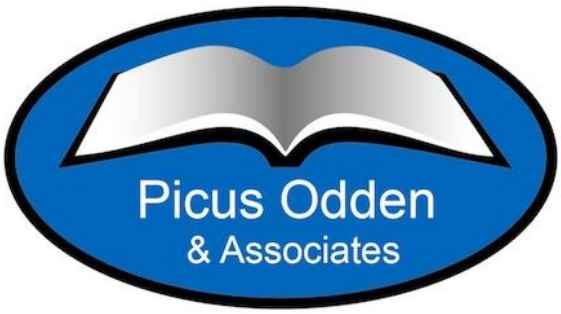
AN EVIDENCE-BASED APPROACH TO THE BASIC STUDENT ALLOCATION IN ALASKA

Prepared for the
Anchorage Public Schools



By

Allan Odden
Lawrence O. Picus

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Table 3.1 Summary of 2023 Alaska Evidence-Based Model Recommendations

Model Element	2022 Evidence-Based Recommendation
Staffing for Core Programs	
1. Full-Day Kindergarten	Full-day kindergarten program. Each K student counts as 1.0 pupil in the funding system.
2. Elementary Core Teachers/ Class Size	Grades K-3: 15 Grades 4-5/6: 25 (Average K-5 elementary class size of 17.3)
3. Secondary Core Teachers/ Class Size	Grades 6-12: 25. Average class size of 25
4. Elective/ Specialist Teachers	Elementary Schools: 20% of core elementary teachers Middle Schools: 20% of core middle school teachers High Schools: 33 1/3% of core high school teachers
5. Instructional Facilitators/ Coaches	1.0 Instructional coach position for every 200 students
6. Core Tutors/ Tier 2 Intervention	One tutor position in each prototypical school (Additional tutors are enabled through poverty and ELL pupil counts in Element 21)
7. Substitute Teachers	5% of core and elective teachers, instructional coaches, tutors (and teacher positions in additional tutoring, extended day, summer school, ELL, and special education)
8. Core Pupil Support Staff, Core Guidance Counselors, and Nurses	1 guidance counselor for every 450 grade K-5 students 1 guidance counselor for every 250 grade 6-12 students 1 nurse for every 450 K-8 students and 1 nurse position for every 600 9-12 students. (Additional student support resources are provided on the basis of poverty and ELL students in Element 22)
9. Supervisory and Instructional Aides	2 for each prototypical 450-student elementary and middle school 3 for each prototypical 600-student high school
10. Library Media Specialist	1.0 library media specialist position for each prototypical school
11. Principals and Assistant Principals	1.0 principal for the 450-student prototypical elementary school 1.0 principal for the 450-student prototypical middle school 1.0 principal and 1.0 assistant principal for the 600-student prototypical high school
12. School Site Secretarial and Clerical Staff	2.0 secretary positions for the 450-student prototypical elementary school 2.0 secretary positions for the 450-student prototypical middle school 3.0 secretary positions for the 600-student prototypical high school

Model Element	2022 Evidence-Based Recommendation
Dollar Per Student Resources	
13. Gifted and Talented Students	$40 per pupil
14. Intensive Professional Development	10 days of student-free time for training built into teacher contract year, by adding five days to the average teacher salary $130 per pupil for trainers (In addition, PD resources include instructional coaches [Element 5] and time for collaborative work [Element 4])
15. Instructional Materials	$210 per pupil for instructional and library materials $50 per pupil for each extra help program triggered by poverty and ELL students as well as special education
16. Short Cycle/ Interim Assessments	$25 per pupil for short cycle, interim and benchmark assessments
17. Technology and Equipment	$250 per pupil for school computer and technology equipment
18. Extra Duty Funds/Student Activities	$300 per student for co-curricular activities including sports and clubs for grades K-12
Central Office Functions	
19. Operations and Maintenance	Separate computations for custodians, maintenance workers and groundskeepers, $1 per gross square footage (GSF) for materials and supplies, and $350 per pupil for utilities
20. Central Office Personnel/ Non-Personnel Resources	8 professional and 17 classified positions for a prototypical 3,900 student Central office. Additionally $400 per pupil is provided for misc. items such as Board support, insurance, legal services, etc.
Resources for Struggling Students	
22. Tutors	1.0 tutor position for every 100 ELL students and one tutor position for every 100 non-ELL poverty students.
23. Additional Pupil Support Staff	1.0 pupil support position for every 100 ELL students and one pupil support position for every 100 non-ELL poverty students.
24. Extended Day	1.0 teacher position for every 120 ELL and for every 120 non-ELL poverty students.
25. Summer School	1.0 teacher position for every 120 ELL and for every 120 non-ELL poverty students.
26. ESL staff for English Language Learner (ELL) Students	In addition to tutors, extra pupil support, extended day and summer school, noted above, 1.0 ESL teacher position for every 100 ELL students.

Model Element	2022 Evidence-Based Recommendation
27. Special Education	8.1 teacher positions per 1,000 students, which includes: 7.0 teacher positions per 1,000 students for services for students with mild and moderate disabilities and 1.1 teacher position for the related services of speech/hearing pathologies and/or OT PT. This allocation equals approximately 1 position for every 141 students. **Plus** 1.0 psychologist per 1,000 students to oversee IEP development and ongoing review (included in Central Office Staffing). **In addition** Full state funding for students with severe disabilities, and state-placed students, and Federal Title VIB, with a cap on the number covered at 2% of all students.
28. Career-Technical Education (CTE)	$10,000 per CTE teacher for specialized equipment
Staff Compensation Resources	
29. Staff Compensation	For salaries, Anchorage average for all EB staff positions For benefits: Retirement or pension costs: 22% per classified employee Retirement or pension costs: 12.56% for certified employee Health Insurance: $22,000per employee Social Security: 0 % for certified Social Security: 6.2% up to $147,000 for classified Medicare: 1.45% Workers' Compensation: 1.06 % for certified employees Workers' Compensation: 3.0% for classified employees Unemployment Insurance: 0.1%

2023 CORE EB ALASKA STAFF RECOMMENDATIONS

This section addresses staffing for core programs, which include full-day kindergarten, core teachers, elective/specialist teachers, substitute teachers, instructional facilitators/coaches, core tutors, core guidance counselors and nurses, supervisory aides, librarians, principals/assistant principals, and school secretarial and clerical staff.

1. Full-Day Kindergarten

Research shows that full-day kindergarten, particularly for students from low-income backgrounds, has significant, positive effects on student learning in the early elementary grades (Cooper et al., 2000, 2010; Fusaro, 1997; Gullo, 2000; Slavin, Karweit & Wasik, 1994). In a late 1990s meta-analysis of 23 studies comparing the achievement effect of full-day kindergarten to half-day kindergarten programs, Fusaro (1997) found an average effect size of +0.77. That same year a randomized controlled trial study (Elicker & Mathur, 1997) found the effect of full-day versus half-day kindergarten to be about +0.75 standard deviations. Cooper, et al.'s (2010) comprehensive meta-analysis reached similar conclusions finding the average effect size of students in full-day versus half-day kindergarten to be +0.25.

Research in the past several years has reinforced these findings. Hahn, et al's (2014) research review concluded that that full-day kindergarten improved academic achievement by an average of 0.35 standard deviations over students receiving only a half day program, with the effect being 0.46 for verbal achievement and 0.24 for math. Gibbs (2017) studied a natural experiment in Indiana that randomly assigned students to full-day kindergarten. The results showed significant gains in literacy skills associated with students placed in full-day kindergarten, with the impacts being even greater for "Hispanic" students. Thompson and Sonnenschein (2016) concluded that full-day kindergarten students (as compared to half-day students) had a higher chance of having early word reading skills by the end of kindergarten, which also predicted their higher reading scores in elementary schools. Early word attainment also helped to decrease the demographic related reading gaps. In a 2018 cost benefit study, Ramon, Barnett and Hahn (2018) calculated that, accounting for both the program costs and calculated economic returns, full-day kindergarten programs had a higher net benefit than half day programs, with net benefits being decreased childcare costs, reduced grade retention and remedial education, and increased maternal employment and income.

As a result of these consistently positive research findings on the impacts of full-day versus half day kindergarten, the EB Model supports a full-day kindergarten program for all students.

2023 EB Recommendation: Fund full-day kindergarten programs by counting kindergarten students as 1.0 ADM.

2. Elementary Core Teachers/Class Size

In staffing schools and classrooms, the most expensive decision superintendents and principals make is on class sizes for core teachers. Core teachers are defined as the grade-level classroom teachers in elementary schools. In middle and high schools, core teachers are those who teach the core subjects of mathematics, science, language arts, social studies and world languages. Advanced Placement (AP) or International Baccalaureate (IB) classes in these subjects are considered core classes.

The gold standard of educational research is controlled randomized trials (CRTs), which provide scientific evidence on the impact of a certain treatment (Mosteller, 1995). The primary evidence on the impact of small classes today is the Tennessee STAR study, which was a large scale,

randomized controlled experiment of class sizes of approximately 15 students compared to a control group of classes with approximately 24 students in kindergarten through grade 3 (Finn and Achilles, 1999; Word, et al., 1990). The study found students in the small classes of 15 (not a class of 30 with an instructional aide or two teachers) achieved at a significantly higher level (effect size of about 0.25 standard deviations) than those in regular class sizes, and the impacts were even larger (effect size of about 0.50) for low income and minority students (Gerber, Finn, Achilles, & Boyd-Zaharias, 2001; Finn, 2002; Grissmer, 1999; Krueger, 2002; Nye, Hedges, & Konstantopoulous, 2002). The same research also showed a regular class of 24-25 students with a teacher and an instructional aide *did not* produce a discernible positive impact on student achievement (Gerber, Finn, Achilles, & Boyd-Zaharias, 2001, a finding that undercuts proposals and widespread practices that place instructional aides in elementary classrooms).

Subsequent research showed the positive impacts of the small classes in the Tennessee study persisted into middle and high school years, and the years beyond high school (Finn, Gerber, Achilles & J.B. Zaharias, 2001; Konstantopoulos & Chung, 2009; Krueger, 2002; Nye, Hedges & Konstantopoulos, 2001a, 2001b). Related longitudinal research on the Tennessee class size reduction program also found the lasting benefits of small classes included a reduction in the achievement gap in reading and mathematics in later grades (Krueger & Whitmore, 2001).

Although some argue the impact of the small class sizes was derived primarily from kindergarten and grade 1, Konstantopoulos and Chung (2009) found that the longer students were in the small classes (i.e., in grades K, 1, 2 and 3) the greater the impact on grade 4-8 achievement. They concluded that the full treatment – small classes in all of the first four grades – had the greatest short- and long- term impacts.

Though differences in analytic methods and conclusions characterize some of the debate over class size (see Hanushek, 2002 and Krueger, 2002), we concur with those concluding class size makes a difference, but only class sizes of approximately 15 students with one teacher (and not class sizes of 30 with an aide or two teachers) and only for kindergarten through grade 3.

2023 EB Recommendation: The EB Model provides for class sizes of 15 in grades K-3, and 25 in grades 4-5. These elementary core class sizes produce elementary schoolwide average class sizes of 17.3 for the prototypical K-5 school.

3. Secondary Core Teachers/Class Size

In middle and high schools, core teachers are those who teach core subjects such as mathematics, science, language arts, social studies and world languages. Advanced Placement (AP) and International Baccalaureate (IB) classes in these subjects are considered core classes.

Evidence on the most effective class sizes in grades 4–12 is harder to find than is evidence for the early elementary grades, because most of the research on the effects of class size has been conducted at the early elementary level. As a result, in developing the EB Model, we seek evidence on the most appropriate secondary class size from typical and best practices to identify the most appropriate class size for these grades. The national average class size in middle and high schools is roughly 25 students. Nearly all comprehensive school reform models were

developed on the basis of a class size of 25 students (Odden, 1997; Stringfield, Ross & Smith, 1996) a conclusion on class size reached by the dozens of experts who created these whole-school design models. Although many professional judgment panels in many states have recommended secondary class sizes of 20, no individual in a panel we have coordinated cited research or best practices to support proposals at seconday class sizes that small.

Citing a few studies, Whitehurst and Chingos (2011) argued there might be a modest linear relationship in improving student performance when class size drops from between 25 and 30 students to 15, but our view of the evidence and impact is that the gains identified are modest at best, and insufficient to alter the EB Model class size recommendations.

2023 EB Recommendation: Secondary core class sizes, grades 6-12 of 25.

The difference between class size and staffing ratios

The issue of class size and staffing ratios is critical to understanding how the EB model allocates resources to schools and has a substantial impact on the total cost of the EB model. In many states and school districts "staffing ratios" are computed by dividing the number of pupils by the number of core ***and*** elective teachers. The result is that a school may report a staffing ratio of 15, but average class sizes will be higher because the number of pupils was separated into two groups: core and elective teachers. In other states and school districts, there can be even more confusion. These states report "pupil teacher ratios" that are computed by dividing the number of pupils by the number of all certified staff – core and elective teachers as well as other certificated staff such as instructional coaches, tutors, nurses and counselors. The result is that a school may report a "pupil teacher ratio" of 12, but average class sizes will be higher because the number of pupils was divided by all certified staff, not just core teachers. These figures are often confusing because staffing ratios, pupil/teacher ratios and class size are frequently conflated when in fact, they have different meanings.

The EB Model is clear that it provides resources for actual class size of 15 or 25, with other instructional and certified staff resourced above that level. To show the difference imagine an elementary school with 300 students. If the school has 20 certified staff members, the pupil teacher (or more accurately pupil/staff) ratio is 15:1. But if five of the instructional staff members are not core teachers, but rather teach electives, are instructional coaches or have other responsibilities, there are only 15 core teachers and the average class size actually would be 20, not the 15 that was reported.

For this reason, the EB model makes a clear distinction between staffing ratio, pupil/teacher ratios and class size. The intent is to provide positions for actual class sizes of 15 in grades K-3 and 25 in higher grades. In the example above, assuming the class size goal is 15, there would be 20 core teachers and the school would receive additional resources for elective teachers, instructional coaches, and other certificated staff.