SCHOOL DESIGN:
Leveraging Talent, Time, and Money

SECTION 4

Serving Special Populations Effectively

PRACTICAL TOOLS
for District Transformation

ERS Education Resource Strategies

Rethinking Resources for Student Success

ANALYSES AND DO-IT-YOURSELF WORKSHEETS

THE SCHOOL DESIGN WORKSHEET SERIES INCLUDES worksheets with step-by-step instructions to help you calculate and measure effective school design and portfolio management. These analyses can help identify your largest challenges and greatest opportunities for action. Armed with this knowledge, you will be able to quantify transformational opportunities for your district. **This document contains Analysis 7.**

Analyses for effective school design and portfolio management

	ANALYSIS	WORKSHEET
IMPROVING TEACHING EFFECTIVENESS	1. Collaborative planning time	1. Elementary school contracted teacher planning time
	2. Expert support	2a. Coaching and lead teacher support spending per teacher
		2b. School teacher-to-coach ratio
	3. Principal span of review	3. Principal span of review
MAXIMIZING INSTRUCTIONAL TIME	4. Instructional time	4a. Total time in school
		4b. Instructional time by subject
PROVIDING INDIVIDUAL ATTENTION	5. Class size	5. Average class size by course type
	6. Teacher load	6. Average teacher load
SERVING SPECIAL POPULATIONS EFFECTIVELY	7. Special education placement	7a. Special education placements as a percentage of total enrollment
		7b. General education class size versus student-to-teacher ratio
PORTFOLIO MANAGEMENT	8. Student needs by school type	8. Student needs by school type
	9. School cost	9a. Distribution of schools by enrollment
		9b. Per-pupil spending differential between small- and medium-size schools
	10. School capacity utilization	10. Seat vacancy by school
	11. Mix of school programs	11. Special education fill rate

Data checklist

Use this list to gather the data and files that you will need to complete the worksheets. All data files listed are for the current school year.

☐ **District K–12 enrollment file by grade and by school.**
This file will allow you to:

  a. Identify total student enrollment by student type:

   i.   Identify total general education enrollment.

   ii. Identify total enrollment of English language learners (ELL), broken out by program, so you know which students are self-contained/substantially separate and which students are integrated/mainstreamed.

   iii. Identify total special education enrollment, broken out by program, so you know which students are self-contained/substantially separate and which students are integrated/mainstreamed.

  b. Identify total student enrollment by student demographic (e.g., poverty).

☐ **District K–12 course file by student, by grade, by school.**
This file will allow you to:

  a. Determine average general education class sizes.

☐ **District human resources file, including supervisor/evaluator information for teachers. This file will allow you to:**

  a. Determine the number of teachers in each school.

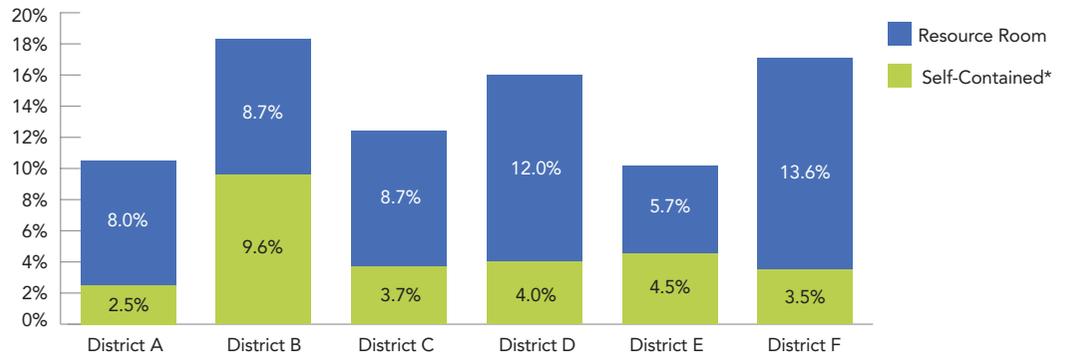☐ **District budget file at lowest level of detail available.**
This file will allow you to:

  a. Identify the number of K-12 teachers at each school.

Analysis 7a: Special education placement

Figure 7a illustrates the percentage of students in special education across six urban districts. The total percentage varies from a low of 10.2% to a high of 18.3%, while the percentage of students served by self-contained classes or home instruction varies from a low of 2.5% to a high of 9.6%. It is unlikely that the variation is driven completely by differences in underlying incidence rates in the different districts. Instead, diagnostic and placement practices in each district may drive very different results.

Figure 7a: K–12 Special Education Placements as a Percentage of Total Enrollment

Legend:
- Resource Room
- Self-Contained*

District	Resource Room	Self-Contained*
District A	8.0%	2.5%
District B	8.7%	9.6%
District C	8.7%	3.7%
District D	12.0%	4.0%
District E	5.7%	4.5%
District F	13.6%	3.5%

Self-contained is typically defined as 60% or more time in a special education setting

Worksheet 7a: Special education placement as a percentage of total enrollment

OBJECTIVE: Understand the special education diagnostic and placement practices in your district to determine whether students are appropriately placed in special education settings.

SUMMARY OF METRICS

STEP 1: Calculate total student enrollment and enrollment by student type for each school.

STEP 2: Calculate average percentages by school.

STEP 3: Deep dive on special education to determine the percentage of resource room and self-contained.

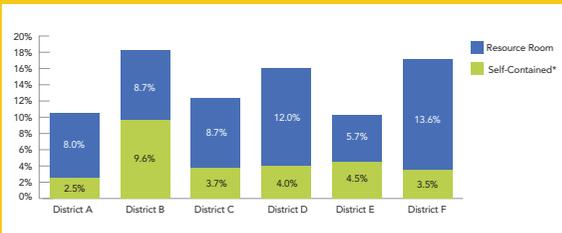STEP 4: Graph average special education placements in your district.

REMINDER

Figure 7a: K–12 Special Education Placements as a Percentage of Total Enrollment

STEP 1: Calculate total student enrollment and enrollment by student type for each school.

1. Using your district enrollment file:

   a. Determine the total student enrollment for each school:

   i. *Ensure you look at students enrolled after a district-specified entry date to make a consistent comparison across student populations (e.g., 40 days after the first day of school).*

   ii. *Identify the number of unique student IDs for each school that are enrolled at this specific cutoff date.*

   b. Determine the total student enrollment by student type:

   i. *Ensure you look at students enrolled after a district-specified entry date to make a consistent comparison across student populations (e.g., 40 days after the first day of school).*

   ii. *Identify student need categories in your student database: free/reduced-price lunch, special education, ELL. Students who are off track or struggling academically are addressed in Step 3. Note: For this analysis, we used the relatively broad categories listed here. For a more complete understanding of student needs by school, you may want to drill down further (e.g., to self-contained special education students, ELL students by language, or struggling students based on several academic measures).*

   iii. *Identify the number of unique student IDs for each school in each category.*

STEP 2: Calculate average percentages by school.

1. Using the figures you calculated for each school in Step 1, perform the following calculation:

$$\frac{\text{Number of unique student IDs for each student type at each school}}{\text{Total student enrollment at each school}} = \textbf{Percentage of student population by student type for each school}$$

2. You now have a full set of student need metrics for each school:

   a. Percentage free/reduced-price lunch, students with disabilities, ELL.

   b. Percentage proficient and below proficient.

You may want to compare schools within the same school level (e.g., elementary, middle) because school types may have different percentages of special populations.

STEP 3: Deep dive on special education to determine the percentage of resource room and self-contained.

1. In Step 1, you calculated special education student enrollment. Using your district enrollment file, identify a further breakdown of special education into resource room or self-contained. Self-contained is typically defined as students spending 60% or more of their time in a special education setting. If you use additional categories to distinguish among special education students in your district, you may want to calculate the percentage of those categories as well.

2. Calculate the number of students in each special education category.

3. Calculate the average proportions for each category by school:

$$\frac{\text{Number of unique student IDs in each special education category}}{\text{Total student enrollment at each school}} = \textbf{Percentage of special education population in each category}$$

STEP 4: Graph average special education placements in your district.

1. Construct a bar graph to show comparison special education metrics as in Figure 7a:

   a. Y-axis: Average proportion for special education and each special education category.

   b. X-axis: Your district and other districts for comparison.

2. Bar graph height will be determined by the overall special education proportion for each district.

Analysis 7b: Special education placement

Rather than siphoning off resources for more restrictive and expensive special education programs, district and school leaders can take a proactive approach to high-need students. For instance, early intervention (e.g., Response to Intervention models), support within the general education program, and the use of flexible staffing for small-group instruction at key junctures during the school day can help reduce the number of special education referrals. To estimate your district's current specialist positions that otherwise might be allocated to support general education, you can compare general education class size to your overall student-to-teacher ratio.

In Figure 7b, there are significant differences between general education class size and overall student-to-teacher ratios in four of the districts. In District A, for example, the difference of 12 students per teacher indicates there may be room to reallocate specialist teachers to support core academics. This is only if the district is able to address the needs of struggling students through alternative staffing and grouping strategies, rather than through special education referrals.

Figure 7b: General Education Class Size versus Student-to-Teacher Ratio

Legend:
- Average General Education Class Size
- Average Total Student-to-Teacher Ratio

District	Average General Education Class Size	Average Total Student-to-Teacher Ratio
District A	29	17
District B	25	14
District C	22	13
District D	26	14
District E	18	14
District F	22	16
District G	29	16
District H	20	12
District I	22	15

Worksheet 7b: General education class size versus student-to-teacher ratio

OBJECTIVE: To understand how much teaching resources are tied up in specialty and nonclassroom positions at schools in your district.

SUMMARY OF METRICS

STEP 1: Calculate the total student-to-teacher ratio for each school.

STEP 2: Calculate the average general education class size at each school.

STEP 3: Graph the difference between total student-to-teacher ratio and the average general education class size at each school and school type.

REMINDER

Figure 7b: General Education Class Size versus Student-to-Teacher Ratio

Average General Education Class Size
Average Total Student-to-Teacher Ratio
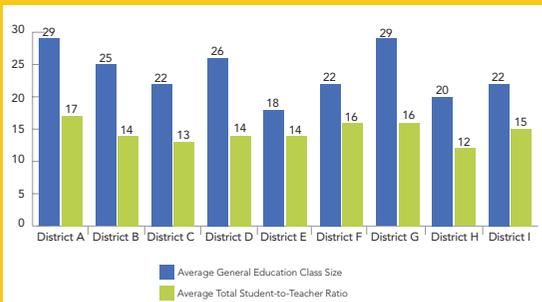
Note: This guide illustrates this analysis at the district level. For your analysis, it may be most useful to do this comparison for each school in your district to understand how much of a school's teaching resources are tied up in self-contained, specialty, and nonclassroom positions and assignments.

STEP 1: Calculate the total student-to-teacher ratio for each school.

1. Using your district budget or HR file:

    a. Identify the total number of K–12 teachers at each school:

        i. *Count only K–12 teachers for the grades each school serves (exclude prekindergarten, adult education, etc.).*

        ii. *Include all categories of K–12 teachers (general education, ELL, special education, etc.).*

2. Using your district's enrollment file:

    a. Identify the total K–12 enrollment at each school.

3. Calculate the total student-to-teacher ratio at each school.

$$\frac{\text{Total K–12 enrollment}}{\text{Total K–12 teachers}} = \textbf{Total student-to-teacher ratio}$$

Steps 2 and 3 allow you to estimate each school's general education class size. If you already have that data available, you do not need to do Steps 2 and 3.

STEP 2: Calculate the average general education class size at each school.

1. For elementary schools, use your district's course file to:

    a. Identify all the general education classes at each school:

        i. *Exclude specialty classes such as art, music, and physical education.*

        ii. *Exclude any self-contained classes that consist primarily (>60%) of special education or ELL students.*

    b. For each general education class, calculate the class size by counting the number of students assigned to the class.

    c. For each elementary school, calculate the average general education class size at the school.

2. For secondary schools, use your district's course file to:

   a. Identify all the general education core classes at each school:

      i. *Exclude specialty classes such as art, music, and physical education.*

      ii. *We use general education core classes only in this calculation because they provide the most accurate representation of teaching staff used for core academic instruction. Non-core class sizes may be very high (e.g., physical education) or very low (e.g., electives) and may therefore under- or overstate the resources devoted to specialist instruction. Core subjects include English language arts, math, science, social studies, and foreign language.*

   b. For each general education core class, calculate the class size by counting the number of students assigned to the class.

   c. For each secondary school, calculate the average general education core class size at the school.

STEP 3:   Graph the difference between total student-to-teacher ratio and the average general education class size at each school and school type.

1. The chart in this guide graphs the differences at the district level, but you should graph ratios for each school for which you performed the analysis.

2. For your district, graph the total student-to-teacher ratio and the average general education class size for each school:

   a. Y-axis: Number of students (class size and student-to-teacher ratio).

   b. X-axis: Individual school or set of schools.

3. Graph each school/set of schools with respect to the average class size and student-to-teacher ratio.

QUESTIONS TO CONSIDER AND ACTION STEPS

Questions to Consider

1. How do your special education placement rates compare to the other districts in Figure 7a?

2. What percentage of your teaching staff are core classroom instructors versus specialty staff/instructors?

3. Are you investing in early interventions (other than special education) for struggling learners?

4. Are there opportunities to use more teaching full-time equivalents for core instruction through inclusion and flexible grouping strategies?

Take Action!

- **Invest in early intervention/Response to Intervention programs that provide the right intervention *just in time*.** Explore and develop interventions other than special education for struggling learners, beginning in prekindergarten and 1st grade, based on ongoing assessments to measure learning. Many districts are having success in using these strategies to reduce special education referrals.

- **Ensure all students are being served in the least restrictive environments.** Seek first to serve struggling students in general education programs to prevent placement in special education. Integrate special education resources (such as resource teachers) with the general education program by using push-in programs and ensuring that teachers who share special education students also share collaborative planning time, instructional materials, and approaches.

- **Use flexible grouping strategies to provide individual attention without reducing class size.** Reducing class sizes can consume significant resources and still not provide struggling students with enough attention. Flexible grouping that brings specialists and others into general education classrooms for high-need students at key junctures during the school day can increase individual attention while reducing teacher loads. In St. Paul, elementary ELL teachers moved from classroom to classroom throughout the day, allowing blocks of 8:1 English language arts instruction for all students rather than just reduced ratios for ELL in self-contained classes.

ABOUT ERS

ERS is a non-profit organization dedicated to helping urban school systems organize people, time, and money to create great schools at scale.

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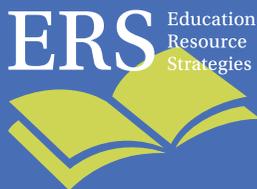
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