data. For example, categories might include the number of classes that average less than 20 students, the number of classes that average 20–30 students, and the number of classes that average more than 30 students. Ranges may be displayed in tables or bar charts, by subgroup.

## College Entrance Testing, Percentage Graduate Participation



### ACT Participation

### Participation Rate in College Entrance Testing

### Percentage Graduate Participation in College Entrance Testing

### SAT Participation

### Student Participation Rate in College Entrance Testing

#### Definition

The percentage of high school graduates who took a college entrance test such as the American College Testing (ACT) exam or the Scholastic Aptitude Test (SAT).

#### Recommended Use

This indicator may be used to identify what portion of graduates has taken a college entrance examination.

#### Policy Question

Are schools preparing students for postsecondary education?

#### Caveats and Cautions

- > Rates will be inflated in states that require a college entrance examination score for admission to public colleges or universities.
- > This indicator may be misleading for schools with high dropout rates.
- > Because ACT and SAT scores are reported independently, data collectors must be careful not to double-count graduates who have taken both tests.

#### Related Indicator

*College Entrance Testing, Student Average Score*

#### Components *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the existence of a reported ACT or SAT score for each graduate, and the total number of graduates.

**Numerator:** *Exit/Withdrawal Type (code = Graduated with regular, advanced, International Baccalaureate, or other type of diploma), Identification System [code = College Board Admission Testing Program (ATP) Number or American College Testing (ACT) Program Number]*

**Denominator:** *Exit/Withdrawal Type (code = Graduated with regular, advanced, International Baccalaureate, or other type of diploma)*

#### Formula

*College Entrance Testing, Percentage Graduate Participation* is calculated by dividing the number of graduates with a reported ACT or SAT score by the total number of graduates, and multiplying by 100 to create a percentage value.

$$\frac{\begin{array}{l} \text{The number of students with } \textit{Exit/Withdrawal Type} \\ \text{(code = } \textit{Graduated with regular, advanced, International Baccalaureate,} \\ \text{or other type of diploma)} \text{ and an } \textit{Identification System} \\ \text{[code = } \textit{College Board Admission Testing Program (ATP) Number} \\ \text{or } \textit{American College Testing (ACT) Program Number}] \end{array}}{\begin{array}{l} \text{Total number of students with } \textit{Exit/Withdrawal Type} \\ \text{(code = } \textit{Graduated with regular, advanced,} \\ \text{International Baccalaureate, or other type of diploma)} \end{array}} \times 100$$

#### Commonly Reported Subgroups

Disability status, race, sex, economic disadvantage status, test type (i.e., ACT or SAT), and high school Grade Point Average (GPA).

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### **Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup. SAT and ACT percentages are usually presented in separate tables and charts, but they may also be compared to each other.

## College Entrance Testing, Student Average Score



**ACT Scores**

**Average Student Score on College Entrance Testing**

**College Readiness Testing**

**SAT Scores**

### Definition

The average score of students taking a college entrance test such as the American College Testing (ACT) exam or the Scholastic Aptitude Test (SAT).

### Recommended Use

This indicator may be used to identify average student performance on college entrance exams.

### Policy Question

Are students prepared for postsecondary education?

### Caveats and Cautions

- > Average student scores may be affected by participation rates, which may vary considerably. For example, some schools encourage all or most students to take college entrance exams; others recommend the exams only for high-performing, college-bound students. The percentage of students participating in college testing may also vary based on state or local policy, including admission requirements for state or local colleges and universities.
- > Although the testing companies report scores for the most recent test, some education organizations record all scores a student receives on college entrance tests (i.e., from multiple test dates) while others maintain only the highest score. These different recording practices may lead to "average" scores that are not comparable between institutions.
- > National average scores are not based on a random sampling of students and, therefore, may not be appropriate for comparison with local or state average college entrance tests scores.
- > College entrance testing scores (SAT and ACT scores) are a measure of student readiness for college; they should not be used to assess student achievement in secondary schools.
- > Longitudinal analyses of college entrance scores must address the recent score rescaling of the Scholastic Aptitude Test (SAT).

### Additional Information

- > Valid comparisons may be made against prior institutional performance.
- > The testing company often can provide information about the total number of students tested, scores, and other relevant data.

### Related Indicator

*College Entrance Testing, Percentage Graduate Participation*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include ACT or SAT scores for all test takers, and the total number of test takers.

**Numerator:** *Score Results for Identification System [code = American College Testing (ACT) Program Number or College Board Admission Testing Program (ATP) Number]*

**Denominator:** Number of students tested (from testing company)

---

**Formula**

*College Entrance Testing, Student Average Score* is calculated by dividing the sum of all student college entrance testing scores reported (by test type to ensure scaling consistency) by the total number of students taking each test.

$$\frac{\text{Sum of Score Results for all students with Identification System} \\ [\text{code} = \text{American College Testing (ACT) Program Number}]}{\text{Total number of students tested (from testing company)}} \times 100$$
$$\frac{\text{Sum of Score Results for all students with Identification System} \\ [\text{code} = \text{College Board Admission Testing Program (ATP) Number}]}{\text{Total number of students tested (from testing company)}} \times 100$$

**Commonly Reported Subgroups**

Sex, economic disadvantage status, test type (i.e., ACT or SAT), high school GPA, and current occupational choice.

**Display Suggestions**

This indicator is presented as a number, in the form of XX.X or XXXX, and displayed in tables or bar charts by subgroup. Both total and sub-scale scores may be displayed by subgroup.



## Courses (Advanced), Percentage Student Completion

### Advanced Course Completion Patterns Percentage Students Completing (Advanced) Courses

#### Definition

The percentage of students completing a given course or sequence of courses.

#### Recommended Use

This indicator may be used to identify completion patterns in advanced courses.

#### Policy Questions

Are schools challenging students academically? Are students completing demanding courses?

#### Caveats and Cautions

- > Local authorities determine whether a course is "advanced."
- > Course "completion" is not the equivalent of course "enrollment."
- > The denominator (*Cumulative Enrollment*) may be limited to eligible students. For example, if AP History is only offered to grade 12 students, then cumulative enrollment in grade 12 may be the appropriate denominator.
- > Unless a comprehensive and unified course coding system is in use, the content of courses with the same name or code (e.g., Advanced American History or History 102) may vary between education institutions.
- > Some classes permit dual enrollment (e.g., one teacher, in one classroom, simultaneously teaching "Advanced U.S. History" and a separately listed course, "AP U.S. History"). To ensure accurate student counts, all course enrollment codes must be distinguishable.
- > Enrollment in gifted and talented or other advanced programs may be used for elementary school students who do not receive credits for course completion.

#### Additional Information

- > This indicator is distinguished from *Courses (Advanced), Percentage Student Enrollment* by the data element *Number of Credits Received*, which indicates completion rather than enrollment in a course or course sequence.
- > Groups of courses other than "advanced" may also be assessed using this formula.

#### Related Indicator

*Courses (Advanced), Percentage Student Enrollment*

#### Components *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include course code(s), number of credits received (signifying "completion"), and cumulative enrollment.

**Numerator:** *Course Code(s), Number of Credits Received* (i.e., credit > 0 signifies completion)

**Denominator:** *Cumulative Enrollment*

Some states or localities may use *Average Daily Attendance (ADA), Average Daily Membership (ADM),* or *Count of Student Membership* (e.g., October 1) as the denominator.

#### Formula

*Courses (Advanced), Percentage Student Completion* is calculated by dividing the number of students who have received credit for a given course, or course sequence, by the total student membership (cumulative enrollment), and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of students who received credit} \\ \text{(Number of Credits Received > 0 signifies completion) for Course Code(s)}}{\text{Cumulative Enrollment}} \times 100$$

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### **Commonly Reported Subgroups**

Age; grade level; disability status; economic disadvantage status; LEP status; migrant status; race; sex; and course level, such as Gifted and Talented (GT), Advanced Placement (AP), International Baccalaureate (IB), college prep, and advanced.

### **Display Suggestions**

This indicator is presented in the form of XX.X percent, by subject matter area and subgroup; or displayed in a table or bar chart.

## Courses (Advanced), Percentage Student Enrollment

### Advanced Course Enrollment Patterns Percentage Students Enrolling in (Advanced) Courses

#### Definition

The percentage of students enrolling in a given course or sequence of courses.

#### Recommended Use

This indicator may be used to identify enrollment patterns in advanced courses.

#### Policy Questions

Are schools challenging students academically? Are students enrolling in demanding courses?

#### Caveats and Cautions

- > Local authorities determine whether a course is "advanced."
- > Course "enrollment" is not the equivalent of course "completion."
- > The denominator (*Cumulative Enrollment*) may be limited to eligible students. For example, if AP History is only offered to grade 12 students, then cumulative enrollment in grade 12 may be the appropriate denominator.
- > Unless a comprehensive and unified course coding system is in use, the content of courses with the same name or code (e.g., Advanced American History or History 102) may vary between education institutions.
- > Some classes permit dual enrollment (e.g., one teacher, in one classroom, simultaneously teaching "Advanced U.S. History" and a separately listed course, "AP U.S. History"). To ensure accurate student counts, all course enrollment codes must be distinguishable.

#### Additional Information

- > This indicator is distinguished from *Courses (Advanced), Percentage Student Completion* by the absence of *Number of Credits Received*, which indicates completion rather than enrollment in a course or course sequence.
- > Groups of courses other than "advanced" may also be assessed using this formula.

#### Related Indicator

*Courses (Advanced), Percentage Student Completion*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include course code(s) and cumulative enrollment.

**Numerator:** *Course Code(s)*

**Denominator:** *Cumulative Enrollment*

Some states or localities may use *Average Daily Attendance (ADA)*, *Average Daily Membership (ADM)*, or *Count of Student Membership (e.g., October 1)* as the denominator.

#### Formula

*Courses (Advanced), Percentage Student Enrollment* is calculated by dividing the number of students enrolled in a given course, or course sequence, by the total student membership (cumulative enrollment), and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of students enrolled in Course Code(s)}}{\text{Cumulative Enrollment}} \times 100$$

#### Commonly Reported Subgroups

Age; grade level; disability status; economic disadvantage status; LEP status; migrant status; race; sex; and course level, such as Gifted and Talented (GT), Advanced Placement (AP), International Baccalaureate (IB), college prep, and advanced.

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### **Display Suggestions**

This indicator is presented in the form of XX.X percent, by subject matter area and subgroup; or displayed in a table or bar chart.

# ***Criminal Offense Incidents Reported Per 100 Students***

## ***Rate of Criminal Offense Incidents Reported Reported Criminal Offense Incidents Per 100 Students***

### **Definition**

The number, per 100 students, of suspected criminal offense incidents reported to police during a given academic year. Reportable violations of laws or ordinances include robbery, theft/larceny, and vandalism.

An "incident" is defined as any offense reported to police that is perpetrated by students at school, on school property, or during a school-sponsored activity.

### **Recommended Use**

This indicator may be used to help assess school safety and climate.

### **Policy Question**

How safe are our schools?

### **Caveats and Cautions**

- > This is an institution-based indicator; it does not present data about individuals or groups of students other than at the institution level.
- > Only incidents reported to police are included; variations in reporting practices by school staff will therefore affect the indicator's measure.
- > Some institutions include all reported incidents regardless of perpetrator (e.g., students and non-students alike), thereby increasing the number of incidents. Comparisons between institutions that do and do not distinguish between student and nonstudent perpetrators are discouraged.
- > Repeat offenders (i.e., individual students who are suspected of multiple violations) may bias measures.
- > School Resource Officers (SROs) are legally considered "police officers" in some communities; all incidents involving SROs in these districts have, by definition, been "reported" to the police, increasing the number of "incidents." Comparisons between institutions with SROs and those that must actively contact an outside authority are therefore discouraged.
- > This indicator is incident-based rather than student-based.

### **Additional Information**

- > The unit of analysis may vary depending on school size. Some organizations may choose to normalize to, and report, "per 1,000 students."
- > The *Youth Risk Behavior Surveillance System* survey administered by the Centers for Disease Control (see appendix E) may help inform the interpretation of data generated by this indicator.
- > Alternative indicators include Percentage of Students Involved in Reported Criminal Offense Incidents.

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**More information about this issue may be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools* (NCES 2002–312). This free resource from the National Forum on Education Statistics may be accessed at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).**

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### **Related Indicators**

*Alcohol-Related Incidents Reported Per 100 Students*  
*Drug-Related Incidents Reported Per 100 Students*  
*Expulsion Incidents Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspensions (Out-of-School), Actions Per 100 Students*  
*Suspensions (Out-of-School), Average Duration*  
*Suspensions (Out-of-School), Percentage Students Receiving*  
*Violent Incidents Reported Per 100 Students*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of criminal offense incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year; and a count student membership normalized to a "per 100 students" denominator.

**Numerator:** The number of criminal offense incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year.

**Denominator:** *Count of Student Membership (e.g., October 1)*  
Some states or localities may use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

**Formula**

*Criminal Offense Incidents Reported Per 100 Students* is calculated by dividing the total number of criminal offense incidents reported by a count of student membership, and multiplying by 100 to normalize to a "per 100 students" count.

$$\frac{\text{Number of criminal offense incidents reported}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$$

**Commonly Reported Subgroups**

This indicator may be disaggregated by school characteristics. For example, the number of criminal offense incidents at elementary, middle, and high schools may be compared. At the institutional level, common subgroups include: school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

**Display Suggestions**

This indicator is presented as a number in the form of XX.X, with a notation that the number is "per 100 students," and displayed in tables by subgroup.

## Drug-Related Incidents Reported Per 100 Students

### Rate of Drug-Related Incidents Reported Reported Drug-Related Incidents Per 100 Students

#### Definition

The number, per 100 students, of suspected drug-related incidents reported to police during a given academic year. Drugs include any use of illegal substances such as marijuana or cocaine, and unauthorized use of controlled substances such as Demerol or morphine. (Local and state laws should be consulted for a complete list of applicable substances.) Reportable violations of laws or ordinances include illegal drug possession, sale, use (under the influence), cultivation, manufacture, distribution, solicitation, purchase, transportation, or importation.

Violations may be specifically coded as:

- > *Sale of illegal drug*—selling illegal drugs.
- > *Sale of substance represented as an illegal drug*—selling a substance represented as an illegal drug (e.g., selling oregano represented as marijuana).
- > *Distribution of illegal drug*—distributing (i.e., giving away) illegal drugs.
- > *Distribution of substance represented as an illegal drug*—distributing (i.e., giving away) a substance represented as an illegal drug.
- > *Use of illegal drug*—smoking, snorting, injecting, ingesting, or otherwise using an illegal drug.
- > *Possession of illegal drug*—having an illegal drug in one’s pocket(s), bag(s), car, locker, etc.
- > *Possession of drug paraphernalia*—having equipment for using illegal drugs in one’s pocket(s), bag(s), car, locker, etc.
- > *Suspicion of use*—exhibiting behaviors suggesting that an individual used illegal drugs.
- > *Other drug offense*—involving a drug violation, but unable to be coded in one of the above categories.

An incident is “drug-related” if the individuals involved were under the influence of drugs at the time of the incident; if there is evidence, based on testing or investigation by a police officer at the scene, that they have been using drugs; or if the incident is somehow related to the possession, use, or sale of drugs.

An “incident” is defined as any offense reported to police that is perpetrated by students at school, on school property, or during a school-sponsored activity.

#### Recommended Use

This indicator may be used to help assess school safety and climate.

#### Policy Questions

Is there a substance abuse problem in our schools? Are drug education programs effective?

#### Caveats and Cautions

- > This is an institution-based indicator; it does not present data about individuals or groups of students other than at the institution level.
- > Only incidents reported to police are included; variation in reporting practices by school staff will therefore affect the indicator’s measure.
- > Some institutions include all reported incidents regardless of perpetrator (e.g., students and nonstudents alike), thereby increasing the number of incidents. Comparisons between institutions that do and do not distinguish between student and nonstudent perpetrators are discouraged.
- > Repeat offenders (i.e., individual students suspected of multiple violations) may bias measures.
- > School Resource Officers (SROs) are legally considered “police officers” in some communities; all incidents involving SROs in these districts have, by definition, been “reported” to the police, increasing the number of “incidents.” Comparisons between institutions with SROs and those that must actively contact an outside authority are therefore discouraged.
- > This indicator is incident-based rather than student-based.

## Additional Information

- > Tobacco and alcohol use generally are reported separately.
- > The unit of analysis may vary depending on school size. Some organizations may choose to normalize to, and report, "per 1,000 students."
- > The *Youth Risk Behavior Surveillance System* survey administered by the Centers for Disease Control (see appendix E) may help inform the interpretation of data generated by this indicator.
- > Alternative indicators include Percentage of Students Involved in Reported Drug-Related Incidents.

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More information about this issue may be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools (NCES 2002–312)*. This free resource from the National Forum on Education Statistics may be accessed at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).

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## Related Indicators

*Alcohol-Related Incidents Reported Per 100 Students*  
*Criminal Offense Incidents Reported Per 100 Students*  
*Expulsion Incidents Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspensions (Out-of-School), Actions Per 100 Students*  
*Suspensions (Out-of-School), Average Duration*  
*Suspensions (Out-of-School), Percentage Students Receiving*  
*Violent Incidents Reported Per 100 Students*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of drug-related incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year; and a count of student membership normalized to a "per 100 students" denominator.

**Numerator:** The number of drug-related incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year.

**Denominator:** *Count of Student Membership (e.g., October 1)*  
Some states or localities may use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

## Formula

*Drug-Related Incidents Reported Per 100 Students* is calculated by dividing the total number of drug-related incidents reported by a count of student membership, and multiplying by 100 to normalize to a "per 100 students" count.

$$\frac{\text{Number of drug-related incidents reported}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$$

## Commonly Reported Subgroups

This indicator may be disaggregated by school characteristics. For example, the number of drug-related incidents at elementary, middle, and high schools may be compared. At the institutional level, common subgroups include: school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

## Display Suggestions

This indicator is presented as a number in the form of XX.X, with a notation that the number is "per 100 students," and displayed in tables by subgroup.



## **Education Level, Mother**

*Education Level of Parent*

*Mother's Education Level*

*Mother's Highest Level of Education Completed*

*Parent's Education Level*

*Parent's Highest Level of Education Completed*

*Percentage of Mothers with a High School Degree*

### **Definition**

The percentage of students with mothers who have completed a given level of education, such as less than high school, high school, some college—no degree, associate's degree, bachelor's degree, and graduate degree.

### **Recommended Uses**

This indicator may be used to identify students at risk for academic failure, and as a predictor of future academic success.

### **Policy Question**

How many students may need extra help to succeed in school?

### **Caveats and Cautions**

- > Although it is commonly used as a proxy for economic disadvantage status, *Education Level, Mother* does not directly measure economic disadvantage status.
- > The education level of mothers with more than one child in an educational institution will be counted for each of her children in the student count, rather than just once; their education levels will therefore be weighted more heavily in the counts.
- > Policymakers may determine what levels of education, or ways of categorizing levels of education, are relevant to their information needs.

### **Additional Information**

- > This indicator is a commonly used predictor of school success, and is sometimes used as a proxy for Percentage Students Receiving Free or Reduced-Price Meals.
- > "Education Level, Father" or "Education Level, Parent" may be used as alternative indicators.
- > Other categories for highest level of education may also be used, including less than high school, high school, some college, college degree (two- or four-year), master's degree, and terminal degree. A complete list is included in appendix D, under the data element *Highest Level of Education Completed*.

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the highest level of education completed by a student's mother and the total student membership.

**Numerator:** Number of students with a mother in each category of *Highest Level of Education Completed* (e.g., code = less than high school, high school, some college—no degree, associate's degree, bachelor's degree, and graduate degree)

**Denominator:** *Count of Student Membership* (e.g., October 1)

Some states or localities use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

**Formula** *This is a composite indicator calculated for each education level.*

*Education Level, Mother* is calculated by dividing the number of students with mothers in each education level category by the total student membership, and multiplying by 100 to create a percentage value.

$\frac{\text{Number of students with} \\ \text{Mother's Highest Level of Education Completed} < \text{High School}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$	x 100
$\frac{\text{Number of students with} \\ \text{Mother's Highest Level of Education Completed} = \text{High School}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$	x 100
$\frac{\text{Number of students with} \\ \text{Mother's Highest Level of Education Completed} = \text{Some College}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$	x 100
$\frac{\text{Number of students with} \\ \text{Mother's Highest Level of Education Completed} = \text{Associate's Degree}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$	x 100
$\frac{\text{Number of students with} \\ \text{Mother's Highest Level of Education Completed} = \text{Bachelor's Degree}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$	x 100
$\frac{\text{Number of students with} \\ \text{Mother's Highest Level of Education Completed} = \text{Graduate Degree}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$	x 100

**Commonly Reported Subgroups**

Age, grade level, disability status, economic disadvantage status, LEP status, migrant status, and race; also school level.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup, or in a stacked bar chart when all education level categories are reported in one chart.

## Education Level, Teacher

### Percentage of Teachers with Advanced Degrees Teacher Education Level Teacher's Highest Level of Education Completed

#### Definition

The percentage of teachers, by Full-Time Equivalency (FTE), who have completed a given level of education, such as associate's degree, bachelor's degree, graduate certificate, first-professional degree, master's degree, or doctoral degree.

#### Recommended Uses

This indicator may be used, in conjunction with other information, to measure teacher quality and other teaching staff qualifications. It may also be used to predict staff salary obligations, as pay grades often reflect academic credentials.

#### Policy Question

Do students have access to well-qualified teachers?

#### Caveats and Cautions

- > Academic degrees do not necessarily correlate with the quality of instruction provided, although it is generally accepted to be a contributing factor to teacher quality.
- > Academic degree areas may or may not relate to teaching assignments.
- > Policymakers may determine what levels of education, or ways of categorizing levels of education, are relevant to their information needs.
- > Some vocational teaching credentials do not require postsecondary education but, instead, assign credential credit based on job-related experience (e.g., for an auto mechanic instructor).
- > This indicator may inform analysis of staff payroll trends because many education payroll systems have stepped increases that correspond to education levels. Thus, teachers with more education often receive higher salaries.
- > This indicator is measured in terms of FTE rather than simple teacher counts (i.e., head counts). Although FTE is a more precise measure, teacher head counts may also be used to calculate this indicator. Indicator values calculated using FTE data should not be compared with values calculated from teacher head counts.
- > Rapidly increasing or decreasing student populations may affect the number of available teaching positions in a school or district; this may influence teacher demographics and the value of this indicator.

#### Additional Information

- > A "teacher" is defined as an individual who provides instruction to prekindergarten, kindergarten, grades 1 through 12, or ungraded classes; or an individual who teaches in an environment other than a classroom setting; and who maintains daily student attendance records.
- > Although teacher education level is often linked directly to student performance, this indicator is best used to assess the general academic climate within an educational organization.
- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.
- > Other categories for highest level of education may also be used. A complete list is included in appendix D, under the data element *Highest Level of Education Completed*.

#### Related Indicators

*Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field Experience Level, Teacher "Highly Qualified" Teachers, Percentage Retention Rate, Teacher*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the employee’s job classification status as a teacher, FTE, highest level of education completed, and the total number of full-time equivalent teachers in the organization.

**Numerator:** *Job Classification (code = Teacher), Full-Time Equivalency*, number of teachers in each category of *Highest Level of Education Completed* (e.g., code = associate’s degree, bachelor’s degree, graduate certificate, first professional degree, master’s degree, doctoral degree)

**Denominator:** *Job Classification (code = Teacher), Full-Time Equivalency*

**Formula** *This is a composite indicator calculated for each education level.*

*Education Level, Teacher* is calculated by dividing the number of FTE teachers in each education level category by the total number of FTE teachers, and multiplying by 100 to create a percentage value.

$\frac{\text{Number of FTE teachers with}}{\text{Highest Level of Education Completed = Associate's Degree}}$	x 100
Total number of FTE teachers	
$\frac{\text{Number of FTE teachers with}}{\text{Highest Level of Education Completed = Bachelor's Degree}}$	x 100
Total number of FTE teachers	
$\frac{\text{Number of FTE teachers with}}{\text{Highest Level of Education Completed = Graduate Degree}}$	x 100
Total number of FTE teachers	
$\frac{\text{Number of FTE teachers with}}{\text{Highest Level of Education Completed = First Professional Degree}}$	x 100
Total number of FTE teachers	
$\frac{\text{Number of FTE teachers with}}{\text{Highest Level of Education Completed = Master's Degree}}$	x 100
Total number of FTE teachers	
$\frac{\text{Number FTE teachers with}}{\text{Highest Level of Education Completed = Doctoral Degree}}$	x 100
Total number of FTE teachers	

**Commonly Reported Subgroups**

School level, subject matter area, school locale, school type (e.g., Title I), and enrollment characteristics (e.g., percentage of students by economic disadvantage status and race/ethnicity).

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup, or in a stacked bar chart when all education level categories are reported in one chart.

## ***Experience Level, Teacher***

### ***Average Experience Level of Teachers*** ***Teacher Experience Level***

#### **Definition**

The percentage of teachers, by Full-Time Equivalency (FTE), who have been teaching a given amount of time (e.g., 0–3 years, 4–9 years, 10–15 years, 16–20 years, 21 + years).

#### **Recommended Uses**

This indicator may be used, in conjunction with other information, to measure teacher quality and other teaching staff qualifications. It may also be used to predict staff turnover rates (anticipated retirements) and salary obligations, as pay grades often reflect years of experience.

#### **Policy Questions**

Do students have equal access to experienced teachers? Are we facing a possible teacher shortage because our staff is disproportionately near retirement?

#### **Caveats and Cautions**

- > This indicator does not measure all facets of the “quality” of a teacher, but experience is generally accepted to be a factor in determining teacher quality.
- > Policymakers may determine what levels of experience, or ways of categorizing levels of experience, are relevant to their information needs.
- > This indicator may inform analysis of staff payroll trends because many education payroll systems have stepped increases that correspond to years of experience. Thus, teachers with more experience often receive higher salaries.
- > This indicator may inform analysis of the age, and likely retirement schedule, of the teaching staff.
- > This indicator is measured in terms of FTE rather than teacher counts (i.e., head counts). Although FTE is more precise, teacher head counts may be used as an alternative method to calculate this indicator. Indicator values calculated from FTE data should not be compared with values calculated with teacher count data.
- > Enrollment trends affect teacher experience. For example, a growing student body requires the hiring of more new teachers, presumably decreasing the faculty’s average years of experience. Conversely, a school or district with declining enrollments may not hire new teaching staff, and this will lead to an increase in its faculty’s average years of experience.
- > Teacher experience is affected by teacher retirement and turnover rates.

#### **Additional Information**

- > A “teacher” is defined as an individual who provides instruction to prekindergarten, kindergarten, grades 1 through 12, or ungraded classes; or an individual who teaches in an environment other than a classroom setting; and who maintains daily student attendance records.
- > Although teacher experience is often linked directly to student performance, this indicator is best used to assess the general academic climate within an educational organization.
- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.
- > This indicator is relatively easy to obtain and may be used as a proxy for staff and financial quality.
- > Organizations may also want to consider variants of this indicator, such as Average Full-Time Teacher Experience and Average Experience in Education Within/Outside the Organization.
- > Other categories for experience level may be used (for example, 0–5 years, 6–15 years, 16 + years).

## Related Indicators

*Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field Education Level, Teacher "Highly Qualified" Teachers, Percentage Retention Rate, Teacher*

## Components *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the employee's job classification status as a teacher, FTE, years of prior teaching experience, and the total number of full-time equivalent teachers in the organization.

**Numerator:** *Job Classification (code = Teacher), Full-Time Equivalency, Years of Prior Teaching Experience (e.g., by category)*

**Denominator:** *Job Classification (code = Teacher), Full-Time Equivalency*

## Formula *This is a composite indicator calculated for each experience category.*

*Experience Level, Teacher* is calculated by dividing the number of FTE teachers in each experience level category by the total number of FTE teachers, and multiplying by 100 to create a percentage value.

$$\begin{array}{l} \frac{\text{Number of FTE teachers with} \\ \text{Years of Prior Teaching Experience} = 0\text{--}3 \text{ years}}{\text{Total number of FTE teachers}} \quad \times 100 \\ \\ \frac{\text{Number of FTE teachers with} \\ \text{Years of Prior Teaching Experience} = 4\text{--}9 \text{ years}}{\text{Total number of FTE teachers}} \quad \times 100 \\ \\ \frac{\text{Number of FTE teachers with} \\ \text{Years of Prior Teaching Experience} = 10\text{--}15 \text{ years}}{\text{Total number of FTE teachers}} \quad \times 100 \\ \\ \frac{\text{Number of FTE teachers with} \\ \text{Years of Prior Teaching Experience} = 16\text{--}20 \text{ years}}{\text{Total number of FTE teachers}} \quad \times 100 \\ \\ \frac{\text{Number of FTE teachers with} \\ \text{Years of Prior Teaching Experience} = 21+ \text{ years}}{\text{Total number of FTE teachers}} \quad \times 100 \end{array}$$

## Commonly Reported Subgroups

School level, subject matter area, school locale, school type (e.g., Title I), and school enrollment characteristics (e.g., percentage of students by economic disadvantage status and race/ethnicity).

## Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup, or in a stacked bar chart when all experience level categories are reported in one chart.

# Expulsion Incidents Per 100 Students

## Number of Expulsion Incidents Per 100 Students

### Definition

The number of incidents, per 100 students enrolled, resulting in student expulsion. Note that "expulsion" is not a placement change but, rather, an action taken by a chief administrator or school board to remove a student from the institution. However, expulsion may be temporary with the possibility of reinstatement.

### Recommended Uses

This indicator may be used to assess school climate and safety, and whether students are attending school. It may also be used as a measure of disruption to the educational process.

### Policy Questions

Are students in school? Are schools safe and orderly? Are discipline policies being enforced as intended?

### Caveats and Cautions

- > The unit of expulsion may vary. For example, a student may be expelled from a school (but remain eligible for services at another school within the district), a district (but remain eligible for services at another district within the state), or a state.
- > Schools need to know whether expulsions affect special education students because these students cannot, by law, be refused services for issues related to their disability.
- > Disciplinary sanctions vary from school to school, district to district, and state to state, both as a matter of policy and subjective enforcement. Comparisons between dissimilar situations are not recommended.
- > Interpreting this indicator can be complex. For example, a "safe" school may have a low number of expulsions because few incidents warranting expulsions occurred, or because previously disruptive students were already removed.
- > Expulsion status may change on appeal, or other administrative or legal decision subsequent to the execution of an expulsion order.

### Additional Information

- > The unit of analysis may vary depending on school size. Some organizations may choose to normalize to, and report, "per 1,000 students."

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More information about this issue may be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools* (NCES 2002–312). This free resource from the National Forum on Education Statistics is available at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).

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### Related Indicators

*Alcohol-Related Incidents Reported Per 100 Students*  
*Criminal Offense Incidents Reported Per 100 Students*  
*Drug-Related Incidents Reported Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspensions (Out-of-School), Actions Per 100 Students*  
*Suspensions (Out-of-School), Average Duration*  
*Suspensions (Out-of-School), Percentage Students Receiving*  
*Violent Incidents Reported Per 100 Students*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of incidents that resulted in student expulsion(s) and the total student membership, normalized to a "per 100 students" denominator.

**Numerator:** Number of incidents that resulted in *Disciplinary Action* (code = *Expulsion*)

**Denominator:** *Count of Student Membership* (e.g., *October 1*)

Some states or localities may use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

### Formula

*Expulsion Incidents Per 100 Students* is calculated by dividing the number of incidents that resulted in student expulsion(s) by a count of student membership, and multiplying by 100 to normalize to a "per 100 students" count.

$$\frac{\text{Number of incidents resulting in } \textit{Disciplinary Action} \text{ (code = } \textit{Expulsion})}{\textit{Count of Student Membership} \text{ (e.g., } \textit{October 1})} \times 100$$

### Commonly Reported Subgroups

This indicator may be disaggregated by student or by school characteristics. For example, users may compare the number of expulsions for males versus females; or the number of expulsions at elementary, middle, and high schools. At the student level, common subgroups include: student disability status, race, sex, economic disadvantage status, and high school Grade Point Average (GPA). At the institutional level, common subgroups include: incident type, school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., percentage of students by economic disadvantage status and race/ethnicity).

### Display Suggestions

This indicator is presented as a number in the form of XX.X, with a notation that the number is "per 100 students," and displayed in tables by subgroup.



## High School Completion/Graduation Rate, Cohort Rate

### Completion Rate Graduation Rate

#### Definition

The percentage of students, typically from a specific 9th grade cohort that is adjusted for verified transfers, who leave school as graduates (i.e., who receive regular diplomas) or otherwise complete high school as defined by the state. "Completers" include diploma recipients, General Educational Development (GED) or other high school equivalency recipients (although some states count GED recipients as dropouts), other high school completers (e.g., Certificates of Completion or Attendance), and any other completion status or credential approved by appropriate authorities such as the State Board of Education.

#### Recommended Use

This indicator may be used to assess student success with regard to high school graduation and completion.

#### Policy Questions

Are schools succeeding in educating students? Do an acceptable number of students complete high school? Are students completing high school and graduating on time?

#### Caveats and Cautions

- > Rates based on all high school completers will be higher than rates based solely on regular diploma recipients. Users should be specific about what completion credentials are used in their rates.
- > Some states issue a regular diploma to students who would be considered "other high school completers" in other states. Other states do not recognize GED-based equivalency credentials. Comparisons among entities with different definitions of "graduates" and "completers" are discouraged.
- > If the cohort is adjusted to add transfers-in, this indicator's measure of on-time graduation can be affected by transfers-in who have been retained in any of grades 9 through 12. The accuracy of the measure also can be affected by failure to account accurately for transfers-out.
- > The completion rate is not the inverse of the dropout rate. Some students take more than the standard number of years to complete high school and should not be counted either as dropouts or completers.
- > Some institutions calculate a cohort completion rate by taking the inverse of the cohort dropout rate, but this method is not recommended as it does not account for students who did not complete high school but are still enrolled.
- > The formula for calculating this indicator requires multiple years of data. Therefore, there may be a delay between instituting policies to improve graduation and completion rates, and generating graduation- and completion-rate data to assess the effectiveness of such policies.
- > Three-year high schools (in districts where 9th grade is offered in separate middle or junior high schools) may complicate the calculation of this indicator.
- > High School Completion and Graduation Rates may be calculated as "leaver rates" or "cohort rates" (see *High School Completion/Graduation Rate, Leaver Rate*). Comparing one organization's "leaver rate" to another's "cohort rate" is not appropriate.
- > Data accuracy increases when student transfers are verified, but verification may be challenging. States with individual student information systems should be able to verify transfers within the state, but out-of-state transfers may be difficult to confirm.

#### Additional Information

- > GED or other high school equivalency recipients should only be counted as completers when they are of comparable age to other students in the cohort.
- > Comparing and contrasting completion and graduation rates within the same organization may yield useful information about student achievement.

**Additional Information Continued**

- > For organizations that can accurately track (and verify) individual transfers, and follow students over time, a cohort rate is more accurate than a leaver rate.
- > Students who transfer into a school or district should be added to the initial cohort, and appear in the denominator of the completion/graduation rate.
- > A "cohort" is a collection of people who jointly experience an event, or series of events, over a period of time. In this case, "cohort" refers to a group of students who enrolled in grade 9 at the same time.
- > The "cohort rate" measures what happens to a specific group of students over a period of time. This rate is based on repeated measures of a group of students with shared experiences, and reveals how many students starting together in a specific grade completed or graduated from high school over time.
- > The cohort rate typically adjusts for students who left before completing high school but were not dropouts. Users should specify whether a cohort completion/graduation rate includes transfers-out in the denominator. If it does, the completion/graduation rate will be lower than if these students are excluded from the initial cohort. "Transfers-out" include any student who left the school but is known to be receiving services, as verified by an official request for records transfer: in another public school district in the same state, in a nonpublic K-12 school, or out of state. Students who have died may also be excluded from the denominator of a completion/graduation rate; however, students temporarily out of school due to illness or expulsion are usually included in the denominator.

**Related Indicators**

*High School Completion/Graduation Rate, Leaver Rate*  
*High School Dropout Rate, Annual Student*  
*High School Dropout Rate, Cohort Rate*  
*Promotion Rate, Student*

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students from the cohort, adjusted for verified transfers, who graduated or otherwise completed schooling; and the number of students in the initial cohort (e.g., 9th grade) adjusted for verified transfers.

**Numerator (Completion Rate):** *Exit/Withdrawal Type (code = Graduated with regular, advanced, International Baccalaureate, or other type of diploma + Completed school with other credentials)*

**Numerator (Graduation Rate):** *Exit/Withdrawal Type (code = Graduated with regular, advanced, International Baccalaureate, or other type of diploma)*

**Denominator:** Initial cohort enrollment (e.g., 9th grade) adjusted for verified transfers

**Formula**

*High School Completion/Graduation Rate, Cohort Rate* is calculated by dividing the number of completers (for completion rates), or the number of diploma recipients (for graduation rates), by the total number of students in the initial cohort adjusted for verified transfers-out and transfers-in; and multiplying by 100 to generate a percentage value.

$$\frac{\text{Cohort (e.g., Grade 9) students who graduated four years later}}{\text{Initial cohort enrollment (e.g., 9th grade) adjusted for verified transfers}} \times 100$$

$$\frac{\text{Cohort (e.g., Grade 9) students who completed four years later}}{\text{Initial cohort enrollment (e.g., 9th grade) adjusted for verified transfers}} \times 100$$

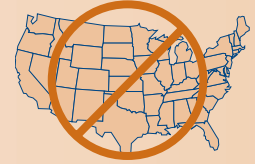
**Commonly Reported Subgroups**

Disability status, LEP status, economic disadvantage status and migrant status when exiting; race, ethnicity, sex, and on-time/not-on-time graduation or completion.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

## High School Completion/Graduation Rate, Leaver Rate



### Completion Rate Graduation Rate

#### Definition

The percentage of leavers, typically from a specific 9th grade cohort, who leave school as graduates (i.e., who receive regular diplomas) or otherwise complete high school as defined by the state. "Completers" include diploma recipients, General Educational Development (GED) or other high school equivalency recipients (although some states count GED recipients as dropouts), other high school completers (e.g., Certificates of Completion or Attendance), and any other completion status or credential approved by appropriate authorities such as the State Board of Education. The completion/graduation rate defined here is based on "leavers" (students who leave school as dropouts or graduates) and, unlike a true cohort rate, does not require the capacity to track individual students over time.

#### Recommended Use

This indicator may be used to assess whether an acceptable proportion of students who leave school are "successes" (i.e., are completers rather than dropouts).

#### Policy Questions

Are schools succeeding in educating students? Do an acceptable number of students complete high school rather than drop out?

#### Caveats and Cautions

- > Rates based on all high school completers will be higher than rates based solely on regular diploma recipients. Users should be specific about what completion credentials are used in their rates.
- > Some states issue a regular diploma to students who would be considered "other high school completers" in other states. Other states do not recognize GED-based equivalency credentials. Comparisons among entities with different definitions of "graduates" and "completers" are discouraged.
- > Although this rate uses only completers and dropouts, the "leaver" completion rate should not be interpreted as the inverse of the dropout rate. Dropout rates based on total student enrollment are more accurate and more useful.
- > The *High School Completion/Graduation Rate, Leaver Rate* does not provide an on-time graduation rate. Unlike the Cohort Rate, retained students who eventually graduate will appear in the numerator and the denominator of the Leaver Rate.
- > The formula for calculating this indicator requires multiple years' worth of data. Therefore, there may be a delay between instituting policies to improve graduation and completion rates, and generating graduation- and completion-rate data to assess the effectiveness of such policies.
- > Three-year high schools (where 9th grade is offered in multiple, middle, or junior high schools) can complicate the calculation of this indicator.
- > High School Completion or Graduation Rates can be calculated as "leaver rates" or as "cohort rates" (see *High School Completion/Graduation Rate, Cohort Rate*). Comparing one organization's "leaver rate" to another's "cohort rate" is not appropriate.

#### Additional Information

- > GED or other high school equivalency recipients should only be counted as completers when they are of comparable age to the other students in the graduating cohort.
- > Comparing and contrasting completion and graduation rates within the same organization may yield useful information about student achievement.
- > For organizations that can accurately track (and verify) individual transfers, and follow students over time, a cohort rate is more accurate than a leaver rate.
- > Cohort rates are more accurate than leaver rates because they account for students who are off sequence for their high school class even though they did not "leave" school (e.g., because they repeated or skipped a grade).

## Related Indicators

*High School Completion/Graduation Rate, Cohort Rate*

*High School Dropout Rate, Annual Student*

*High School Dropout Rate, Cohort Rate*

*Promotion Rate, Student*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students from the cohort who graduated or otherwise completed schooling and the number of students who discontinued schooling (i.e., the total number of dropouts).

**Numerator (Completion Rate):** *Exit/Withdrawal Type (code = Graduated with regular, advanced, International Baccalaureate, or other type of diploma + Completed school with other credentials)*

**Numerator (Graduation Rate):** *Exit/Withdrawal Type (code = Graduated with regular, advanced, International Baccalaureate, or other type of diploma)*

**Denominator:** *Exit/Withdrawal Type (code = Completed grade 12, but did not pass test + Completed school with other credentials + Dropped out + Graduated with regular, advanced, International Baccalaureate, or other type of diploma + Matriculation to post-secondary school + Reached maximum age for services)*

## Formula

*High School Completion/Graduation Rate, Leaver Rate* is calculated by dividing the number of completers (for completion rates), or diploma recipients (for graduation rates), by the number of completers plus the number of dropouts, and multiplying by 100 to generate a percentage value.

$$\frac{\text{High School Completers Year 4}}{\text{High School Completers Year 4} + \text{Dropouts (Grade 9 Year 1} \\ + \text{Grade 10 Year 2} + \text{Grade 11 Year 3} + \text{Grade 12 Year 4)}} \times 100$$
$$\frac{\text{High School Graduates Year 4}}{\text{High School Completers Year 4} + \text{Dropouts (Grade 9 Year 1} \\ + \text{Grade 10 Year 2} + \text{Grade 11 Year 3} + \text{Grade 12 Year 4)}} \times 100$$

## Commonly Reported Subgroups

Disability status, LEP status, economic disadvantage status and migrant status when exiting; race, ethnicity, and sex.

## Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

# High School Dropout Rate, Annual Student

## Annual Dropout Rate Dropout Rate

### Definition

The percentage of students who drop out of high school (grades 9 through 12) in a given year. This includes students in grades 9 through 12 who:

- > were enrolled in school at some time during the previous school year (e.g., 2000–2001);
- > were not enrolled at the beginning of the current school year (e.g., 2001–2002);
- > have not graduated from high school or completed a state- or district-approved educational program; and
- > do not meet any of the following exclusionary conditions:
  - > transfer to another public school district, private school, or state- or district-approved educational program (including correctional or health facility programs);
  - > temporary absence due to suspension or school-excused illness; or
  - > death.

### Recommended Use

This indicator may be used as a measure of the percentage of students who are at risk of not completing school, and allows year-to-year comparisons of dropout rates.

### Policy Questions

Are schools succeeding in educating students and keeping them in school? Is the dropout rate improving over time?

### Caveats and Cautions

- > The annual percentage rate will usually, but not always, be smaller than a cohort rate (*High School Dropout Rate, Cohort Rate*), because a cohort rate measures the percentage of students who drop out over several years.
- > This indicator may introduce a bias in schools with highly mobile student populations because tracking and verifying transfers to other schools may be difficult. These schools may report inflated dropout rates.
- > Students whose transfers to another education institution cannot be verified should be treated as dropouts for reporting purposes. The ability to document transfers to another education institution may vary by state or district and, therefore, can contribute to disparities in this indicator.
- > Students who are too old to continue receiving services ("age-outs"), or can no longer be served by the education organization for another reason ("push-outs"), are counted as dropouts if they leave without having graduated from high school or completing a state- or district-approved educational program.
- > Some education institutions calculate aggregate dropout rates for student groups beginning in 9th grade; others prefer a rate that begins in 7th grade. Comparisons among entities that use different grade ranges in their calculations are discouraged.

### Additional Information

- > This indicator is based on the NCES Common Core of Data (CCD) survey definition of an "event" dropout rate.

### Related Indicators

*High School Completion/Graduation Rate, Cohort Rate*  
*High School Completion/Graduation Rate, Leaver Rate*  
*High School Dropout Rate, Cohort Rate*  
*Promotion Rate, Student*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students with an exit/withdrawal code of "discontinued schooling," and a count of student membership.

**Numerator:** *Exit/Withdrawal Type (code = Discontinued Schooling)* for grades 9–12

**Denominator:** *Count of Student Membership (e.g., October 1)* for grades 9–12  
Some states or localities use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

**Formula**

*High School Dropout Rate, Annual Student* is calculated by dividing the number of students in grades 9–12 with a "discontinued schooling" exit/withdrawal code by a count of student membership in those grades, and multiplying by 100 to generate a percentage value.

$$\frac{\text{Number of grade 9–12 students with } \textit{Exit/Withdrawal Type (code = Discontinued Schooling)}}{\textit{Count of Student Membership (e.g., October 1) for grades 9–12 from previous academic year}} \times 100$$

**Commonly Reported Subgroups**

Disability status, economic disadvantage status, grade, LEP status, migrant status, race, ethnicity, and sex.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

# High School Dropout Rate, Cohort Rate

## Cohort Dropout Rate Dropout Rate

### Definition

The percentage of students from a specific grade cohort (e.g., "grade 9 in 2001" or "the class of 2004") who are dropouts at the time the cohort ends. This includes students who:

- > were enrolled when the cohort was initiated (e.g., at the beginning of 9th grade);
- > were not enrolled at the beginning of the school year following the end of the cohort (in this example, the fall following 12th grade);
- > have not graduated from high school or completed a state- or district-approved educational program; and
- > do not meet any of the following exclusionary conditions:
  - > transfer to another public school district, private school, or state- or district-approved educational program (including correctional or health facility programs);
  - > temporary absence due to suspension or school-excused illness; or
  - > death.

### Recommended Use

This indicator may be used to assess student success with regard to high school completion.

### Policy Questions

Are schools succeeding in educating students and keeping them in school? Is the dropout rate improving over time?

### Caveats and Cautions

- > A cohort rate will usually, but not always, be larger than an "annual rate" (*High School Dropout Rate, Annual Student*), because it includes dropouts from multiple years.
- > An accurate cohort dropout rate requires a longitudinal student record system because it compares a student's status at two points in time. A rate that adds the number of dropouts by grade over time (for example, grade 9 dropouts in year 1 plus grade 10 dropouts in year 2, etc.) can be biased by students who drop out and re-enroll, or by net changes in enrollment caused by transfers.
- > Unless calculated as a "synthetic dropout rate" (see below), this indicator requires several years' worth of data.
- > This indicator may introduce a bias in schools with highly mobile student populations because tracking and verifying transfers to other schools may be difficult. These schools may report inflated dropout rates.
- > Students whose transfers to another education institution cannot be verified should be treated as dropouts for reporting purposes. The ability to document transfers to another education institution may vary by state or district and, therefore, can contribute to disparities in this indicator.
- > Some education institutions calculate dropout rates for student groups beginning in 9th grade; others prefer a rate that begins in 7th grade. Comparisons among entities that use different grade ranges in their calculations are discouraged.
- > Some education institutions calculate a "synthetic cohort dropout rate" that, for example, measures the dropout rate for all grade 9 students, all grade 10 students, all grade 11 students, and all grade 12 students in a single year. In other words, it reflects dropout events in each of four separate grades as a single "synthetic cohort dropout rate." While this approach has the advantage of generating a single rate in a single year (rather than requiring multiple years' worth of data for a single cohort), it assumes that the different grade groups reflect substantially the same types of students, with the same types of experiences over time. The calculation of a synthetic cohort dropout rate is shown below.
- > Some institutions calculate a cohort dropout rate by taking the inverse of the High School Completion Rate, but this method is not recommended as it does not account for students who did not complete high school but are still enrolled.

## Additional Information

- > This indicator is based on the NCES Common Core of Data (CCD) survey definition of dropout.
- > A "cohort rate" measures what happens to a specific group of students over a period of time. This rate is based on repeated measures of a group of students with shared experiences, and reveals how many students starting together in a specific grade drop out over time.

## Related Indicators

*High School Completion/Graduation Rate, Cohort Rate*

*High School Completion/Graduation Rate, Leaver Rate*

*High School Dropout Rate, Annual Student*

*Promotion Rate, Student*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students in the cohort with an exit/withdrawal code of "discontinued schooling," and the number of students in the cohort during the initial year.

**Numerator:** *Exit/Withdrawal Type* (code = *Discontinued Schooling*) for cohort members

**Denominator:** Initial cohort enrollment (e.g., 9th grade) adjusted for verified transfers

## Formula

*High School Dropout Rate, Cohort Rate* is calculated by dividing the number of students in a specific grade cohort who, throughout their high school career, have an exit/withdrawal (code = *Discontinued Schooling*) by the number of students in the cohort in the initial year adjusted for verified transfers; and multiplying by 100 to generate a percentage value.

$$\frac{\text{Cohort members (throughout the balance of their high school career) with} \\ \text{Exit/Withdrawal Type (code = Discontinued Schooling)}}{\text{Initial cohort enrollment (e.g., 9th grade) adjusted for verified transfers}} \times 100$$

A synthetic high school dropout rate uses dropout rates from consecutive grades within a single year. This rate assumes that dropout rates for various grades do not change substantially over time.

$$\text{Synthetic High School Cohort Dropout Rate} = \\ 1 - [(1 - \text{Grade 9 rate}) \times (1 - \text{Grade 10 rate}) \times (1 - \text{Grade 11 rate}) \times (1 - \text{Grade 12 rate})] \times 100$$

## Commonly Reported Subgroups

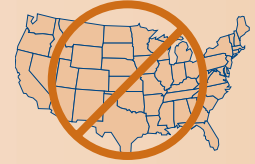
Disability status, economic disadvantage status, grade, LEP status, migrant status, race, ethnicity, and sex.

## Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.



## "Highly Qualified" Teachers, Percentage



### Appropriately Certified Teachers Percentage "Highly Qualified" Teachers

#### Definition

The percentage of Full-Time Equivalency (FTE) teachers designated by the state or locality as "highly qualified."

#### Recommended Use

This indicator may be used to assess the quality of the teaching staff, and whether teacher quality is improving over time. This indicator will likely generate high public interest.

#### Policy Question

Do students have access to "highly qualified" teachers?

#### Caveats and Cautions

- > Teacher assessments to determine subject area knowledge vary in each state. Thus, comparisons among states are not encouraged.
- > Public understanding of the term "highly qualified" may not match the precise meaning of "highly qualified" as defined by the No Child Left Behind Act of 2001 (NCLB).
- > Teachers may be fully certified in their state but not "highly qualified" if they are teaching out-of-field for some portion of the school day. Prorating "highly qualified" status based on FTE assignments increases the accuracy of indicator data (e.g., 1/6 FTE not "highly qualified" when teaching one of six classes out-of-field).

#### Additional Information

- > A "teacher" is defined as an individual who provides instruction to prekindergarten, kindergarten, grades 1 through 12, or ungraded classes; or an individual who teaches in an environment other than a classroom setting; and who maintains daily student attendance records.
- > According to NCLB (but subject to additional state criteria and interpretation), teachers in "core academic subjects" (English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography) must meet the following three criteria to be considered highly qualified:
  - > Hold a bachelor's degree.
  - > Obtain full state certification, as defined by the state.
  - > Demonstrate competency, as defined by the state, in each core academic subject taught.
- > NCLB calculations are limited to teachers in the above "core academic subjects."
- > This indicator is measured in terms of FTE rather than simple teacher counts (i.e., head counts). Although FTE is a more precise measure, teacher head counts may also be used to calculate this indicator. Indicator values calculated using FTE data should not be compared with values calculated from teacher head counts.
- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.

#### Related Indicators

*Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field Education Level, Teacher Experience Level, Teacher "Qualified" Paraprofessionals, Percentage Retention Rate, Teacher*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include identification of employee job classification status as a teacher, FTE, highest level of education completed, teaching assignment, certification type, and assessment score results; and the total number of full-time equivalent teachers.

**Numerator:** *Job Classification (code = Teacher), Full-Time Equivalency, Highest Level of Education Completed, Teaching Credential Type Teaching Assignment, Score Results*

**Denominator:** *Job Classification (code = Teacher), Full-Time Equivalency*

**Formula**

*“Highly Qualified” Teachers, Percentage* is calculated by dividing the FTE number of “highly qualified” teachers (determined for, and weighted by, each teaching assignment) by the total number of FTE teachers, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number FTE “highly qualified” teachers (weighted by teaching assignment)}}{\text{Total number of FTE teachers}} \times 100$$

**Commonly Reported Subgroups**

Race, sex, age, and program area assignment. Statistics are also commonly reported by school locale, level, size, and enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and displayed in tables or bar charts by subgroup.

## ***Instructional Time, Allotted***

***Allotted Instructional Time***  
***Instructional Minutes***  
***Instructional Time Per Year***  
***Time of Instruction***

### **Definition**

The amount of time allotted to students for scheduled instructional activities (i.e., the sum of scheduled class time), per unit of time. This indicator is commonly reported in hours and minutes per day, per week, per session, or per year. Homeroom time may be counted when it is supervised by a certified teacher and used for structured activities such as viewing specialized programming (e.g., Channel One), guidance activities, or student information activities (e.g., announcements). For elementary and middle schools, a recess period may be counted when it includes structured instructional activities under the supervision of a certified teacher (e.g., physical education instruction). Unstructured homeroom and recess, class changing, and meal time are not counted as allotted instructional time.

### **Recommended Use**

This indicator may be used to determine the amount of instructional time allotted to students.

### **Policy Question**

How much instructional time is being provided to students?

### **Caveats and Cautions**

- > Given the difficulty of determining precisely what students are doing in a classroom at a given time, this indicator measures the time *allotted* for instructional activities rather than the time engaged in, or participating in, instructional activities.
- > Variation in units of time (e.g., minutes versus hours) and in the measurement window (e.g., per day, per week, per session, per year) may be confusing and, therefore, must be accurately represented. Units should be adjusted before comparing data from different reporting entities.
- > Logically, the amount of instructional time allotted in a day cannot be equal to or greater than the amount of time reported as the length of student school day.
- > In an integrated curriculum, it may not be possible to differentiate time spent on specific subject areas.

### **Additional Information**

- > The unit of time may vary depending on the school calendar.
- > *Instructional Time, Allotted* may influence per-pupil expenditures and other financial indicators.
- > Common reporting units include minutes per session, hours per session, minutes per year, and hours per year.

### **Related Indicator**

*Absence Rate (Class), Teacher*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include time allotted for instructional activities per unit of time (e.g., minutes per year).

*Instructional Minutes*—The total number of instructional minutes in a given unit of time, e.g., day, week, or session.

### **Formula**

*Instructional Time, Allotted* is calculated by determining the total amount of time allotted for instructional activities, per unit of time.

The sum of allotted *Instructional Minutes* per unit of time (e.g., per day, week, or session).

### **Commonly Reported Subgroups**

School level, instructional level, core/noncore classes, and subject area.

### **Display Suggestions**

This indicator is presented as a number (in units of time) per unit time, although tables and bar graphs may make sense to display subgroups.

## "Persistently Dangerous" Schools, Percentage



### Percentage Schools Identified as "Persistently Dangerous"

#### Definition

The percentage of schools identified as "persistently dangerous," as defined by the No Child Left Behind Act of 2001 (NCLB) and the state.

#### Recommended Use

This indicator may be used to assess school climate and safety, and whether conditions are improving over time. This indicator will likely generate high public interest.

#### Policy Question

Are our schools safe places for children?

#### Caveats and Cautions

> Each state has its own definition of "persistently dangerous school"; thus, there may be great variation in what is considered a "persistently dangerous" school in different states. Comparisons should not be made across states.

#### Additional Information

> A "school" is defined as an institution that provides preschool, elementary, and/or secondary instruction; has one or more grade groupings or is ungraded; has one or more teachers to give instruction and care; is located in one or more buildings; and has an assigned administrator(s).

#### Related Indicators

*Alcohol-Related Incidents Reported Per 100 Students*

*Criminal Offense Incidents Reported Per 100 Students*

*Drug-Related Incidents Reported Per 100 Students*

*Expulsion Incidents Per 100 Students*

*Suspensions (Out-of-School), Actions Per 100 Students*

*Suspensions (Out-of-School), Average Duration*

*Suspensions (Out-of-School), Percentage Students Receiving*

*Violent Incidents Reported Per 100 Students*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of schools designated as "persistently dangerous," as defined by state criteria in accordance with NCLB; and the total number of schools.

**Numerator:** Number of schools designated as "persistently dangerous," as defined by state criteria

**Denominator:** Total number of schools

#### Formula

"Persistently Dangerous" Schools, Percentage is calculated by dividing the number of schools designated as "persistently dangerous," as defined by state criteria in accordance with NCLB, by the total number of schools; and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of schools designated as "Persistently Dangerous," as defined by state criteria}}{\text{Total number of schools}} \times 100$$

#### Commonly Reported Subgroups

School locale, level, size, and enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

#### Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

# Placement of Students With Disabilities

## Alternative Environment Placements Disabilities, Placement of Students With Students With Disabilities Placement

### Definition

The percentage of students with disabilities placed in various learning or care environments. Service settings include: early intervention classroom/center, homebound placement instruction, hospital placement instruction, itinerant services outside the home, outpatient service facility, private residential placement, private separate day school placement, public residential placement, public separate day school placement, regular nursery school/child care center, regular school campus/regular class placement, residential facility, resource room placement (pullout program), respite care, reverse mainstream setting, separate class placement, and short-term detention facility.

### Recommended Use

This indicator may be used to identify the percentage of students with disabilities who have been placed in alternative learning environments.

### Policy Questions

How much instruction do students with disabilities receive in regular classroom settings? How much instruction do students with disabilities receive in alternative settings?

### Caveats and Cautions

- > Special education may be age-based rather than grade-based.
- > Some placement categories are limited to early childhood.
- > Because a student may be placed in more than one setting, the sum of the percentages from all settings can be more than 100 percent.

### Additional Information

- > This indicator may be adapted for other groups of students served in alternative environments (e.g., pregnant students, violent offenders, etc.).

### Related Indicators

*Class Size, Average*

### Components *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include disability status and service setting.

**Numerator:** Number of students with a *Disability Status* in each category of *Service Setting* (see codes below)

**Denominator:** Number of students with a *Disability Status*

### Formula *This is a composite indicator calculated for each service setting.*

*Placement of Students With Disabilities* is calculated by dividing the number of students with disabilities placed in various learning environments (service settings) by the total number of students with disabilities, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of students with disabilities (Disability Status) in early intervention classrooms/centers (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}} \times 100$$
$$\frac{\text{Number of students with disabilities (Disability Status) in homebound placement instruction (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}} \times 100$$
$$\frac{\text{Number of students with disabilities (Disability Status) in hospital placement instruction (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}} \times 100$$

## Formula Continued

$\frac{\text{Number of students with disabilities (Disability Status) in itinerant services outside the home (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in outpatient service facilities (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in private residential placement (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in private separate day school placement (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in public residential placement (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in public separate day school placement (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in regular nursery schools/child care centers (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in regular school campus/regular class placement (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in residential facilities (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in resource room placement (pullout program) (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in respite care (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in reverse mainstream settings (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in separate class placement (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100
$\frac{\text{Number of students with disabilities (Disability Status) in short-term detention facilities (Service Setting)}}{\text{Total number of students with disabilities (Disability Status)}}$	x 100

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**Commonly Reported Subgroups**

Disability status and type, time in placement, placement type, age, and grade.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

## Promotion Rate, Student

### Retention Rate, Student

### Student Promotion

### Student Retention Rate

#### Definition

The percentage of students promoted to the next grade level at the end of a school session.

#### Recommended Use

This indicator may be used to identify promotion and retention rates.

#### Policy Question

Are students progressing academically?

#### Caveats and Cautions

> Using enrollment counts as the denominator incorporates transfers and dropouts into the rate, decreasing the apparent promotion rate. Thus, the desired denominator should be the number of students promoted plus the number of students retained.

> Students in ungraded classes are not considered “not promoted” unless (and until) they are asked to spend more than the usual amount of time in the ungraded class.

> States and localities may have different promotion policies. For example, some organizations may limit the number of times a student can be retained in a given span of grades, while others may promote strictly on the basis of academic progress or assessment. Comparing promotion or nonpromotion rates between education organizations with different promotion policies is discouraged.

#### Additional Information

> Retention Rate = 1 - Promotion Rate

#### Related Indicators

*High School Completion/Graduation Rate, Cohort Rate*

*High School Completion/Graduation Rate, Leaver Rate*

*High School Dropout Rate, Annual Student*

*High School Dropout Rate, Cohort Rate*

#### Components *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students promoted to the next grade level at the end of the session, and the number of students not promoted to the next grade level at the end of the session.

**Numerator:** Number of students promoted (entry for *Promotion Type*) to the next grade level at the end of the session.

**Denominator:** Number of students not promoted (entry for *Nonpromotion Reason*) to the next grade level at the end of the session, plus the number of students promoted (entry for *Promotion Type*) to the next grade level at the end of the session.

#### Formula

*Promotion Rate, Student* is calculated by dividing the number of students promoted to the next grade level at the end of the session by that number plus the number of students not promoted to the next grade level at the end of the session, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of students promoted (entry for } Promotion Type)}{\text{Number of students promoted (entry for } Promotion Type) + \text{Number of students not promoted (entry for } Nonpromotion Reason)}} \times 100$$

#### Commonly Reported Subgroups

Race, sex, age, status as academically disadvantaged, and grade level.

#### Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.



## "Qualified" Paraprofessionals, Percentage



### Appropriately "Qualified" Paraprofessionals Percentage "Qualified" Paraprofessionals

#### Definition

The percentage of Full-Time Equivalency (FTE) instructional paraprofessionals with responsibilities in core academic, special education, bilingual education, and English as a Second Language (ESL) courses who have been designated as "qualified" by the state or locality. According to the No Child Left Behind Act of 2001 (NCLB), Title I paraprofessionals must meet one of the following three criteria to be considered highly qualified:

- > Complete at least two years of study at an institution of higher education.
- > Obtain an associate's (or higher) degree.
- > Pass a state or local assessment that demonstrates knowledge of, and the ability to assist with instruction in, reading, writing, and math (or, as appropriate, reading, writing, and mathematics readiness).

#### Recommended Use

This indicator may be used to assess the quality of the paraprofessional staff, and whether paraprofessional quality is improving over time. This indicator will likely generate high public interest.

#### Policy Question

Do students have access to "qualified" paraprofessional staff?

#### Caveats and Cautions

- > Assessments administered to paraprofessionals to determine whether they are "qualified" vary by state. Thus, comparisons among states are not encouraged.
- > Public understanding of the term "qualified" may not match the precise definition of "qualified" under NCLB.
- > This indicator is measured in terms of FTE rather than simple paraprofessional counts (i.e., head counts). Although FTE is a more precise measure, head counts are sometimes used to calculate this indicator. Indicator values calculated using FTE data should not be compared with values calculated from paraprofessional head count data.

#### Additional Information

- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.
- > NCLB calculations are limited to paraprofessional staff with responsibilities in core academic, special education, bilingual education, and English as a Second Language (ESL) courses only.

#### Related Indicators

*"Highly Qualified" Teachers, Percentage*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include identification of employee job classification status as a paraprofessional, FTE, highest level of education completed, and assessment score results; and the total number of full-time equivalent paraprofessionals in the organization.

**Numerator:** *Job Classification (code = Paraprofessional), Full-Time Equivalency, Highest Level of Education Completed, Score Results*

**Denominator:** *Job Classification (code = Paraprofessional), Full-Time Equivalency*

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**Formula**

*"Qualified" Paraprofessionals, Percentage* is calculated by dividing the FTE number of "qualified" paraprofessionals by the total number of FTE paraprofessionals, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number FTE "qualified" paraprofessionals}}{\text{Total number of FTE paraprofessionals}} \times 100$$

**Commonly Reported Subgroups**

Race, sex, age, and program area assignment. Statistics are also commonly displayed by school locale, level, size, and enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and displayed in tables or bar charts by subgroup.

# Retention Rate, Teacher

## Teacher Retention Rate

### Definition

The percentage of Full-Time Equivalency (FTE) teachers currently on staff who were retained as employees after a specified amount of time.

### Recommended Use

This indicator may be used to assess staff availability and job satisfaction. It is also used as an indicator of organizational climate.

### Policy Questions

How healthy is our organizational climate? Does our system retain teachers? Do students have access to well-qualified teachers?

### Caveats and Cautions

- > Staff members may end employment with an education organization for many reasons. A few examples might be a retirement bulge due to an incentive package, transfers to a better paying school district, an unpleasant working environment, or a new supervisor negatively affecting job satisfaction. Without additional information about causation, conclusions about job satisfaction are difficult to ascertain. Conclusions about staff supply may still be valid, however, because the staff are no longer employed regardless of the reason.
- > Reconstituted schools will show low staff retention rates upon reassignment of teaching staff.
- > Context indicators are particularly important for interpreting the meaning behind this indicator's value. For example, school leaders might wish to see a high retention rate for their most effective teaching staff—unless they decide to distribute their best teachers to multiple schools to serve as role models. On the other hand, a low retention rate might be desirable when a school's teaching staff has not been effective.
- > This indicator is measured in terms of FTE rather than simple teacher counts (i.e., head counts). Although FTE is a more precise measure, teacher head counts may also be used to calculate this indicator. Indicator values calculated using FTE data should not be compared with values calculated from teacher head counts.

### Additional Information

- > A "teacher" is defined as an individual who provides instruction to prekindergarten, kindergarten, grades 1 through 12, or ungraded classes; or an individual who teaches in an environment other than a classroom setting; and who maintains daily student attendance records.
- > This indicator may be used to determine retention rates of other types of staff as well.
- > The compound indicator Retention of "Highly Qualified" Staff could provide useful information to an education organization, although it may be more difficult to collect.
- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.

### Related Indicators

*Absence Rate (Class), Teacher*

*Assessment, Average Student Score*

*Certification, Percentage Classes Taught by Teachers Holding Emergency, Provisional, or Out-of-Field Education Level, Teacher*

*Experience Level, Teacher*

*"Highly Qualified" Teachers, Percentage*

*"Persistently Dangerous" Schools, Percentage*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include identification of employee job classification status as a teacher, FTE, and employment start date; and the total number of FTE teachers in the organization.

**Numerator:** *Job Classification (code = Teacher), Full-Time Equivalency, Employment Start Date (prior to relevant previous point in time)*

**Denominator:** *Job Classification (code = Teacher), Full-Time Equivalency*

### **Formula**

*Retention Rate, Teacher* is calculated by dividing the number of FTE teachers with an employment start date prior to a relevant previous point in time by the total number of current FTE teachers, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of FTE teachers with an} \\ \text{Employment Start Date (date = prior to relevant previous point in time)}}{\text{Total number of current FTE teachers}} \times 100$$

### **Commonly Reported Subgroups**

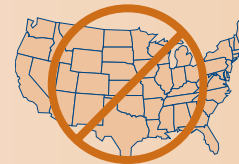
Race, sex, subject matter area, school, school level, local economic factors, age groups, program, experience, and reason for leaving.

### **Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

## School Capacity, Percentage Used

*Excess Public School Capacity  
Excess Public School Membership  
Percentage School Capacity Used*



### Definition

The degree to which public school membership is in excess of, or less than, the “normal” student capacity for accessible publicly owned school plants in use, as defined by local authorities. This includes any public school students housed in non-publicly owned quarters, and makeshift or improvised facilities; as well as students in permanent publicly owned school plants that are in excess of, or below, normal capacity.

### Recommended Use

This indicator may be used to determine whether schools are operating above, below, or at enrollment capacity.

### Policy Question

Are our schools overcrowded? Are we using our school facilities as efficiently as possible?

### Caveats and Cautions

- > “School enrollment capacity” is defined by local authorities and may vary based on “best practices,” room sizes, building configuration, state regulations, and even union contracts. Thus, this indicator should not be used to compare organizations with different definitions of school enrollment capacity.
- > *Average Daily Membership (ADM)* is sometimes confused with *Average Daily Attendance (ADA)*, *Count of Student Membership* (e.g., October 1) and *Cumulative Enrollment*. Each of these is slightly different; they should not be used interchangeably to assess the value of this indicator.
- > *Average Daily Attendance (ADA)* may give a better picture of actual school crowding than does *Average Daily Membership (ADM)*, because students who are enrolled but absent do not take up space. However, ADM is the preferred numerator because it reflects the number of students for whom a school is required to provide space.

### Additional Information

- > A “school” is defined as an institution that provides preschool, elementary, and/or secondary instruction; has one or more grade groupings or is ungraded; has one or more teachers to give instruction and care; is located in one or more buildings; and has an assigned administrator(s).
- > In a secondary school, both basic classrooms and specialty instructional spaces such as art or music rooms are counted toward capacity because regular classrooms are not unoccupied while students receive art or music instruction. In elementary schools, only basic classrooms are counted toward capacity. Two identical school buildings could have different capacities if they offer different types of programs, or are subject to different capacity limitations set by state law or teacher contracts. An optimal utilization rate recognizes that it is not possible to utilize every classroom every period. For example, an advanced science classroom may be able to accommodate 20 students, but there may be only 10 students in the fifth period class. In this scenario, even if some other classes are over capacity, the school utilization rate may not be over 100 percent.
- > Elementary School Enrollment Capacity = Number of classrooms x number of students assignable to classrooms
- > Secondary School Enrollment Capacity = Number of classrooms x number of students per assignable classroom x optimal utilization rate

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More information about this issue can be found in *Facilities Information Management: A Guide for State and Local Education Agencies (NCES 2003-400)*. This free resource from the National Forum on Education Statistics can be accessed at [http://nces.ed.gov/forum/pub\\_2003400.asp](http://nces.ed.gov/forum/pub_2003400.asp).

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### Related Indicators

*Class Size, Average*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the Average Daily Membership (ADM) and the school enrollment capacity as defined locally (based on the number of classrooms, the number of students assignable to each type of classroom, and the optimal utilization rate).

**Numerator:** *Average Daily Membership (ADM)*

Some states or localities use *Average Daily Attendance (ADA), Cumulative Enrollment, or Count of Student Membership (e.g., October 1)* as the numerator.

**Denominator:** School Enrollment Capacity (as established by local authorities)

**Formula**

*School Capacity, Percentage Used* is calculated by dividing ADM by the school enrollment capacity, and multiplying by 100 to create a percentage value.

$$\frac{\textit{Average Daily Membership (ADM)}}{\textit{School enrollment capacity}} \times 100$$

**Commonly Reported Subgroups**

School level, quartiles or quintiles representing percentage of students by economic disadvantage status and race/ethnicity, and school locale.

**Display Suggestions**

This indicator may be displayed as a table or bar chart showing the percentage of capacity utilized by subgroup.

## Stability Rate, Student Enrollment

### Mobility Rate

### School Year Stability Rate

### Student Enrollment Stability Rate

#### Definition

The percentage of students attending the same education institution (e.g., a school, district, or state) during a given period of time.

#### Recommended Uses

This indicator may be used to assess the student population turnover over time. It may also be used as a measure of school climate.

#### Policy Questions

Do schools have to deal with a lot of student turnover? Do students stay in the same school long enough to make academic gains?

#### Caveats and Cautions

> One organization's Stability Rate should not be compared to another's Mobility Rate because tracking students who have left an institution is presumably more difficult than accounting for students still in an institution, possibly introducing a bias in the converse indicator.

#### Additional Information

- > If the period of measurement extends beyond one academic year, the lowest grade in the institution should be excluded from the count because there would not be students in the grade for both counting windows in the formula.
- > All grades can be included in the denominator even though the highest grade will not be present the following year, because students who exit due to promotion are considered part of the stability measure.
- > Stability Rate and Mobility Rate are closely related, however, Stability Rate may be easier to implement as an indicator given that many organizations are better able to track students who are currently enrolled than students who have already withdrawn.
- > Some organizations may choose to substitute "membership" for "enrollment" in the formula.

#### Related Indicators

*Promotion Rate, Student*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students enrolled at time B, and the number of students continuously enrolled since a previous time A.

**Numerator:** *Enrollment Status* (continuous since time A)

**Denominator:** *Enrollment Status* (at time B)

#### Formula

*Stability Rate, Student Enrollment* is calculated by dividing the number of students who were continuously enrolled since time A by the number students enrolled at time B, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of students continuously enrolled (*Enrollment Status*) since time A}}{\text{Total number of students enrolled (*Enrollment Status*) at time B}} \times 100$$

#### Commonly Reported Subgroups

School level, quartiles or quintiles representing percentage of students by economic disadvantage status and race/ethnicity, and school locale.

#### Display Suggestions

This indicator is presented as a number in the form of XX.X percent, and may be displayed in tables or bar charts by subgroup.

## Student:Instructional Computer Ratio

### Computer:Student Ratio Instructional Computer:Student Ratio

#### Definition

A measure of the relationship between the number of students and the number of instructional computers in an education institution.

#### Recommended Use

This indicator may be used to assess and compare instructional computer allocation in education institutions, and often generates high public interest.

#### Policy Question

Do students have adequate access to instructional technology?

#### Caveats and Cautions

- > Computer capacity and speed do not factor into the identification of instructional computers as long as the equipment meets the curriculum needs of instructional staff. Thus, the identification of "instructional computers" may vary in different education institutions. "Old" computers may not be able to meet some students' curricular demands while meeting the needs of others. For example, a 486 computer may run instructional software for elementary students, but may not be able to process advanced mathematical software used in a high school curriculum; thus the same 486 computer would be counted as an "instructional computer" in the elementary school but not the high school.
- > This count does not include computers dedicated to administrator or teacher use. Instructional computers must be accessible to students. This requires that instructional computers counts be at a specific time in order to avoid counting machines in the repair shop or otherwise inaccessible to students.
- > Some organizational circumstances demand more or fewer computers than others. For example, a magnet school for technology may require more instructional computers per student than a regular school.
- > Staff other than teachers may supervise instructional activities. For example, students using computers to work on an assignment in the library may be supervised by the librarian.
- > The *Student:Instructional Computer Ratio* does not address how well, how often, how much, or how effectively technology is used as a teaching and learning tool.

#### Additional Information

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**The Forum Unified Education Technology Suite presents a comprehensive approach to acquiring, implementing, managing, securing and using technology in education settings. It is available at no cost at [http://nces.ed.gov/pubs2005/tech\\_suite/](http://nces.ed.gov/pubs2005/tech_suite/).**

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**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include a count of student membership; and the number of computers accessible to, and used by, students during instructional activities and under an instructor's supervision.

**Numerator:** *Count of Student Membership (e.g., October 1)*

Some states or localities use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the numerator.

**Denominator:** The number of computers accessible to, and directly used by, students during instructional activities and under an instructor's supervision. (Computer capacity and speed do not factor into the identification of instructional computers, as long as the equipment meets the curriculum needs of the instructional staff.)

#### Formula

*Student:Instructional Computer Ratio* is calculated by dividing a count of student membership by the number of computers accessible to, and used by, students during instructional activities and under an instructor's supervision.



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$$\frac{\text{Count of Student Membership (e.g., October 1)}}{\text{Number of instructional computers (e.g., on October 1)}} \times 100$$

**Commonly Reported Subgroups**

School level, quartiles or quintiles representing percentage of students by economic disadvantage status and race/ethnicity, school locale, room type (e.g., classroom, media center, library), Internet connected/not, multimedia capable/not, operating system type, and machine age.

**Display Suggestions**

This indicator is presented as a numerical ratio in the form of XXX students/1 computer (or XXX:1), although tables may make sense to display subgroups.

## Student:Staff Ratio

### Staff:Student Ratio Student:Teacher Ratio

#### Definition

A measure of the relationship between the number of students and the number of Full-Time Equivalency (FTE) staff in an education institution.

#### Recommended Use

This indicator may be used to assess the availability of staff resources relative to student demand in education institutions, and often generates high public interest.

#### Policy Question

How efficiently and effectively are we staffing our schools?

#### Caveats and Cautions

- > Job classifications vary between organizations, even for employees with similar duties. For example, a "curriculum coordinator" may be designated as either an administrative or an instructional staff member depending on the organizational chart.
- > Some circumstances demand more or fewer staff than others. For example, a young instructional staff or a disadvantaged student population may require more administrative support. Similarly, some circumstances demand more or fewer teachers than others. For example, a bilingual student population may require smaller classes (to encourage language practice) and therefore relatively more teachers.
- > The terms "certification," "licensure," and "endorsement" are not used consistently across the nation, which may lead to misreporting. Indicator values should not be compared among organizations with different definitions.

#### Additional Information

- > Student and staff counts should be taken at the same time.
- > Student:Teacher Ratio may be used as a proxy for class size. While this is not ideal, Student:Teacher Ratio is easier to calculate, requires less burden, and provides a reasonable approximation that reflects increases/decreases in class size over time.
- > "Staff" may be categorized further as "official-administrative," "professional-educational," "professional-other," "paraprofessional," "technical," "office/clerical/administrative support," "crafts and trades," "operative," "labor," and "service work."

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**A complete list of administrative and professional-educational job classifications, including specific job titles within each classification category below, may be found in appendix H of the *NCES Handbooks Online* at <http://nces.ed.gov/programs/handbook/index.asp>.**

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- > *Official-Administrative* staff perform management activities that require developing broad policies, and executing those policies through direction of individuals at all levels. This includes high-level administrative activities performed directly for policymakers.
- > *Professional-Educational* staff perform duties requiring a high degree of knowledge and skills generally acquired through a baccalaureate or higher degree (or its equivalent obtained through special study and/or experience), including skills in the field of education, educational psychology, educational social work, or an education therapy field.
- > *Professional-Other* staff perform assignments requiring a high degree of knowledge and skills usually acquired through a baccalaureate or higher degree (or its equivalent obtained through special study and/or experience), but not necessarily requiring skills in the field of education.
- > *Paraprofessional* staff work alongside and assist professional staff.

- > *Technical staff* perform tasks requiring a combination of basic scientific knowledge and manual skills that can be obtained through approximately two years of postsecondary education such as that offered in community/junior colleges and technical institutes, or through equivalent special study and/or on-the-job training.
  - > *Office/Clerical/Administrative Support staff* prepare, transfer, transcribe, systematize, or preserve communications, records, and transactions.
  - > *Crafts and Trades staff* perform tasks requiring high level manual skills acquired through on-the-job training and experience, or through apprenticeship or other formal training programs. This assignment requires considerable judgment, and a thorough and comprehensive knowledge of the processes involved in the work.
  - > *Operative staff* perform tasks requiring an intermediate level of manual skills that can be mastered in a few weeks through limited training. This includes bus drivers and vehicle operators.
  - > *Labor staff* perform manual tasks that require no special training. This includes individuals performing lifting, digging, mixing, loading, and pulling operations.
  - > *Service work staff* perform tasks regardless of level of difficulty relating to both protective and nonprotective supportive services.
- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.

### Related Indicators

*Class Size, Average*

*Teacher:Administrator Ratio*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include a count of student membership, employee job classification, and FTE.

**Numerator:** *Count of Student Membership (e.g., October 1)*

Some states or localities use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the numerator.

**Denominator:** *Job Classification, Full-Time Equivalency*

### Formula

*Student:Staff Ratio* is calculated by dividing a count of student membership by the FTE number of staff in an education institution. "Staff" may be categorized further, based on job classification as desired (see above).

$$\frac{\text{Count of Student Membership (e.g., October 1)}}{\text{Number of FTE staff (by Job Classification categories)}} \times 100$$

### Commonly Reported Subgroups

Staff type (e.g., student:administrator, student:instructional staff, and student:teacher). Each staff type may be disaggregated further by school level, quartiles or quintiles representing percentage of students by economic disadvantage status and race/ethnicity, school locale, and (for teachers) subject area.

### Display Suggestions

This indicator is presented as a numerical ratio in the form of XX students/1 staff (or XX:1), although tables may make sense to display subgroups.

## ***Suspensions (Out-of-School), Actions Per 100 Students***

### ***Number of Out-of-School Suspension Actions Per 100 Students***

#### **Definition**

The number of actions, per 100 students enrolled, in which students were disciplined by out-of-school suspension (with or without services).

#### **Recommended Uses**

This indicator may be used to assess school climate and safety, and whether students are attending school. It may also be used as a measure of disruption to the educational process.

#### **Policy Questions**

Are students in school? Are schools safe and orderly? How well is our discipline policy working?

#### **Caveats and Cautions**

- > Administration of disciplinary sanctions varies from school to school, district to district, and state to state, both as a matter of policy and subjective enforcement. Comparisons between different situations are not recommended.
- > Repeat offenders (i.e., students disciplined on multiple occasions) may bias the number of out-of-school suspensions.
- > If a student is suspended until an expulsion hearing is held and then is ultimately expelled, it may lead to a double count of a single student.
- > Although special restrictions exist with respect to suspending special education students, all out-of-school suspensions should be counted, including those of special education students. In-school suspensions are not counted for any students.
- > Interpreting this indicator can be complex. For example, a "safe" school may have a low number of suspensions because there were few incidents worthy of suspension, or a because students who previously caused trouble have already been removed.
- > This indicator is often interpreted in light of its related indicators (see below) to ascertain the relative severity of incidents and determine whether they arise from across the student population or from a smaller group of students (are multiple incidents caused by the same students?).

#### **Additional Information**

- > The unit of analysis may vary depending on school size. Some organizations may normalize to, and report, "per 1,000 students."
- > This formula may be used to assess in-school suspensions, depending on the organization's information needs.

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**More information about this issue may be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools (NCES 2002–312)*. This free resource from the National Forum on Education Statistics can be accessed at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).**

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#### **Related Indicators**

*Alcohol-Related Incidents Reported Per 100 Students*  
*Criminal Offense Incidents Reported Per 100 Students*  
*Drug-Related Incidents Reported Per 100 Students*  
*Expulsion Incidents Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspensions (Out-of-School), Average Duration*  
*Suspensions (Out-of-School), Percentage Students Receiving*  
*Violent Incidents Reported Per 100 Students*

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**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of disciplinary actions resulting in suspension, and a count of student membership normalized to a "per 100 students" denominator.

**Numerator:** Number of actions resulting in *Disciplinary Action* (code = *Suspension*)

**Denominator:** *Count of Student Membership* (e.g., *October 1*)

Some states or localities use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

**Formula**

*Suspensions (Out-of-School), Actions Per 100 Students* is calculated by dividing the number of disciplinary actions resulting in suspensions by a count of student membership, and multiplying by 100 to normalize to a "per 100 students."

$$\frac{\text{The number of incidents resulting in } \textit{Disciplinary Action} \text{ (code = } \textit{Suspension}\text{)}}{\textit{Count of Student Membership} \text{ (e.g., } \textit{October 1}\text{)}} \times 100$$

**Commonly Reported Subgroups**

This indicator may be disaggregated by student or school characteristics. For example, users may compare the number of suspension actions for males and females or the number of suspension actions at elementary, middle, and high schools. At the student level, common subgroups include: disability status, race, sex, economic disadvantage status, and high school grade point average. At the institutional level, common subgroups include: incident type, school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

**Display Suggestions**

This indicator is presented as a number in the form of XX.X, with a notation that the number is "per 100 students," and displayed in tables by subgroup.

## Suspensions (Out-of-School), Average Duration

### Average Duration of Out-of-School Suspension Incidents Total Number of Days Out-of-School Suspension Incidents

#### Definition

The average number of suspension days served by students during an out-of-school suspension incident.

#### Recommended Uses

This indicator may be used to assess school climate and safety, and whether students are attending school. It may also be used as a measure of disruption to the educational process.

#### Policy Questions

Are students in school? Are schools safe and orderly? How well is our discipline policy working? How much school are students missing because of discipline problems?

#### Caveats and Cautions

- > Administration of disciplinary sanctions varies from school to school, district to district, and state to state, both as a matter of policy and subjective enforcement. Comparisons between different situations are not recommended.
- > If a student is suspended until an expulsion hearing is held and then is ultimately expelled, it may lead to a double count of a single student.
- > Although special restrictions exist with respect to suspending special education students, all out-of-school suspensions should be counted, including those of special education students. In-school suspensions are not counted for any students.

#### Additional Information

- > The unit of analysis may vary depending on school size. Some organizations may normalize to, and report, "per 1,000 students."
- > This formula may be used to assess in-school suspensions, depending on the organization's information needs.

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More information about this issue may be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools* (NCES 2002–312). This free resource from the National Forum on Education Statistics can be accessed at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).

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#### Related Indicators

*Alcohol-Related Incidents Reported Per 100 Students*  
*Criminal Offense Incidents Reported Per 100 Students*  
*Drug-Related Incidents Reported Per 100 Students*  
*Expulsion Incidents Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspensions (Out-of-School), Actions Per 100 Students*  
*Suspensions (Out-of-School), Percentage Students Receiving*  
*Violent Incidents Reported Per 100 Students*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of disciplinary actions resulting in suspension, the disciplinary action start date, and disciplinary action end date.

**Numerator:** *Disciplinary Action (code = Suspension), Disciplinary Action Start Date, Disciplinary Action End Date*

**Denominator:** *Total number of incidents [Disciplinary Action (code = Suspension)]*

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## Formula

*Suspension (Out-of-School), Average Duration* is calculated by dividing the total number of days of student suspensions (ending dates minus beginning dates) for all disciplinary actions that resulted in a suspension by the total number of out-of-school suspensions administered.

$$\frac{\begin{array}{l} \text{The total number of days of student suspensions} \\ \text{[Disciplinary Action End Date(s) - Disciplinary Action Start Date(s)]} \\ \text{resulting from Disciplinary Action (code = Suspension)} \end{array}}{\text{Total number of incidents [Disciplinary Action (code = Suspension)]}} \times 100$$

## Commonly Reported Subgroups

This indicator may be disaggregated by student or school characteristics. For example, users may compare the average number of suspension days for males and females or the average number of suspension days at elementary, middle, and high schools. At the student level, common subgroups include: disability status, race, sex, economic disadvantage status, and high school grade point average. At the institutional level, common subgroups include: incident type, school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

## Display Suggestions

This indicator is presented as a number in the form of XX.X, and may be displayed in tables by subgroups.

# Suspensions (Out-of-School), Percentage Students Receiving

## Percentage of Students Receiving Out-of-School Suspensions

### Definition

The percentage of students who have been disciplined by out-of-school suspensions.

### Recommended Uses

This indicator may be used to assess school climate and safety, and whether students are attending school. It may also be used as a measure of disruption to the educational process.

### Policy Questions

Are students in school? Are schools safe and orderly? How well is our discipline policy working? How many students are missing school because of discipline problems?

### Caveats and Cautions

- > Administration of disciplinary sanctions varies from school to school, district to district, and state to state, both as a matter of policy and subjective enforcement. Comparisons between different situations are not recommended.
- > This is a student-based indicator. Care must be taken not to double count any single student for subsequent (multiple) offenses within a single reporting period.
- > If a student is suspended until an expulsion hearing is held and then is ultimately expelled, it may lead to a double count of a single student.
- > Although special restrictions exist with respect to suspending special education students, all students with out-of-school suspensions should be counted, including special education students. In-school suspensions are not counted for any students.
- > This indicator is often interpreted in light of its related indicators (see below) to ascertain the relative severity of incidents and determine whether they arise from across the student population or from a smaller group of students (are multiple incidents caused by the same students?).

### Additional Information

- > This formula may be used to assess in-school suspensions, depending on the organization's information needs.

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More information about this issue may be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools* (NCES 2002–312). This free resource from the National Forum on Education Statistics can be accessed at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).

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### Related Indicators

*Alcohol-Related Incidents Reported Per 100 Students*  
*Criminal Offense Incidents Reported Per 100 Students*  
*Drug-Related Incidents Reported Per 100 Students*  
*Expulsion Incidents Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspensions (Out-of-School), Average Duration*  
*Suspensions (Out-of-School), Actions Per 100 Students*  
*Violent Incidents Reported Per 100 Students*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of disciplinary actions resulting in suspensions, and a count of student membership.

**Numerator:** *Disciplinary Action (code = Suspension)*

**Denominator:** *Count of Student Membership (e.g., October 1)*

Some states or localities may use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.



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## Formula

*Suspension (Out-of-School), Percentage Students Receiving* is calculated by dividing the number of students receiving a suspension as a disciplinary action by a count of student membership, and multiplying by 100 to create a percentage value.

$$\frac{\text{An unduplicated count of students receiving } \textit{Disciplinary Action} \textit{ (code = } \textit{Suspension})}{\textit{Count of Student Membership (e.g., October 1)}} \times 100$$

## Commonly Reported Subgroups

This indicator may be disaggregated by student or school characteristics. For example, users may compare the percentage of males and females suspended or the percentage of students suspended at elementary, middle, and high schools. At the student level, common subgroups include: disability status, race, sex, economic disadvantage status, and high school grade point average. At the institutional level, common subgroups include: incident type, school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

## Display Suggestions

This indicator is presented as a number in the form of XX.X percent, although it may be displayed in tables, nested tables (e.g., race within grade level), or bar charts by subgroup.

## Teacher:Administrator Ratio

### Administrator:Teacher Ratio

#### Definition

A measure of the relationship between the Full-Time Equivalency (FTE) number of teachers and the FTE number of administrators in an education institution.

#### Recommended Use

This indicator may be used to evaluate the span of control and supervisory responsibilities of education institutions, and often generates high public interest.

#### Policy Question

Do schools have too many (or too few) nonteaching staff?

#### Caveats and Cautions

- > Job classifications vary between organizations, even for staff who perform similar duties. For example, a "curriculum coordinator" may be designated as either an administrative or an instructional staff member depending on the organizational chart.
- > When determining the number of administrators, some organizations may choose not to combine staff with *office/clerical/administrative support* job titles with *official-administrative* job titles.
- > Some circumstances demand more or fewer staff than others. For example, a young instructional staff or a disadvantaged student population may require more administrative support. Similarly, some circumstances demand more or fewer teachers than others. For example, a bilingual student population may require smaller classes (to encourage language practice) and therefore relatively more teachers.

#### Additional Information

- > A "teacher" is defined as an individual who provides instruction to prekindergarten, kindergarten, grades 1 through 12, or ungraded classes; or an individual who teaches in an environment other than a classroom setting; and who maintains daily student attendance records.

---

**A complete list of administrative and professional-educational job classifications, including specific job titles within each classification category below, may be found in appendix H of the *NCES Handbooks Online* at <http://nces.ed.gov/programs/handbook/index.asp>.**

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- > *Official-Administrative* job categories include administrative/supervisory/ancillary services officer, board of education/school board/board of trustees member, commandant of cadets, dean/dean of instructions/dean of students/dean of boys/dean of girls/dean of student activities, deputy/associate/vice-/assistant principal, deputy/associate/assistant superintendent/ commissioner, executive assistant, instructional program director/coordinator/consultant, manager, noninstructional program director/coordinator/consultant, ombudsperson, principal/headmaster/headmistress/head of school, school president, school site council member, and superintendent/commissioner.
- > *Office/Clerical/Administrative Support* job categories include bookkeeping/accounting/auditing clerk, cashier, computer operator, data entry clerk, dispatcher, duplicating/photocopying assistant, file clerk, general office clerk, mail clerk, messenger, office manager, receptionist, records clerk, secretary, stenographer, stores/supplies handler, switchboard/PBX operator, and typist/word processor.
- > Other job classifications or job categories may be substituted depending on the organization's information needs.
- > Full-Time Equivalency (FTE) is the amount of time required to perform an assignment, stated as a proportion of a full-time position and computed by dividing the amount of time employed by the time normally required for a full-time position.

## Related Indicators

*Class Size, Average*

*Education Level, Teacher*

*Experience Level, Teacher*

*"Highly Qualified" Teachers, Percentage*

*Retention Rate, Teacher*

*Student:Staff Ratio*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of FTE teachers and the FTE number of administrators.

**Numerator:** *Job Classification (code = Teacher), Full-Time Equivalency*

**Denominator:** *Job Classification (code = Official-Administrative and Office/Clerical/Administrative support), Full-Time Equivalency*

## Formula

*Teacher:Administrator Ratio* is calculated by dividing the number of FTE teachers by the FTE number of administrators in an education institution. "Administrators" may be categorized further, based on job classification as desired (see above).

$$\frac{\text{Number of FTE staff with } \textit{Job Classification (code = Teacher)}}{\text{Number of FTE staff with } \textit{Job Classification (code = Official-Administrative and Office/Clerical/Administrative Support)}} \times 100$$

## Commonly Reported Subgroups

School level, school size, quartiles or quintiles representing percentage of students by economic disadvantage status and race/ethnicity, and school locale.

## Display Suggestions

This indicator is presented as a numerical ratio, in the form of XX teachers/1 administrator or XX:1, and may be displayed in tables by subgroups.

## Transportation Services, Percentage Students Receiving

### Percentage Students Receiving Transportation Services Student Transportation Transportation at Public Expense

#### Definition

The percentage of students transported at public expense; transported at reduced public expense; or provided room, board, or payment in lieu of transportation.

#### Recommended Use

This indicator may be used to assess what portion of students are transported to or from school at public expense.

#### Policy Questions

How many students are transported to or from school at public expense? What noninstructional costs are important in the district's budget?

#### Caveat and Caution

> Due to the wide range of geographic and demographic features in communities across the nation, student transportation costs may vary substantially even for organizations with a similar percentage of students being transported at public expense.

#### Additional Information

> According to the No Child Left Behind Act of 2001 (NCLB), school districts may be required to provide transportation services to students who choose to attend a new school because their school does not make Adequate Yearly Progress (AYP) during consecutive years, even if they otherwise would not have received services.

#### Related Indicators

*Adequate Yearly Progress (AYP), Percentage Schools in Improvement Categories  
Placement of Students With Disabilities*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include student transportation status and a count of student membership

**Numerator:** The number of students with *Transportation Status* (code = *At Public Expense; At Reduced Public Expense; or Provided Room, Board, or Payment in Lieu of Transportation*).

**Denominator:** *Count of Student Membership (e.g., October 1)*

Some states or localities may use *Average Daily Membership (ADM), Average Daily Attendance (ADA), or Cumulative Enrollment* as the denominator.

#### Formula

*Transportation Services, Percentage Students Receiving* is calculated by dividing the number of students transported at public expense; transported at reduced public expense; or provided room, board, or payment in lieu of transportation by a count of student membership, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of students with } \textit{Transportation Status} \text{ (code = } \textit{At Public Expense; At Reduced Public Expense; or Provided Room, Board, or Payment in Lieu of Transportation})}{\textit{Count of Student Membership (e.g., October 1)}} \times 100$$

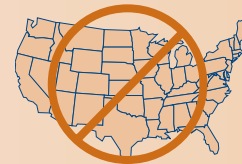
#### Commonly Reported Subgroups

School level and school characteristics.

#### Display Suggestions

This indicator is presented as a percentage although tables may make sense to display subgroups.

## Truancy Rate, Schoolwide



### Schoolwide Truancy Rate

#### Definition

The percentage of students in a school who are "truant," as defined by local or state authorities (e.g., "students subject to compulsory attendance who have been absent without valid cause").

#### Recommended Use

This indicator may be used to assess the significance of missed class time.

#### Policy Question

Are we succeeding in keeping students in school?

#### Caveats and Cautions

- > There is no national standard defining "truancy," or "excused" versus "unexcused" absences. Thus, the truancy rates of different states or localities generally are not comparable.
- > Various definitions of "truancy" include more than 4 unexcused absences per month, more than 12 days unexcused absences per year, and less than 90 percent attendance.

#### Additional Information

- > This indicator is required by the No Child Left Behind Act of 2001 (NCLB) to meet new federal Uniform Management Information Reporting System (UMIRS) requirements set forth in NCLB Subpart 1 – State Grants, Section 4112(c)(3).

#### Related Indicators

*High School Dropout Rate, Annual Student*

*High School Dropout Rate, Cohort Rate*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students who are truant, as defined by local or state authorities (based on the number of days of attendance and the total days in session), and a count of student membership.

**Numerator:** The number of students who are truant

Note that *Number of Days in Attendance* divided by *Total Days in Session* can determine whether a student is a truant if there is a "threshold" absence rate that defines truancy.

**Denominator:** *Count of Student Membership (e.g., October 1)*

Some states or localities may use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

#### Formula

*Truancy Rate, Schoolwide* is calculated by dividing the number of students who are truant, as defined by local or state authorities, by a count of student membership; and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of students who are truant, as defined by local or state authorities (e.g., based on } \textit{Number of Days in Attendance} \textit{ and } \textit{Total Days in Session})}{\textit{Count of Student Membership (e.g., October 1)}} \times 100$$

#### Commonly Reported Subgroups

Age, disability status, grade level, migrant status, race, and sex; and school level, size, quartiles or quintiles representing percentage of students by economic disadvantage status and race/ethnicity, safety, and locale.

#### Display Suggestions

This indicator is presented as a percentage although tables may make sense to display subgroups.

## ***Violent Incidents Reported Per 100 Students***

***Rate of Violent Incidents Reported***  
***Reported Violent Incidents Per 100 Students***  
***School Violence Incidents Reported***  
***Violence in Schools***

### **Definition**

The number, per 100 students, of suspected violent incidents reported to police during a given academic year. "Violent" incidents include battery, fighting (mutual), homicide (murder or manslaughter), kidnapping (abduction), physical attack with a weapon, physical attack without a weapon, rape/sexual battery, and threat/intimidation.

An "incident" is defined as any offense reported to police that is perpetrated by students at school, on school property, or during a school-sponsored activity.

### **Recommended Use**

This indicator may be used to help assess school safety and climate.

### **Policy Question**

How safe are our schools?

### **Caveats and Cautions**

- > This is an institution-based indicator; it does not present data about individuals or groups of students other than at the institution level.
- > Only incidents reported to police are included; variation in reporting practices by school staff will affect this indicator's measure.
- > Repeat offenders (i.e., individual students suspected of multiple violations) may bias measures.
- > School Resource Officers (SROs) are legally considered "police officers" in some communities; all incidents involving SROs in these districts have, by definition, been "reported" to the police, increasing the number of "incidents." Comparisons between institutions with SROs and those that must actively contact an outside authority are therefore discouraged.
- > This indicator is incident-based rather than student-based.

### **Additional Information**

- > The unit of analysis may vary depending on school size. Some organizations may choose to normalize to, and report, "per 1,000 students."
- > The *Youth Risk Behavior Surveillance System* survey administered by the Centers for Disease Control (see appendix E) may help inform the interpretation of data generated by this indicator.
- > Alternative indicators include Percentage of Students Involved in Reported Violent Incidents.

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**More information about this issue can be found in *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools* (NCES 2002–312). This free resource from the National Forum on Education Statistics can be accessed at [http://nces.ed.gov/forum/pub\\_2002312.asp](http://nces.ed.gov/forum/pub_2002312.asp).**

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### **Related Indicators**

*Alcohol-Related Incidents Reported Per 100 Students*  
*Criminal Offense Incidents Reported Per 100 Students*  
*Drug-Related Incidents Reported Per 100 Students*  
*Expulsion Incidents Per 100 Students*  
*"Persistently Dangerous" Schools, Percentage*  
*Suspension (Out-of-School), Actions Per 100 Students*  
*Suspensions (Out-of-School), Average Duration*  
*Suspensions (Out-of-School), Percentage Students Receiving*

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**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of violent incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year, and a count of student membership normalized to a “per 100 students” denominator.

**Numerator:** The number of violent incidents perpetrated by students at school, on school property, or during a school-sponsored activity that have been reported to police during a given academic year.

**Denominator:** *Count of Student Membership (e.g., October 1)*  
Some states or localities may use *Average Daily Membership (ADM)*, *Average Daily Attendance (ADA)*, or *Cumulative Enrollment* as the denominator.

**Formula**

*Violent Incidents Reported Per 100 Students* is calculated by dividing the total number of violent incidents reported by a count of student membership, and multiplying by 100 to normalize to a “per 100 students” count.

$$\frac{\text{Number of violent incidents reported}}{\text{Count of Student Membership (e.g., October 1)}} \times 100$$

**Commonly Reported Subgroups**

This indicator may be disaggregated by school characteristics. For example, the number of violent incidents at elementary, middle, and high schools may be compared. At the institutional level, common subgroups include: school level, school type, school size, grade level, school locale, and school enrollment characteristics (e.g., categories representing percentage of students by economic disadvantage status and race/ethnicity).

**Display Suggestions**

This indicator is presented as a number in the form of XX.X, with a notation that the number is “per 100 students,” and displayed in tables by subgroup.

# Vocational/Technical Programs, Percentage Nontraditional Completers

## Nontraditional Completers of Vocational/Technical Programs Percentage Nontraditional Completers of Vocational/Technical Programs

### Definition

The percentage of nontraditional students completing "career/technical" programs or "clusters," as defined by the Carl D. Perkins Vocational and Technical Education Act. Students are designated "non-traditional" when members of their sex comprise less than 25 percent of the individuals employed in the occupation or field associated with the area of study. Because of geographical variation in labor markets, local authorities assign "nontraditional" status.

### Recommended Use

This indicator may be used to identify nontraditional completion rates of vocational/technical programs or clusters, as defined by the Carl D. Perkins Vocational and Technical Education Act.

### Policy Question

Are schools succeeding in preparing all students equally for occupations traditionally dominated by members of one sex? Are our schools ensuring that young men and women have the same occupational choices?

### Caveats and Cautions

- > Because of geographical variation in labor markets, local authorities define and designate programs as "nontraditional."
- > Content broached in a course with the same name/code (e.g., Plumbing I) may vary between institutions, unless a comprehensive and unified course coding system is being used.

### Additional Information

- > The U.S. Department of Education Office of Vocational and Adult Education (OVAE) identifies 16 career "clusters": Agriculture and Natural Resources, Arts/Audio/Video Technology and Communications, Architecture and Construction, Business and Administration, Education and Training, Finance, Government and Public Administration, Health Science, Hospitality and Tourism, Human Services, Information Technology Services, Law and Public Safety, Manufacturing, Retail/Wholesale Sales and Services, Scientific Research and Engineering, and Transportation Distribution and Logistics (Source: *Sixteen Career Clusters: Securing Futures*, U.S. Department of Education and OVAE, 2001).

### Related Indicators

*Vocational/Technical Programs, Percentage Nontraditional Participation*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of nontraditional completers (by sex), course codes, and number of credits received (i.e., "credit > 0" signifies completion); and a count of all vocational/technical program completers.

**Numerator:** *Sex, Course Code, Number of Credits Received* (i.e., credit > 0 signifies completion)

**Denominator:** *Course Code, Number of Credits Received* (i.e., credit > 0 signifies completion)

### Formula

*Vocational/Technical Programs, Percentage Nontraditional Completers* is calculated by dividing the number of nontraditional students who received credit for completing career/technical programs or career clusters by the total number of students (i.e., traditional and nontraditional) who completed career/technical programs or career clusters, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of nontraditional students (by Sex) who completed} \\ \text{(Number Credits Received > 0 signifies completion)} \\ \text{a vocational/technical course or course sequence (Course Code)}}{\text{Total number of students who completed (Number Credits Received > 0 signifies completion)} \\ \text{a vocational/technical course or course sequence (Course Code)}} \times 100$$



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**Commonly Reported Subgroups**

Sex, program, or career cluster.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and displayed in tables or bar charts by subgroup.

# Vocational/Technical Programs, Percentage Nontraditional Participation

## Percentage Nontraditional Participation in Vocational/Technical Programs

### Definition

The percentage of nontraditional students participating in "career/technical" programs or "clusters" regardless of their completion status, as defined by the Carl D. Perkins Vocational and Technical Education Act. Students are designated "nontraditional" when members of their sex comprise less than 25 percent of the individuals employed in the occupation or field associated with the area of study. Because of geographical variation in labor markets, local authorities assign "nontraditional" status.

### Recommended Use

This indicator may be used to identify nontraditional participation in vocational/technical programs or clusters, as defined by the Carl D. Perkins Vocational and Technical Education Act.

### Policy Question

Are schools succeeding in preparing all students equally for occupations traditionally dominated by members of one sex? Are our schools ensuring that young men and women have the same occupational choices?

### Caveats and Cautions

- > Because of geographical variation in labor markets, local authorities define and designate programs as "nontraditional."
- > Content broached in a course with the same name/code (e.g., Plumbing I) may vary between institutions, unless a comprehensive and unified course coding system is being used.

### Additional Information

- > The U.S. Department of Education Office of Vocational and Adult Education (OVAE) identifies 16 career "clusters": Agriculture and Natural Resources, Arts/Audio/Video Technology and Communications, Architecture and Construction, Business and Administration, Education and Training, Finance, Government and Public Administration, Health Science, Hospitality and Tourism, Human Services, Information Technology Services, Law and Public Safety, Manufacturing, Retail/Wholesale Sales and Services, Scientific Research and Engineering, and Transportation Distribution and Logistics (Source: *Sixteen Career Clusters: Securing Futures*, U.S. Department of Education and OVAE, 2001).

### Related Indicators

*Vocational/Technical Programs, Percentage Nontraditional Completers*

**Components** *All italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of nontraditional participants (by sex), course codes, and a count of all vocational/technical program participants.

**Numerator:** *Sex, Course Code*

**Denominator:** *Course Code*

### Formula

*Vocational/Technical Programs, Percentage Nontraditional Participation* is calculated by dividing the number of nontraditional students participating in career/technical programs or career clusters by the total number of students (i.e., traditional and nontraditional) participating in career/technical programs or career clusters, and multiplying by 100 to create a percentage value.

$$\frac{\text{Number of nontraditional students (by Sex) participating in a vocational/technical course or course sequence (Course Code)}}{\text{Total number of students participating in a vocational/technical course or course sequence (Course Code)}} \times 100$$

---

**Commonly Reported Subgroups**

Sex, program, or career cluster.

**Display Suggestions**

This indicator is presented as a number in the form of XX.X percent, and displayed in tables or bar charts by subgroup.



# Appendix A: Additional Context Measures

Some statistics are used to calculate the indicators listed in the *Guide*. Appendix A describes how these statistics are defined when used in the document.

## **Average Daily Attendance (ADA)**

### **ADA**

#### **Definition**

The average number of students "attending," or present, during a given reporting period (usually a regular school session). Only days when students are under the guidance and direction of teachers should be considered "in session."

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students in attendance on all days that school was in session during a given reporting period, and the total number of days that school was in session during the reporting period.

**Numerator:** *Number of Days in Attendance* (for each student)

**Denominator:** *Total Days in Session*

#### **Formula**

*Attendance, Average Daily (ADA)* is calculated by dividing the total number of days in attendance during a given reporting period for all students by the total number of days on which school is in session during the reporting period.

$$\frac{\sum \text{Number of Days in Attendance for each student}}{\text{Total Days in Session}}$$

#### **Caveats and Cautions**

> ADA is not defined uniformly because some states count absent students with a written excuse for a school day as "in attendance" while others do not. Similarly, "in attendance" may be defined as "in homeroom" in many high schools, whereas it might require 4.5 hours of school day participation in an elementary school setting. Because of these and other definition differences, caution is necessary when trying to compare ADA reports from different schools, school districts, and state education agencies.

> ADA is sometimes confused with *Average Daily Membership (ADM)*, *Count of Student Membership* (e.g., *October 1*), and *Cumulative Enrollment*. Each item measures something slightly different and they should not be used interchangeably.

#### **Additional Information**

> ADA can be used to determine Title I funding.

## Average Daily Membership (ADM)

### ADM

#### Definition

The average daily count of students enrolled in school during a given reporting period. Only days when students are under the guidance and direction of teachers should be considered "in session."

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of students enrolled on all days that school was in session during a given reporting period, and the total number of days that school was in session during the reporting period.

**Numerator:** *Enrollment Status* (code = *Currently Enrolled*) for each student on each day in session

**Denominator:** *Total Days in Session*

#### Formula

*Membership, Average Daily (ADM)* is calculated by dividing the total number of students enrolled on each day in session during a given reporting period by the total number of days school is in session during the reporting period.

$$\frac{\sum \text{Enrollment Status (code = Currently Enrolled) for each student on each day in session}}{\text{Total Days in Session}}$$

#### Caveats and Cautions

> ADM is sometimes confused with *Average Daily Attendance (ADA)*, *Count of Student Membership* (e.g., *October 1*), and *Cumulative Enrollment*. Each item measures something slightly different and they should not be used interchangeably.

> This measure may also be referred to as "Average Daily Enrollment (ADE)."

> This measure may be complicated by the placement of special education students in alternative learning environments administered outside an education organization's authority.

#### Additional Information

For groups of schools with varying lengths of terms (e.g., within a state or local education agency), ADM is the sum of the individual schools' Average Daily Memberships.

## Contract Days of Service per Year

### Number of Service Days

#### Definition

The number of days per year that teachers are expected to work, as described in their employment agreement.

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of service days in the teacher contract.

*Contract Days of Service per Year*

#### Formula

*Contract Days of Service per Year* is the number of service days in the teacher contract.

$$\text{Contract Days of Service per Year}$$

#### Caveats and Cautions

> A teaching contract may include both instructional and noninstructional (e.g., professional development and preparation) days.

## Count of Student Membership (e.g., October 1)

### October 1 Count of Student Membership

#### Definition

The count of students on the current roll taken on a specific school day (for example the date closest to October 1) by using either the sum of original entries and re-entries, minus total withdrawals; or the sum of the total students present and the total students absent.

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the enrollment status for all students.

*Enrollment Status (code = Currently Enrolled)*

#### Formula

*Membership, Student Count (e.g., October 1)* is the number of students enrolled on a given date (e.g., October 1)

$\sum$  *Enrollment Status (code = Currently Enrolled)* on a given date (e.g., October 1)

#### Caveats and Cautions

> Although many organizations take a Count of Student Membership on October 1, the components and formula may be applied to any date. For example, some organizations report a "Fall count" (taken, for example, on September 15), or an average of a fall and spring attendance count, as their Count of Student Membership.

> *Membership, Student Count (e.g., October 1)* is sometimes confused with *Average Daily Attendance (ADA)*, *Average Daily Membership (ADM)*, and *Cumulative Enrollment*. Each item measures something slightly different and they should not be used interchangeably.

## Cumulative Enrollment

#### Definition

The total number of students enrolled at any point during a specified window of time. Cumulative Enrollment includes enrollment at the beginning of the specified period, and transfers into the school or program during the specified period. In an individual student record system, Cumulative Enrollment is the count of all enrollments during the school year with an exit date greater than the entry date.

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the enrollment status of all students.

*Enrollment Status (code = Currently Enrolled)* at any point during the measurement window for all students

#### Formula

Cumulative Enrollment is the sum of students enrolled at any point during the measurement window (e.g., an academic year).

$\sum$  *Enrollment Status (code = Currently Enrolled)* at any point during the measurement window for all students

#### Caveats and Cautions

> *Cumulative Enrollment* is sometimes confused with *Average Daily Attendance (ADA)*, *Average Daily Membership (ADM)*, and *Count of Student Membership (e.g., October 1)*. Each item measures something slightly different and they should not be used interchangeably.

## ***Noninstructional Service Days, Number of Teacher***

### ***Number of Noninstructional Teacher Service Days***

#### **Definition**

The number of noninstructional days teachers are required to attend school, including professional development days, curriculum development days, planning days, and parent-teacher conference days.

**Components** *Italicized terms are defined in chapter 2, appendix A, or appendix D.*

Components include the number of days in the teacher contract, and the length of the student school year.

*Contract Days of Service per Year; School Year, Length of Student*

#### **Formula**

*Noninstructional Service Days, Number of Teacher* is calculated by subtracting the number of instructional days in the student school year from the number of service days in the teacher contract.

*Contract Days of Service per Year – School Year, Length of Student*

#### **Caveats and Cautions**

Noninstructional days do not refer to work days that a teacher is removed from a classroom and replaced by a substitute teacher.



# Appendix B: Statistical Terms and Concepts

Appendix B describes several statistical terms and concepts commonly used to conceptualize, develop, and interpret education indicators. To limit the length of this appendix, only terms and concepts explicitly or implicitly referred to in this *Guide* are included.

The following documents served as resources during the preparation of appendix B:

- > *Handbook of Parametric and Nonparametric Statistical Procedures (Third Edition)* by David Sheskin (Chapman and Hall/CRC 2003)
- > *HyperStat Online: An Introductory Statistics Textbook and Online Tutorial for Help in Statistics* by David M. Lane (<http://davidmlane.com/hyperstat/>)
- > *Statistical Methods in Education and Psychology* by Gene V. Glass and Kenneth D. Hopkins (Prentice Hall 1984)

## Introduction

This document defines an education indicator as a measure of the status of, or change in, an education system with regard to its goals. Because statistical methods play an integral role in the development, use, and interpretation of education indicators, definitions of commonly used methods are useful for both generators and users of indicator data. This appendix presents basic statistical terms and concepts that commonly arise when conceptualizing, developing, or interpreting education indicators. These terms and concepts include:

- > Average
- > Cohort
- > Confidence Interval
- > Data
- > Error
- > Grade Equivalent
- > Mean
- > Median
- > Mode
- > Normal Curve Equivalent
- > Observation
- > Percentage
- > Percentile Rank
- > Population
- > Random Error
- > Random Sample
- > Range
- > Rank Order
- > Ratio
- > Sample
- > Standard Deviation
- > Standard Error
- > Standard Score
- > Stanines
- > Systematic Error
- > Variable
- > Variance
- > Z-Score

*“One must always be wary of “statisticulation,” the art of lying with statistics while maintaining an appearance of objectivity and rationality.”*

—Gene Glass and Kenneth Hopkins

## Population Sampling

A “population” is an entire set of subjects, items, units, or observations in a group. The identification of a population usually includes explicit restrictions to a specified “universe” that is limited in space or time. For example, all students in a school district’s high schools during the 2000–2001 academic year might be a “population” studied by education researchers.

*A representative sample of 100 may be preferable to an unrepresentative sample of 1,000,000!*

—Gene Glass and Kenneth Hopkins

A “sample” is a subset of a population that is selected to represent the population for the purpose of inferring information about the entire population. The criteria for selecting a sample from a population (i.e., “sampling”) are very important to satisfy assumptions implicit in many statistical methods. For example, in a “random sample,” each element of the population should have an equal probability of being included in the sample. In a “biased sample,” on the other hand, the method used to select the sample generates a sample that does not truly represent the population. For example, the principle of independent sampling may be violated when the selection of one member increases or decreases the probability that another member will be selected. Such a sample is said to “lack representativeness.” However, a random sample with different characteristics than the population universe is not necessarily a biased sample: if the difference is not the result of a systematic bias in the selection process, such a sample is merely randomly different.

Another type of group is a “cohort” group, a collection of people who jointly experience an event or series of events over a period of time. For example, a group of kindergarten students entering school at the same time and promoted together over time could serve as a cohort.

## Observing and Describing a Sample

Researchers often refer to the fundamental unit of analysis as an “observation,” which is a measurement or value recorded for a characteristic of a subject in a sample. These characteristics, or “variables,” may be quantitative or qualitative in nature. A body of observations about a variable becomes “data.”

As stated above, “statistics” is a branch of mathematics that deals with the collection, analysis, interpretation, and presentation of data. Methods for describing data sets are classified in the field of statistics as “descriptive statistics.” Descriptive statistics involve summarizing, tabulating, organizing, and graphing values in data sets (i.e., observations) for purely descriptive purposes. No effort is made to infer meaning to parts of a population that have not been observed. There are many ways to present data, including:

### Grade Equivalents

“Grade equivalents” represent the typical performance of students tested at a given point in a school year. However, they do not indicate the level of material a student has mastered. For example, if a fourth grade student obtains a grade equivalent of 6.9 on a reading test designed for fourth graders, this does not mean that the student has mastered sixth grade material. Rather, the grade equivalent of 6.9 means that the student’s score is about the same as what the typical score of sixth graders would have been had they taken the fourth-grade test in the ninth month of the year. Thus, grade equivalents are of limited utility for measuring academic growth. In addition, like percentile ranks, grade equivalents represent unequal units.

## Normal Curve Equivalents

*Normal curve equivalents* are derived from percentile ranks. Because they are presented in an equal-interval scale, any differences (e.g., 6 raw score points) have the same meaning regardless of the part of the scale being referenced. Thus, they can be used when test scores need to be averaged, or to make gain/loss comparisons.

## Percentage

A *percentage* is a part of a whole expressed in hundredths. In other words, the value represents some portion of a larger value that has been normalized to 100 parts. For example, if a student answered 32 questions correctly on a 40-question exam, the percentage correct would be  $(32/40) \times 100 = 80$  percent.

## Percentile Ranks

A *percentile rank* is a value ranging from 1 to 99 that indicates the percentage of a distribution equal to or less than a value. Percentile ranks are used to indicate the relative standing of a student in comparison with other students in the same grade or norm group who took the test at the same time of year. However, they do not represent equal interval units along the score scale, and tend to accumulate in the middle of the scale and spread out towards the ends of the scale. This means that an increase of only one or two raw score points might translate into a fairly substantial increase of percentile rank in the middle of the scale, and a quite small percentile rank increase (if any) at either end of the scale. Percentile ranks are best used for reporting position (higher, lower, same) in the reference group and should not be averaged, added, or subtracted.

## Rank Order

A *rank order* is a presentation of values in a data set, by order of magnitude. For example, a rank order of teachers' salaries would begin with the smallest or largest salary.

## Ratio

A *ratio* is an expression of the quantity, amount, value, or size of two entities. For example, a student:teacher ratio of 15:1 means that there are 15 students for every teacher. Ratios can bridge relationships based on different units (e.g., a student:computer ratio links people to equipment). However, because of this feature, ratios should not be added, multiplied, divided, or otherwise mathematically combined. While under specific conditions the math may be appropriate, the subsequent presentation of data can be confusing to many readers.

## Standard Scores

A *standard score* is a series of scores that have been converted to a scale with a specific mean and standard deviation. A z-score is a commonly used standard score that has a mean of 0 and a standard deviation of 1.

## Stanines

*Stanine* stands for a "STANDARD score with a scale of NINE units" (i.e., ranging from one to nine). Stanines occur on an equal-interval scale, and may be averaged and used to make gain/loss comparisons. They measure achievement in broad categories and generally do not reflect small differences in achievement very well.

## Z-Scores

A *z-score* is the most widely used standard score in statistics. Raw scores are converted to z-scores based on the properties of the normal curve so that the mean score and standard deviation are fixed and known to users. Otherwise, raw data can be difficult to interpret (e.g., a score of 78 means relatively little unless information about the associated mean score and standard deviation is conveyed as well—as is done with z-scores and other standard scores).

## Measures of Central Tendency: Mean, Median, and Mode

### Mean (i.e., Arithmetic Mean)

Commonly called an “average,” the “arithmetic mean” is calculated by dividing the sum of all the individual observations by the total number of observations in the sample. For example, suppose ten students have assessment scores of 99, 100, 97, 71, 73, 80, 77, 74, 79, and 70. The mean, or average, score is calculated by adding all values in the data set (generating a value of 820). This number would then be divided by 10 (the total number of values in the data set), yielding a mean value of 82. Interestingly, only three students in the example had scores above the average, which demonstrates that using a mean as a measure of central tendency is sometimes misleading. Another limitation of the descriptive value of the mean statistic stems from data sets that vary in range. For example, a data set with values of 20, 85, 95, and 100 has a mean value of 75. However, so does a data set with values of 71, 73, 77, and 79. In the first data set, the low value of 20 skews the other high scores (such a value is called an “outlier”). Thus, using the mean statistic as a measure of central tendency requires additional information (such as the median, mode, or standard deviation) for proper interpretation. Under most circumstances, mean values should not be added, subtracted, multiplied or divided. Nor should they be used to calculate the average of a series of averages; rather, the original (i.e., raw) data should be used to generate the mean value of a series of means.

### Median

The “median” is the middle of a distribution (i.e., half the scores are above the median and half are below it). In other words, if sample observations are arranged in order, from smallest to largest, the median is the point above and below which an equal number of cases fall. The median is less sensitive to extreme scores than the mean, making it a better measure for highly skewed distributions. For example, if observation values are 23, 25, 27, 29, 31 (group A), the median is 27 and so is the mean. If, however, observation values are 23, 25, 27, 29, 51 (group B), the median is still 27 while the mean increases to 31. Replacing the last observation in group A (the value 31) with 51 in group B does not change the median value, but does change the mean value.

### Mode

The “mode” is defined as the value that occurs most frequently in a data set. Although the concept of a mode is fairly unambiguous, it is of limited value as a measure of central tendency because it is subject to random sampling fluctuations (i.e., it takes on different values for different samples due simply to random variation). Also, data sets can have zero, one, two, or more modes. For example, if observation values are 4, 5, 6, 7, 8, 9, there is not a mode. If observation values are 4, 5, 5, 7, 8, 9, the mode is 5 (“unimodal”). If observation values are 4, 5, 5, 8, 8, 9, the modes are 5 and 8 (“bimodal”). And if observation values are 4, 5, 5, 8, 8, 9, 9, the modes are 5, 8, and 9 (“multimodal”). Obviously, large data sets may generate multimodal values that are not particularly useful.

## Measures of Spread (Dispersion)

### Range

The “range” is the difference between the largest and the smallest values in a data set (i.e., the largest sample value minus the smallest sample value). It is a useful measure of spread because it is so easily understood and calculated. However, it has the disadvantage of using only two of the observations in the sample (the largest and smallest), which means that it disregards much of the information available in the sample and is particularly sensitive to extreme scores (see Mean).

Finally, the meaning of a range value may be unclear depending on the unit of measure reported. Thus, a range should almost never be used as the only measure of spread, but can be informative if used as a supplement to other measures.

### **Variance**

By far the most widely used measure of spread, “variance” is based on the deviations of the sample observations from the sample mean. Thus, it reflects every observation in the sample by weighing each observation by its distance from the center of the distribution. Variance is scaled in squared units of the original observation, which is not very user-friendly for the lay reader. Since a measure of spread scaled in the original units is often desirable, another useful sample statistic is calculated by taking the square root of the variance. This measure, called the “standard deviation,” is scaled in the original units.

### **Standard Deviation**

A “standard deviation” describes how widely the values in a data set are spread apart. A large standard deviation suggests that the data are fairly widespread, whereas a small standard deviation shows that the data values are tightly bunched together. Mathematically, the standard deviation is the square root of the variance, and is expressed in the original units of measurement. It is simply the spread of the individual observations about the arithmetic mean. In a normally distributed population (a frequently used assumption with large sample populations), approximately two-thirds (68 percent) of the observations fall within one standard deviation above and one standard deviation below the mean; about 95 percent fall within two standard deviations above and below the mean; and about 99 percent fall within three standard deviations above and below the mean.

## **Having Confidence in the Data**

All statistics-based indicators have error associated with them. This does not mean that they are wrong. Rather, it means that one can never be 100 percent certain that a sample is a perfect replica of the group or condition it represents. For example, tests are not perfect measures of student knowledge, random samples are not perfect reflections of greater populations, and statistical methods are not perfect summaries of the underlying raw data. This reality sets limits on how confident users can be in relying upon data to inform their decisions. Fortunately, there are ways to verify the accuracy and precision of most assessment instruments. Similarly, statisticians have determined ways to deal with random fluctuations in populations. “Error” is present, but the indicator data can still be useful.

Error arises in statistics in two broad forms: random error and systematic error (bias). Put simply, “random error” is precisely that—random, by chance, and, ultimately, inevitable (e.g., any time a sample is measured, it may vary from the greater population based on purely random chance; the only way to eliminate this possibility is to measure the entire population). Random error can be accounted for through advanced statistical techniques that are based largely on the concepts of mean values, standard deviations, and confidence intervals (see below). While these statistical tools do not eliminate random error, they do identify and quantify it so that researchers can know how confident they can be of the data informing their decisionmaking.

“Systematic error,” on the other hand, is not inevitable; rather, it is introduced during the process of data collection and analysis, causing measurements to skew in a consistent and repeatable manner. In other words, some systematic inaccuracies are a function of methods, equipment, or design (e.g., a poorly calibrated scale that weighs “heavy” will add the same “extra” weight to every measurement, no matter how many times the measurement is taken). Systematic error can be

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identified and corrected through a host of validation procedures (e.g., using multiple tools to calibrate measurements or confirming random and independent sampling methods).

### **Confidence Intervals**

A “*confidence interval*” is a gauge to help readers know how certain they can be of the results reported. Because of random error, users can never be sure the data do not reflect some error (and, in fact, they probably do). The question then becomes, how much error might there be (and how reliable are the findings). Statisticians and educational researchers often recognize a 95 percent confidence level (i.e., a 95 percent probability that the findings for a sample reflect the entire population) as acceptable. Sometimes they report at the 99 percent level. A confidence interval is presented as a range of values around (i.e., half above and half below) the finding in which there is a 95 percent (or 99 percent) probability that the actual value for the greater population is contained.

### **Standard Error**

“*Standard error*” establishes the likelihood that a single piece of data will fall within a standard deviation (or two standard deviations) of its predicted value. Standard errors are useful because they indicate how much the value of a statistic might fluctuate from sample to sample. In general, the larger the sample the smaller the standard error, which is not surprising as standard error is a measure of how well the sample value reflects the greater population.

## Appendix C: Display and Presentation Options for Indicators

Appendix C provides guidance about preparing indicator reports and displaying indicator data.

Much of the material in this appendix was adapted from *A Guide to Effective Accountability Reporting* by Ellen Forte Fast, Rolf K. Blank, Abigail Potts, and Andra Williams (Council of Chief State School Officers, Washington, DC, with support from the U.S. Department of Education). Some modifications have been made to the original text so that the appendix better reflects the style and information needs of the *Forum Guide to Education Indicators*. To download the original document, visit <http://www.ccsso.org/publications/details.cfm?PublicationID=56>.

**Summary:** To assist state and local educators, the Council of Chief State School Officers (CCSSO) developed the monograph, *A Guide to Effective Accountability Reporting*, through the Accountability Systems and Reporting State Collaborative on Assessment and Student Standards (ASR SCASS). It is intended to serve as a resource for State Education Agencies (SEAs) and Local Education Agencies (LEAs) responsible for producing state, district, or school report cards of the type required under many state or district accountability systems, as well as under the No Child Left Behind Act of 2001 (NCLB). It is not intended to present an academic discussion of the nature of indicators and indicator systems, nor is it meant to cover the broad range of accountability issues in their entirety. Rather, it is meant to provide a resource for agencies and help practitioners as accountability reporting systems are tooled to meet NCLB requirements.

### How to Design an Indicator Report

Good report design reflects clear thinking. Effective reports are:

- > easy to read and clearly state a well-defined message that readers can understand and use;
- > accessible to the target audiences, both physically and linguistically;
- > accompanied by adequate interpretive information;
- > supported by evidence; and
- > coordinated with other resources from within the reporting organization or system.

Indicator reports are both stand-alone documents and a part of a larger system for providing information to stakeholders. As stand-alone documents, they should present a full story by themselves. Stakeholders, especially parents and the public, should not have to search for important information. Printed reports should be self-contained and accompanied by all information necessary for proper interpretation; web-based reports should include links to additional information (e.g., brief definitions, prompts, etc.) as available to support the message.

Audience needs should drive indicator report development. For example:

- > Non-English-speaking parents and stakeholders should have access to the same information as English speakers. Depending on local needs, it may be necessary to produce a report in multiple languages.
- > Professional development materials for educators should include information about the indicators and how to interpret them.

Three key points in the process of presenting indicator data are:

- > crafting the language so that it is clear and easily understood;
- > using graphics to highlight important information without cluttering the page or distracting the reader; and
- > aligning reports with other documents, such as Spanish-language versions or interpretive information.

## Crafting the Language

Once the overall message of an indicator report has been determined, but before the text is written, it is important to think about the report's audience. In many cases, the target audience will have a wide range of linguistic needs, technical sophistication, access to technology, and motivation to seek out and act on information in the document. The report must therefore be crafted so that readers with no knowledge with educational terminology or evaluation concepts can understand the message as well as seasoned professional educators. Given this wide range of stakeholders, efforts should also be made to present content in a clear and easy-to-read format that is free of jargon (both verbal and numerical).

Consider the following recommendations:

- > The language used within a report card should be jargon-free:
  - > Do not use lingo, such as "disaggregated," "alternate assessment," "performance index"; or idiomatic words or terms without providing a brief but clear definition.
  - > Do not use acronyms, such as "AYP," "FTE," "CRT"; or any abbreviations without first spelling and defining them.
  - > Do not use statistical or psychometric terms, such as "chi-square," "p-value," or "coefficient," unless absolutely necessary (the best way to demonstrate technical sophistication is by explaining a complex concept simply and elegantly).
  - > Do not use unnecessary terminology or statistics.
- > Any text included in the report should be easy to read and understand.
  - > Keep the most important information at the forefront (e.g., larger text) to help the reader quickly skim the graphic and see patterns.
  - > Use a combination of sentence lengths and avoid long and overly-punctuated sentences.
  - > Keep paragraphs short.
  - > Use an active voice rather than a passive one.
  - > Surround text by white space.
  - > Spell out all words in full so the reader does not have to refer to a separate key.
- > Choose a font that is easy to read.
  - > Avoid boldface except in headings and to highlight specific words or phrases.



- > Do not combine font styles, such as boldface and italics, except perhaps for headings.
- > Choose fonts that reproduce well.
- > Use as few fonts as possible.
- > Carefully use color to illustrate points rather than distract from them.
- > Subject the text to multiple reviews.
- > Use the design team to review the text for readability and clarity.
- > Have teachers and parents connected with a diverse range of schools read the text and provide feedback.

## Using Graphics

When used well, graphics can be a powerful tool to illustrate data. As a general rule, the more complex a concept is, the more likely a good graphic will help convey it. Conversely, if a series of numbers can be described in one sentence without any qualifiers, do not bother to graph them.

Graphics are such useful interpretive tools that readers sometimes look at a graphic before (or instead of) reading text. In addition, people tend to copy a graphic—sometimes without including the accompanying text. Thus, regardless of the type of graphic (i.e., a bar chart, line chart, pie chart, table, or other graphical presentation of information) a graphic should stand alone—all information needed to understand the main points in a graphic should be included in it (compare figures A-1 and A-2 and figures A-3 and A-4). Figure A-2 and A-4 are superior because they contain all the information needed to understand the main points, including:

- > a concise, accurate, and descriptive title;
- > axis or chart labels, including units of measure;
- > time periods of measure; and
- > data source(s).

Moreover, figures A-2 and A-4 are superior because they retain their integrity even when photocopied (i.e., black and white reproduction). In figure A-1, the color key would be useless in a black and white presentation. In figure A-3, the solid lines that represent data values for male and female (originally red and orange) became shades of gray when reproduced in black and white. However, in figure A-4, a dashed line allows the figure to retain its meaning, even in black and white.

Deciding how best to present data in a graphical format is often the difference between simply complying with dissemination and accessibility requirements, and effectively conveying a message about indicator findings, interpretation, and significance.

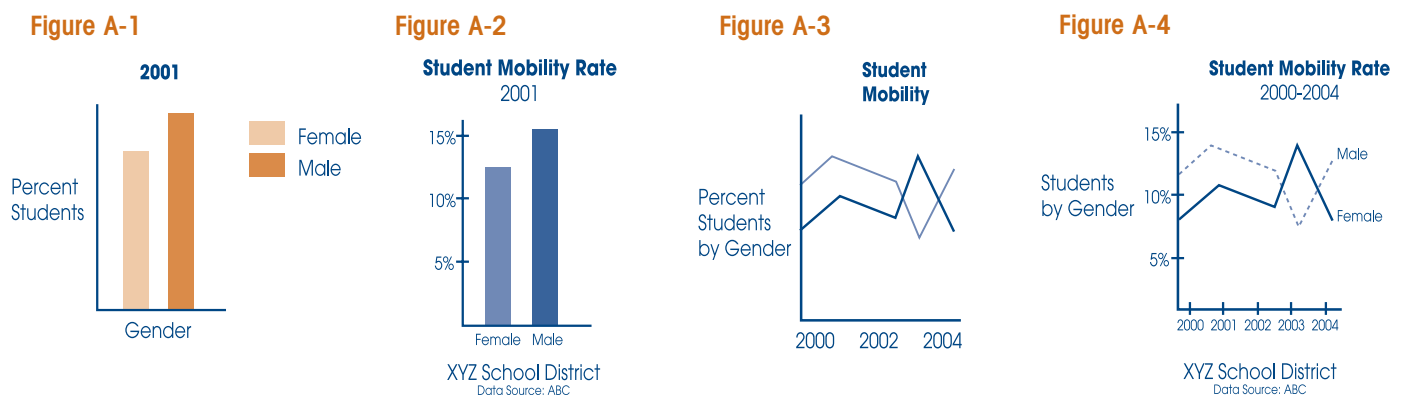


Figure B

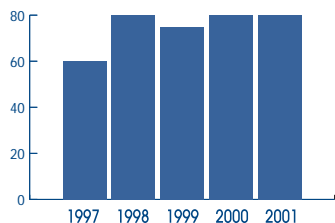


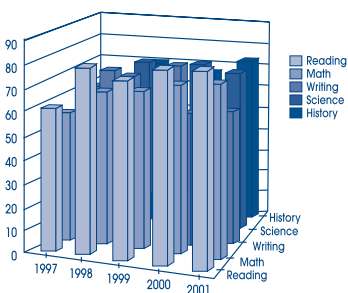
Figure (Table) C

	1997	1998	1999	2000	2001
Reading	62	80	76	81	82
Math	58	67	69	73	75
Writing	53	56	56	55	58
Science	60	65	72	73	72
History	64	67	68	66	73

Figure (Table) D

	Basic	Proficient	Advanced	%Basic
2001	18	63	19	→
2000	19	59	22	→
1999	24	55	21	→
1998	20	55	25	→
1997	38	44	18	→

Figure E



When deciding whether to use a graphic, consider whether the space and ink used in the picture (e.g., figure B) is necessary compared to the amount of information that could be conveyed in the same space in a table (e.g., figure C).

Another option is to combine tables and graphics, as illustrated in figure D. In about the same amount of space used for figure B, figure D graphically indicates the proportion of students scoring at or above the proficient level for each of five years, and also provides numerically the proportion of students in each of the three performance levels. Further, the simple horizontal line representing the total scale, with the tick mark indicating the proportion above and below the proficient score, allows for quick comparisons between actual performance and the goal (100 percent proficient or advanced), as well as across years. This example shows how a few content and graphic modifications to data presentation can make a big difference in how much information can be conveyed in a limited space. With figure D, stakeholders will easily see what is important.

## How to Graph

Once the decision is made on what to graph, the next step is to think about how to graph.

- > Graphic displays do not have to take up a whole page, or even a significant portion of a page. In fact, bigger is usually not better. Rather than filling a large portion of the page with a graph, consider using a series of smaller graphs to highlight comparisons across time or groups.
- > Do not accept the stated limits of graphic programs. If there is a better way to make a point, and someone can draw it, it can be programmed.
- > Integrate graphics with words and numbers on the page. Place them in the appropriate context rather than in an appendix or on a separate page.
- > When appropriate, remove “%” symbols within the data cells and round numbers to the nearest whole. Results may be reported to the tenth decimal place, but such detail makes a table difficult to read.
- > Minimize the text that accompanies a graph—limit it to definitions (e.g., assessment terms) and cautions (e.g., to readers about making comparisons across groups).
- > Every mark on the graph should be as small but as clear as possible. Minimize unnecessary words, numbers, pictures, graphics, and lines; and allow less necessary elements (e.g., lines on tables) to recede into the background by making them as pale as possible.
- > Create a style book that defines how each graphic should look: specify font styles and sizes, use of color and pattern, etc. For best results, create templates for each graphic and distribute these templates electronically to anyone who may need to produce graphics for reports.

## Example A

If figure D effectively illustrates student proficiency levels for each of five years, then figure E is an example of how **not** to display these numbers. Figure E does not tell a clear story. In fact, understanding anything in figure E is difficult.

- > Using 3-D (three dimensional) graphics in the two-dimensional space of paper makes little sense.
- > There is so much information that some of the columns (data) are hidden.
- > The shading does not add anything to the graphic. Use as little color as necessary, and none on the background if possible.
- > The grid lines are distracting. Use them sparingly, if at all.

- > The legend is redundant. As part of the goal to integrate words, numbers, and images, try to just name columns, bars, or lines directly (which is already done).

An alternate way to handle this type of complex data is to use a table. In figure F, notice that the grid lines are not thick—the horizontal lines have been lightened to reduce distraction from the numbers, and some vertical lines have been deleted altogether. This table shows the proportion of students scoring above and below the proficient point. However, to save even more space, just one column may be enough, since they should always add to 100.

In order to highlight changes proportionally over time, a table may contain small graphics similar to those in figure D. In figure G, for example, a simple line is used to reflect the total student population tested (100 percent), and a block represents the proportion of students at or above proficiency. Cross-year comparisons may easily be made by scanning down the column for each content area. The reader may also make comparisons across content areas, though not as easily.

Figure (Table) F

	1997		1998		1999	
	Below	Above	Below	Above	Below	Above
Reading	38	62	20	80	24	76
Math	42	58	33	67	31	69
Writing	47	53	44	56	44	56
Science	40	60	35	65	28	72
History	36	64	33	67	32	68

Figure (Table) G

		Reading	Math	Writing	Science	History
2001	Above	82	75	58	72	73
	Below	18	25	2	28	27
2000	Above	81	73	55	73	66
	Below	19	27	45	27	34
1999	Above	76	69	56	72	68
	Below	24	31	44	28	32
1998	Above	80	67	56	65	67
	Below	20	33	44	35	33
1997	Above	62	58	53	60	64
	Below	38	42	47	40	36

**Example B**

Pie charts are useful presentation tools when the pieces of information (i.e., the “slices”) add up to 100 percent (i.e., the “whole” pie). When using a pie chart, however, having a legible labeling scheme is critical. In figure H, for example, the large number of sections results in visual confusion because of the arrows and labels. In this case, another type of graphic may make sense, such as the bar chart in figure I.

Figure H

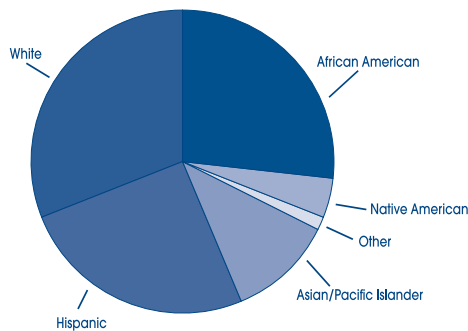
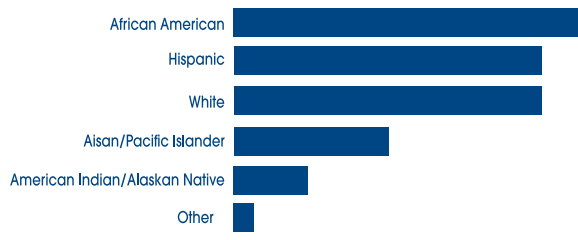


Figure I



## A Final Note About Color

Used strategically, color can enhance a report by drawing attention to critical information. However, caution is recommended when deciding how much color to use.

Color can be distracting and can reduce the accessibility of a report's information. For example, some popular colors, including red, may be difficult to read. Further, when colors in charts are very bright they may be distracting and it may be difficult to see the differences in bar heights, line lengths, and other shapes. Even with categorical data that might be clumped together, such as scores for each of several different schools for each of several years, using a different color for each school is not necessary. As long as the number of schools represented in the chart is small, the order of appearance is probably enough for readers to identify any patterns or trends.

Moreover, because of the very nature of indicator reports, some users will likely want to make photocopies of the report or print a web report without a color printer. Therefore, coloring the graphic so that all information is clear in a black and white copy is important.

### Additional Tips for Preparing Color Reports

- > Consider using only one color other than black. Shades of two colors provides a wide range of possible combinations for graphs and accents.
- > For printed reports, consider using white or off-white paper; it provides a strong contrast for text and graphics and will not discolor when copied.
- > Test printed reports by copying them on photocopiers of varying quality. Make sure color, text, and graphics transfer without affecting the amount or quality of information conveyed.

### Some general rules:

- > The more complex a concept is, the more likely a good graph can help convey it.
- > Graphical displays should reflect the critical elements of the message.
- > Graphs are good for reporting trends, but not for conveying the actual numbers behind them.
- > Graphs should "stand alone" (i.e., not be dependent on accompanying text) and meet the information and presentation needs of their intended audience.
- > Test web reports by printing them out on printers of varying qualities—including some with color and some without. Again, make sure color, text, and graphics print without affecting the amount or quality of information conveyed.

# Appendix D: Data Elements Used to Create Indicators

Appendix D lists all data elements, definitions, and code sets (option lists) used to construct indicators throughout this document. The original source of this material is the *NCES Handbooks Online*, available from the National Center for Education Statistics at <http://nces.ed.gov/programs/handbook/index.asp>.

## Data Elements: The Building Blocks of Indicators

A data element is a specific piece of information that can be defined and measured. Data elements often serve as the constituent components of indicators. For example, the indicator *Placement of Students With Disabilities* is calculated using the following formula:

$$\frac{\text{Number of students with disabilities (using the data element } \textit{Disability Status}) \text{ placed in various environments (using the data element } \textit{Service Setting})}{\text{Total number of students with disabilities (using the data element } \textit{Disability Status})} \times 100$$

Where the data element *Disability Status* is defined as "a physical or mental impairment that substantially limits one or more major daily life activities" and the data element *Service Setting* is defined as "the setting and circumstance in which a student is served. (e.g., the educational placement of the student)" with a code list that includes early intervention classroom/center, homebound placement, hospital placement, itinerant services outside the home, etc.

**Appendix D lists all data elements, definitions, and option lists used to construct indicators in this document. Data element characteristics have been gathered from the *NCES Handbooks Online* (<http://nces.ed.gov/programs/handbook/index.asp>).**

The format of the data element entries in appendix D is as follows:

### Data Element Name

The name of the data element as referred to in this document and the *NCES Handbooks Online*.

- > *Definition*: A description of the meaning of a word or concept.
- > *Element Number*: The four-digit number assigned to a data element for coding and organizational purposes in the *NCES Handbooks Online*.
- > *Element Type*: A description of the form or qualities (i.e., the "type") of the data that constitutes the element. Data element "types" include:
  - > *Alpha/Numeric (AN)*: A data element for which any letter or number (or combination of letters and numbers) is appropriate. Generally, this data element type is used when no standard code list of related options (see below) exists, or where descriptive information is desired.
  - > *Date (DT)*: A data element type that is specifically defined as a date. The format in the *NCES Handbooks Online* generally is MMDDYYYY (field length = 8), although it may vary.
  - > *Floating Decimal (R)*: A data element type in which a decimal must be included in the numeric value. If it does not appear, the number is assumed to be whole. *Floating Decimal (R)* values might, for example, appear as 4.1 (signifying four digits to the left of the decimal and one digit to the right of the decimal) or 3.2 (signifying three digits to the left of the decimal and two digits to the right of the decimal).

- > *Identifier (ID)*: A data element that is defined by a code set of related options (see below). A code set is provided for most of the data elements identified as "ID" in the *NCES Handbooks Online*.
- > *Numeric (N)*: A data element that must be a numeric value. Decimals themselves are not included in the value [see *Floating Decimal (R)* above], although a decimal is implied in the right-most place to signify a whole number.
- > *Field Length*: The recommended maximum number of places that the value of a data element would require in an automated record system. For example, a descriptive *Alpha/Numeric (AN)* element might require 60 letters or numbers for a response, whereas a *Date (DT)* would require 8 digits (MMDDYYYY). Only a maximum suggested field length has been included here. In designing a data collection system, a minimum length is also generally specified. All field length recommendations are illustrative, not mandated.
- > *Related Options*: A recommended code list that serves as a response for a data element. For example, "Female" and "Male" are options under the data element "Sex." Options are listed in either alphabetical order or in a logical sequence, and have assigned code numbers.

### **Adequate Yearly Progress Status**

- > *Definition*: An indication as to whether the education institution meets Adequate Yearly Progress (AYP) standards.
- > *Element Number*: 0028
- > *Element Type*: ID
- > *Field Length*: 4
- > *Related Options*:
  - 0911 Does not meet AYP standards
  - 0910 Meets AYP standards

### **Contract Days of Service Per Year**

- > *Definition*: The number of days per year that an individual is expected to work as outlined specifically in his or her employment agreement.
- > *Element Number*: 0473
- > *Element Type*: R
- > *Field Length*: 3.2

### **Course Code**

- > *Definition*: The actual code that identifies the organization of subject matter and related learning experiences provided for the instruction of students. (Note: For courses at the secondary level only, a list of course codes and titles can be found in Appendix N of the *NCES Handbooks Online* (<http://nces.ed.gov/programs/handbook/index.asp>).
- > *Element Number*: 0102
- > *Element Type*: AN
- > *Field Length*: 10

### **Course Title**

- > *Definition*: The descriptive name given to a course of study offered in a school or other institution or organization. In departmentalized classes at the elementary, secondary, and postsecondary levels (and for staff development activities), this refers to the name by which a course is identified (e.g., American History, English III). For elementary and other nondepartmentalized classes, it refers to any portion

of the instruction for which a grade or report is assigned (e.g., reading, composition, spelling, and language arts).

> *Element Number:* 0107

> *Element Type:* AN

> *Field Length:* 45

### **Disability Status**

> *Definition:* A physical or mental impairment that substantially limits one or more major daily life activities. [Public Law 101-336, the Americans with Disabilities Act (ADA), prohibits discrimination against individuals with disabilities as regards employment, public accommodations, and certain public services.]

> *Element Number:* 0331

> *Element Type:* AN

> *Field Length:* 60

### **Disciplinary Action**

> *Definition:* Identifies the consequences of an incident for the student(s) involved in an incident as perpetrator(s).

> *Element Number:* 1054

> *Element Type:* ID

> *Field Length:* 4

> *Related Options:*

3071 Bus suspension

3072 Change of placement (long-term)

3073 Change of placement (reassignment), pending an expulsion hearing

3074 Change of placement (reassignment), resulting from an expulsion hearing

3075 Change of placement (reassignment), temporary

3076 Community service

3077 Conference with and warning to student

3078 Conference with and warning to student and parent/guardian

3079 Confiscation of contraband

3080 Conflict resolution or anger management services mandated

3081 Corporal punishment

3082 Counseling mandated

3083 Demerit

3084 Detention

3085 Expulsion recommendation

3086 Expulsion with services

3087 Expulsion without services

3088 Juvenile justice referral

3089 Law enforcement referral

3090 Letter of apology

3091 Loss of privileges

3105 No action

9998 None

9999 Other

3092 Physical activity

3158 Removal by a hearing officer

3093 Reprimand

3094 Restitution

3095 Saturday school

- 3096 School probation
- 3097 Substance abuse counseling mandated
- 3098 Substance abuse treatment mandated
- 3099 Suspension after school
- 3100 Suspension, in-school
- 3154 Suspension, out of school, greater than 10 consecutive school days
- 3155 Suspension, out of school, separate days cumulating to more than 10 school days
- 3101 Suspension, out-of-school, with services
- 3102 Suspension, out-of-school, without services
- 3157 Unilateral removal—Drug incident
- 3156 Unilateral removal—Weapon incident
- 9997 Unknown
- 3103 Unsatisfactory behavior grade
- 3104 Work detail

### **Disciplinary Action End Date**

- > *Definition:* The month, day, and year through which the disciplinary action is in effect.
- > *Element Number:* 1056
- > *Element Type:* DT
- > *Field Length:* 8

### **Disciplinary Action Start Date**

- > *Definition:* The month, day, and year on which the disciplinary action begins.
- > *Element Number:* 1055
- > *Element Type:* DT
- > *Field Length:* 8

### **Employment Start Date**

- > *Definition:* The month, day, and year on which an individual began self-employment or employment with an organization or institution.
- > *Element Number:* 0431
- > *Element Type:* DT
- > *Field Length:* 8

### **Enrollment Status**

- > *Definition:* An indication as to whether a student's name was, is, or will be officially registered on the roll of a school or schools.
- > *Element Number:* 0615
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 1812 Concurrently enrolled
  - 1811 Currently enrolled
  - 1810 Previously enrolled
  - 1813 Transferring (will enroll)

### **Exit/Withdrawal Type**

- > *Definition:* The circumstances under which the student exited from membership in an educational institution.
- > *Element Number:* 0644



- > *Element Type:* ID
- > *Field Length:* 4
- > **Related Options**
  - 1928 Completed grade 12, but did not pass test
  - 1922 Completed school with other credentials
  - 1927 Discontinued schooling
  - 1921 Graduated with regular, advanced, International Baccalaureate, or other type of diploma
  - 1920 Matriculation to another school
  - 1931 Moved, not known to be continuing
  - 1926 Reached maximum age for services
  - 1923 Student death
  - 1925 Student expulsion
  - 1924 Student illness
  - 1918 Transfer to a charter school
  - 1930 Transfer to a postsecondary education institution
  - 1911 Transfer to a private, non-religiously-affiliated school in a different Local Education Agency (LEA) in the same state
  - 1912 Transfer to a private, non-religiously-affiliated school in a different state
  - 1910 Transfer to a private, non-religiously-affiliated school in the same LEA
  - 1914 Transfer to a private, religiously-affiliated school in a different LEA in the same state
  - 1915 Transfer to a private, religiously-affiliated school in a different state
  - 1913 Transfer to a private, religiously-affiliated school in the same LEA
  - 1908 Transfer to a public school in a different LEA in the same state
  - 1909 Transfer to a public school in a different state
  - 1907 Transfer to a public school in the same LEA
  - 1916 Transfer to a school outside of the country
  - 1917 Transfer to an institution
  - 1929 Transfer to GED program
  - 1919 Transfer to home schooling
  - 9997 Unknown
  - 9999 Other

### **Full-Time Equivalency (FTE)**

- > *Definition:* The ratio between the hours of work expected in a position and the hours of work normally expected in a full-time position in the same setting.
- > *Element Number:* 0475
- > *Element Type:* R
- > *Field Length:* 1.2

### **Highest Level of Education Completed**

- > *Definition:* The extent of formal instruction an individual has received (e.g., the highest grade in school completed or its equivalent or the highest degree received).
- > *Element Number:* 0332
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 1809 Twelfth grade, no diploma
  - 1046 Adult Basic Education Diploma
  - 1050 Associate's degree (two years or more)
  - 1051 Bachelor's (Baccalaureate) degree (e.g., B.A., A.B., B.S.)
  - 1057 Doctoral (Doctor's) degree (e.g., Ph.D., Ed.D)

- 0798 Eighth grade
- 0801 Eleventh grade
- 0794 Fifth grade
- 0790 First grade
- 1053 First-professional degree (e.g., D.C. or D.C.M., D.D.S. or D.M.D., M.D., O.D., D.O., D. Phar., Pod.D., D.P.M., D.V.M., L.L.B., J.D., M.Div., M.H.L.)
- 1047 Formal award, certificate or diploma (less than one year)
- 1048 Formal award, certificate or diploma (more than or equal to one year)
- 0793 Fourth grade
- 1052 Graduate certificate
- 2408 High school completers (e.g., certificate of attendance)
- 1044 High school diploma
- 2409 High school equivalency (e.g., GED)
- 0805 Kindergarten
- 1054 Master's degree (e.g., M.A., M.S., M. Eng., M.Ed., M.S.W., M.B.A., M.L.S.)
- 0799 Ninth grade
- 1043 No school completed
- 1056 Postprofessional degree
- 0789 Prekindergarten
- 0791 Second grade
- 0796 Seventh grade
- 0795 Sixth grade
- 1049 Some college but no degree
- 1055 Specialist's degree (e.g., Ed.S)
- 0800 Tenth grade
- 0792 Third grade
- 0819 Vocational certificate
- 9999 Other

### Identification System

> *Definition:* A coding scheme that is used for identification and record-keeping purposes by schools, social services, or other agencies to refer to an individual, organization, or institution.

> *Element Number:* 0147

> *Element Type:* ID

> *Field Length:* 4

> *Related Options:*

- 0254 American College Testing (ACT) Program number
- 0243 College Board Admission Testing Program (ATP) number
- 0175 College Board/ACT code set of prekindergarten-grade 12 institutions
- 0593 District-assigned number
- 0328 Driver's license number
- 0276 Dun and Bradstreet number (e.g., DUNS number)
- 0164 Family unit number
- 0264 Federal identification number
- 0339 Health record number
- 0233 Integrated Postsecondary Education Data System (IPEDS) number
- 0186 LEA number for school
- 0338 Medicaid number
- 0879 Migrant number
- 0216 NCES number for LEA
- 0208 NCES number for school
- 0222 Other agency number (e.g., Roman Catholic diocese or association number)

- 0764 Other federally assigned number
- 0154 Personal identification number
- 0399 Professional certificate or license number
- 0495 School-assigned number
- 0763 State Education Agency (SEA) number for LEA
- 0197 SEA number for school
- 0780 Selective Service number
- 0004 Social Security Administration number
- 0686 State-assigned number
- 0873 Statute number
- 0936 Sub-test number
- 0307 Test contractor-assigned assessment number
- 0113 U.S. government Visa number
- 9999 Other

### Instructional Minutes

- > *Definition:* The total number of instruction minutes in a given session.
- > *Element Number:* 0150
- > *Element Type:* N
- > *Field Length:* 5

### Job Classification

- > *Definition:* A description of the specific group of duties and responsibilities of a position. (A list of options and their codes can be found at [http://nces.ed.gov/programs/handbook/data/pdf/Appendices\\_H.pdf](http://nces.ed.gov/programs/handbook/data/pdf/Appendices_H.pdf)).
- > *Element Number:* 0557
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:* See [http://nces.ed.gov/programs/handbook/data/pdf/Appendices\\_H.pdf](http://nces.ed.gov/programs/handbook/data/pdf/Appendices_H.pdf).

### Leave Substitution Status

- > *Definition:* An indication of the type of substitution provided for an individual's job assignment during the period of his/her absence.
- > *Element Number:* 0544
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 1608 No substitution
  - 1610 Substitution by an individual with proof of required credentials
  - 1609 Substitution by an individual without proof of required credentials

### Nonpromotion Reason

- > *Definition:* The primary reason why a staff member determined that a student should not be promoted (or be demoted).
- > *Element Number:* 0673
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 1979 Failed to meet testing requirements
  - 1980 Illness
  - 1981 Immaturity

- 1982 Inadequate performance
- 1983 Insufficient credits
- 1984 Prolonged absence
- 9999 Other

### **Number of Credits Received**

- > *Definition:* The number of credits a student earned for completing a given course.
- > *Element Number:* 0656
- > *Element Type:* R
- > *Field Length:* 2.1

### **Number of Days in Attendance**

- > *Definition:* The number of days an individual is present when school is in session during a given reporting period.
- > *Element Number:* 0637
- > *Element Type:* R
- > *Field Length:* 3.1

### **Performance Rating**

- > *Definition:* Indicator of performance status in relation to benchmarks (e.g., score, grade).
- > *Element Number:* 0206
- > *Element Type:* AN
- > *Field Length:* 60

### **Promotion Type**

- > *Definition:* The nature of the student's promotion or progress at the end of a given school term.
- > *Element Number:* 0672
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 1974 Accelerated promotion
  - 1975 Continuous promotion
  - 1976 Probationary promotion
  - 1973 Regular promotion
  - 1977 Social promotion
  - 1978 Variable progress
  - 9999 Other

### **Score Results**

- > *Definition:* The description of a meaningful raw score or statistical expression of the performance of a student or group of students on an assessment.
- > *Element Number:* 0259
- > *Element Type:* AN
- > *Field Length:* 35

### **Service Setting**

- > *Definition:* The setting and circumstance in which a student is served. (e.g., the educational placement of the student).

- > *Element Number:* 0307
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 0127 Early intervention classroom/center
  - 0128 Homebound placement instruction
  - 0129 Hospital placement instruction
  - 0140 Itinerant services outside the home
  - 0356 Outpatient service facility
  - 0132 Private residential placement
  - 0358 Private separate day school placement
  - 0134 Public residential placement
  - 0135 Public separate day school placement
  - 0365 Regular nursery school/child care center
  - 0130 Regular school campus/regular class placement
  - 0756 Residential facility
  - 0136 Resource room placement (pullout program)
  - 0367 Respite care
  - 0143 Reverse mainstream setting
  - 0137 Separate class placement
  - 0364 Short-term detention facility

## **Sex**

- > *Definition:* A person's gender.
- > *Element Number:* 0851
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 1631 Female
  - 1632 Male

## **Teaching Assignment**

- > *Definition:* The teaching field taught by an individual.
- > *Element Number:* 0436
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:* See Teaching Field or Area Authorized

## **Teaching Credential Type**

- > *Definition:* An indication of the category of a legal document giving authorization to perform teaching assignment services.
- > *Element Number:* 0394
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 1229 Emergency
  - 1234 Intern
  - 1226 Master
  - 1230 Nonrenewable
  - 1223 Probationary/initial

- 1225 Professional
- 1224 Provisional
- 1222 Regular/standard
- 1231 Retired
- 1227 Specialist
- 1232 Substitute
- 1233 Teacher assistant
- 1228 Temporary
- 9999 Other

### **Teaching Field or Area Authorized**

> *Definition:* An indication of a teaching field within which an individual is authorized to teach by an active teaching credential. In a departmentalized organization, a teaching field is a major subdivision of the educational program such as language arts, mathematics, music, distributive education, or physical education. In a nondepartmentalized situation or in a self-contained classroom, a general teaching level such as elementary or secondary may be the most accurate designation of a teaching field.

> *Element Number:* 0421

> *Element Type:* ID

> *Field Length:* 4

> *Related Options:*

- 1305 Accounting
- 1362 Agriculture or natural resources
- 1333 American Indian/Native American studies
- 1334 Anthropology
- 1311 Architecture or environmental design
- 1150 Area, ethnic, and cultural studies
- 1348 Autism
- 1346 Basic skills or remedial education
- 0251 Bilingual education
- 1325 Biology or life science
- 1306 Business and management
- 1363 Business/office
- 1364 Career education
- 1326 Chemistry
- 1315 Chinese
- 1335 Civics
- 1153 Communications technologies
- 1324 Computer Science
- 1366 Cosmetology
- 0068 Curriculum and instruction
- 0684 Dance
- 1349 Deaf and hard of hearing
- 1350 Developmentally delayed
- 1312 Drama/theater
- 1296 Early childhood
- 1351 Early childhood special education
- 1327 Earth/space science/geology
- 1336 Economics
- 0097 Educational administration
- 0120 Educational psychology
- 1304 Elementary
- 1352 Emotionally disturbed or behavior disorders
- 1157 Engineering

0256 English as a Second Language  
1162 English language and literature/letters  
1308 English or language arts  
1367 Family and consumer science (home economics)  
1368 Food services  
2371 Foreign language and literature  
1316 French  
1328 General science  
0547 Geography  
1317 German  
2381 Gifted and talented  
0302 Guidance counseling  
1329 Health education  
1369 Health professions and occupations  
0550 History  
1337 Humanities  
1318 Italian  
1319 Japanese  
1309 Journalism/communications  
0805 Kindergarten  
1320 Latin  
1338 Law  
1353 Learning disabilities  
1163 Liberal arts and sciences, general studies, and humanities  
1164 Library science  
1166 Mathematics  
1354 Mentally disabled  
2400 Middle  
1355 Mildly/moderately disabled  
0557 Military science  
0558 Multi/interdisciplinary studies  
1313 Music  
1356 Orthopedically impaired  
9999 Other  
1344 Other area or ethnic studies  
1307 Other business  
1323 Other languages  
1332 Other natural sciences  
1345 Other social studies/social sciences  
1361 Other special education  
1371 Other vocational/technical education  
1339 Philosophy  
0559 Physical education  
1330 Physical science  
1331 Physics  
1340 Political science and government  
0789 Prekindergarten  
1181 Psychology  
1183 Public administration and services  
0560 Reading  
1342 Religion  
1321 Russian  
2403 Secondary  
1357 Severely/profoundly disabled

- 0563 Social studies
- 1343 Sociology
- 1322 Spanish
- 2043 Special education
- 1310 Speech
- 1358 Speech/language impaired
- 1370 Trades and industry (e.g., CADD, electronics repair, mechanics, precision production)
- 1359 Traumatologically brain-injured
- 1314 Visual arts
- 1360 Visually impaired

### **Total Days in Session**

- > *Definition:* The total number of days in a given session. Also included are days on which the education institution facility is closed and the student body as a whole is engaged in planned activities off-campus under the guidance and direction of staff members.
- > *Element Number:* 0285
- > *Element Type:* N
- > *Field Length:* 3

### **Transportation Status**

- > *Definition:* Information about whether or not a student is transported to and/or from school or receives services, aid, or payment in lieu of transportation.
- > *Element Number:* 0719
- > *Element Type:* ID
- > *Field Length:* 4
- > *Related Options:*
  - 2064 Not transported
  - 2063 Provided room, board, or payment in lieu of transportation
  - 2060 Transported at public expense
  - 2061 Transported at reduced public expense
  - 2062 Transported, but not at public expense
  - 9999 Other

### **Unique Course Code**

- > *Definition:* A unique number that identifies the classroom, the subjects taught, and the instructors that are assigned.
- > *Element Number:* 0292
- > *Element Type:* AN
- > *Field Length:* 30

### **Years of Prior Teaching Experience**

- > *Definition:* The total number of years that an individual has previously held a teaching position in one or more education institutions.
- > *Element Number:* 0438
- > *Element Type:* N
- > *Field Length:* 2.1



## Appendix E: Additional Resources

Appendix E lists related resources, including web materials, available from the National Forum on Education Statistics, the National Center for Education Statistics (NCES), and other organizations.

### *Accountability Mechanisms in Big City School Systems.*

ERIC/CUE Digest No. 71.

<http://www.ericdigests.org/pre-9220/big.htm>

Accountability has always been a basic concept in public education, although ideas about how to accomplish it have changed. In recent years, the urgent need to improve big city schools has been a powerful incentive for the adoption of accountability systems. This digest explores the strengths and weaknesses of various accountability tools, the use and misuse of indicators, and ways to create genuine accountability at the school level.

### *Facilities Information Management: A Guide for State and Local Education Agencies (NCES 2003–400)*

National Forum on Education Statistics (2003)

U.S. Department of Education, National Center for Education Statistics, Washington, DC

[http://nces.ed.gov/forum/pub\\_2003400.asp](http://nces.ed.gov/forum/pub_2003400.asp)

This free *Guide* provides a framework for identifying a basic set of school facilities data elements and definitions that will meet the information needs of school and community decisionmakers, school facility managers, and the general public. It presents recommendations for designing and maintaining an information system about the condition, design, use, management, and financing of elementary/secondary education facilities. Commonly used measures, data elements, and a list of additional resources for the practitioner are also included.

### *Forum Guide to Building a Culture of Quality Data: A School and District Resource (NCES 2005–801)*

National Forum on Education Statistics (2005)

U.S. Department of Education, National Center for Education Statistics, Washington, DC

[http://nces.ed.gov/forum/pub\\_2005801.asp](http://nces.ed.gov/forum/pub_2005801.asp)

This free *Guide* asserts that good data, like good students, come from schools. While it is undeniably harder to teach a student than it is to collect statistics, certain procedures can help to achieve goals in both cases. Recently, there has been a growing awareness that effective teaching, efficient schools, and quality data are linked. The quality of information used to develop an instructional plan, run a school, plan a budget, or place a student in a class depends on the school data clerk, teacher, counselor, and/or school secretary who enter data into a computer. With that in mind, the focus of this report is on data entry—getting things right at the source.

### *Forum Guide to Protecting the Privacy of Student Information: State and Local Education Agencies (NCES 2004–330)*

National Forum on Education Statistics (2004)

U.S. Department of Education, National Center for Education Statistics, Washington, DC

[http://nces.ed.gov/forum/pub\\_2004330.asp](http://nces.ed.gov/forum/pub_2004330.asp)

This free *Guide* presents a general overview of privacy laws and professional practices that apply to information collected for, and maintained in, student records. The document also provides an overview of key principles and concepts governing student privacy; summarizes federal privacy laws including recent changes; identifies issues concerning the release of information to both parents and external organizations; and suggests good data management practices for schools, districts, and state education agencies..

### *Forum Unified Education Technology Suite*

National Forum on Education Statistics (2005)

U.S. Department of Education, National Center for Education Statistics, Washington, DC  
[http://nces.ed.gov/pubs2005/tech\\_suite/](http://nces.ed.gov/pubs2005/tech_suite/)

This free resource combines material from four previously published National Center for Education Statistics/National Forum on Education Statistics publications (*Safeguarding Your Technology*, *Technology @ Your Fingertips*, *Technology in Schools*, and *Weaving a Secure Web Around Education*) into one comprehensive document that will be updated periodically as an ongoing web resource. The document presents a practical, comprehensive, and tested approach to assessing, acquiring, instituting, managing, securing, and using technology in education settings.

### *Guide to Effective Accountability Reporting*

Council of Chief State School Officers, Washington DC

<http://www.ccsso.org/publications/details.cfm?PublicationID=56>

To assist state and local educators, the Council of Chief State School Officers (CCSSO) developed this monograph through the Accountability Systems and Reporting State Collaborative on Assessment and Student Standards (ASR SCASS). It is intended to serve as a resource for State Education Agencies (SEAs) and Local Education Agencies (LEAs) responsible for producing state, district, or school report cards of the type required under many state or district accountability systems, as well as under the No Child Left Behind Act of 2001 (NCLB). This *Guide* does not present an academic discussion about the nature of indicators and indicator systems, nor is it meant to cover the broad range of accountability issues in its entirety. It is meant to provide a resource for agencies, and to spur the thought of practitioners, as accountability reporting systems are tooled to meet the requirements of NCLB.

### *Handbook of Parametric and Nonparametric Statistical Procedures (Third Edition)*

Author: David Sheskin (2003)

Chapman and Hall/CRC: Boca Raton

This document offers students and researchers practical information for analysis and research. It emphasizes statistical application over theory, and examines over 130 statistical procedures and tests.

### *HyperStat Online: An Introductory Statistics Textbook and Online Tutorial for Help in Statistics*

Author: David M. Lane (2003)

<http://davidmlane.com/hyperstat/>

This resource is an online introductory statistics textbook and tutorial.

### *Monitoring School Quality: An Indicators Report (NCES 2001-030)*

U.S. Department of Education, National Center for Education Statistics, Washington, DC

<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001030>

This free NCES report explores why some schools may be better than others at helping students learn. It reviews 13 characteristics of schools, classrooms, and teachers that are most likely related to school quality and student learning. For each indicator, the report identifies where national data are currently available and reliable. It assesses the current status of our schools by examining and critiquing these national indicator data. The report is designed for policymakers, researchers, and others interested in assessing the strength of our schools. While it is relevant for those interested in standards or accountability, it is not about test scores and is not a guide for education reform.

### *NCES Handbooks Online*

U.S. Department of Education, National Center for Education Statistics, Washington, DC  
<http://nces.ed.gov/programs/handbook/index.asp>

The free *NCES Handbooks Online* define standard education terms for students, staff, schools, LEAs, intermediate education agencies, and SEAs. They are intended to serve as reference documents for public and private organizations (including education institutions and early childhood centers), as well as education researchers and other users of education data. This web-based tool allows users to view and download Handbook information via an electronic table of contents, a drill-down finder, element-name and first-letter searches, and advanced query options.

### *Practical Problems in Educational Measurement*

Author: Robert L. Ebel (1980)

DC Heath and Company: Lexington, MA

This document presents a brief introduction to the practical application of educational tests and measurement techniques. It addresses topics such as accountability, testing bias, grading, and standard tests.

### *Safety in Numbers: Collecting and Using Crime, Violence, and Discipline Incident Data to Make a Difference in Schools (NCES 2002-312)*

National Forum on Education Statistics (2002)

U.S. Department of Education, National Center for Education Statistics, Washington, DC  
[http://www.nces.ed.gov/forum/pub\\_2002312.asp](http://www.nces.ed.gov/forum/pub_2002312.asp)

This free resource is designed for use by school, district, and state staff to improve the effectiveness of their efforts to collect and use disciplinary incident data. It provides recommendations on what types of data to collect, why it is critical to collect such data, and how the data maybe used to improve school safety and answer policy questions relating to school improvement and the safety of students.

### *School District Demographics*

Developed under the sponsorship of the U.S. Department of Education National Center for Education Statistics

<http://nces.ed.gov/surveys/sdds/index.asp>

The School District Demographics (SDD) is an electronic library containing social, economic and administrative data for each of the 15,274 public school districts in the United States. It contains the most comprehensive demographic database of the nation's children ever developed. The SDD enables users to: examine the demographics, operations, and finances of any school district; assess special needs of the children and households served; plan for growth or decline in student membership; compare characteristics of one school district to another; locate districts within a region with certain characteristics; draw a thematic map to examine geographic distributions; extract data that may be manipulated and used with other data; and use reference features as a handy electronic library.

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*Statistical Methods in Education and Psychology*

Authors: Gene V. Glass and Kenneth D. Hopkins (1984)

Prentice Hall: Englewood Cliffs NJ

This document is written for students who hope to improve their functional literacy in the field of statistics, develop skills in statistical methods, and apply statistics as a part of a broader research program.

*Youth Risk Behavior Surveillance System*

<http://www.cdc.gov/HealthyYouth/yrbs/index.htm>

The Youth Risk Behavior Surveillance System (YRBSS) was developed in 1990 to monitor priority health risk behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth and adults in the United States. These behaviors, often established during childhood and early adolescence, include tobacco use, unhealthy dietary behaviors, inadequate physical activity, alcohol and other drug use, sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases (including HIV infection), and behaviors that contribute to unintentional injuries and violence. The YRBSS includes national, state, and local school-based surveys of representative samples of 9th through 12th grade students.

# Alphabetical Index

- Absence Rate (Class), Teacher, 19, 67, 75
- Academic Proficiency (*see Assessment, Percentage Students Demonstrating Proficient Or Advanced Performance*)
- ACT Participation (*see College Entrance Testing, Percentage Graduate Participation*)
- ACT Scores (*see College Entrance Testing, Student Average Score*)
- ADA (*see Average Daily Attendance*)
- Additional Information, xiii, 15
- Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) In Improvement Categories, 21, 23, 25, 29, 30, 31
- Adequate Yearly Progress (AYP), Percentage Schools In Improvement Categories, 21, 23, 25, 29, 30, 31, 92
- Adequate Yearly Progress (AYP), Percentage Schools Making, 21, 23, 25, 29, 30, 31
- Adequate Yearly Progress (AYP) Status, 26, 118
- ADM (*see Average Daily Membership*)
- Administrator:Teacher Ratio (*see Teacher:Administrator Ratio*)
- Advanced Course Completion Patterns (*see Courses (Advanced), Percentage Student Completion*)
- Advanced Course Enrollment Patterns (*see Courses (Advanced), Percentage Student Enrollment*)
- Alcohol-Related Incidents Reported Per 100 Students, 27, 45, 48, 55, 68, 84, 86, 88, 94
- Allotted Instructional Time (*see Instructional Time, Allotted*)
- Alpha/Numeric, 117
- Alternative Environment Placements (*see Placement of Students With Disabilities*)
- Annual Dropout Rate (*see High School Dropout Rate, Annual Student*)
- Appropriately Certified Teachers (*see "Highly Qualified" Teachers, Percentage*)
- Appropriately "Qualified" Paraprofessionals (*see "Qualified" Paraprofessionals, Percentage*)
- Assessment, Average Student Score, 21, 23, 25, 29, 30, 31, 75
- Assessment, Percentage Student Participation, 21, 23, 25, 29, 30, 31
- Assessment, Percentage Students Demonstrating Proficient or Advanced Performance, 21, 23, 25, 29, 30, 31
- Assessment Performance (*see Assessment, Percentage Students Demonstrating Proficient Or Advanced Performance*)
- Assessment Results (*see Assessment, Average Student Score*)
- Attendance, Average Daily (*see Average Daily Attendance*)
- Average, 108
- Average Class Size (*see Class Size, Average*)
- Average Daily Attendance (ADA), 28, 41, 43, 46, 48, 49, 56, 62, 64, 77, 78, 80, 83, 85, 88, 92, 93, 95, 101, 102, 103
- Average Daily Membership (ADM), 28, 41, 43, 46, 48, 49, 56, 62, 64, 77, 78, 80, 83, 85, 88, 92, 93, 95, 101, 102, 103
- Average Duration Of Out-Of-School Suspension Incidents (*see Suspensions (Out-of-School), Average Duration*)
- Average Experience Level Of Teachers (*see Experience Level, Teacher*)
- Average Student Assessment Score (*see Assessment, Average Student Score*)
- Average Student Score On College Entrance Testing (*see College Entrance Testing, Student Average Score*)
- AYP Status (*see Adequate Yearly Progress Status*)
- Burden, 2, 8, 9, 10, 11, 82
- Caveats and Cautions, xiii, 15
- Certification, Percentage Classes Taught By Teachers Holding Emergency, Provisional, Or Out-Of-Field, 33, 51, 54, 54, 65, 75
- Class Absence Rate, 19
- Class Size, Average, 35, 69, 77, 83, 91
- Cohort, 57, 63, 106
- Cohort Dropout Rate (*see High School Dropout Rate, Cohort Rate*)
- College Entrance Testing (*see College Entrance Testing, Percentage Graduate Participation and College Entrance Testing, Student Average Score*)
- College Entrance Testing, Percentage Graduate Participation, 37, 39
- College Entrance Testing, Student Average Score, 37, 39
- College Readiness Testing (*see College Entrance Testing, Percentage Graduate Participation and College Entrance Testing, Student Average Score*)
- Commonly Reported Subgroups, xiii, 15
- Completion Rate (*see High School Completion/Graduation Rate, Cohort Rate, and High School Completion/Graduation Rate, Leaver Rate*)
- Components, xiii, 15
- Computer:Student Ratio (*see Student:Instructional Computer Ratio*)
- Confidence Intervals, 110
- Context Indicators, xi, xii, xv, 1, 2, 3, 4, 5, 15
- Contract Days of Service per Year, 102, 104, 118
- Cost-Effectiveness, 6, 8
- Count of Student Membership (e.g., October 1), 28, 41, 43, 46, 48, 49, 56, 62, 64, 77, 78, 80, 83, 85, 88, 89, 92, 93, 95, 101, 102, 103
- Course Code, 41, 43, 96, 98, 118
- Course Title, 19, 33, 34, 35, 36, 118
- Courses (Advanced), Percentage Student Completion, 41, 43
- Courses (Advanced), Percentage Student Enrollment, 41, 43
- Criminal Offense Incidents Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94

Cross References, xiii, 15  
 Cumulative Enrollment, 28, 41, 43, 46, 48, 49, 56, 62, 64, 77, 78, 80, 83, 85, 88, 92, 93, 95, 101, 102, 103  
 Data, 106  
 Data Elements, 117  
 Date, 117  
 Definition, xiii, 15  
 Disabilities, Placement Of Students With (*see Placement of Students With Disabilities*)  
 Disability Status, xiv, 69, 119  
 Disciplinary Action, 56, 85, 88, 89, 119  
 Disciplinary Action End Date, 86, 87, 120  
 Disciplinary Action Start Date, 86, 87, 120  
 Display Suggestions, xiii, 15, 111  
 Dropout Rate (*see High School Dropout Rate, Annual Student and High School Dropout Rate, Cohort Rate*)  
 Drug-Related Incidents Reported Per 100 Students, 28, 45, 47, 55, 68, 84, 56, 88, 94  
 Economic Disadvantage Status, xiv  
 Education Indicator, xi, xv, 1, 2, 3, 4, 10, 15  
 Education Level, Mother, 49  
 Education Level, Parent (*see Education Level, Mother*)  
 Education Level, Teacher, 33, 51, 54, 65, 75, 91  
 Element Number, 117  
 Element Type, 117  
 Employment Start Date, 76, 120  
 English Proficiency, xiv  
 Enrollment (*see Cumulative Enrollment*)  
 Enrollment Status, 79, 102, 103, 120  
 Error, 109  
 Ethnicity (*see Race/Ethnicity*)  
 Excess Public School Capacity (*see School Capacity, Percentage Used*)  
 Excess Public School Membership (*see School Capacity, Percent Used*)  
 Exit/Withdrawal Type, 37, 58, 60, 62, 64, 120  
 Experience Level, Teacher, 33, 51, 65, 75, 91  
 Expulsion Incidents Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94  
 Faculty/Staff Absence Rate (*see Absence Rate (Class), Teacher*)  
 Field Length, 118  
 Financial Resources, 16  
 Floating Decimal, 117  
 Formula, xiii, 15  
 FTE (*see Full-Time Equivalency*)  
 Full-Time Equivalency (FTE), 19, 33, 51, 52, 53, 54, 65, 66, 73, 74, 75, 76, 82, 83, 90, 91, 121  
 Grade Equivalents, 106  
 Graduation Rate (*see High School Completion/Graduation Rate, Cohort Rate and High School Completion/Graduation Rate, Leaver Rate*)  
 Graphing, 113, 114  
 High School Completion/Graduation Rate, Cohort Rate, 57, 60, 61, 64, 72  
 High School Completion/Graduation Rate, Leaver Rate, 58, 59, 61, 64, 72  
 High School Dropout Rate, Annual Student, 58, 60, 61, 64, 72, 93  
 High School Dropout Rate, Cohort Rate, 58, 60, 61, 63, 72, 93  
 Highest Level Of Education Completed, 49, 52, 66, 73, 121  
 "Highly Qualified" Teachers, Percentage, 33, 51, 54, 65, 73, 75, 91  
 Identification System, 37, 39, 40, 122  
 Identifier, 118  
 Indicator Layout, xiii  
 Instructional Computer:Student Ratio (*see Student:Instructional Computer Ratio*)  
 Instructional Minutes, 67, 123  
 Instructional Time, Allotted, 19, 67  
 Instructional Time Per Year, 67  
 Job Classification, 52, 54, 66, 73, 76, 83, 91, 123  
 Leave Substitution Status, 19, 123  
 Mean, 108  
 Median, 108  
 Membership, Average Daily (*see Average Daily Membership*)  
 Membership, Student Count (e.g., October 1) (*see Count of Student Membership (e.g., October 1)*)  
 Migrant Status, xiv  
 Mobility Rate, 79  
 Mode, 108  
 Mother's Education Level (*see Education Level, Mother*)  
 Mother's Highest Level Of Education Completed (*see Education Level, Mother*)  
 Noninstructional Service Days, Number Of Teacher, 104  
 Nonpromotion Reason, 72, 123  
 Nontraditional Completers Of Vocational/Technical Programs (*see Vocational/Technical Programs, Percentage Nontraditional Completers*)  
 Nontraditional Participation Rate In Vocational/Technical Programs (*see Vocational/Technical Programs, Percentage Nontraditional Participants*)  
 Normal Curve Equivalents, 107  
 Number Of Credits Received, 41, 43, 96, 124  
 Number Of Days In Attendance, 93, 101, 124  
 Number Of Expulsion Incidents Per 100 Students (*see Expulsion Incidents Per 100 Students*)  
 Number Of Noninstructional Teacher Service Days, 104  
 Number Of Out-Of-School Suspension Actions Per 100 Students (*see Suspensions (Out-Of-School), Actions Per 100 Students*)  
 Number Of Service Days, 102  
 Numeric, 118  
 Observation, 106  
 Opportunity To Learn, 16  
 Out-Of-Field Teaching Assignments (*see Certification, Percentage Classes Taught By Teachers Holding Emergency, Provisional, Or Out-Of-Field*)  
 Parent's Education Level (*see Education Level, Mother*)

- Parent's Highest Level Of Education Completed (*see Education Level, Mother*)
- Participation Rate In College Entrance Testing (*see College Entrance Testing, Percentage Graduate Participation*)
- Participation Rate In Student Assessment (*see Assessment, Percentage Student Participation*)
- Percentage, 107
- Percentage Classes Taught By Teachers With Emergency, Provisional, Or Out-Of-Field Certificates (*see Certification, Percentage Classes Taught By Teachers Holding Emergency, Provisional, Or Out-Of-Field*)
- Percentage Graduate Participation In College Entrance Testing (*see College Entrance Testing, Percentage Graduate Participation*)
- Percentage "Highly Qualified" Teachers (*see "Highly Qualified" Teachers, Percentage*)
- Percentage LEAs In AYP School Improvement Categories (*see Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) In Improvement Categories*)
- Percentage Mothers With A High School Degree (*see Education Level, Mother*)
- Percentage Nontraditional Completers Of Vocational/Technical Programs (*see Vocational/Technical Programs, Percentage Nontraditional Completers*)
- Percentage Nontraditional Participating In Vocational/Technical Programs (*see Vocational/Technical Programs, Percentage Nontraditional Participants*)
- Percentage "Qualified" Paraprofessionals (*see "Qualified" Paraprofessionals, Percentage*)
- Percentage School Capacity Used (*see School Capacity, Percent Used*)
- Percentage Schools Identified As "Persistently Dangerous," (*see "Persistently Dangerous" Schools, Percentage*)
- Percentage Schools In AYP Improvement Categories (*see Adequate Yearly Progress (AYP), Percentage Schools In Improvement Categories*)
- Percentage Schools Making Adequate Yearly Progress (AYP) (*see Adequate Yearly Progress (AYP), Percentage Schools Making*)
- Percentage Students Completing (Advanced) Courses (*see Courses (Advanced), Percentage Student Completion*)
- Percentage Students Demonstrating Proficient Or Advanced Performance (*see Assessment, Percentage Students Demonstrating Proficient or Advanced Performance*)
- Percentage Students Enrolling In (Advanced) Courses (*see Courses (Advanced), Percentage Student Enrollment*)
- Percentage Students Participating In Assessment (*see Assessment, Percentage Student Participation*)
- Percentage Students Receiving Out-Of-School Suspensions (*see Suspensions (Out-Of-School), Percentage Students Receiving*)
- Percentage Students Receiving Transportation Services (*see Transportation Services, Percentage Students Receiving*)
- Percentage Teachers With Advanced Degrees (*see Education Level, Teacher*)
- Percentage Teachers With Emergency, Provisional, Or Out-Of-Field Certificates (*see Certification, Percentage Classes Taught By Teachers Holding Emergency, Provisional, Or Out-Of-Field*)
- Percentile Ranks, 107
- Performance Indicators, xi, xv, 1, 2, 3, 5, 8
- Performance Rating, 31, 32, 124
- "Persistently Dangerous" Schools, Percentage, 28, 45, 48, 55, 68, 75, 84, 86, 88, 94
- Placement Of Students With Disabilities, 69, 92
- Policy Questions, xiii, 15
- Population, 106
- Presentation Options, 111
- Promotion Rate, Student, 58, 60, 61, 64, 72, 79
- Promotion Type, 72, 124
- Public Presentation, 13
- "Qualified" Paraprofessionals, Percentage, 65, 73
- Race/Ethnicity, xiv
- Random Error, 109
- Random Sample, 106
- Range, 108
- Rank Order, 107
- Rate Of Alcohol-Related Incidents Reported (*see Alcohol-Related Incidents Reported Per 100 Students*)
- Rate Of Criminal Offense Incidents Reported (*see Criminal Offense Incidents Reported Per 100 Students*)
- Rate Of Drug-Related Incidents Reported (*see Drug-Related Incidents Reported Per 100 Students*)
- Rate Of Violent Incidents Reported (*see Violent Incidents Reported Per 100 Students*)
- Ratio, 107
- Recommended Use, xiii, 15
- Related Indicators, xiii, 15
- Related Options, 118
- Reliability, 7
- Reported Alcohol-Related Incidents Per 100 Students (*see Alcohol-Related Incidents Reported Per 100 Students*)
- Reported Criminal Offense Incidents Per 100 Students (*see Criminal Offense Incidents Reported Per 100 students*)
- Reported Drug-Related Incidents Per 100 Students (*see Drug-Related Incidents Reported Per 100 Students*)
- Reported Violent Incidents Per 100 Students (*see Violent Incidents Reported Per 100 Students*)
- Reporting, 12, 111
- Retention Rate, Student (*see Promotion Rate, Student*)
- Retention Rate, Teacher, 19, 51, 54, 65, 75, 91

Sample, 106  
 SAT Participation *(see College Entrance Testing, Percentage Graduate Participation)*  
 SAT Scores *(see College Entrance Testing, Student Average Score)*  
 School AYP Status *(see Adequate Yearly Progress (AYP), Percentage Schools In Improvement Categories)*  
 School Capacity, Percentage Used, 35, 77  
 School Climate, 16  
 School District AYP Status *(see Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) In Improvement Categories)*  
 School Enrollment Capacity, 77  
 School Performance, 16  
 School Violence Incidents Reported *(see Violent Incidents Reported Per 100 Students)*  
 School Year, Length Of Student, 104  
 School Year Stability Rate *(see Stability Rate, Student Enrollment)*  
 Schoolwide Truancy Rate *(see Truancy Rate, Schoolwide)*  
 Score Results, 29, 31, 39, 66, 73, 124  
 Securing Data, 12  
 Service Setting, 69, 124  
 Sex, xiv, 96, 98, 125  
 Stability Rate, Student Enrollment, 79  
 Staff Characteristics, 16  
 Staff:Student Ratio *(see Student:Staff Ratio)*  
 Standard Deviation, 109  
 Standard Error, 110  
 Standard Scores, 107  
 Stanines, 107  
 Statistical Integrity, 13  
 Statistics, 105  
 Student Academic Proficiency, 31  
 Student:Instructional Computer Ratio, 80  
 Student Participation Rate In Assessment *(see Assessment, Percentage Student Participation)*  
 Student Participation Rate In College Entrance Testing *(see College Entrance Testing, Percentage Graduate Participation)*  
 Student Performance, 29  
 Student Promotion, 72  
 Student Retention Rate, 72  
 Student/School Characteristics, 16  
 Student Stability Rate, 79  
 Student:Staff Ratio, 35, 82, 91  
 Student:Teacher Ratio *(see Student:Staff Ratio)*  
 Student Transportation *(see Transportation Services, Percentage Students Receiving)*  
 Students With Disabilities Placement *(see Placement Of Students With Disabilities)*  
 Suspensions (Out-Of-School), Actions Per 100 Students, 28, 45, 48, 55, 68, 54, 86, 88, 94  
 Suspensions (Out-Of-School), Average Duration, 28, 45, 48, 55, 68, 54, 86, 88, 94  
 Suspensions (Out-Of-School), Percentage Students Receiving, 28, 45, 48, 55, 68, 54, 86, 88, 94  
 Synthetic High School Cohort Dropout Rate, 64  
 Systematic Error, 109  
 Teacher Absence Rate *(see Absence Rate (Class), Teacher)*  
 Teacher:Administrator Ratio, 83, 90  
 Teacher Education Level *(see Education Level, Teacher)*  
 Teacher Experience Level *(see Experience Level, Teacher)*  
 Teacher Retention Rate *(see Retention Rate, Teacher)*  
 Teacher's Highest Level Of Education Completed *(see Education Level, Teacher)*  
 Teaching Assignment, 33, 66, 125  
 Teaching Assignments Out-Of-Field *(see Certification, Percentage Classes Taught By Teachers Holding Emergency, Provisional, Or Out-Of-Field)*  
 Teaching Credential Type, 33, 66, 125  
 Teaching Field Or Area Authorized, 33, 126  
 Test Results, 29  
 Time Of Instruction, 67  
 Timeliness, 8  
 Total Days In Session, 93, 101, 103, 128  
 Total Number Of Days Out-Of-School Suspension Incidents *(see Suspensions (Out-Of-School), Average Duration)*  
 Training Users, 11  
 Transportation At Public Expense *(see Transportation Services, Percentage Students Receiving)*  
 Transportation Services, Percentage Students Receiving, 92  
 Transportation Status *(see Transportation Services, Percentage Students Receiving)*  
 Truancy Rate, Schoolwide, 93, 128  
 Unique Course Code, 19, 33, 34, 35, 36, 128  
 Utility, 6  
 Validity, 7  
 Variables, 106  
 Variance, 109  
 Violence In Schools *(see Violent Incidents Reported Per 100 Students)*  
 Violent Incidents Reported Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94  
 Vocational/Technical Programs, Percentage Nontraditional Completers, 96, 98  
 Vocational/Technical Programs, Percentage Nontraditional Participants, 96, 98  
 Years of Prior Teaching Experience, 54, 128  
 Z-Scores, 107



# Topical Index

## Financial Resources

Class Size, Average, 35, 69, 77, 83, 91  
School Capacity, Percentage Used, 35, 77  
Student:Instructional Computer Ratio, 80  
Student:Staff Ratio, 35, 82, 91  
Teacher:Administrator Ratio, 83, 90  
Transportation Services, Percentage Students Receiving, 92

## Opportunity to Learn

Absence Rate (Class), Teacher, 19, 67, 75  
Certification, Percentage Classes Taught By Teachers Holding Emergency, Provisional, Or Out-Of-Field, 33, 51, 54, 54, 65, 75  
Class Size, Average, 35, 69, 77, 83, 91  
Courses (Advanced), Percentage Student Completion, 41, 43  
Courses (Advanced), Percentage Student Enrollment, 41, 43  
Experience Level, Teacher, 33, 51, 65, 75, 91  
Expulsion Incidents Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94  
High School Completion/Graduation Rate, Cohort Rate, 57, 60, 61, 64, 72  
High School Completion/Graduation Rate, Leaver Rate, 58, 59, 61, 64, 72  
High School Dropout Rate, Annual Student, 58, 60, 61, 64, 72, 93  
High School Dropout Rate, Cohort Rate, 58, 60, 61, 63, 72, 93  
"Highly Qualified" Teachers, Percentage, 33, 51, 54, 65, 73, 75, 91  
Instructional Time, Allotted, 19, 67  
Placement Of Students With Disabilities, 69, 92  
"Qualified" Paraprofessionals, Percentage, 65, 73  
Stability Rate, Student Enrollment, 79  
Student:Instructional Computer Ratio, 80

Student:Staff Ratio, 35, 82, 91  
Suspensions (Out-Of-School), Actions Per 100 Students, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Suspensions (Out-Of-School), Average Duration, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Suspensions (Out-Of-School), Percentage Students Receiving, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Truancy Rate, Schoolwide, 93, 128  
Vocational/Technical Programs, Percentage Nontraditional Completers, 96, 98  
Vocational/Technical Programs, Percentage Nontraditional Participants, 96, 98

## School Climate

Absence Rate (Class), Teacher, 19, 67, 75  
Alcohol-Related Incidents Reported Per 100 Students, 27, 45, 48, 55, 68, 84, 86, 88, 94  
Class Size, Average, 35, 69, 77, 83, 91  
Criminal Offense Incidents Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94  
Drug-Related Incidents Reported Per 100 Students, 28, 45, 47, 55, 68, 84, 56, 88, 94  
Experience Level, Teacher, 33, 51, 65, 75, 91  
Expulsion Incidents Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94  
Instructional Time, Allotted, 19, 67  
"Persistently Dangerous" Schools, Percentage, 28, 45, 48, 55, 68, 75, 84, 86, 88, 94  
Placement Of Students With Disabilities, 69, 92  
Stability Rate, Student Enrollment, 79  
Suspensions (Out-Of-School), Actions Per 100 Students, 28, 45, 48, 55, 68, 54, 86, 88, 94

Suspensions (Out-Of-School), Average Duration, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Suspensions (Out-Of-School), Percentage Students Receiving, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Truancy Rate, Schoolwide, 93, 128  
Violent Incidents Reported Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94

## School Performance

Adequate Yearly Progress (AYP), Percentage Local Education Agencies (LEAs) In Improvement Categories, 21, 23, 25, 29, 30, 31  
Adequate Yearly Progress (AYP), Percentage Schools In Improvement Categories, 21, 23, 25, 29, 30, 31, 92  
Adequate Yearly Progress (AYP), Percentage Schools Making, 21, 23, 25, 29, 30, 31  
Assessment, Average Student Score, 21, 23, 25, 29, 30, 31, 75  
Assessment, Percentage Student Participation, 21, 23, 25, 29, 30, 31  
Assessment, Percentage Students Demonstrating Proficient or Advanced Performance, 21, 23, 25, 29, 30, 31  
College Entrance Testing, Percentage Graduate Participation, 37, 39  
College Entrance Testing, Student Average Score, 37, 39  
Courses (Advanced), Percentage Student Completion, 41, 43  
Courses (Advanced), Percentage Student Enrollment, 41, 43  
Expulsion Incidents Per 100 Students, 28, 45, 48, 55, 68, 84, 86, 88, 94  
High School Completion/Graduation Rate, Cohort Rate, 57, 60, 61, 64, 72  
High School Completion/Graduation Rate, Leaver Rate, 58, 59, 61, 64, 72

High School Dropout Rate, Annual Student, 58, 60, 61, 64, 72, 93  
High School Dropout Rate, Cohort Rate, 58, 60, 61, 63, 72, 93  
Promotion Rate, Student, 58, 60, 61, 64, 72, 79  
Suspensions (Out-Of-School), Actions Per 100 Students, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Suspensions (Out-Of-School), Average Duration, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Suspensions (Out-Of-School), Percentage Students Receiving, 28, 45, 48, 55, 68, 54, 86, 88, 94  
Truancy Rate, Schoolwide, 93, 128  
Vocational/Technical Programs, Percentage Nontraditional Completers, 96, 98

### **Student/School Characteristics**

Education Level, Mother, 49  
High School Completion/ Graduation Rate, Cohort Rate, 57, 60, 61, 64, 72  
High School Completion/ Graduation Rate, Leaver Rate, 58, 59, 61, 64, 72  
High School Dropout Rate, Annual Student, 58, 60, 61, 64, 72, 93  
High School Dropout Rate, Cohort Rate, 58, 60, 61, 63, 72, 93  
Placement Of Students With Disabilities, 69, 92  
School Capacity, Percentage Used, 35, 77  
Stability Rate, Student Enrollment, 79  
Transportation Services, Percentage Students Receiving, 92

### **Staff Characteristics**

Absence Rate (Class), Teacher, 19, 67, 75  
Certification, Percentage Classes Taught By Teachers Holding Emergency, Provisional, Or Out-Of-Field, 33, 51, 54, 54, 65, 75  
Education Level, Teacher, 33, 51, 54, 65, 75, 91  
Experience Level, Teacher, 33, 51, 65, 75, 91  
"Highly Qualified" Teachers, Percentage, 33, 51, 54, 65, 73, 75, 91  
"Qualified" Paraprofessionals, Percentage, 65, 73  
Retention Rate, Teacher, 19, 51, 54, 65, 75, 91  
Student:Staff Ratio, 35, 82, 91  
Teacher:Administrator Ratio, 83, 90