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California State Special Education Funding System Study, Part 2

FINDINGS, IMPLICATIONS, AND CONSIDERATIONS FOR IMPROVING SPECIAL EDUCATION FUNDING IN CALIFORNIA

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This paper builds on decades of prior work by policymakers, practitioners, and researchers who also sought to understand and improve California's special education finance system.

We thank members of the study's technical advisory committee, who contributed hours of volunteer work to advise our research team and provide input on the design and implementation of the study. The technical advisory committee included representatives from the California Department of Education; the California State Board of Education; the California Department of Finance; the California Legislative Analyst's Office; El Dorado County Office of Education; Garden Grove Unified School District; the Humboldt County Office of Education; the Santa Clara County Office of Education; Policy Analysis for California Education; School Business Solutions, LLC; and the Stanford Center for Education Policy Analysis.

Collectively, these contributors represent hundreds of years of special education experience, policymaking, implementation, and advocacy. We could not have done this work alone, and we are grateful for the tireless efforts of California's special education leaders and their generous contributions to this work.

Authors' Note

Over the period of this study, from June 2019 through May 2021, California and the rest of the world experienced the COVID-19 pandemic. Prior to and throughout these unprecedented times, California has remained focused on improving its special education funding system. This study used data from three school years, 2016/17, 2017/18, and 2018/19, in some cases supplemented by data from 2019/20. It did not evaluate the impact of changes to the special education funding formula enacted by the California Budget Acts of 2019, 2020, and 2021, but for purposes of context in reading this study report, it's helpful to know about those changes, summarized below.

California Budget Act of 2019 (2019/20 State Budget, Enacted)

- Increased California's ongoing investment in special education by $152.6 million.
- Invested $492.7 million in supplemental special education funding for inclusive preschool practices; $500,000 in workgroups to improve state agency coordination for the transition of 3-year-old children with disabilities from early intervention to preschool and to reduce barriers to Medi-Cal reimbursement; $1.2 million for development of a Teacher Performance Assessment for candidates seeking a credential in special education; and $5 million in Educator Workforce Investment Grants for professional development related to special education and inclusive practices.

California Budget Act of 2020 (2020/21 State Budget, Enacted)

- Increased the AB 602 base rate for special education local plan areas (SELPAs) that received less than the state average, up to $625 per student as determined by average daily attendance (ADA). Those receiving more than the state average will be held harmless at the higher rate; their rate will not be reduced to the new average.
- Increased ongoing funding for special education services for students with low-incidence disabilities by $100 million, raising it from $18 million to $118 million.
- Directed $15 million for grants to special education teachers through the Golden State Teacher Grant Program; $8.6 million to assist local education agencies (LEAs) with alternative dispute resolution services and mediation services; $350,000 for a workgroup to design a standardized individualized education program (IEP) template for the state; $500,000 for a study to examine special education governance and accountability; and $250,000 for a workgroup to examine and propose alternative pathways to a high school diploma for students with disabilities.

California Budget Act of 2021 (2021/22 State Budget, Enacted)

- Increased the AB 602 base rate for SELPAs that receive less than the state average, from $625 to $715 per student as determined by ADA. Those receiving more than the state average will be held harmless at the higher rate; their rate will not be reduced to the new average.
- Invested $117.7 million to increase the cost-of-living adjustment for state special education funding. SELPAs also received a 4.05% cost-of-living adjustment for 2021/22.

- Appropriated $350 million, available over five years, to provide one-time competitive grants to develop new, or expand existing, teacher residency programs that recruit and support the preparation of special education teachers.
- Appropriated $30 million for school-wide and district-wide implementation of services or practices aligned to the Multi-tiered Systems of Support framework.
- Appropriated $500 million one-time funds from General Fund over five years for the Golden State Teacher grants, which would support a combined total of at least 25,000 grants for teacher credential candidates who commit to teach at a priority school, in a high-need subject matter area, including special education, for four years.
- Invested $125 million one-time Proposition 98 funds from General Fund over five years for the Classified School Employee Teacher Credentialing Program, to support more than 5,000 classified school staff, including paraeducators, in becoming credentialed teachers.
- Established the use of the count of grade 1 students with IEPs to allocate $260 million ongoing for the special education early intervention preschool grant and restricted the use of those funds to the provision of services and supports in inclusive settings that have been determined to improve school readiness and long term outcomes.
- Appropriated $450 million for allocation to SELPAs to provide learning recovery support to certain pupils, including individuals with exceptional needs. Allocated $10 million in federal IDEA funds to provide technical assistance and support to LEAs in developing and administering comprehensive IEPs, and to develop tools and resources to assess and address learning and service needs for students with disabilities stemming from COVID-19.
- Increased funding in support of the Supporting Inclusive Practices project by $15 million.
- Allocated $5 million for the School Health Demonstration Project, a pilot project to expand comprehensive health and mental health services to public school pupils by providing LEAs with intensive assistance and support to build the capacity for long term sustainability by leveraging multiple revenue sources. Invested $3 billion to create additional community schools. which provide health care, family services and after-school programs through local partnerships.
- Directed $117 million for dispute resolution services, including mediation and fair hearing services; directed $300,000 to contract for the development of a model for an IEP Facilitation Network; and allocated funding, to support the expansion of Family Empowerment Centers on Disability and to develop a data collection system for Family Empowerment Centers on Disability.
- Increased funding to support the workload within the State Department of Education's Special Education Division including six positions to support compliance, address special education complaints and perform court-ordered special education monitoring of LEAs.
- Directed $500,000 of IDEA funds to contract for a study to examine special education nonpublic school or agency (NPS or NPA) placements.

Executive Summary

More than $12 billion in state, federal, and local funds is spent each year to provide special education and related services to California's approximately 725,000 students with disabilities, nearly 12 percent of the California K–12 population (California Department of Education [CDE], n.d.). The federal government provides approximately 10 percent of that funding, for implementation of the Individuals with Disabilities Education Act (IDEA), and the state provides another 30 percent, leaving 60 percent of special education costs to be covered by local education agencies (LEAs), which include California school districts and charter schools. Given the special education funding load that falls to LEAs and the inclusion of students with disabilities in the accountability systems under the Local Control Funding Formula (LCFF), along with the overlapping nature of how students fall into different categories (e.g., a student can be designated as an English learner and also identified for special education), studying the separate special education funding system became imperative. California policymakers and education stakeholders recognized the need to more deeply examine and suggest considerations for improving the special education funding system, which allocates, distributes, and sets spending expectations for state special education dollars. Special education funding in California, one of the few funding streams not included in the reform that led to the LCFF, had not undergone substantive review or changes since 1998.

This study of California's special education funding system was done in two parts. Part 1, whose report was published in 2020 (Willis et al.), provided a comprehensive descriptive review of the current funding system. Part 2, detailed in this report, consisted of in-depth quantitative analyses of state data from 2016/17, 2017/18, and 2018/19 and an exploration of the implications of those statistical findings, culminating in a series of evidence-based considerations for improving California's system for special education funding. The considerations for change presented in this report draw from the findings of both parts of the study to inform state-level decision-making focused on creating a more effective special education funding system — one that provides the *right amount* of funding to the *right agencies* so that they can provide the *right services* to the *right students.*

This Executive Summary provides the major findings of the investigation into improving the special education funding system, followed by considerations for improving the state's special education funding system. Both the findings and the considerations are further detailed in the full report. The full report also includes a glossary of terms that will aid the reader in understanding the study results and considerations for change.

Study Results and Their Implications for California's Special Education Funding System

Findings are organized by three funding system components: *allocation* (how the state calculates amounts of funding needed for special education); *distribution* (which entity receives funding); and *expected expenditure* (how funds are used).

Findings Related to the Allocation of Special Education Funding

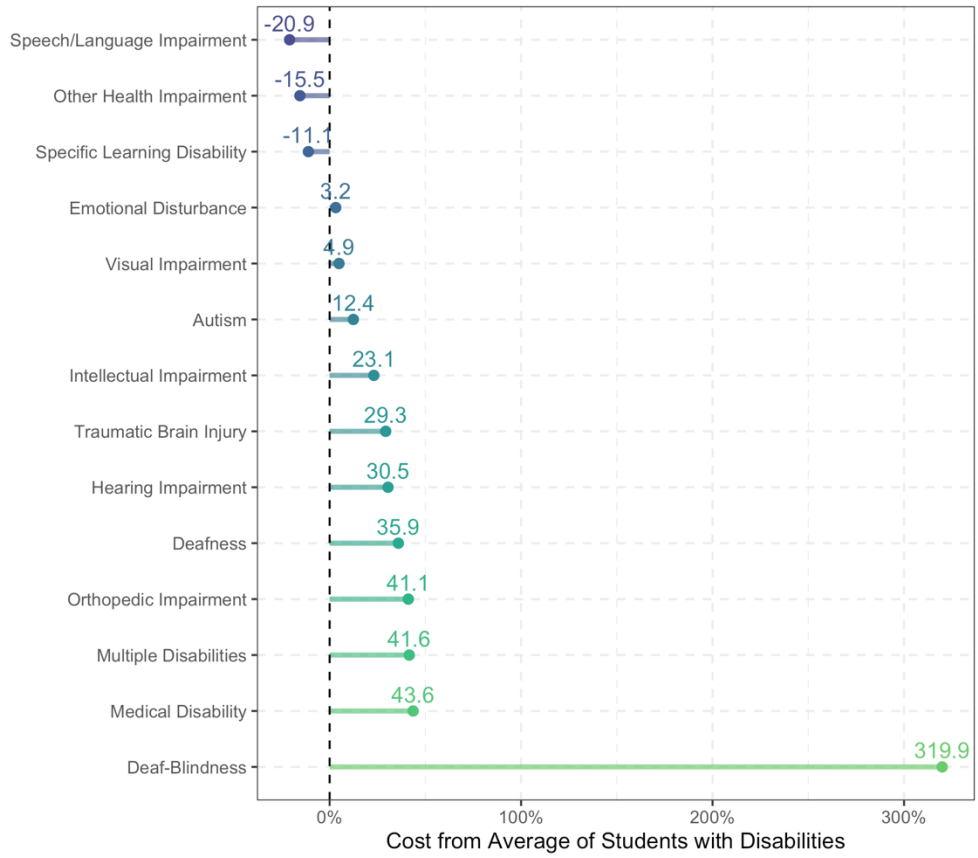
There was a positive correlation between cost and academic growth for all California students, including students with disabilities and other student groups. An increase in education program funding at the school level resulted in an increase in the rate of growth on English language arts and math assessments. This evidence justifies the allocation of additional funds to specific student populations with the intent of improving academic outcomes and closing opportunity and achievement gaps (Johnson & Tanner, 2018).

It cost, on average, 50.5 percent more to ensure that students with disabilities achieved the same academic growth as their peers without disabilities. This is an initial estimate of the amount of *supplemental* funding needed — that is, *on top of* the per-pupil general education base that applies to all students — to ensure that students with disabilities, on average, demonstrate academic progress comparable with that of their peers without disabilities. This additional 50.5 percent does not account for any special education costs associated with helping students attain any nonacademic goals identified in their individual education plans (IEPs) or costs associated with school-size variation, regional cost differences, and nonpublic school (NPS) placements.

For students with disabilities who also had other needs — specifically, those who were also English learners and/or economically disadvantaged — the additional (marginal) cost to ensure comparable academic growth increased. Over the years of this study, 85 percent of students with disabilities were also in at least one other high-need category (i.e., English learner, economically disadvantaged), with some students in both groups (Willis et al., 2020, p. 17). The average additional cost of programs for students with disabilities related not only to students' disabilities, but also to other student needs. An ideal funding system would facilitate schools' ability to address students' multiple needs in a coordinated manner. Having such a system would require a change from the state's current funding approach, which, as described in part 1 of the study (Willis et al., 2020), features separate, but parallel funding systems for special education and general education.

The additional cost of special education related to academic growth varied by students' primary disability category. For students in some disability categories, the average additional costs were lower than the average for all students with disabilities, and for students in other categories, costs were higher. For example, as illustrated in exhibit E-1, the average additional per-student cost for the Speech or Language Impairment category was 20.9 percent less than the cross-category average, whereas for the Orthopedic Impairment category, the average additional cost was 41.1 percent greater.

Exhibit E-1. Percentage difference in cost compared with the average cross-category cost of special education, by federal disability category.

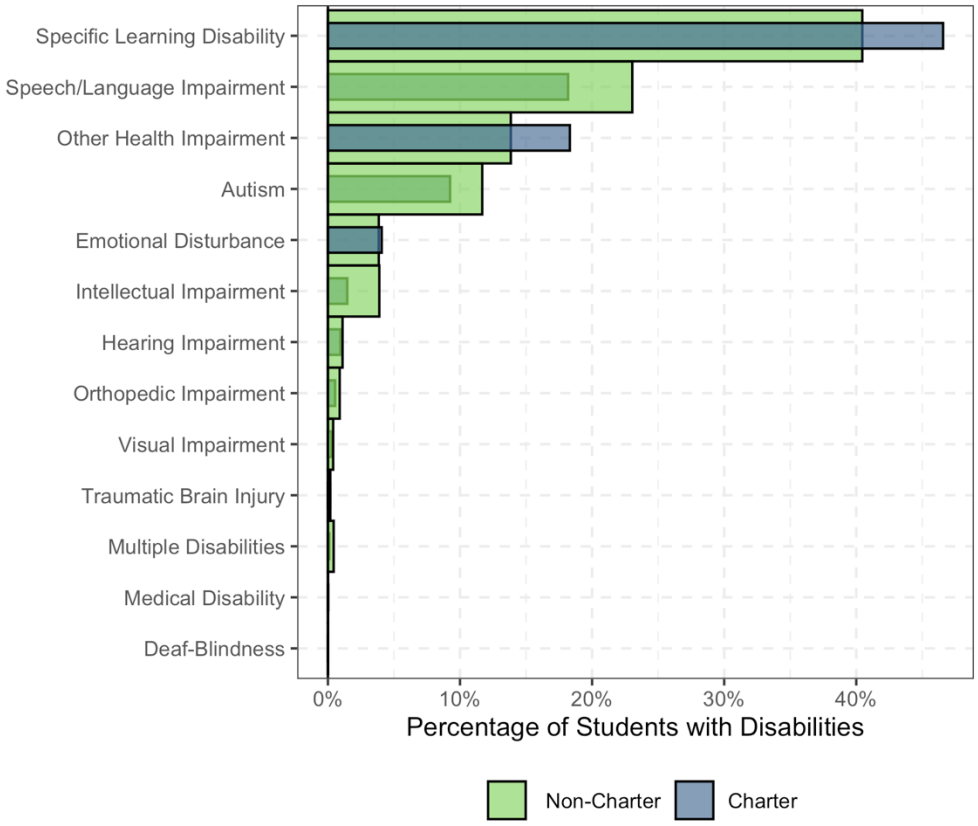


Source. Authors' calculations from the education cost function.

The average per-student spending on special education reported by LEAs in 2018/19 was $17,372, resulting in total costs per student of $28,016 when added to an average $10,644 per-student base cost for general education programs. The $17,372 includes the marginal cost of ensuring comparable academic growth (50.5 percent of the base, or approximately $5,375), additional costs attributable to school and LEA variables, and additional costs related to students' attainment of nonacademic outcomes. This finding is consistent with the findings of a 2019 Legislative Analyst's Office report (LAO) on special education costs that concluded that "students with disabilities cost, on average, more than two times as much to educate ($27,000) as students without disabilities ($10,000)" (Petek, p.17).

The cost of special education related to academic growth for students with disabilities was, on average, lower in charter schools than in non-charter schools due, in part, to the particular populations of students with disabilities that charter schools tended to serve. The difference in per-student cost was largely attributable to the fact that, according to 2018/19 California data, the populations of students with disabilities that charter schools served were generally identified as being in higher-incidence disability categories, which have lower associated costs compared with other disability categories (see exhibit E-2). In addition, on average, students with disabilities accounted for a smaller proportion of the overall student populations in charter schools compared to non-charter schools: 9.4 percent and 10.7 percent, respectively (Willis et al., 2020, p. 26).

Exhibit E-2. Proportion of students with disabilities served by charter and non-charter schools, by disability category.



Source. Data from the California Longitudinal Pupil Achievement Data System (CALPADS) and the California Student Management Information System (CASEMIS), 2018/19.

Findings Related to Distribution

Up to an ideal size, increased overall enrollment in an LEA or other education entity correlated with economies of scale that reduced the per-student cost of serving students with disabilities. Regionalization can improve students' access to some type of services and reduce their cost through economies of scale. As the size of a school or regional entity increased up to an ideal point, the per-student cost decreased. However, past the ideal size for an entity, per-student costs began to grow, creating diseconomies of scale and adding cost. The ideal total enrollment in a multi-LEA Special Education Local Plan Area (SELPA) or a county office of education (COE) to produce the lowest per-student cost is approximately 40,000 students. The ideal size for an LEA (excluding charter school LEAs due to their small size) is a total enrollment of approximately 30,000 for elementary and unified LEAs and approximately 20,000 for high school LEAs. In 2018/19, 56 (60 percent) of California's 94 multi-LEA SELPAs were below this ideal enrollment threshold and only 1 elementary school LEA, 7 high school LEAs, and 24 unified LEAs from among California's more than 1,000 school district LEAs met or exceeded the enrollment thresholds for optimizing their economies of scale.

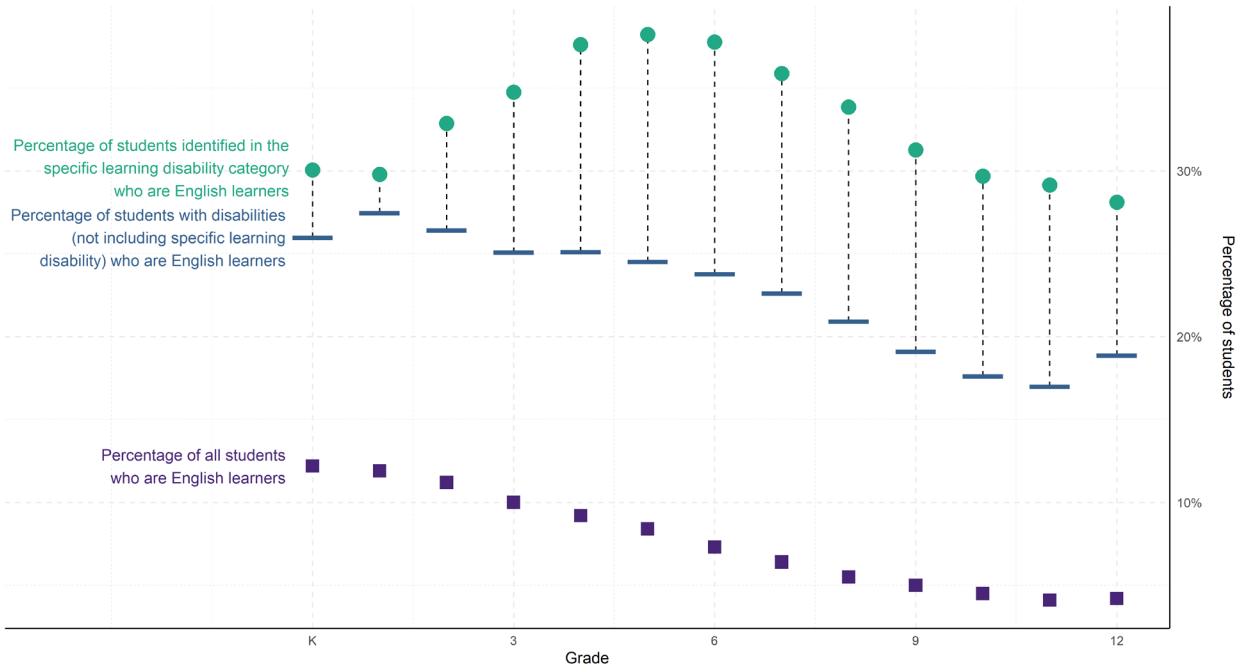
Despite not reaching the ideal enrollment size to maximize economies of scale, LEAs worked together, including within and across SELPAs, to achieve some economies of scale in order to serve students with disabilities more cost effectively. Special education services were regionalized not just through the work of multi-LEA SELPAs, but through partnerships — including LEAs contracting directly with each other and/or with COEs.

Most educationally related mental health services were provided by LEAs even though funds to pay for them are allocated to SELPAs. Beginning with the fiscal year 2020 budget cycle, Educationally Related Mental Health Services (ERMHS) funding could be used for mental health services whether they were provided for students with disabilities through an IEP or for students without disabilities. Eighty-four percent of mental health services for students with disabilities were provided by students' LEAs, 7 percent by NPS providers, and 9 percent by other LEAs or by SELPAs. There may be additional opportunities for coordination and possible cost savings at the LEA level between ERMHS and other LEA-level resources.

Findings Related to Expected Expenditures

Students who were English learners were disproportionately identified for special education. Specifically, English learners with disabilities who were Hispanic and Spanish-speaking were the most likely students in California elementary schools to be found eligible for special education and identified for the Specific Learning Disability category. The disproportionate identification of English learners as having disabilities — particularly in the Specific Learning Disability, possibly due to the challenges of learning English being mistakenly identified as resulting from a learning disability — suggests the importance of having sufficient funding flexibility and coordinated planning to meet the unique needs of these students without having to categorize them as having a disability. Exhibit E-3 illustrates the identification trends and overidentification for special education and the Specific Learning Disability category.

Exhibit E-3. Proportion of California public school students in general, students eligible for special education, and students identified in the Specific Learning Disability category, who were English learners, by grade.



Source. Data from CASEMIS and CALPADS, 2018/19.

Funding to support students who both had disabilities and were English learners was distributed separately, to different agencies (SELPAs for students with disabilities and LEAs for English learners). *There is a need for stronger coordination of services for these students.* Early and accurate identification of English learners' needs, before students have been identified for special education, is essential. It may be a more efficient use of general education resources to provide this population with additional early supports rather than waiting until they are identified for special education services.

Providing preschool special education services in an inclusive setting benefits students with and without disabilities, with effective early childhood education reducing the likelihood of students' identification for special education (Diamond, 2001; Odom et al., 2004; Kwon et al., 2011; Yu et al., 2012). Students with disabilities who participate in inclusive preschool and kindergarten are more likely to be in inclusive settings later in elementary school (Guralnick et al., 2008). The distribution of some potential funds for inclusive preschool (e.g., AB 602, IDEA) to SELPAs and other funds (e.g., the Inclusive Early Education Expansion Program, recent Special Education Early Intervention grants) to LEAs may be one of the factors contributing to a lack of inclusive settings.

Nonpublic school placements for students with disabilities were more expensive and also resulted in students achieving less academic growth compared with their peers with disabilities in public placements. The cost of implementing a student's IEP in a nonpublic school (NPS) placement averaged 24 percent more than implementing a student's IEP in any other potential placement. The use of expensive NPS placements is especially concerning given that additional analyses showed relatively lower academic growth for students in NPS settings, with a consistent difference of 5 to 6 percentage points between NPS and public placements through the 2016/17, 2017/18, and 2018/19 school years. This finding supports the need to further study the cost and other implications of the placement of students in NPS settings, as prioritized in the California Budget Act of 2021.

White students with disabilities were more likely than their peers in other racial/ethnic groups to be placed in an NPS setting. Compared with students of other races or ethnicities, White students were more likely to be placed in NPS settings, including students in high-incidence disability categories that typically do not require intensive services or restrictive settings, such as Speech Language Impairment and Specific Learning Disability. These patterns are not unique to California and raised questions about whether some NPS placement decisions have less to do with student need and more to do with, for example, parent advocacy skills.

Only LEAs whose students received their education in NPS placements could benefit from California's extraordinary cost pools; these LEAs may have benefited from the pools even if those students could have been served better or as effectively in a less restrictive setting. The state may be inadvertently incentivizing more restrictive settings through its regulations for current extraordinary cost pools, together with its provision of additional funds for out-of-home placements. Limited due to underfunding, these funds have only been available to reimburse LEAs or SELPAs for costs associated with placement in NPS settings, which represent the most restrictive settings as defined by IDEA.

Considerations for Improving California's Special Education Funding System

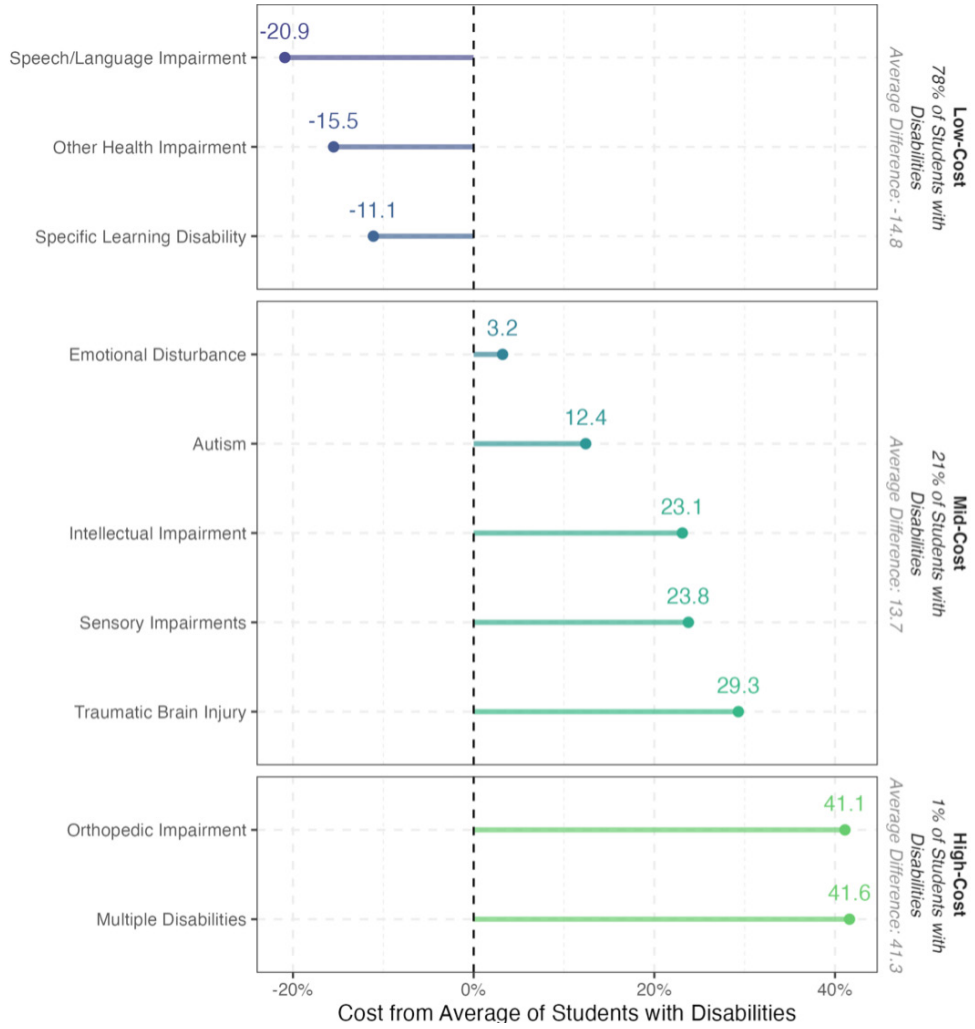
Based on findings from both the descriptive (Willis et al., 2020) and the analytic parts of this study of California's state special education funding system, this report provides considerations for how the current funding system might be changed. Considerations are organized by state priorities for special education: ensuring that state funds will reach students with the greatest need; prioritizing appropriate early intervention and identification; and promoting inclusive practices. Considerations are provided for three implementation timeframes — long term, near term, and immediate — with the long term changes collectively comprising the ideal funding system. The full report includes additional, related considerations, with summaries of feedback from a cross-section of education groups and leaders on what they see as potential benefits and drawbacks of each consideration.

Considerations Related to Ensuring Funds Reach the Students With the Greatest Needs

Long term: Allocate base state special education funding using the count of students with disabilities from the prior year, weighted by the proportion of students in each of three primary disability category cost groupings (i.e., high, mid, and low) over the prior three years. To align the allocation more closely to the actual costs of programs that support academic growth for students

with disabilities comparable with the growth of their peers without disabilities, allocate state special education funding based on the actual count of students with disabilities, rather than on a census count, in three cost groupings: low, mid, and high (see exhibit E-4).

Exhibit E-4. Percentage difference in cost from the average additional cost for programs for all students with disabilities, by disability category and cost groupings.



Source. Authors' calculations from the education cost function. Note that Sensory Impairments includes Visual Impairment, Hearing Impairment, Deafness, and Deaf-Blindness. The Multiple Disabilities category includes Medical Disability.

Near term: Allocate base state special education funding using the count of students with disabilities. There are limitations to the use of disability categories as a proxy for student need and program cost. So as an interim step, allocate funds using a statewide average per-student rate calculated by applying the current per-student rates to the prior year's count of students with disabilities.

Near term: Develop a more precise measure of cost and need using additional IEP data. A more precise measure by disability category or other groupings, specific to California, would be beneficial in future decisions about allocation of resources on the basis of student characteristics, assuming subsequent investigations were to have access to more robust data. Access to more robust data might require the state to establish indicators of student need and experience that would be commonly collected through the entry of IEP data into the statewide student information system.

Long term: Establish and sufficiently fund a single state-level extraordinary cost pool to provide funds for the most expensive IEPs, even when such programs are provided within an LEA (rather than in an NPS placement). Establish a single new extraordinary cost pool that consolidates funds from two existing pools and from two additional AB 602 funding streams (Low-Incidence Disabilities and Out-of-Home Care). The new cost pool should ultimately be funded with at least $348 million, with the state augmenting that initial funding as student need grows, but it could be funded at $266 million by combining current funding for the current pools with funding for low-incidence disabilities and out of home placements, funding streams that currently support students who would likely be eligible for extraordinary cost pool funding. To remove the potential incentive for LEAs and SELPAs to make NPS placements, these entities would need to be able to request reimbursement from the new pool for public placements, with the elimination of current restrictions that allow reimbursements only for NPS placements, including placements in licensed children's institutions (LCIs).

Immediate: Combine the Extraordinary Cost Pool for NPS/LCI with the Necessary Small SELPAs Mental Health Service Extraordinary Cost Pool and revise extraordinary cost pool eligibility rules to provide funding for LEAs that serve students needing out-of-home placements in their local community.

Immediate: Broaden the definition of "low-incidence" disabilities and, thus, access to Low-Incidence Disabilities funds. Expand the California Education Code Section 56026.5's definition of low-incidence disabilities, currently "hearing impairments, vision impairments, severe orthopedic impairments, or any combination thereof," to also include students classified in Medical Disability and Multiple Disabilities disability categories identified by the education cost function as having the highest-cost programs.

Near term, using one-time funding: Study the current use of all supplemental AB 602 funds for NPS placements and study mechanisms for LEAs to provide similar supports and services in more inclusive settings. Not only are such settings the most restrictive, as defined by IDEA, but also, this study found them to be the costliest while also resulting in poorer academic outcomes for students.

Considerations Related to Prioritizing Appropriate Early Intervention and Identification

Long term: Use one-time and ongoing funds to invest in preparation of special education personnel for early childhood and K-12. As in IDEA, include funds to universities and LEAs for pre- and in-service preparation of an expert special education workforce in annual special education allocations. Such expenditures would be consistent with the body of research cited in the full report and would reflect state priorities by allowing the development and hiring of additional qualified staff.

Immediate: Continue investments in service scholarships, classified staff supports, and teacher residencies for preparing transitional kindergarten (TK)-12 special education teachers to stem the teacher shortage, and include early childhood professionals in these programs.

Immediate: Through the California Commission on Teacher Credentialing (CTC), invest in developing and expanding programs for the preparation and credentialing of special education teachers in early childhood and TK-12 to meet the state's new credentialing requirements.

Immediate: Allow the state's current Low-Incidence Disabilities funds to be used for inclusive preschool programs that include students with low-incidence disabilities, other students with disabilities, and students without disabilities.

Immediate: Build the expertise of existing CDE special education and federal program staff to provide LEAs with guidance on allowable braiding and blending funding strategies, incidental benefit, and the allowability of using special education funds, including AB 602 base funds and Low-Incidence Disabilities funds, to support inclusive preschools.

Considerations Related to Promoting Inclusive Practices

Long term: Transition over time from distributing state special education funds exclusively to SELPAs to distributing them to LEAs, which could then, at their discretion, provide funds to a regional entity (e.g., COEs, SELPAs) for regional services. Special education programs, supported in part by AB 602 funds, are intended to ensure that students with disabilities gain access to and make progress in the general education curriculum. Because most students with disabilities spend most of their school day in general education programs, they could benefit from coordination of services between general and special education. Such coordination could be optimized by distribution of AB 602 funds directly to LEAs, allowing LEA leaders to make decisions about how best to use the funds for coordination purposes.

Near term: Distribute funds allocated by counts of students in the low- and mid-cost disability categories directly to LEAs to promote service coordination for those students, most of whom are included in the general education classroom for 80 percent or more of the day. For students in high-cost categories, in which the need for a regional service or program is more likely, especially for small LEAs, funding could go to the regional entity.

Near term: Clarify SELPA governing boards' authority to allocate and distribute state special education funding using a funding formula different from the state's formula. Whether or not the state implements other considerations from this report, it should clarify whether SELPA governing boards have broad authority to use funding formulas that are different from the state's formula for allocating special education funding.

Long term: Continue providing ERMHS funds to pay for services for students both with and without IEPs, potentially by allowing flexible use of a portion of base funds. The amount of ERMHS funds provided should continue to be based on average daily attendance in order to communicate to LEAs that the funding is available to serve students irrespective of whether they have been identified as having a disability, to promote better mental health for all students.

> **Immediate: Allow ERMHS funds to be used for development of school-based health centers and other health-focused infrastructure, including partnerships with other agencies, such as county behavioral health agencies and Medi-Cal managed care plans.**
>
> **Immediate: Allocate and distribute ERMHS funds directly to each LEA (including charter school LEAs) rather than to SELPAs.** Providing funds directly to LEAs can support local partnerships and may encourage LEAs to establish or enhance their match for federal drawdown programs, enabling LEAs to receive additional federal funds.

Long term: Given the number of students with disabilities who have needs beyond those related solely to their disabilities, encourage LEAs to create a single system for planning and coordinating funding and programs. Separate funding streams distributed to separate programs and agencies (in the case of special education) do not encourage having a single system for planning and coordination of interventions. Although state and federal special education funds are restricted to specific uses, the majority of funds required to operate special education programs are local funds, allocated from each LEA's general fund, and it is important for LEAs to have one system for planning and coordination. To encourage LEAs to create a single system for planning and coordinating funding and programs, CDE could model inclusive planning across programs by issuing joint guidance on practical ways for LEAs to establish one system for planning and coordination.

The right of students with disabilities to receive the services identified in their IEPs is protected by federal law (IDEA), and that protection is, in part, guaranteed through the maintenance of effort and excess cost fiscal requirements. Coordinating funding and services should not impede an LEA's ability to meet these requirements because funds that are used to provide coordinated special education services may still be counted as funds budgeted and expended to provide special education and related services.

> **Immediate: Ensure that existing planning and reporting requirements encourage coordinated LEA planning between special education and general education.** CDE should consider recommendations from the forthcoming special education governance and accountability study, required by the 2020 budget bill, for increasing alignment between general education and special education.
>
> **Near term: Ensure that California's statewide system of support identifies and promotes best practices related to coordinating instructional supports for students in groups most likely to be misidentified or overidentified as having disabilities.** Prioritize state funds available through the statewide system of support for development of coordinated planning. Highlight and promote best practices for coordinated planning and intervention through conferences, newsletters, and other media.

Conclusion

This study recommends revisions to California's special education funding system that would make it more responsive to California's increasing population of students with disabilities. The changes, collectively, would communicate and reinforce the importance of coordination between general education and special education to ensure inclusive practices that, ultimately, would both improve outcomes for students with disabilities and benefit their peers without disabilities.

Allocating base funds by student count and differentiating funding based on disability category may improve the alignment of funding with student needs. The state should also consider which additional student data it could collect statewide to enable the state to better differentiate funding based on student needs. For example, statewide data from student IEPs about the number and intensity of services or the gap between students' present levels of performance and grade level would provide additional indicators of student need by which funding could be differentiated. A sufficiently funded extraordinary cost pool available to students placed in their LEA of residence or a neighboring LEA as well as students in NPS placements supplements the differentiated base allocation of funds.

To communicate the messages of prioritizing inclusive practices and supporting students with diverse needs across programs, this study recommends distributing special education funds to LEAs, which may then, as needed, enter into agreements with other entities to provide regionalized services. This proposed change ultimately aligns with the accountability placed on LEAs by the LCFF to ensure equitable, improved outcomes for all students, including students with disabilities. The need for some regionalized services and the potential for attaining economies of scale and, thus, cost reduction through their regionalization are clear. However, the locus for decision-making about the best way to provide services to students with disabilities should lie with the LEAs in order to maximize funding coordination.

Finally, prioritizing inclusive practices and ensuring improved learning experiences and outcomes for students with disabilities requires consistent reevaluation both of the funding and of the intervention systems. The funding system alone cannot bring forth necessary changes, but it can communicate the state's intent on ensuring that the *right amount* of funding goes to the *right agencies* so that they can provide the *right services* to the *right students*.

Introduction

In recent years, California's public education system used more than $12 billion of federal, state, and local funding to provide special education and related services to more than 725,000 students with disabilities, a group that accounts for approximately 11.7 percent of the state's K–12 population (California Department of Education [CDE], n.d.). Although special education and related services are federally mandated, federal funding covers just 11 percent, approximately, of California's special education costs. Roughly another 28 percent is covered by state money, commonly referred to as AB 602 funds after the 1997/98 legislation that established the California special education funding system still used today. This leaves approximate 61 percent of special education costs to be covered by LEAs.

The Local Control Funding Formula (LCFF), enacted in 2013, heavily altered California's approach to education funding, although it did not directly touch the special education funding system. The LCFF dissolved heavily regulated categorial funding streams in favor of a single integrated funding system that provides additional, more flexible funding for certain student groups, including those who experience economic disadvantages, those who are English learners, and those in the foster care system. However, state funding for special education was kept separate. Discussion of the benefits and weaknesses of that separate funding system for students with disabilities has remained active as California has continued to consider how to improve outcomes for these students (California Statewide Special Education Task Force, 2015; Hill et al., 2016). Given the inclusion of students with disabilities in LCFF-established accountability systems, along with the overlapping nature of how students fall into different categories (e.g., one student can be designated as an English learner and also identified for special education), studying the separate special education funding system became an imperative.

With the education of roughly three quarters of a million students at stake and more than $12 billion in play annually, California policymakers and education stakeholders have recognized the need to more deeply understand the current special education funding system, particularly as it applies to the use of state funds; the need to evaluate the funding system's relationship to outcomes for students with disabilities; and the need to thoroughly investigate potential improvements to the funding system itself. With this in mind, WestEd proposed this two-part study of the special education funding system to the California Department of Education (CDE), the California State Board of Education (SBE), and the California Department of Finance.

Part 1 of the study, completed in 2020 (Willis et al.), was a comprehensive descriptive review of the current special education funding system in California. In addition to helping the study team identify specific system components that merited further examination, it provided policymakers and education stakeholders with a baseline from which to evaluate the implications of potential system revisions. In part 2 of the study, reported here, the study team reviewed relevant research, conducted in-depth quantitative analyses of specific components of the funding system, explored the implications of those statistical findings, and, ultimately, generated a series of evidence-based considerations for improving California's system for special education funding. The team then developed implementation scenarios for how those considerations would play out if all or some of them were adopted and depending on various implementation decisions.

Purpose and Design of Part 2 of the Study

Building on the understanding of the current system developed in part 1, part 2 of the study employed statistical modeling to explore potential changes to California's special education funding formula for state funds and explored, through mixed quantitative and qualitative methods, how various special education funding-system considerations might play out for students. The considerations presented here, which draw from the findings of both part 1 and part 2 of the study, are intended to inform state-level decision-making focused on creating a more effective special education funding system — one that provides the *right amount* of funding to the *right agencies* so that they can provide the *right services* to the *right students.*

The considerations are options for refining California's special education funding system so that it better aligns with — and therefore supports — state priorities for improving education and services for all students with disabilities. Those priorities, as established by state leaders from the CDE and SBE and reported in the descriptive report for this study (Willis et al., 2020), are

- ensuring that funds reach students with the greatest need, including students who qualify for special education as well as for other services or supports (e.g., those who are designated English learners or are economically disadvantaged);
- prioritizing appropriate early intervention and identification;
- promoting the implementation of inclusive practices, including increased access to inclusive preschool and inclusive high-quality instruction aligned to grade-level standards; and
- supporting LEAs to effectively serve students with low-incidence disabilities, as well as students who are placed in high-cost programs, including home, hospital, nonpublic school, and out-of-district placements.

Using data about California's students, schools, LEAs, SELPAs, and the state's structures for oversight and support, part 2 employed a combination of simple and complex statistical methods to examine special education spending as it related to outcomes for students with disabilities. In particular, results from the education cost function model, which is described in detail in the Methods section below, allowed the team to study the relationships between cost, student need, and student outcomes, with those findings informing considerations for an improved funding system.

The study was guided by the following research questions:

1. How does California's special education funding formula allocate and distribute state funds to SELPAs and LEAs in California?
    a. What are the implications of the policies establishing and surrounding the current funding formula?
2. What are potential alternative approaches to the allocation, distribution, and expected expenditures of special education funding in California, with attention to the state's priorities and research on effective practices?
    a. How would any proposed changes to the current allocation, distribution, and expected expenditures for special education funding affect funding for LEAs and SELPAs?
    b. What are the potential benefits and drawbacks of the proposed alternatives?

3. In which circumstances do California's LEAs currently benefit from economies of scale for special education programs and services?

    a. What increases the potential benefit of economies of scale?

Consistent with the framework for education funding policymaking, introduced in part 1 of the study, this report responds to the research questions with an examination and discussion of change options related to the funding formula. As described in the framework, the funding formula has three components — *allocation, distribution,* and *expected expenditures* — and the change options presented in this report correspond to each of those components. This report's options, or considerations, are supported by the results of the descriptive research presented in part 1, by the results from reviews of literature and current research, and by various statistical analyses, including use of a cost function model, presented in part 2.

This study was not intended to identify an ideal future dollar amount for state special education funding or to address the question of whether current funding is adequate. Rather, given California's uncertain economic and fiscal environments, its overall intent has been to identify policy and funding options that would maximize benefit from existing funds. Thus, the considerations propose (1) how the state might revise its funding system by allocating, distributing, and establishing expenditure expectations in new ways that make better use of currently available funding on behalf of students with disabilities and (2) where the state might want to think of focusing any additional revenues should they become available, either on a one-time or an ongoing basis.

Due to the unique status of the LA County Court Schools and the state special schools, they were not included in the cost function model or the study.

Key Takeaways From Part 1 of the California State Special Education Funding System Study

The findings, based in quantitative analyses, and the considerations for improvement presented in this report build, in part, on several key takeaways from part 1 of the study (Willis et al., 2020):

- Since the 1990s, students with disabilities have constituted a growing proportion of California's student population. The group is diverse, both by level of need due to their disabilities and by other need characteristics. Students with disabilities overlap with students who qualify for other supports, especially English learners, who account for 19.3 percent of all California students but account for 28.6 percent of students with disabilities. Similarly, 60.9 percent of all California students are economically disadvantaged, whereas 67.5 percent of students with disabilities are economically disadvantaged.
- Persistent and significant achievement gaps between students with disabilities and their peers without disabilities indicate the need for more work to create inclusive,[1] equitable education systems that ensure all students make comparable progress.

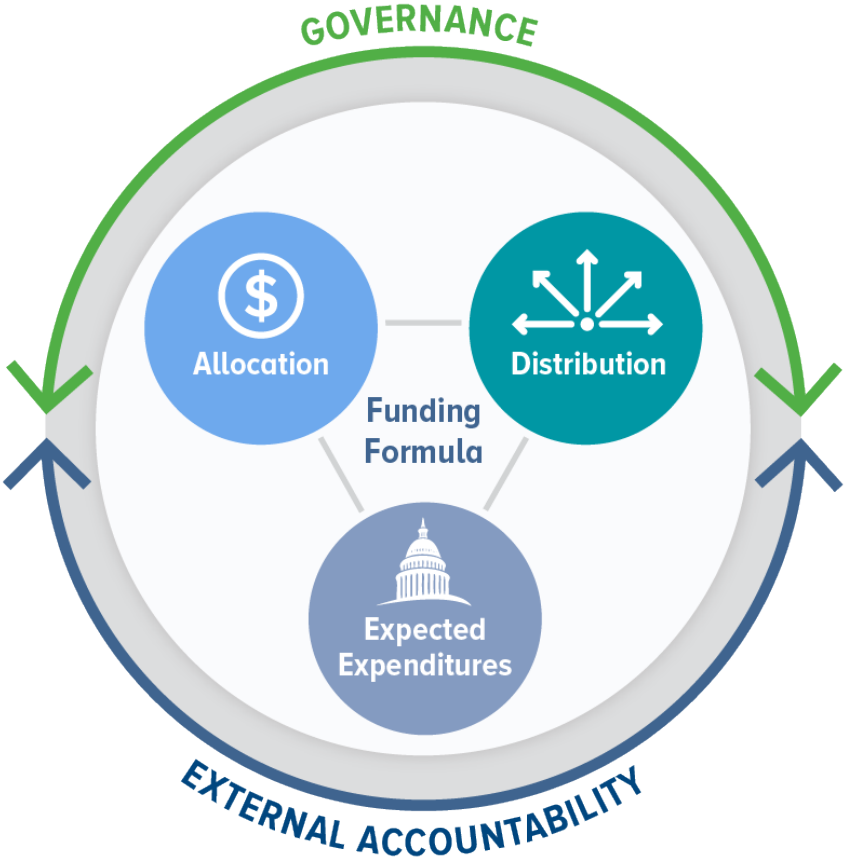
1 For purposes of this report, an inclusive program is one that serves both students with disabilities and students without disabilities.

- California's system for state funding for special education is separate from its system for state funding for general education, and state special education funds are spread across multiple funding streams with differing methods for allocating those funds.
- The state's long-standing special education funding system uses a census-based formula for allocating and distributing special education funds. This means that funding is not allocated based on numbers of students with disabilities served by a given entity (referred to as "child count"), but rather on its total student population, that is, average daily attendance. When this formula was adopted under AB 602, it was intended to disincentivize the overidentification of students with disabilities, thereby helping contain special education costs. However, the stabilization in identification rates that immediately followed the adoption of AB 602 did not translate into long term stabilization of identification rates, nor, therefore, did it help contain long term costs.
- California is unique nationwide in its creation of and reliance on the SELPA as an intermediate agency in the special education funding system. The governing board for each of the state's approximately 135 SELPAs receives federal and state special education funds on behalf of the students served by the LEAs represented by the SELPA. The board, in turn, has authority to allocate, distribute, and establish local expenditure expectations for those funds. Whereas the state allocates state special education funds to SELPAs based on the ADA of its LEAs, SELPAs tend to establish their own allocation methods that are different from the state's. For example, some allocate funds based on each LEA's child count, that is, its number of students with disabilities. Others establish regionalized cost pools to cover the cost of exceptionally costly special education programs, with LEAs accessing the funds through an application-for-reimbursement system. Even within the allocation plan of an individual SELPA, allocation methods may differ by funding stream (e.g., one SELPA may choose to use the actual count of students in specific disability categories or placements rather than ADA to allocate base special education funds, but then choose to use ADA for allocation of mental health funds).
- The profile of students with disabilities served differs by charter school LEAs and traditional LEAs. On average, charter schools enroll relatively fewer students with disabilities — 9.4 percent of enrollment for charter LEAs, compared with 10.7 percent for traditional LEAs. Also, compared with traditional LEAs, charter LEAs serve smaller proportions of students identified in disability categories that commonly cost more to serve, such as Autism, Intellectual Disability, and Multiple Disabilities.

Education Funding Policymaking Framework

Part 1 of this study recognized the need for policymakers and education stakeholders to more fully understand the multiple components of an education funding system, including the funding formula. The authors presented the education funding policymaking framework, illustrated in exhibit 1, to organize their description of the current funding system.

Exhibit 1. Framework for education funding policymaking.



Source. Willis et al., 2020, p. 9.

The framework consists of five key components of the funding system, all of which affect funding and practice and should, but don't always, directly or indirectly, support and communicate state priorities. At the center of the framework are three critical components of a funding formula: allocation (how amounts of funding are calculated), distribution (how funds are directed to specific local entities), and expected expenditures (requirements or restrictions on how funds will be spent). The findings and attendant considerations provided in this report are organized by these three components at the heart of the funding system.

Methods

Part 2 of this study used quantitative methods to further explore California's current special education funding system. In addition to analyzing California statewide education data, the study team examined an array of potential funding system policy options that were gleaned from reviewing current state and local policies across the country, as well as the most current research. The team used findings from part 1 of the study, coupled with findings from its data analysis and its research review, to narrow the range of potential improvement options and, also, to identify areas for further examination in the future. For example, some states have special education funding formulas that use relatively complex methods to evaluate the needs of individual students. But such methods require something California does not have: a statewide database with information about students' levels of performance and education goals, as recorded in their IEPs. Because California's data do not include this level of detail, the study team did not consider policy options that would depend on such data.

The study team conducted a review of the most current research on each of the three funding formula components. It also examined available California data for all California students, schools, LEAs, SELPAs, and COEs to construct an education cost function model that would allow an evaluation of the relationships between spending and academic growth in specific contexts, including for students with disabilities.

The team looked at potential policy options through the lens of their relative consistency both with state leaders' stated special education priorities and with the broad principles of the LCFF. The team also considered the feasibility of implementing various policy changes in the current California context by evaluating how different a potential change would be from the current system as well as the potential challenges to achieving broad stakeholder buy-in for a given change. For example, the team did not propose for consideration any changes related to absorbing special education funding into the LCFF because any changes to the broader funding system were beyond the scope of this study.

Education Cost Function Model

Education cost function analysis is one of several analytic methods commonly used in school finance research. It enables researchers to observe the influence of different variables (e.g., student characteristics, geographic location, regional service configuration) on the costs associated with different levels of student performance (Gronberg et al., 2011a). Education cost function analysis has been employed comparably in previous studies, including one focused explicitly on funding for students with disabilities (Willis et al., 2019a), as well as in several other studies examining funding for entire public education student populations (Willis et al., 2019b; Willis et al., 2019c; Taylor et al., 2017).

The education cost function analysis requires the use of quantitative datasets, such as school spending, student demographics, school and community characteristics, and student outcome data, in order to construct a statistical model that produces statistically significant results estimating the relationship between spending and education outcomes. For this study, the team constructed an education cost function model using primary data sources from California that represented more than 7,000 schools across three school years (2016/17, 2017/18, and 2018/19). Specific data sources used for construction of the education cost function model and, in turn, the education cost function analysis are described in detail in appendices A and B.

Implications and Considerations

The research team used its review of current research on the funding formula components (i.e., allocation, distribution, and expected expenditures), results from the education cost function analysis and from additional quantitative analyses, and the findings and data from the earlier descriptive report (part 1) to explore emerging findings. For each finding, the team then examined its implications for California's special education funding formula and, in light of those implications, developed considerations for potential revisions to how California allocates, distributes, and establishes expenditure expectations for state special education funding.

To share the considerations with key stakeholder groups and seek feedback, the study team hosted 27 stakeholder engagement sessions with more than 200 participants between January and April 2021. During the sessions, the team sought input on what stakeholders perceived to be potential benefits and drawbacks of the different considerations. That qualitative feedback was then coded and analyzed, with results presented in the Considerations for Improving California's Special Education Funding System section of this report.

Additional methodology details are included in Appendix A: Methodology, Data, and Measures and Appendix B: Education Cost Function Technical Report.

Impact of the COVID-19 Pandemic

Much of the analytic phase (part 2) of this special education funding system study was conducted during a period coinciding with the emergence of the COVID-19 pandemic. In California, as in many other states, the pandemic has altered every facet of the public education system and brought on a recession yielding major economic challenges and fiscal constraints that did not exist when part 1 of the study began. Keeping these constraints in mind, the study team developed considerations for three timeframes — immediate, near term, and long term. The long term considerations represent what the team sees, based on study findings, as ideal revisions to California's special education funding formula in order to better align it with key state priorities for special education — these considerations would require additional and ongoing state investment. In contrast, the immediate and near term considerations are interim improvement options that would build toward the long term considerations and that, initially, would require little to no additional funding or could be implemented with one-time funds.

How to Read This Report

This report is organized into three sections: (1) Study Results and Their Implications for California's Special Education Funding System; (2) Considerations for Improving California's Special Education Funding System; and (3) What Change Would Look Like.

The findings are derived from the results of the education cost function model and other statistical analyses conducted by the study team. For each, the report includes a discussion of implications —

that is, how each finding relates to current special education funding policies and potential changes. Findings are organized by the three funding formula components of allocation, distribution, and expected expenditures.

The considerations for changes to the state special education funding system are, in turn, derived from the findings and implications. As noted earlier, each consideration is envisioned for implementation in one of three timeframes: immediate, near term, or long term. They are organized according to the state special education priorities they could help advance and by the three funding formula components. To help the reader navigate connections between the findings and the considerations, each finding and consideration is numbered, and each consideration includes a reference to the related finding(s). There is not necessarily a one-to-one relationship between findings and considerations; some considerations are based on multiple findings.

The final section provides a summary of the anticipated changes to the special education funding system if all of the long term considerations are implemented, including the impact on specific funding streams.

Glossary of Key Terms

This report uses some terms that are unique to special education, some that are unique to school funding studies, and some that may have multiple meanings in different contexts. To ensure accurate understanding and application of the findings and considerations, readers should carefully familiarize themselves with the following terms as defined and used for purposes of this report.

Academic achievement. Academic achievement refers to a student's progress toward meeting agreed-upon grade-level standards, measured using standardized statewide assessments (e.g., California Assessment of Student Performance and Progress [CAASPP]), including alternate assessments for students who cannot participate in the regular assessment. For this study, achievement was measured by student growth scores. One limitation of the education cost function as an approach to evaluating needed funding to achieve outcomes is that it requires a common outcome measure across students. Although academic achievement is not the only desired outcome, for all students including students with disabilities, other outcomes, including social-emotional outcomes, and those related to transferrable skills for future employment, are not commonly measured or reported for all students, including students with disabilities.

> **Student growth score, or academic growth.** The study team used CAASPP databases for the 2016/17, 2017/18, and 2018/19 school years to create a normalized curve equivalent (NCE) score, a measure of student growth constructed by assessing how a student is actually performing relative to how they were expected to perform based on their prior-year performance. The NCE score directly answers the question: How did the student perform relative to students who performed the same as the student had performed the previous year? This approach is particularly helpful for comparing assessment scores across years, grade levels, and test subjects. The measure is applied as follows: If a student scores 2500 in grade 3 in 2016/17 and then scores a 2550 the next year, in 2017/18, is this the growth that would have been expected for that student based on their 2016/17 performance? Using the NCE approach, this student's score in the second year, 2017/18, would be compared with the 2017/18 scores for all students who had scored 2500 in 2016/17, with and without disabilities. Students with like scores, among all students and then specifically among students with disabilities, are examined to determine whether they improved as expected.

By identifying students with disabilities whose academic growth, or progress, was comparable with that of their peers without disabilities and by examining the cost of the general and special education programs for these students, the cost function model projected what it would cost, on average, to ensure similarly comparable academic growth for students with disabilities. Thus, when this report refers to additional costs related to academic growth for students with disabilities, it is talking about the marginal costs of having special education programs that ensure that students with disabilities achieve the same academic growth as their peers without disabilities, not the costs of closing the achievement gap between students with disabilities and their peers.

Categories of need. Students, whether with or without disabilities, may experience particular needs related to their personal characteristics (e.g., being an English learner) or family characteristics (e.g., being economically disadvantaged). The LCFF provides LEAs with additional funds for high-need students, defined under the law as economically disadvantaged students, English learners, or foster youth. AB 602 provides additional funds to be used for students who are identified as eligible for special education, but amounts are calculated using ADA, based on the count of all students in the district. Prior to 2019/20, these and other demographic and special education data were collected through the California Student Management Information System (CASEMIS) and beginning in 19-20, they data were collected through the California Longitudinal Pupil Achievement Data System (CALPADS)

Students who are economically disadvantaged. Students who meet the federal income eligibility criteria or are deemed to be categorically eligible for free and reduced-price meals under the National School Lunch Program.

Students who are English learners. Students who have been classified as English learners for LCFF purposes; this occurs if they are identified in CALPADS as enrolled on Census Day with an English Language Acquisition Status of “English learner” (EL).

Students who are in the foster care system. Students who have been identified as being in the foster care system through the statewide match or who have been identified through a local data matching process and submitted to and validated by CALPADS.

Students with disabilities. Students who have been evaluated; have been found eligible, in one of 13 federal categories or the additional category of medical disability established by California, to receive special education and related services; and have an IEP describing their present levels of performance, annual goals, needed accommodations and modifications, and special education and related services.

Cost pool (extraordinary, high-cost). To help with the extraordinary costs of paying for the most expensive special education programs, the state and SELPAs have established high-cost pools, sometimes called risk pools or extraordinary cost pools, to which LEAs may apply for extra funding when they are required to provide a special education program that meets the criteria to access the pooled funds. In terms of criteria, either the minimum cost threshold for accessing cost pools can be set as a specific dollar amount above which the costs of a student’s program are considered to be extraordinary or high cost or it can be set as the number of times higher than the average per-pupil expenditure or average special education costs at which a student’s program costs are considered extraordinary or high cost. Some pools have additional criteria, such as being available only for certain types of placement, and some are for specific purposes (e.g., legal risk pools to cover the costs of litigation).

Education cost function model. The terms *education cost function model, education cost function,* and *cost function model* all refer to the final statistical model constructed for this study, as described in appendices A and B, to examine the relationship between the cost of education programs and students' academic achievement, which for purposes of this study was academic growth. Results from the education cost function model are presented as "model results."

Education program. The term *education program* refers to the experience of a student attending California public schools, including the school environment, school and LEA administration, classroom instruction aligned to the state's academic standards, the system of statewide assessments, and applicable accountability and supports. An education program includes necessary supplemental supports that are not always connected to IEPs (e.g., the education program for a student who is an English learner includes any supports that are provided because the student is learning English).

> **General education program.** The general education program is the program provided for all students in a school. The general education program serves as the base program for all students. Students with disabilities are entitled to receive the general education program in addition to special education.
>
> **Special education program.** A special education program is the additional program provided for students with disabilities to ensure that they make the same academic progress as their peers without disabilities and, as needed, that they also attain goals related to other functional skills (e.g., independent living, behavior). This program includes specialized instruction, related services (e.g., speech and language therapy, physical therapy), and/or necessary supplemental supports, all tailored as needed to meet each student's individual needs. It also includes school or LEA administration of those services and supports, but does not include administrators who manage the general education program for all students (e.g., the school principal).
>
> **Individualized educational program (IEP).** Each student receiving special education services has an IEP that establishes the student's eligibility for special education, documents the student's current levels of performance and educational goals, and specifies the types and amounts of special education services the student receives. Sufficient statewide data are not available in California to study the cost of each IEP, but the services identified in an IEP are protected and must be provided to a student when agreed upon by an IEP team. IEP goals and services are related to academic growth and, as needed, to improving functional skills.

Local educational agency (LEA). Each LEA is obligated by the Individuals With Disabilities Education Act (IDEA) to provide a free appropriate public education (FAPE) to students who are eligible for special education services. This study examined fiscal and programmatic data collected from multiple types of LEAs, including traditional school district LEAs, charter school LEAs, and other agencies that function as LEAs, including COEs.

Least restrictive environment (LRE). IDEA requires that students with disabilities learn in the LRE and have access to the general education curriculum together with peers who do not receive special education. IDEA requires students be in the general education setting to the "maximum extent that is appropriate" as decided by the student's IEP team. For purposes of this report, preschool LRE is the percentage of students aged 3–5 spending more than 50 percent of their day in a general early childhood setting, and school-age LRE is the percentage of school-age students who are in the general education classroom for 80 percent or more of the day.

Nonpublic schools (NPS placements or settings). Private schools certified by CDE to provide educational placements and services to students with disabilities when required by the student's IEP. NPS placements are distinct from services provided by nonpublic agencies (NPAs). NPS placements are separate school settings outside the student's LEA, whereas in some cases, NPAs provide services within the student's LEA. As with all other educational services described in a student's IEP, NPS placements are funded using public school funds.

Special education local plan area (SELPA). California requires each LEA to form or join a SELPA to develop a plan for delivering special education services. In 2018/19, California had 135 SELPAs, including single- and multi-district SELPAs.

> **Multi-district SELPA.** Small and midsized districts form regional multi-district SELPAs to coordinate their special education plans. Charter school LEAs may join multi-district SELPAs or charter-only SELPAs. Charter-only SELPAs are not geographically bound; in 2017/18, there were five charter-only SELPAs.
>
> **Single-district SELPA.** A district may serve as its own SELPA. Historically, districts were required to meet size and scope requirements of serving 30,000 K–12 students in metropolitan areas or 15,000 K–12 students in non-metropolitan areas. However, in recent years, the SBE has waived size and scope requirements for some districts, based on requests and applications from those districts to become single-district SELPAs.

Students with disabilities. For the purposes of this report, unless otherwise specified, the term *students with disabilities* refers to students aged 3–21 with one or more of the disabilities identified under federal law who, because of their disability, received special education and related services provided through an IEP during the time period of the study. The term, as used in the report, does not include students who previously had an IEP but no longer had one during the years studied or students with another type of plan (e.g., a Section 504 Plan).

Student outcomes. In addition to academic achievement, measured by student growth scores, the education cost function model used other student outcome data, including graduation rates, measured by a 4-year cohort graduation rate.

> **Nonacademic outcomes.** Many students with disabilities are receiving special education and related services not only to ensure academic growth, but also to meet goals related to nonacademic outcomes such as social and pragmatic skills to increase integration with peers and independent living and job skills to increase the likelihood of employment after high school. Many students also have goals related to spoken language and communication that are not reflected in the statewide assessment data. California does not currently collect sufficient data on nonacademic outcomes or IEP goals to compare nonacademic outcomes across students, schools, or LEAs.

Study Results and Their Implications for California's Special Education Funding System

In presenting the major findings from part 2 of the California special education funding study and discussing the implications of those findings, this section lays the foundation for the report's subsequent considerations. Findings are organized by the three funding formula components introduced in part 1 of the study: *allocation, distribution,* and *expected expenditures.* Findings related to **how the state calculates amounts of funding** needed for special education are categorized under allocation; findings related to **which entity receives funding** are categorized under distribution; and findings related to **how funds are used** are categorized under expected expenditures. Discussion of finding implications draws from the evidence developed in both parts of this study and its analyses, as well as findings and conclusions from other relevant research. Where relevant, supplemental data analyses are included in appendix C.

Note that, as explained in the glossary, when this report refers to additional costs related to academic growth, it is talking about the marginal costs of having special education programs that ensure students with disabilities achieve the same academic growth as their peers without disabilities, on average.

Findings Related to Allocation

For purposes of this study, *allocation* refers to the process for calculating the amount or proportion of funds provided by the state to a local entity (e.g., school, LEA, or intermediary unit). Allocation amounts or proportions (i.e., a divided proportion of total available funds) are generally calculated using unit counts (most frequently, number of students). To create funding equity and/or year-to-year funding stability, counts can be adjusted based on a variety of student characteristics (e.g., disability type, English learner status) and other measures (e.g., low property tax revenue, cost-of-living adjustments, prior funding levels). Each finding in this report provides evidence that may be taken into account in developing or revising allocation policies for California's state special education funding formula.

Finding 1: There was a positive correlation between cost and academic growth for all California students, including students with disabilities and other student groups. For this study, academic achievement was measured by *student growth* scores derived from student performance on state assessments. Holding constant all other factors in the education cost function model (e.g., student demographics, school characteristics), the results showed that an increase in education program funding at the school level resulted in an increase in the rate of growth on English language arts and math assessments. This positive correlation between cost and academic achievement measured by student growth scores is consistent with findings from previous research (Willis et al., 2019a; Willis et al., 2019c), but does not establish causation.

Implications. Although this study did not address and does not offer considerations on funding adequacy for students with disabilities, this finding has implications for the differentiation of funding for different student groups. As addressed in more detail below, the finding provides important evidence that justifies the allocation of additional funds, beyond the base funding provided for general education, to specific student populations with the intent of improving academic outcomes and closing opportunity and achievement gaps. This evidence is consistent with prior causal research in California investigating the relationship between spending and student outcomes (Johnson & Tanner, 2018).

Finding 2: It cost, on average, 50.5 percent more to ensure that students with disabilities made the same academic growth as their peers without disabilities. This finding is consistent with other studies that have found there to be additional costs in providing students with disabilities the opportunity to achieve the same level of academic growth as students without disabilities (Willis et al., 2019a; Kolbe et al., 2019).

Implications. These results from the education cost function provide an initial estimate of the amount of supplemental funding needed — *on top of* the per-pupil general education program base that applies to all students — to ensure that students with disabilities, on average, demonstrate the same level of academic growth as their peers without disabilities. For 2018/19, the education cost function model calculated the average per-student spending for general education programs, without supplemental programs including special education, to be $10,644. The additional 50.5 percent, minimally, related to ensuring comparable academic growth for students receiving special education was at least $5,375.22, bringing the average per-pupil cost for students with disabilities to $16,019.22, or 150.5 percent of the amount needed for students without additional needs.

Finding 2 results are helpful in understanding how to use disability as a factor in a weighted formula for allocating funding. In such a formula, students needing special education programs, which on average cost approximately one-and-a-half times as much as general education programs, would be weighted at 1.5. This weight could be applied to an allocation calculation in different ways. For example, if funding to a school or LEA were allocated on a per-student basis, the weight could be applied to calculate a supplemental amount needed for students receiving special education. This means that if $10,000 were allocated for each student in general education, an additional $5,050 — for a total of $15,050 — would be needed to ensure comparable academic growth for each student with disabilities.

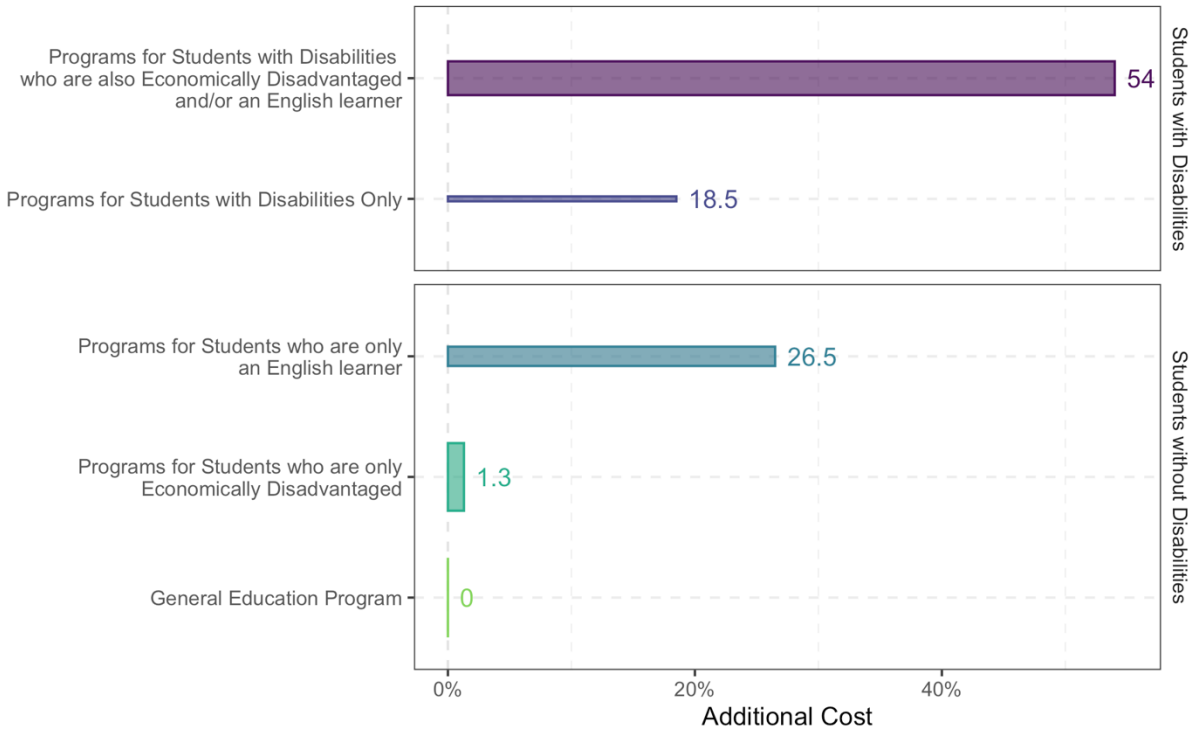
The weight could also be used to differentiate distribution of a specific amount. For example, if a school or LEA received $100,000 to help educate 10 students — 8 in general education with no need for added support and 2 who also receive special education — students in only general education would have a weight of 1, whereas students who also receive special education would have a weight of 1.5. To calculate allocation of the $100,000, one would multiply the number of students in each program by their respective weights and sum the products to get a denominator for the funding (in this example, [8 X 1] + [2 X 1.5] = 11). When the $100,000 is divided by the denominator of 11, the quotient of $9,091 becomes the per-unit allocation. Because all 10 students are in general education, each would receive $9,091, but the 2 students who are also receiving special education would each receive an additional half unit ($4,546), for a total of $13,637 each.

The additional 50.5 percent cost, minimally, of enabling students with disabilities to make academic progress equivalent to that of their peers in general education alone does not include any of the other special education costs associated with helping students attain the nonacademic goals identified in their IEPs. Nor does the 50.5 percent estimate reflect any additional special education costs associated with school-size variation, regional cost differences, or nonpublic school placements. These additional costs are addressed in finding 5.

Finding 3: For students with disabilities who also had other needs — specifically those who were also English learners and/or economically disadvantaged — the additional (marginal) cost to ensure comparable academic growth greatly exceeded the marginal cost for students with disabilities who had no other needs. Specifically, cost function results showed that the average marginal cost for students with disabilities who were in no other high-need group was only 18.5 percent, compared with roughly 54 percent for students with disabilities who were in at least one other high-need group (exhibit 2).

Finding 2's average additional cost of at least 50.5 percent to ensure comparable academic growth for all students receiving special education reflects the fact that, over the years of this study, 85 percent of students with disabilities were also in at least one other high-need category. Specifically, 28.6 percent of students with disabilities were also English learners, and 67.5 percent were also economically disadvantaged, with some in both groups (Willis et al., 2020, p. 17). As shown in exhibit 2, students who only had a disability incurred an additional cost of 18.5 percent, in contrast to students with disabilities who were also in other high-need categories. These students incurred an additional cost of roughly 54 percent, driving up the overall average for students with disabilities to 50.5 percent. This calculation controlled for many other variables, including race, disability category, and whether students were placed in an NPS or received NPA services. Additional analyses on English learners with disabilities are provided in the supplemental analyses in appendix C.

Exhibit 2. Additional (marginal) cost, by percentage, of education programs for students in one or more student groups compared with the average cost of students in general education programs with no additional supports.



Source. Author presentation of education cost function results. Width of bar is proportional to the prevalence of each group in the model.

Cost function results indicated that additional resources were necessary to support students with disabilities who belonged to at least one other high-need group, irrespective of whether an LEA had a high concentration of such students. (Note: The category of students in foster care was also tested in the education cost function, but results were not included in the final model due to low variability of cost for students with disabilities in foster care at the school level and due to the fact that foster-care status combined with other characteristics did not affect cost.)

This finding is consistent with findings from earlier research that informed the design of California's LCFF, which allocates supplemental funds for students who are economically disadvantaged, English learners, and/or in the foster care system (Bersin et al., 2008; Imazeki, 2007). On top of those supplemental funds, the LCFF provides additional funds (i.e., concentration funds) to LEAs with more than 55 percent of their student population belonging to any of those three student groups.

Clearly, the fact that many students with disabilities also had other needs related to learning English and/or experiencing economic disadvantage played a major role in raising the overall cost of special education programs as related to academic growth. However, something more is at play, because the 54 percent marginal cost for serving students in multiple groups exceeds the sum of the additional costs associated with serving each group individually. In addition to revealing the 18.5 percent marginal cost for serving students with disabilities who were in no other group, the cost function results showed a 26.5 percent marginal cost for students who were English learners but not also economically disadvantaged or receiving special education and a 1.3 percent marginal cost for students who were economically disadvantaged but not also English learners or receiving special education. Those group-specific marginal costs add up to 46.3 percent, well under the average of 54 percent found to be the true marginal cost for students in multiple groups. California does not currently collect sufficient data to determine how these differences in cost apply to the additional special education programs costs related to nonacademic outcomes and other factors, as described in finding 5.

Implications. This finding affirms that the average additional cost of programs for students with disabilities did not relate solely to students' disabilities, but rather to a combination of factors. Furthermore, the fact that achieving growth for students with disabilities who were also English learners and/or economically disadvantaged cost more than the sum of costs associated with achieving such growth for each student group individually suggests that students' multiple needs may amplify one another.

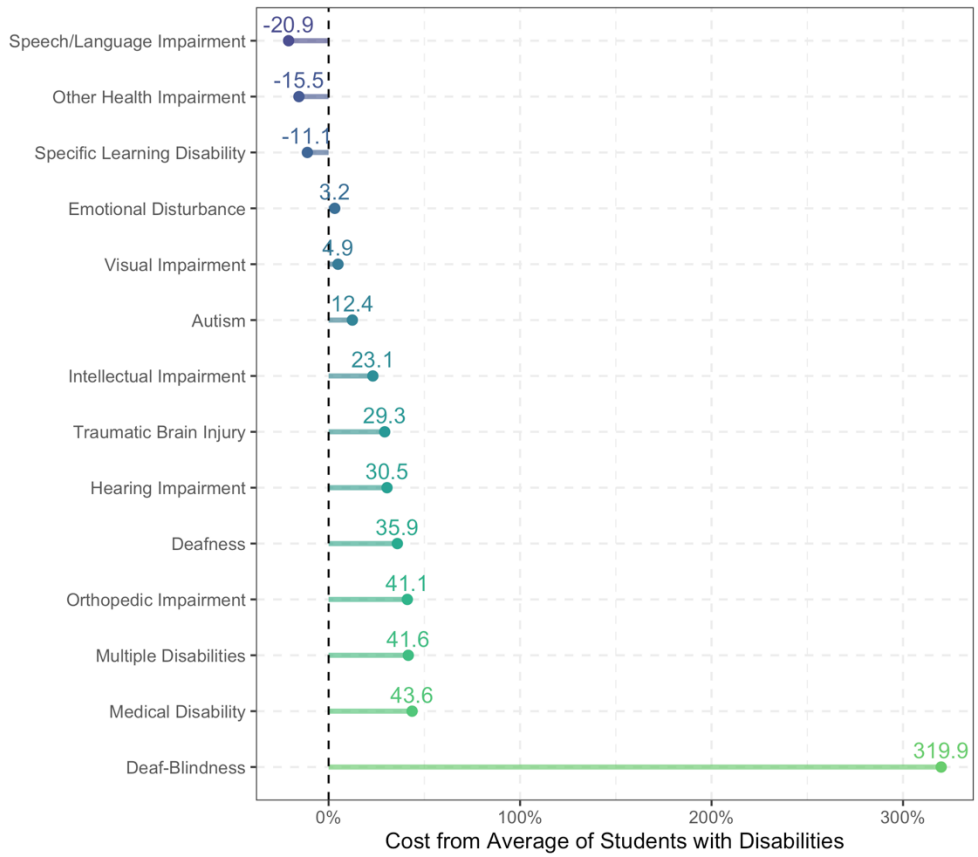
An ideal funding system would facilitate schools' ability to address students' multiple needs in a coordinated manner by allowing them to coordinate the necessary state special education and LCFF resources to support those students, moving beyond the segmentation of service delivery currently observed in many school environments.

Thus, an ideal funding system would facilitate schools' ability to address students' multiple needs in a coordinated manner. Having such a system would require a change from the state's current funding approach, which, as described in part 1 of this study (Willis et al., 2020), features separate, but parallel funding systems for special education and general education. This bifurcated approach is prominently displayed in statute: AB 602 funds are reserved for special education, LCFF funds are intended for general education, and separate planning and reporting requirements exist for each. The current approach does not establish any expectations for coordinated planning and implementation of services and supports.

Taken together, the evidence related to this finding suggests that in the pursuit of academic growth for students receiving special education, the state should continue to identify ways to better coordinate funding for students that are associated with one or more of these funding categories (i.e., special education and student groups eligible for LCFF supplementary funding).

Finding 4: The additional cost of special education related to academic growth varied by students' primary disability category. This finding is consistent with previous research that recognizes differences in education costs across primary disability categories (Chambers et al., 2004; Willis et al., 2019a). In the current study, the education cost function enabled the study team to examine program cost by individual disability categories while controlling for other variables, including age, gender, LEA characteristics, English learner status, and economic disadvantage status. As portrayed in exhibit 3, there were meaningful differences in average program costs by disability category, calculated as marginal percentage differences from the average additional per-pupil program cost for all students with disabilities (irrespective of their disability category). For some individual disability categories, the average additional costs were lower than the cross-category average; for example, the average additional per-student cost for the Speech or Language Impairment category was 20.9 percent less than the average across all categories. For other categories, the model results showed greater additional costs, such as 41.1 percent more for students identified as having an Orthopedic Impairment.

Exhibit 3. Percentage difference in cost compared with the average cross-category cost of special education, by federal disability category.



Source. Authors' calculations from the education cost function.

The study team explored the validity of averaging costs by disability category. Although model results showed clear cost differences between disability categories, the variability of cost *within* some disability categories created an average program cost for some individual disability categories that was nearer than might be expected to the average cross-category cost for all students with disabilities. For example, in the Autism category, there was a bimodal distribution of program costs (Petek, 2019), with high costs for some students and low costs for others. This split is due to the wide spectrum of students in the category; some received services in the general education classroom with less specialized instruction and related services, and others in the same category spent little time in a general education classroom and received more significant supports. Further details on the team's exploration of variation within disability categories is provided in the supplemental analyses in appendix C.

Implications. Although the model results showed meaningful, distinct cost differences between disability categories, there are limitations to using disability category as a proxy for need in differentiating funding. One limitation relates to subjectivity in making disability category assignments. IEP team members (consisting of school and LEA staff, as well as parents) have flexibility in assigning students with disabilities to specific disability categories. For some disability categories, such as the low-incidence categories of Deaf-Blindness, Visual Impairment, and Multiple Disabilities, the criteria are more objective. However, most students are classified in one of the three highest-incidence categories of Speech/Language Impairment, Specific Learning Disability, and Other Health Impairment, for which the criteria are more subjective, resulting in much less homogenous groupings.

A second and related potential limitation is the variation of size among disability categories. An allocation formula that differentiates based on disability category must use an average cost for the category, which may not accurately — or adequately — reflect the variability of needs within the category given its size. Further examination of data for the lower-incidence/higher-cost disability categories found wider variability of cost within and between the low-incidence categories compared with the higher-incidence categories. For example, between the lower-incidence/higher-cost categories of Emotional Disturbance and Traumatic Brain Injury, there was a 26.1 percent cost difference, whereas between the higher-incidence/lower-cost categories of Speech/Language Impairment and Specific Learning Disability, the cost difference was 9.8 percent.

A third limitation is the option, in California, of assigning students a secondary disability category, which could potentially result in students with similar needs and costs being classified in different disability categories or combinations of categories. The study team reviewed the use of primary disability categories and whether secondary disability categories should also be considered when looking at cost. That exploration found that, in 2018/19, only 271,000, or 27 percent, of students with disabilities had secondary disability categories recorded and for 86 percent of those students, the secondary category was one of the three highest-incidence disability categories, indicating that the primary disability category was nearly always the more costly category. Details from the secondary disability category analyses are included in appendix C.

To explore how an allocation system might be adjusted to mitigate these limitations so as to create more stable cost allocations, allocation formulas often group disability categories. Considerations for disability cost groupings are presented in the Considerations for Improving California's Special Education Funding System section.

Finding 5: The average marginal per-student spending on special education reported by LEAs in 2018/19 was $17,372, resulting in total costs per student of $28,016 when added to the average $10,644 per-student base cost for general education programs. This amount includes the additional marginal costs of ensuring comparable academic growth calculated by the cost function model (approximately $5,375). The additional costs beyond the 50.5 percent increase were attributable to school and LEA variables as well as to students' attainment of nonacademic outcomes. The total average per-student spending of $28,016 was calculated by the study team from expenditure and excess cost reports submitted by LEAs through the statewide uniform financial reporting format, also known as the Standardized Account Code Structure (SACS). Although the team could not verify the spending reported on the SACS (e.g., whether general education costs for students with disabilities might, in some instances, also have been charged to special education functions and goals), the average per-student spending it found was consistent with the findings of a 2019 LAO report (Petek) on special education costs. The report concluded that in 2017/18, marginal "special education costs averaged about $17,000 per student with disabilities, as compared to general education costs, which averaged about $10,000 per student. Accounting for both general and special education costs, students with disabilities cost, on average, more than two times as much to educate ($27,000) as students without disabilities ($10,000)" (p. 17).

To understand what accounted for this roughly $12,000 difference between the two amounts — the cost related solely to academic growth, as established by the cost function model, and the all-inclusive cost, as based on analysis of the SACS expenditure data — the study team reviewed a number of discrete cost variables that are likely to contribute to the overall costs of special education. The cost function model reported their respective costs separately, but the costs were not included in the average marginal per-student cost of special education specifically intended to ensure comparable academic growth — the $5,375 — because they did not specifically or solely relate to ensuring students' academic growth or there was not a comparable cost for all students. These cost variables fell into three categories:

- costs that applied only to special education programs (e.g., SELPA type and size, nonpublic placements);
- costs that applied to all education programs, but may have applied at a greater rate to special education programs (e.g., type of school, type and size of LEA, regional cost differences); and
- other student-level costs related to attaining nonacademic outcomes. These are costs incurred that are not tied to identified outcome measures and may also include program inefficiencies. Because this study did not have an outcome measure that could be included in the cost function model for special education efforts focused on students' nonacademic goals, any costs related to those efforts are included with program inefficiencies.

The model provided useful data on the range of costs associated with these other variables and how those costs changed based on student, school, and LEA context. The costs are described as averages and ranges, many of which do not easily translate to per-student costs, but rather apply to a school or an LEA as a whole, depending on its population.

Additional costs specific to special education programs

SELPA type. The cost function results showed small differences in the cost of special education programs by SELPA type. In particular, special education programs in LEAs belonging to a multi-LEA SELPA cost approximately 0.2 percent more than the average program cost in a single-LEA SELPA. (Note that the cost function model did not include SELPA administrative costs unless those costs were reported in the SACS by individual LEAs.)

SELPA size. Costs for special education programs also varied by SELPA size, for both single- and multi-LEA SELPAs. Programs in California's smallest SELPAs (ADA below 1,000) cost as much as 40 percent more than programs in an average-sized SELPA (ADA approximately 40,000). Programs in large SELPAs (ADA at or above 100,000) cost up to 20 percent more than the average. This means that based on SELPA size alone, the average additional per-student costs ranged from $0 to as much as $2,500.

Nonpublic placements. The cost of special education programs increased proportionately based on the number of students with disabilities in nonpublic placements. The average proportion of students in nonpublic placements, by LEA, was approximately 0.5 percent, with the general range across LEAs from 0 to 20 percent. As the proportion of nonpublic placements increased, so did the average per-student cost of an LEA's special education programs. For example, in LEAs with 2 percent or more of their special education students in nonpublic placements, the average per-student marginal cost of special education programs increased by up to 5 percent, translating at the high end to an increased cost of $500 per student.

Additional costs that applied to all education programs, but may have applied at a greater rate to special education programs

Although some variables accounting for additional costs applied to all programs within an LEA, some applied more to special education than to general education. For example, in very small LEAs, compared with larger ones, the cost of general education programs was greater due, in part, to the necessity of providing teachers for classes that were smaller than those in larger LEAs. However, in that same category of very small LEAs, the additional size-related cost of providing qualified staff for special education programs (e.g., school psychologists, occupational and physical therapists) was greater than the additional cost of providing general education teachers due both to the specialized nature of the special-education-related positions and to the proportionally smaller number of students they served.

School type (elementary, middle, high). The cost function model calculated small differences in the cost of programs by school type. Because the additional costs calculated by the model were minimal and aligned with the grade span adjustments in the LCFF, school type did not present any meaningful additional costs that could be attributed proportionally to special education.

LEA size. The model showed meaningful variations in cost due to LEA size that likely apply in some proportion to special education as well as to general education. Very small LEAs tended to have much higher costs per student than moderate- to large-sized LEAs. For very small LEAs, the increased per-student cost for special education programs was double or more (around $11,700) that of the per-student cost for an LEA whose size was such that it had optimal economies of scale. Because the LCFF takes into account very small LEAs (CDE, 2015), some of this size-related cost was offset, but it is likely that, as with SELPA size, these costs applied as much or more to special education, given issues with recruiting and retaining trained personnel for small LEAs.

LEA type (charter/non-charter). Whether an LEA was a charter LEA also affected cost. The average cost of non-charter LEAs was 47 percent higher than those of charter LEAs. This relatively large difference likely resulted from policy and structural features of charter LEAs (e.g., no geographic borders, differences in governance and accountability structures, differences in student populations admitted) that are not generally found in non-charter LEAs. Thus, compared with charter LEAs, non-charters LEAs could have seen average additional per-student costs of $5,000 — costs that could apply as much to special education as to general education. These cost differences for special education often correlated with the increased costs of serving students in lower-incidence, higher-cost disability categories — students who were more commonly served by non-charter LEAs.

Regional cost differences. Not unexpectedly, costs tied to employing teachers and service staff varied by region. For example, hiring a teacher in the Bay Area was more expensive on average than in San Bernardino, holding other factors constant. Thus, some programs — both general and special education — had higher costs simply due to the location. For an average location in California, relative to the cheapest location, the location-related difference was nearly $1,900 more per student.

Student-level costs of attaining nonacademic outcomes

For many students with disabilities, their special education program, as laid out in their IEP, focuses on helping them achieve nonacademic outcomes in addition to making academic progress. However, California has no validated statewide measure of nonacademic outcomes, for general or special education. There was no direct evidence in either cost function model results or the data that LEAs reported in the SACS for identifying costs associated with nonacademic outcomes in particular. In the cost function model, costs not associated specifically with academic performance or growth and not tied to the identified cost variables listed above are grouped together with potential costs of program inefficiencies as "other costs." The study team assumes that some of the difference in cost between the average per-student cost of academic growth and the all-inclusive per-student cost of special education programs reported by LEAs is attributable to efforts to help students with disabilities attain their nonacademic IEP goals and that these costs are hidden in the "other costs."[2]

It is plausible, indeed likely, that costs related to the achievement of nonacademic goals vary by LEA, depending on the particular makeup of its population of students with disabilities, and it is reasonable, based on the examination of the gap between spending and the costs calculated by the model, that actual per-student costs related to helping students achieve nonacademic outcomes could range from $0 to upwards of $10,000.

Implications. This finding highlights both the significant variability in the additional special education costs depending on SELPA, LEA, school, and student contexts and how those additional costs help account for the difference between the average additional per-student special education cost for academic growth and LEA-reported spending on special education. As is true for the marginal 50.5 percent cost related to academic growth, costs related to these other variables represent a statewide average, and some portion of the differences in additional costs is accounted for through adjustments to the LCFF, for example, through the adjusted amounts for elementary, middle, and high school.

When the additional costs presented in this finding are applied to an "average" LEA, they can be seen as accounting for the $12,000 difference between the average marginal per-student cost of $5,375 that

2 Cost function technical language refers to these "other costs" as "inefficiencies," a category that includes costs incurred that are not tied to identified outcome measures. Some special education costs in the "other costs" category might legitimately be attributable to program inefficiencies. But because this study did not have an outcome measure that could be included in the cost function model for special education efforts focused on students' nonacademic goals, any costs related to those efforts were deemed by the model to be inefficiencies and, thus, included in the "other costs" category.

is related to academic growth alone and the all-inclusive average cost of $17,372 for special education. But, in reality, these costs apply uniquely in each LEA, as the two hypothetical examples below demonstrate.

Example 1: The per-student cost of special education in a small, non-charter LEA that is in a small multi-LEA SELPA with a high rate of nonpublic placements would include the following increased costs, in addition to the $5,375 for comparable academic growth:

- Increase for SELPA type (multi-LEA SELPA) equals 2.0 percent of $5,375, or $108
- Increase for SELPA size (ADA under 10,000) equals 40 percent of $5,375, or $2,150
- Increase for nonpublic placements (average rate) equals 5.0 percent of $5,375, or $269
- Increase for LEA size (proportion of increased cost for all programs) equals 46 percent of $5,375, or $2,473
- Increase for non-charter LEA (proportion of increased cost for all programs) equals 20 percent of approximately $12,000, or $2,400
- Increase for other costs, including attainment of nonacademic outcomes, equals $7,500

When these costs are added to the $5,375 marginal cost for ensuring comparable academic growth, the all-inclusive average marginal per-student cost for special education comes to $20,275 — higher than the average of $17,372 reported in the SACS.

Example 2: The per-student cost of special education in a charter LEA that has ADA greater than 10,000 and does not place students in nonpublic settings would include only the following costs in addition to the $5,375 for comparable academic growth:

- Increase for SELPA type (multi-LEA SELPA) equals 2.0 percent of $5,375, or $108
- Increase for SELPA size equals 0 percent
- Increase for nonpublic placements (average rate) equals 0 percent
- Increase for LEA size (proportion of increased cost for all programs) equals 0 percent
- Increase for non-charter LEA (proportion of increased cost for all programs) equals 0 percent
- Increase for other costs, including attainment of nonacademic outcomes, equals $2,500

When these costs are added to the $5,375 marginal cost for ensuring comparable academic growth, the all-inclusive average marginal per-student cost for special education comes to $7,983 — notably lower than the average of $17,372 reported in the SACS.

Although some special education funding formulas include adjustments for the additional cost factors laid out in this finding, similar to the grade span adjustments in the LCFF, there is a high level of correlation among many of these factors, which means that one adjustment can account for multiple factors. Some of the cost differences by LEA type are due, in part, to differences in the populations of students with disabilities served and the programs needed to serve those students. The descriptive report from part 1 of the study notes, for example, that elementary schools and charter schools serve proportionally more students in the Speech and Language Impairment disability category, which correlates to lower costs, and that students in some disability categories (e.g., Intellectual Disability and Emotional Disturbance) are more likely to be placed in nonpublic settings, which correlates to higher costs (Willis et al., 2020). This means, for example, that an allocation formula using disability categories to differentiate funding may already account for some of the cost differences related to school type, LEA

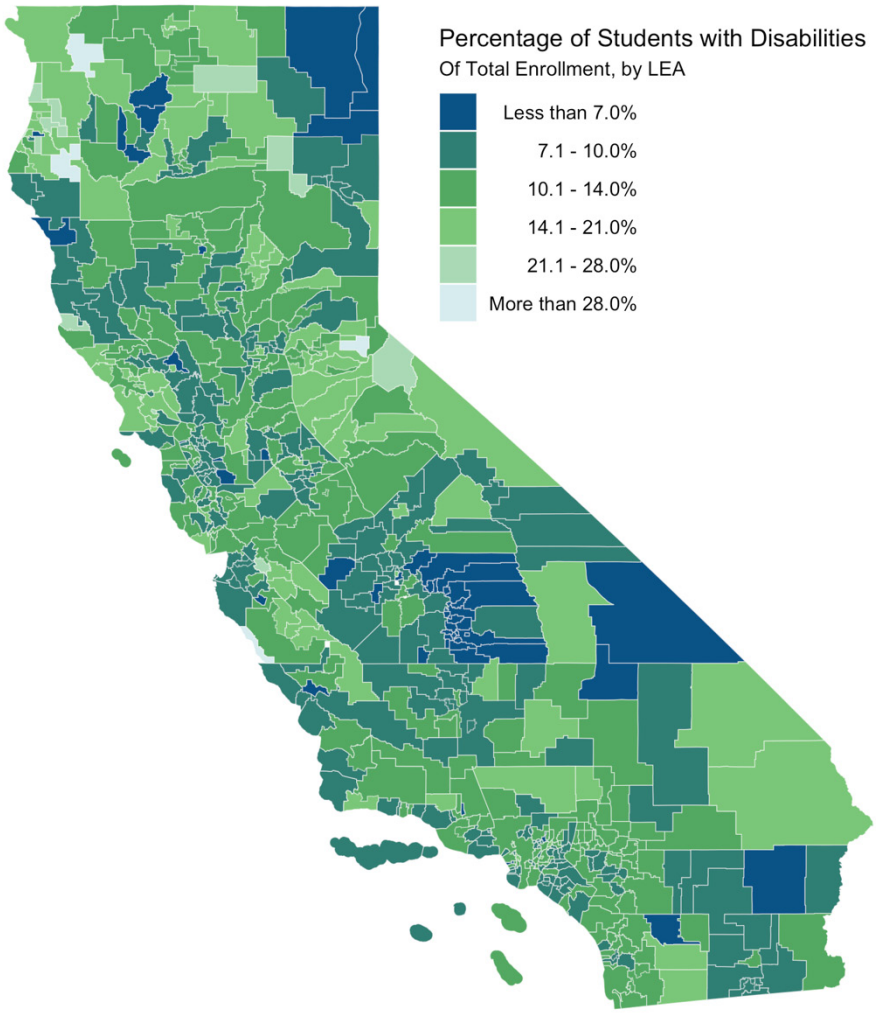
type, and nonpublic placements. Given the lack of stability of some costs, along with the correlation of and interactions between these variables, it may not be necessary or appropriate to adjust a funding formula based on each of the above variables. It is important for policymakers to make any adjustments to the funding formula using these variables with caution and careful consideration of the impacts across funding systems.

Finding 6: The LEA-wide cost of programs that enabled students with disabilities to make the same academic growth as their peers increased proportional to the number of students with disabilities. Given the average per-student cost differences for educating students with disabilities, LEAs with larger numbers of students with disabilities had higher overall costs compared with those with smaller numbers or proportions of this student group.

Implications. This finding, unsurprising as it might seem, has significant implications because of how California currently allocates its special education funding to SELPAs. Rather than being based on the number and/or type of students with disabilities in the overall student population of the LEAs within a SELPA, allocations of state funding are based on the average daily attendance of a SELPA's LEAs. This means that two SELPAs whose LEAs have approximately the same ADA, collectively — let's say 10,000 students total ADA between the two LEAs — would receive the same amount of state special education funding (dependent on each SELPA's per-child rate) even if the number (and type) of students with disabilities served by their respective LEAs differed dramatically. The SELPA with fewer students with disabilities would have more state money available to serve each student with a disability, compared with the other SELPA, which has to spread the same amount of funding more thinly in order to serve a greater number of students, forcing its LEAs to find local funds to supplement their special education programs.

The underlying assumption for basing special education allocations on ADA rather than on the number and type of students with disabilities is that, on average, this student population should be evenly distributed across California LEAs and their schools. However, research shows that this is not the case. Even among the middle 50 percent of LEAs, by size of student population, the proportion of students with disabilities still ranged between 10.7 percent and 17.2 percent — an indicator that this finding is important for all LEAs and not just the smallest or largest. Exhibit 4 illustrates the variability of disability identification rates. As indicated in the exhibit, the northern and eastern parts of the state tended to have more variability in the rates of students with disabilities compared with the coastal and southern parts of the state.

Exhibit 4. Students with disabilities identification rates by California LEA.



Source. Data from CASEMIS, 2016/17.

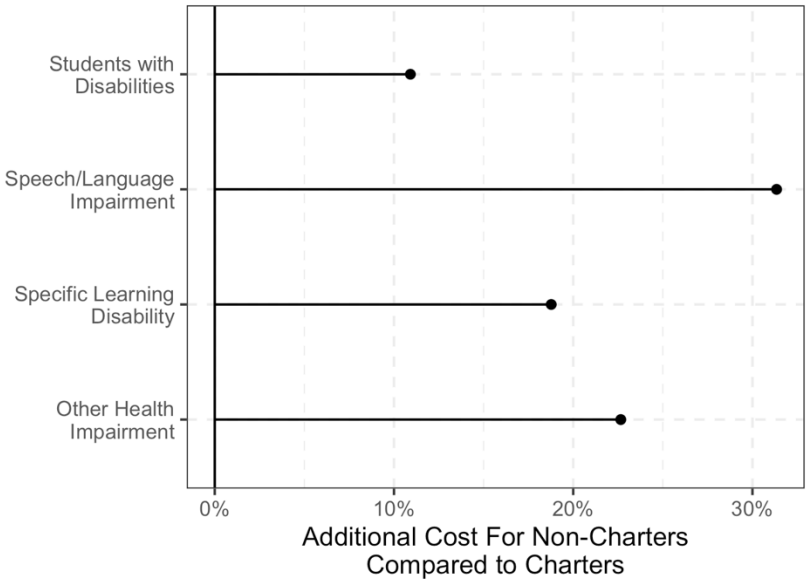
Given that students with disabilities required higher levels of funding and that students with disabilities were not equally distributed across all LEAs, this finding indicates that some LEAs may need more funding than others with a similar ADA. This suggests that the current ADA-based allocation method for the state's special education resources cannot ensure that LEAs receive resources aligned to the needs of their students.

Finding 7: The cost of special education related to academic growth for students with disabilities was, on average, lower in charter schools than in non-charter schools due, in part, to the particular populations of students with disabilities that charter schools tended to serve. The difference in per-student cost was largely attributable to the fact that, according to 2018/19 California data, the populations of students with disabilities that charter schools served were generally identified as being in higher-incidence disability categories, which have lower associated costs compared with

other disability categories. In addition, on average, students with disabilities accounted for a smaller proportion of the overall student populations in charter schools compared with non-charter schools: 9.4 percent and 10.7 percent, respectively (Willis et.al., 2020, p. 26).

Exhibit 5 shows the model's results for the additional cost of programs for students with disabilities by LEA type (charter or non-charter), overall, and for the three highest-incidence disability categories. The model controlled for several factors that can differentiate charter and non-charter LEAs (e.g., enrollment size, student demographics), but it ultimately could not account for the differences in infrastructure and governance between the two. For all four groups, the average costs in a charter school were lower. There were likely similar differences in the additional costs related to nonacademic outcomes and other school and LEA factors, but exhibit 5 results reflect only the differences for the cost related to achieving comparable academic growth.

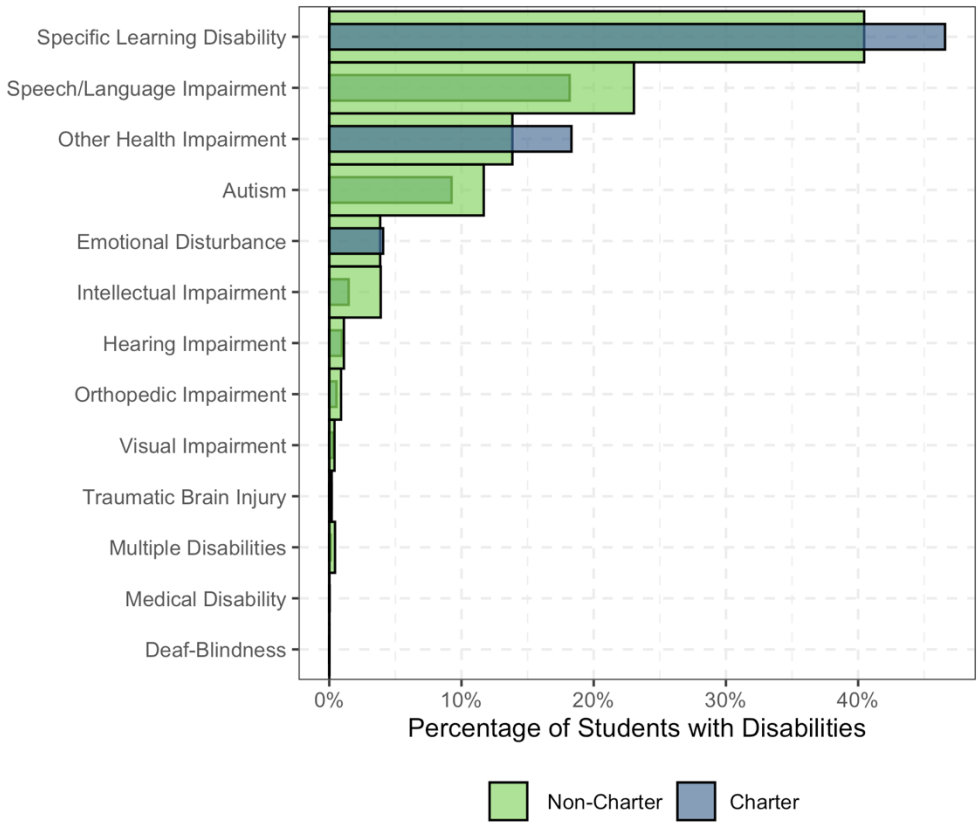
Exhibit 5. Average additional cost related to academic growth for students with disabilities for non-charter LEAs compared with charter LEAs (0 percent), overall, and for the three highest-incidence disability categories.



Source. Authors' calculations from the education cost function.

Implications. This finding has implications for funding allocation and distribution because it suggests that compared with non-charter (i.e., traditional) public schools, charter schools need less additional funding to achieve the same outcomes for the particular population of students with disabilities that they serve. Compared with those in non-charter LEAs, students with disabilities in charter LEAs are less likely to be in low-incidence categories, and nearly 83 percent of charter school students with disabilities were in the three highest-incidence categories (Speech Language Impairment, Specific Learning Disability, and Other Health Impairment). Exhibit 6 illustrates the differences in disability categories between students served by charter and non-charter schools. If California's state special education funding were allocated by the count of students with disabilities or the proportion of students in specific disability categories, the per-child and total allocation distributed to charter schools would be lower than allocations to traditional LEAs, which generally serve larger proportions of students with disabilities and serve students in a broader range of disability categories.

Exhibit 6. Proportion of students with disabilities served by charter and non-charter schools, by disability category.



Source. Data from the CALPADS and CASEMIS data sources from CDE, 2018/19.

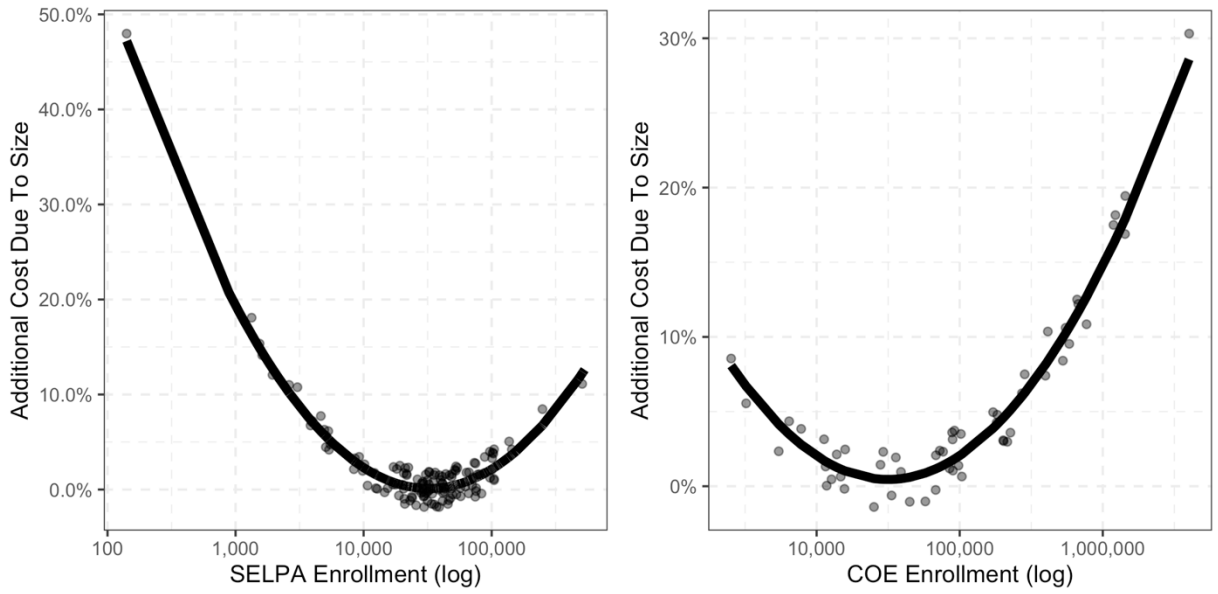
Findings Related to Distribution

These findings are related to distribution, which, for purposes of this study, refers to which entities receive state special education funding directly from the state. The findings provide evidence to consider when developing funding policies around the distribution of funds.

Finding 8: Up to an ideal size, increased overall enrollment in a school or other education entity correlated with economies of scale that reduced the per-student cost of serving students with disabilities. As discussed in part 1 of this study (Willis et al., 2020), the use of regional education service agencies such as SELPAs and COEs to support general education and, specifically, special education is based on the concept that regionalizing services can improve students' access to them and reduce their cost through economies of scale. The cost function model produced cost curves that include the ideal size for different entities (i.e., schools, LEAs, SELPAs, and COEs) to achieve economies of scale. Note that when these calculations refer to enrollment for a SELPA or COE, they are referring to the collective enrollment across the LEAs that belong to the SELPA or are served by the COE; students are not technically enrolled in the SELPA as an agency and may or may not receive services directly from their SELPA or COE.

In this study, calculations of economies of scale were based on the total enrollment of all students in the entity of interest and considered all costs (e.g., general education teacher salaries and administration costs), not just the additional costs of special education and related services due to disabilities. As displayed in exhibit 7, the model produced an inverted J-curve for both SELPAs and COEs, showing that as size increased up to an ideal point, the per-student cost decreased. Past the ideal size for the entity, however, per-student costs began to grow, creating diseconomies of scale and adding additional costs beyond the bottom of the curve. This shows that there was indeed a specific size at which these entities would have been most cost efficient. Notably, when comparing economies of scale for the SELPA and the COE, they appear to be mirror images. This is a result of the way that SELPAs are distributed across California; there are many more counties that are larger than the "ideal" size and are thus creating diseconomies of scale. (The inverted J-curve graphs and supplemental analyses on economies of scale in LEAs are included in appendix C.)

Exhibit 7. Additional cost compared with the lowest cost of special education programs, at 0 percent additional cost, due to SELPA enrollment and COE enrollment



Source: Authors' calculations from the education cost function. Calculations included data from charter and non-charter schools and LEAs within SELPAs and COEs across years 2016/17 to 2018/19. Note. The x-axis and y-axis scales differ.

Holding LEA and school enrollment constant, the ideal total enrollment in a multi-LEA SELPA and in a COE to produce the lowest per-student cost would be approximately 40,000 students. Single-LEA SELPAs were included in the SELPA analysis, but the more relevant economies-of-scale calculation is for the size of an individual LEA instead of the SELPA size. At the LEA level, implications for economies of scale differed by LEA type. The education cost function results identified ideal sizes for traditional LEAs: a total enrollment of approximately 30,000 for elementary and unified LEAs and approximately 20,000 for high school LEAs. The education cost function did not identify an ideal size for charter school LEAs because they were so small that the model could not predict a point at which growing larger would cease to reduce costs and, instead, would start adding costs.

The analyses to identify the ideal size for optimizing economies of scale did not address the issue of program quality or consider such variables as the amount of time students might have spent being transported to create entities of the ideal size.

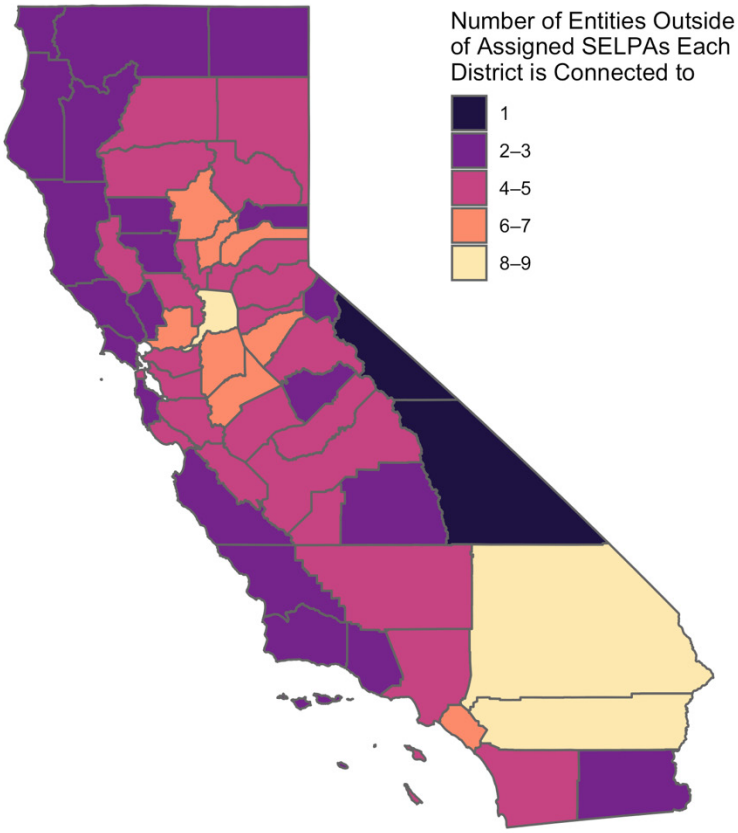
Implications. Regional entities, including multi-LEA SELPAs and COEs, provided a valuable opportunity for achieving economies of scale to serve students with disabilities**.** Yet, in 2018/19, 56 (60 percent) of California's 94 multi-LEA SELPAs were below the ideal enrollment thresholds identified by the cost function model. Current state policy does not compel SELPAs to be of a size that would maximize economies of scale, but it supports economies of scale for single-LEA SELPAs by requiring that to become a single-district SELPA, an LEA has to serve grades K–12 and enroll 30,000 or more pupils in metropolitan areas and 15,000 or more in non-metropolitan areas. This finding about economies of scale is consistent with previous research and evidence showing that compared with larger entities, smaller ones (due to a variety of constraints, including geography) need to spend more per student to provide the same services (Bowles & Bosworth, 2002; Chakraborty et al., 2007).

Economies of scale for serving students with disabilities also remained elusive for individual LEAs. During the study years, only 1 elementary school LEA, 7 high school LEAs, and 24 unified LEAs from among California's more than 1,000 school district LEAs met or exceeded the enrollment thresholds for optimal economies of scale calculated by the cost function model. This means that virtually all LEAs could have benefited from finding ways to achieve greater economies of scale by reducing costs through shared programs or shared staff. Charter school LEAs' economies of scale were more closely related to those of traditional public schools than to those of non-charter LEAs (i.e., they were more similar to other individual schools than to entire school districts).

Among schools belonging to LEAs of similar sizes, the per-student costs were always lower in a larger school. This suggests that at the school level, costs could be reduced by increasing school size (i.e., by combining schools). However, school size is heavily influenced by geography, constraints on facilities, and other factors, so achieving these ideal economies of scale is not always feasible or desirable — for example, combining small schools could result in increased transportation time and costs for students and staff.

Finding 9. Despite not reaching the ideal enrollment size to maximize economies of scale, LEAs worked together, including within and across SELPAs, to achieve some economies of scale in order to serve students with disabilities more cost effectively. Special education services can be regionalized not just through the work of multi-LEA SELPAs, but through partnerships — including LEAs contracting directly with each other and/or with COEs. The study team's review and analysis of three years (2016/17–2018/19) of CASEMIS's IEP services data showed that approximately 6 percent of students with disabilities (45,000 of 725,000 students) received at least one service from their SELPA annually, and nearly the same percentage (5.5 percent, or 40,000 of 725,000) received at least one service from their COE. Further, LEAs commonly worked to arrange services for their students with entities outside their assigned SELPA, with an average of five outside connections per LEA (exhibit 8). The CASEMIS data did not include an indicator of which relationships between LEAs were brokered by SELPAs and which were brokered by the LEAs themselves.

Exhibit 8. Count of outside connections to other entities per LEA, measured by the number of entities other than the LEA of residence or assigned SELPA serving students with disabilities enrolled in each LEA, 2018/19.



Source. Data from CASEMIS, 2018/19.

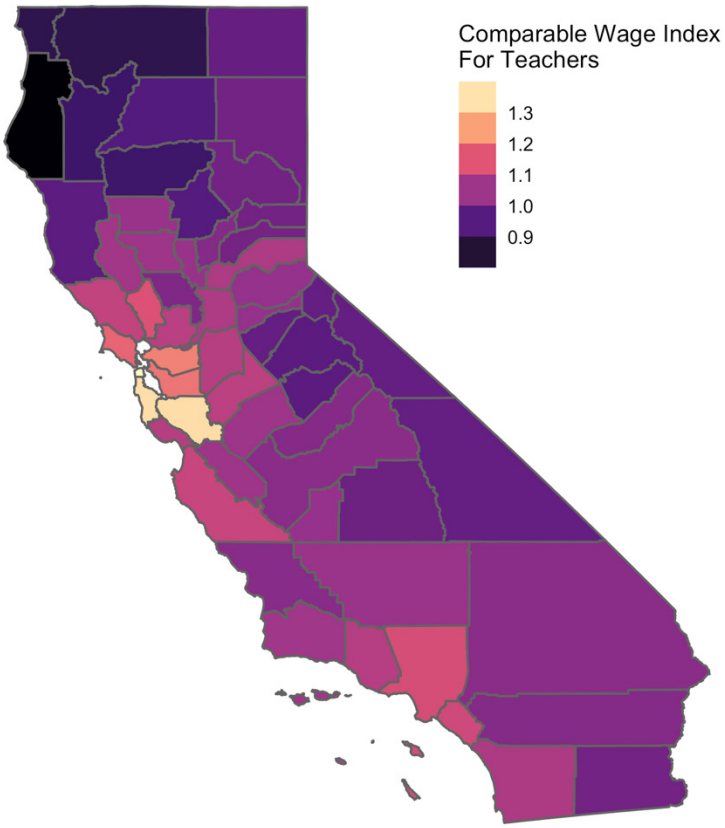
Implications. The efforts of California LEAs and other education entities to create economies of scale even when they were not required to do so is consistent with practices observed in 36 other states that use education services agencies for special education purposes, but do not distribute funds through those agencies (Willis et al., 2020). In many states, participation in a regional agency is voluntary, and those agencies are supported by membership fees or fees for specific services. Other states use different policy mechanisms beyond distribution of funds to encourage voluntary participation in the creation of economies of scale at the LEA and/or regional levels, for example, by allowing LEAs to jointly apply for supplemental funding to create or implement programs and by directly funding regional entities for specific activities, such as provision of technical assistance and other supports to LEAs on behalf of the state (Willis et al., 2020).

Finding 10: Most educationally related mental health services are provided by LEAs even though funds to pay for them are allocated to SELPAs. The study team's examination of the use of supplemental AB 602 funding streams led it to also investigate provisions of the state's Educationally Related Mental Health Services (ERMHS) funding, which may be used both for mental health services provided through an IEP and for mental health services provided outside an IEP for students without disabilities. In 2018/19, more than 100,000 students with disabilities, or approximately 14 percent of that student population in California, received mental health services. Such services included, for example, individual counseling, counseling and guidance, social work services, and psychological services through students' IEPs. Many services were supported by the approximately $375 million in ERMHS funding allocated to SELPAs. However, based on CASEMIS services data about the provision of mental health services, it appears that SELPA governing boards elected to have SELPAs provide only a small percentage of the services themselves, directing the bulk of the ERMHS funds to LEAs so they could provide services themselves or pay for services provided by other entities. Eighty-four percent of mental health services for students with disabilities were provided by the student's LEA of residence (i.e., district of service), including traditional school districts (72 percent), charter schools operated by an LEA (6 percent), and charter schools serving as an LEA (6 percent). Of the remaining services, 7 percent were provided by nonpublic providers, and 9 percent were provided by other LEAs or by SELPAs.

Implications. The fact that LEAs provided a large majority of students' educationally related mental health services, paired with the fact that ERMHS funds were made available to pay for mental health services for students without disabilities, suggests that there may be additional opportunities for coordination and possible cost savings at the LEA level between ERMHS and other LEA-level resources.

Finding 11: The cost of providing services differed by California region. The education cost function model included a factor that adjusted for cost differences between geographic regions. Numerous published indices may be used to account for regional cost differences; the research team selected the National Center for Education Statistics (NCES) Comparable Wage Index for Teachers (CWI-FT), which uses the differences in labor cost to establish regional cost differences (NCES, 2018). The NCES CWI-FT is a nationally normed index that uses Census Bureau data sources to adjust for observed differences in real costs between various education communities. Since California's regional cost differences for education are largely attributable to differences in labor costs, this index applies well to the state (see exhibit 9 for the index by county). Introducing the indexed data to the education cost function model confirmed that the documented cost differences correlated to regional differences in the cost of educating both students with disabilities and students without disabilities.

Exhibit 9. Regional cost differences for California in 2018 as measured by the NCES Comparable Wage Index for Teachers.



Source. Data from NCES, 2018/19.

Implications. The potential effects of a regional allocation adjustment are notable; applying such a cost adjustment would have implications for both general education funding and special education funding. Additional analyses related to this finding are included in appendix C.

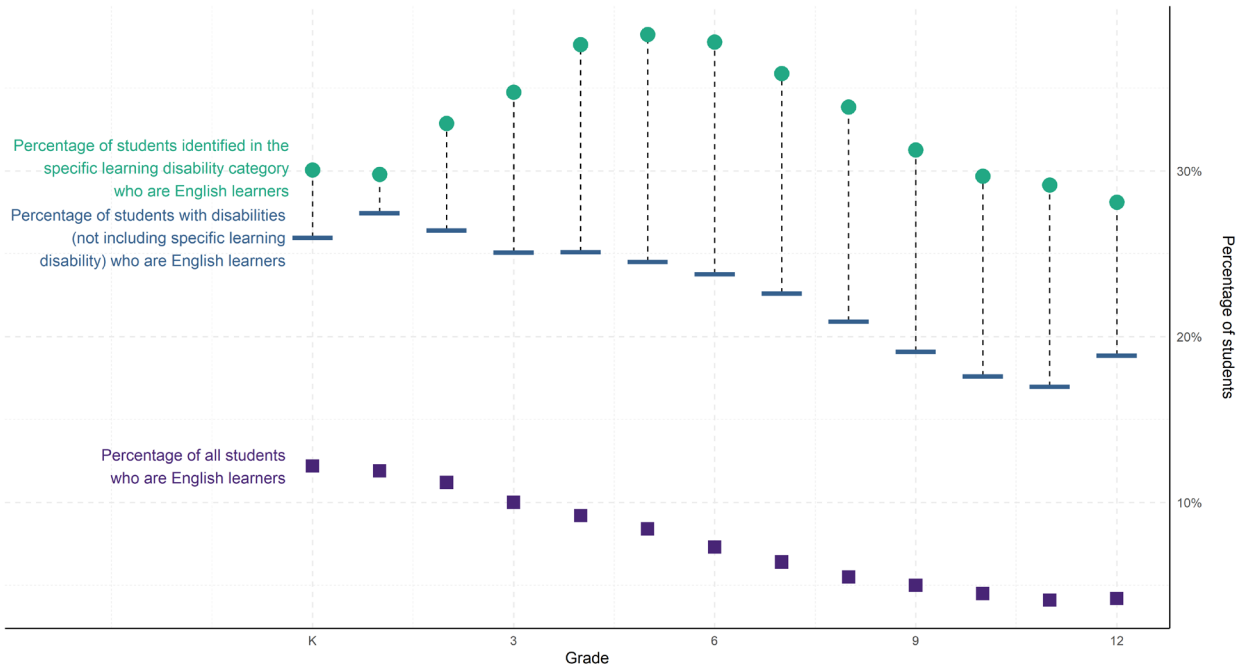
Findings Related to Expected Expenditures

Expected expenditures refers to expectations that are established by policymakers for how funds will be spent, including any rules, regulations, and guidance on how funds should be used and if they may be used only for a specific purpose. The expected expenditures explored in these findings relate to the identification of eligible special education students and to where and by whom special education and related services are provided.

Finding 12: Students who were English learners were disproportionately identified for special education and overidentified for the Specific Learning Disability category compared with all other students with disabilities. Funding to support students who both had disabilities and were English learners was distributed separately, to different agencies (SELPAs for students with disabilities and LEAs for English learners). As reported in part 1 of this study, more than 222,000 English learners with disabilities were enrolled in California public schools over the study years. Although English learners accounted for less than 20 percent of the total student population, they made up nearly 30 percent of students with disabilities (Willis et al., 2020). This present finding in part 2 of the study builds on those data, revealing that although collectively English learners were identified for all disability categories, a disproportionately high number were identified in the Specific Learning Disability category. Conversely, there was under-identification of English learners in other categories, specifically Other Health Impairment, Autism, and Emotional Disturbance.

As illustrated in exhibit 10, for the study years, the disproportionate increase in the identification of English learners as having disabilities was greatest in grades 3–8. That grade span showed a marked increase in the proportion of students with disabilities who were English learners (middle line), compared with the proportion of the general student population who were English learners (bottom line). Furthermore, within grades 3–8, Specific Learning Disability became the most common identification category for English learners, but not for their peers with disabilities who were not English learners. In grade 3, 45 percent of all English learners with disabilities were classified with Specific Learning Disability, compared with 33 percent of students with disabilities who were not English learners. By grade 5, the proportion and difference had grown to 60 percent of all English learners with a disability compared with 42 percent of students with disabilities who were not English learners. The disproportionate number of students who were English learners identified in the Specific Learning Disability category is illustrated by the differences between the top and middle and top and bottom lines in exhibit 10.

Exhibit 10. Proportion of California public school students in general, students eligible for special education, and students identified in in the Specific Learning Disability category who were English learners, by grade.



Source. Data from CASEMIS and CALPADS, 2018/19.

Implications. There was a notable pattern in grades 1–5 of increasing identification of English learners as having disabilities, followed by a marked decrease in identification in grades 6–11. Altogether, the disproportionate identification of English learners as having disabilities — particularly in the Specific Learning Disability, potentially due to the challenges of learning English being mistakenly identified as resulting from a learning disability — suggests the importance of having sufficient funding flexibility and coordinated planning to meet the unique needs of these students without having to categorize them as having a disability.

Finding 13: English learners with disabilities who were also Hispanic and Spanish-speaking were the most likely students in California elementary schools to be found eligible for special education and in the Specific Learning Disability category. Further analyses of special education identification, eligibility determination, and disability category classification patterns revealed that a disproportionate majority of elementary-grade students identified in the category of Specific Learning Disability were Hispanic and that a majority of Hispanic students with a Specific Learning Disability were English learners. Among those students classified in the Specific Learning Disability category who were not Hispanic, most were also not English learners.

Exhibit 11. Students identified in grades K–5 as having a Specific Learning Disability, by English learner status and Hispanic or Non-Hispanic ethnicity, by percentage

Students in Specific Learning Disability Category	Hispanic	Not Hispanic	Total
English Learner	33.3	3.1	36.4
Not English Learner	29.3	34.3	63.6
Total	62.6	37.4	100

Source. Data from CALPADS and CASEMIS, 2016/17 to 2018/19.

Perhaps the most striking observation from the additional analyses described in appendix C was that Hispanic, Spanish-speaking English learners who were identified in kindergarten as having a disability in the Speech Language Impairment category were more likely than their non-English-learner peers in the same disability category to subsequently exit special education. This suggests that there may be a link between English learners' language needs and their identification for special education. For example, it might mean that English learners who received needed language support early in their education, perhaps through eligibility for speech language services in kindergarten, overcame learning barriers related to both learning a language and a disability. It might also mean that those students had been misidentified as having a disability and should not have received special education services. Hispanic, Spanish-speaking English learners who were not identified as needing special education services in kindergarten but were identified as such at a later point were almost always identified in the category of Specific Learning Disability and were less likely to exit special education.

This finding supports the premise of CDE's *2019 California Practitioners' Guide for Educating English Learners With Disabilities* (development of which was required by state law) that English learners are overidentified (and, therefore, sometimes misidentified) for special education. The guide addresses identification-related challenges, including practitioners' difficulty in differentiating between a language learning need and a disability; teachers' lack of skill in teaching language acquisition; and the lack of individualized programs and procedural safeguards for students who are English learners unless they are found eligible for special education. In addition to making suggestions for practitioners, the guide highlights the complex decision-making needed to determine whether a language or academic problem is due to language acquisition issues, disability, or both.

Implications. The complexity of the needs of students who are English learners and the challenges of knowing whether those needs relate to disability, lack of or inadequate instruction, or other factors, combined with evidence from the education cost function model on eligibility patterns, indicate a need for stronger coordination of services for these students. Early and accurate identification of English learners' needs, before students have been identified for special education, is essential. When that identification results in the provision of appropriate, high-quality primary and supplemental instruction, it can generate cost savings if, as a result, students are able to avoid being identified for or can exit special education. Addressing students' learning needs in early childhood or elementary grades (up to grade 3) is itself less costly than providing such services later in students' education journey, and additional savings accrue if, having received this early support, students can then transition away from

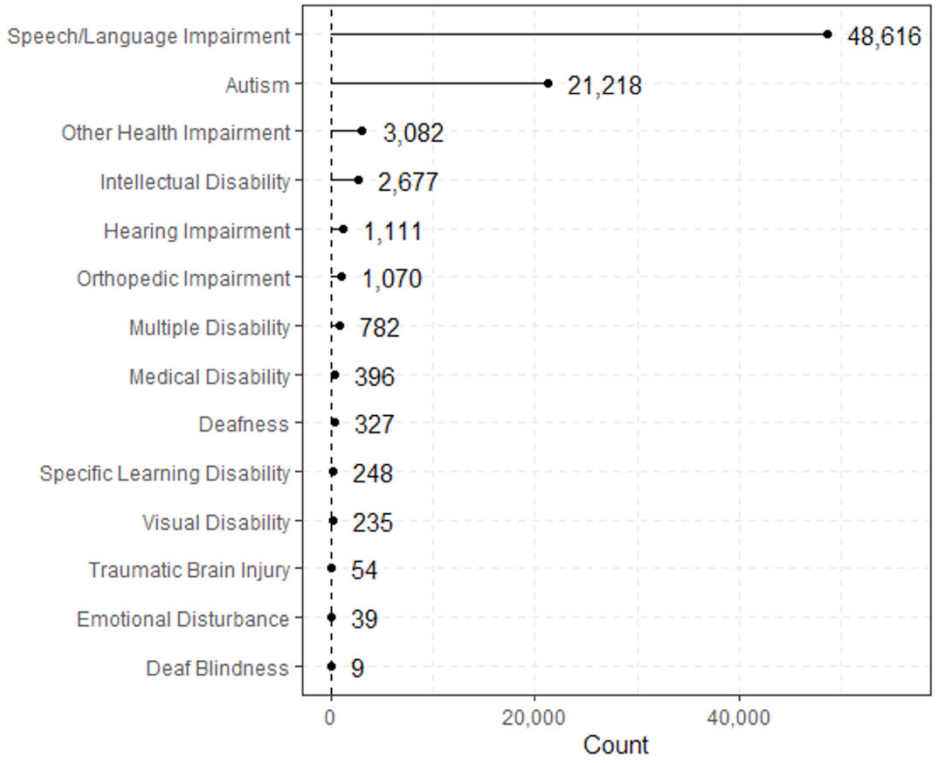
requiring supplementary support — whether through special education and/or English learner support. Thus, it may be a more efficient use of general education resources to provide this population with additional early supports than to wait until they are identified for special education services.

Additional analyses related to English learners with disabilities are provided in appendix C, including an analysis demonstrating that the overidentification of English learners as students with disabilities varies across schools. In some schools and districts, there may be student groups with other factors that make them most likely to be identified for special education if they do not receive additional support. Although English learners with disabilities is the only student group the study examined at this level of detail, the implications of this finding can be applied more broadly, and related considerations for change should not be restricted to English learner students. Understanding the coordinated supports needed for students who are at risk being identified as needing special education services can help policymakers determine where to distribute funding and where special education funding may be unnecessarily spent on students who are misidentified as having disabilities.

Finding 14: A strong body of research establishes that providing preschool special education services in an inclusive setting provides benefits for students with and without disabilities and that effective early childhood education reduces the likelihood of students' identification for special education (Diamond, 2001; Odom et al., 2004; Kwon et al., 2011; Yu et al., 2012). The education cost function model confirmed that costs increase in higher grades, supporting, by extension, the body of research on the effectiveness of both early childhood education and interventions in the early grades (Connor et al., 2013; Garcia & Weiss, 2017; McCoy et al., 2017). This finding supports the state's current prioritization of these investments through the *Master Plan for Early Learning and Care* (Alcalá et al., 2020) and the allocation of funds for inclusive preschool programs (see Authors' Note, p. 4). Targeting programs for earlier grades (e.g., Pre-K–2) could have positive, lasting effects on overall academic performance through high school.

In California, for school year 2018/19, approximately 100,000 students aged 3–5 were enrolled in preschool and identified as having a disability. Of those, the majority were identified as having a Speech Language Impairment, followed by Autism, and then Other Health Impairment. Exhibit 12 shows the frequency counts in each disability category for that population.

Exhibit 12. Count of students with disabilities aged 3–5 in California preschool programs for 2018/19 school year, by disability category.



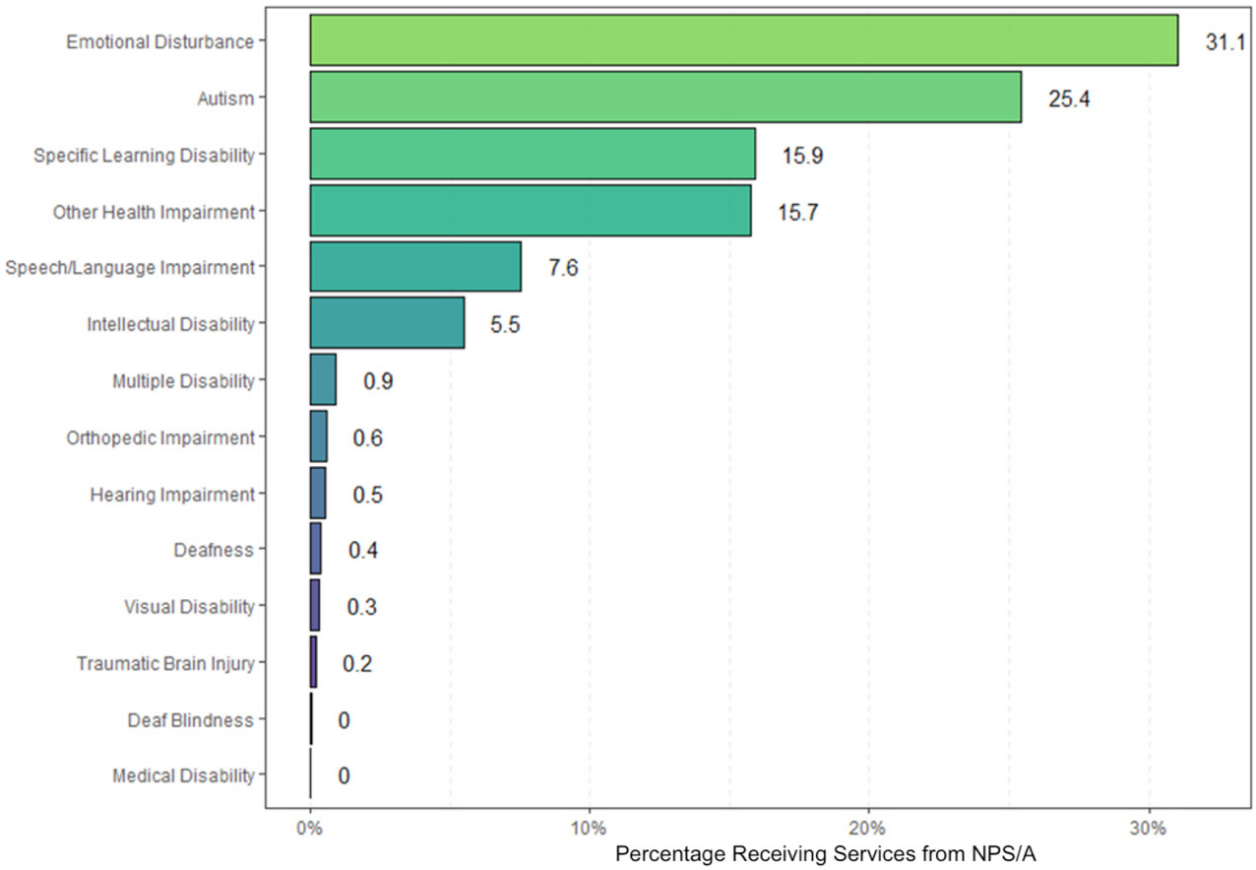
Source. Data from CASEMIS, 2018/19.

Research has also found that students with disabilities who participate in inclusive preschool and kindergarten are more likely to be in inclusive settings later in elementary school, compared with students with disabilities who did not participate in inclusive preschool and kindergarten (Guralnick et al., 2008). Data provided by CDE for a cohort of students followed from preschool to first grade confirmed this phenomenon. Nearly all children with disabilities who were in the general education classroom for at least 80 percent of the day in preschool remained in that setting configuration during first grade, whereas fewer than one third of the children with disabilities who were in the general education setting for 40 to 79 percent of their preschool day moved to spending 80 percent of the day in general education during first grade. A graph demonstrating the movement is included with the supplemental data analyses in appendix C.

Implications. Although the model for this study was focused on grades K–12, the *Master Plan for Early Learning and Care* (Alcalá et al., 2020) explored the significant need for additional LEA and nonprofit infrastructure to provide earlier support through preschool services for young children with exceptional needs. Because California does not provide universal preschool, the current system allows LEAs to use IDEA funds to establish and provide inclusive early childhood settings. Although some potential funds for inclusive preschool (e.g., AB 602, IDEA) are distributed to SELPAs, others are distributed directly to LEAs (e.g., the Inclusive Early Education Expansion Program, recent Special Education Early Intervention grants). This could lead to a lack of coordination, hindering the creation of inclusive settings that intentionally serve students both with and without disabilities.

Finding 15: Nonpublic placements for students with disabilities were more expensive and resulted in students achieving less academic growth compared with their peers with disabilities in public placements. The education cost function model results showed that the cost of implementing a student's IEP in an NPS placement averaged 24 percent more than implementing a student's IEP in any other potential placement. To better understand patterns for NPS services and placements, the study team conducted additional analyses, first looking at which students were placed in NPS settings. The two primary disability categories accounting for the largest proportions of NPS placements were Emotional Disturbance (representing 31 percent of those in NPS settings) and Autism (representing 25 percent of such placements). Accounting for the next most significant proportions were Specific Learning Disability (16 percent) and Other Health Impairment (16 percent). Exhibit 13 displays the proportions of all NPS placements by disability category. In some cases, students in particular disability categories (e.g., Emotional Disturbance, Autism) might have been appropriately placed in an NPS setting because LEAs were not equipped to meet their needs. However, given that peers with similar service profiles and characteristics were served in their LEA, it is possible that many of the 31,467 students with disabilities placed in NPS settings could, instead, have received their special education services from their LEA. Finding 17 further discusses NPS placements for students in high-incidence disability categories, such as Specific Learning Disability and Speech Language Impairment.

Exhibit 13. Proportion of California special education students in NPS placements, by disability category, by percentage.



Source: Data from CASEMIS, 2018/19.

An examination of the services students received in NPS placements showed that 90 percent received specialized academic instruction, 44 percent individual counseling, 43 percent support with speech and language, and 38 percent counseling and guidance — all services that were also available in LEA environments.

The use of expensive NPS placements is especially concerning given that additional analyses showed lower academic growth for students in NPS settings versus public placements. Using a matched sample to compare performance, the results showed that, on average, students in NPS placements were performing lower than students in public placements when matched on gender, age, grade, primary disability category, early intervention status, English learner status, economically disadvantaged status, race, and proportion of attendance relative to expected days. This trend was generally consistent across the study years, with a consistent difference of 5 to 6 percentage points between NPS and public placements through the 2016/17, 2017/18, and 2018/19 school years.

Implications. The finding indicates that it costs more to serve students in NPS settings than in public settings and that compared with public settings, NPS settings yield lower academic achievement for students. This suggests that whenever a public setting can meet a student's needs, it should be the preferred choice.

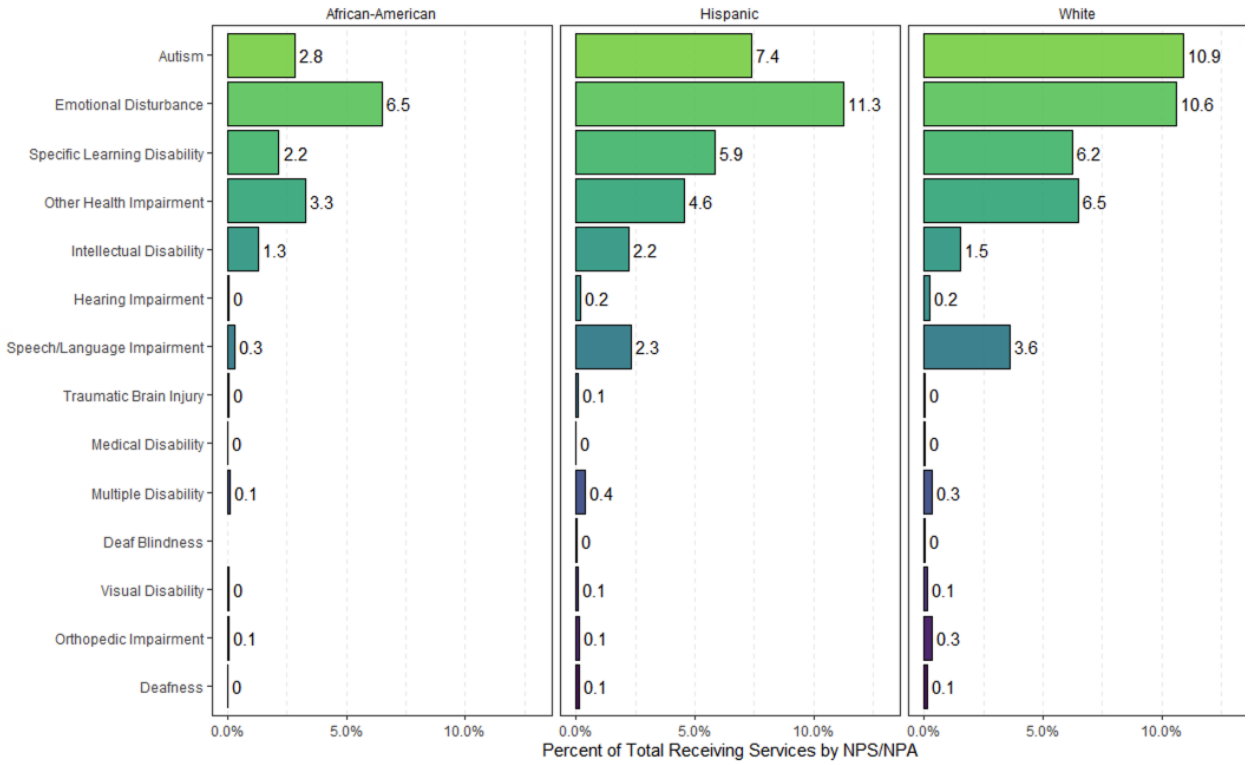
Finding 16: Only LEAs whose students received their education in nonpublic placements benefited from California's extraordinary cost pools; these LEAs benefited from the pools even if those students could have been served better or as effectively in a less restrictive setting. Rather than incentivizing inclusive practices for students with disabilities, per state priorities, the state has perhaps been inadvertently incentivizing more restrictive settings through its regulations for current extraordinary cost pools, together with its provision of additional funds for out-of-home placements. These funds have only been available to reimburse LEAs or SELPAs for costs associated with placement in NPS settings, which represent the most restrictive settings as defined by IDEA.

Implications. Nonpublic placements cost more and had lower outcomes for students with disabilities, yet the statewide cost pools and many SELPA high-cost pools have used placement in an NPS as a criterion for eligibility to access funds.

Finding 17: White students with disabilities were more likely than their peers in other racial/ethnic groups to be placed in an NPS setting. Compared with students of other races or ethnicities, White students were more likely to be placed in NPS settings, including students in high-incidence disability categories that typically do not require intensive services or restrictive settings, such as Speech Language Impairment and Specific Learning Disability. These patterns raised questions about whether some NPS placement decisions have had less to do with student need and more to do, for example, with parent advocacy skills. However, data are not available about which placements were made as part of settlement agreements or other dispute resolution decisions.

Exhibit 14 shows which proportion of all students served in NPS settings were in each disability category, by the largest three racial/ethnicity groups served in California's public schools. The percentages are referring to the proportions of all students with disabilities in NPS settings. It shows, for example, that in the primary disability category of Speech Language Impairment, 3.6 percent (representing more than 1,100 California students with disabilities in NPS settings) were White and that in the Autism category, 7.4 percent were Hispanic.

Exhibit 14. Percentages of California students with disabilities served in NPS settings, by three race/ethnicity groups and primary disability category, for 2018/19.



Source: Data from CASEMIS, 2018/19.

The disproportionate representation of White students in costly NPS placements is not unique to California. A recent survey conducted by The Teacher Project of state departments of education showed that White students were significantly overrepresented in five of the seven states reporting the largest enrollment of students in NPS placements (Elsen-Rooney, 2020). Survey results showed that many NPS placements were associated with wealth; in California and Massachusetts, economically disadvantaged students with disabilities were half as likely to receive a private placement as their peers who were not identified as economically disadvantaged. This may be linked to the advocacy of wealthier parents (who are more likely to be White) for their children to receive specialized services, including private placements; Kalyanpur et al. (2010) outline a number of cultural and socioeconomic factors that may lead to greater levels of advocacy for specific services and placements among wealthier White parents compared with parents from different backgrounds.

Implications. This finding reinforces the need to ensure that placement decisions are made based on student needs and are not incentivized by funding or inequitably influenced by parent advocacy. Other findings also establish the need for additional studies on services and placement patterns, including at the local level, to inform future state guidance on placement-related decision-making.

Considerations for Improving California's Special Education Funding System

Based on findings from both the descriptive (Willis et al., 2020) and the analytic parts of this study of California's state special education funding system, this section offers considerations for how the current funding system might be changed. These changes would accomplish the dual purposes of responding to the unique characteristics and circumstances of California students and advancing the state's priorities for special education — all while ensuring that the system reflects best practices from current special education finance research.

The state administration, including the California Department of Finance and the California State Board of Education, along with the California legislature and the California Department of Education, has actively engaged in multiple efforts over the last several years to improve education and outcomes for students with disabilities. As reported in the descriptive report for this study (pp. 19–20), state leaders from CDE and SBE envisioned a funding system that would:

- ensure that funds reach students with the greatest need, including those who, in addition to qualifying for special education, qualify for other services or supports (e.g., those who are English learners and/or are economically disadvantaged);
- prioritize appropriate early intervention and identification;
- promote inclusive practices, including increased access to inclusive preschool and the use of inclusive high-quality, grade-level instruction; and
- support LEAs to effectively serve students with low-incidence disabilities as well as students who are placed in high-cost programs, including home, hospital, nonpublic school, and out-of-district placements.

In this report, considerations are organized into clusters based on the aforementioned priorities, with the first and fourth priorities combined into one area: ensuring funds reach students with the greatest needs. Each consideration is also classified, using icons, according to which aspect(s) of the funding formula — allocation, distribution, and expected expenditures — such a change would affect. Considerations are also described as being intended for long term, near term, or immediate implementation.

Long term considerations are derived from the findings with the strongest evidence that the proposed changes could help the state meet its special education priorities. A defining characteristic of these considerations is that their full and collective implementation would result in a substantially different special education funding formula than the one California currently uses. Based on the study findings, the study team envisions a simplified and more flexible alternative funding system in which all state funding — new and existing — would be allocated and distributed through the combination of two funding streams: (1) a base state special education funding stream that would be allocated according to a count of students with disabilities in conjunction with a formula that differentiates by the three disability cost categories of high-, mid-, and low-cost; and (2) a single, sufficiently funded extraordinary cost pool. This alternative funding system and its potential impacts are described in detail in the What Change Would Look Like section beginning on page 55.

The study team also provides immediate and near term considerations — changes that could be made more quickly and would allow incremental movement toward the envisioned alternative system. Near term considerations are those that could be implemented within the next one to three years; they may require additional one-time funding and/or increases in ongoing funds, but not as much as would be required in the related long term considerations. Immediate considerations are those whose implementation would require no — or minimal — additional funds and could take place as soon as the upcoming school year.

The changes posed in the immediate and near term considerations could either stand alone, improving the system to some degree without any larger changes being subsequently made, such as those posed in the long term considerations, or they could serve as bridges or building blocks to longer-term changes. Because long term considerations are envisioned as necessary for making lasting improvements, a long term consideration is presented first in each cluster of related considerations that follows. Immediate considerations are presented second in each cluster because they propose actions that could most easily be taken. The near term considerations, which often are intended to build upon immediate actions, are presented third. Although many of the consideration clusters relate to and could build upon each other if implemented, the long, immediate, and near term considerations are not interdependent unless explicitly noted.

Notably, many of the considerations call for increased flexibility in the use of state funds. Funding restrictions are generally established with the intent of preserving funding for specific priorities and/or student populations. But IDEA already protects students with disabilities through numerous federal mandates. For example, regardless of any changes a state might make to its special education funding system, it would still be obligated under federal law to provide FAPE for students with disabilities and, similarly, each LEA would still be obligated under the federal maintenance of effort (MOE) requirement to maintain or increase its year-to-year spending for providing special education and related services. Thus, there is no clear benefit to also maintaining all current restrictions on state funding because regardless of the laws on how LEAs can spend funds, the laws on what LEAs must provide to students do not change. In fact, increasing flexibility for the use of state funds may support the kind of coordination of resources and services for students with disabilities that is needed to promote the state priorities of equity, inclusion, and early intervention that ultimately improve how and where these students receive the services and programs to which they are entitled.

Identification of Considerations

The considerations are identified alphanumerically to make it easier for the reader to track multiple mentions of a consideration within the section. Alphanumeric identifiers are used rather than stand-alone numbers in order to distinguish them from the numbered findings, with which there is not always a one-to-one relationship. Each long term consideration is identified with a capital letter (e.g., A), and each related immediate or near term consideration is identified with that same letter and an appended number (e.g., A1, A2). The alphanumeric identifiers do not denote priority, interdependency, or any other relationship between one consideration and another.

Note that all of the following considerations are just that — actions for the state to consider *as it revisits and looks to improve its special education funding system. Although the considerations are written as imperatives, they are not intended to be recommendations. Rather, they articulate possible actions that state leaders could take if, after due deliberation, the action seemed right and reasonable in the California context.*

Stakeholder Feedback

To provide additional context as the state reviews the considerations, the study team conducted a series of sessions with a cross-section of education groups and leaders to seek their feedback on the considerations. After presenting the findings and considerations from this report, the study team asked stakeholders to identify what they saw as potential benefits and drawbacks of each consideration. Highlights of that feedback follow each consideration cluster below unless, as for some considerations, there was no feedback.

Generally speaking, stakeholders tended to focus on how a proposed change would affect the type of organization they represented (e.g., LEA, SELPA), rather than on how the change might affect the system as a whole or outcomes for students with disabilities. This focus was also evident in stakeholder requests for funding simulations that would allow them to better understand how funding amounts currently received by the entity they represented would be impacted by any proposed change.

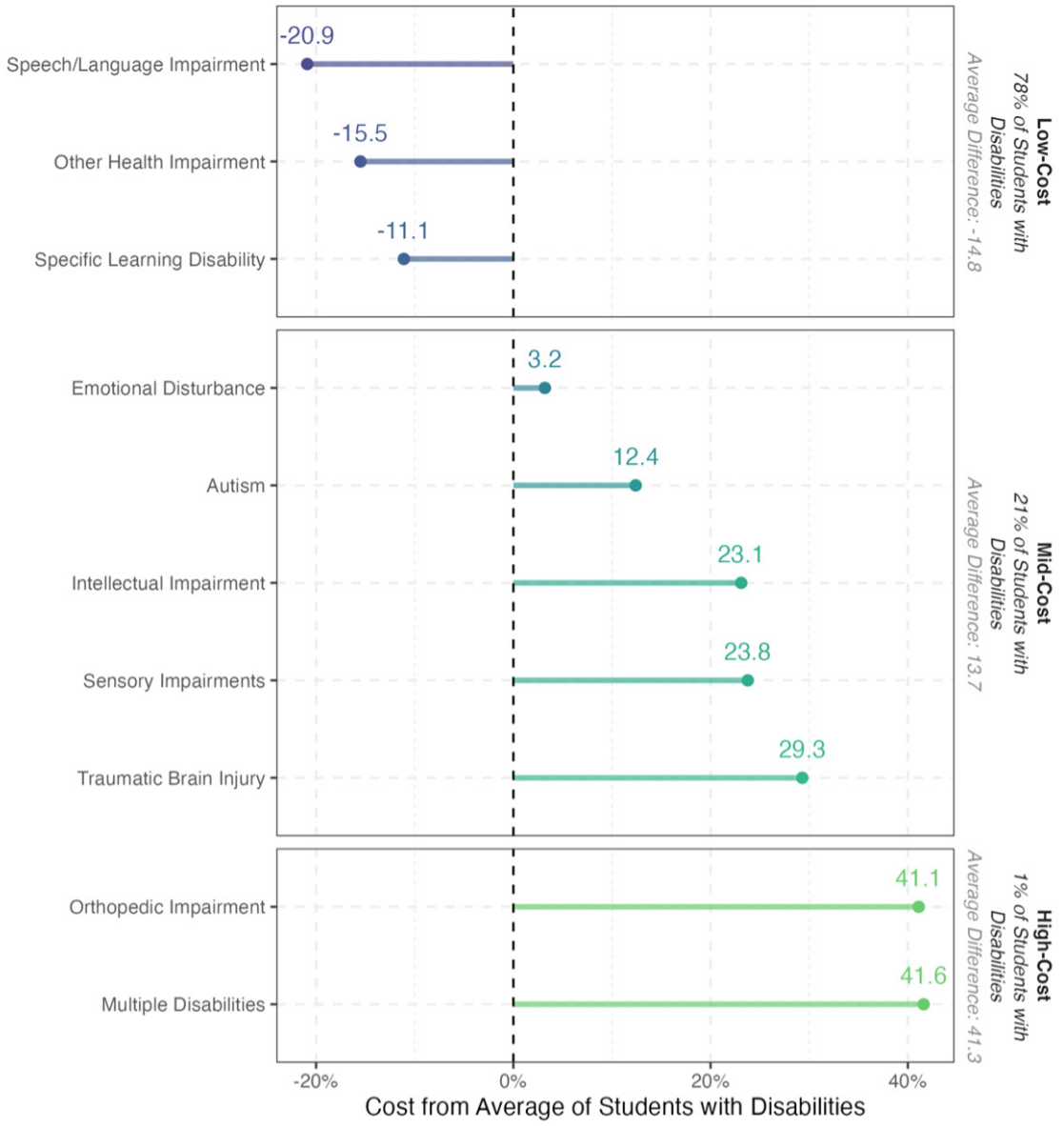
Considerations Related to Ensuring Funds Reach the Students With the Greatest Needs

A. Long term: Allocate base state special education funding using the count of students with disabilities from the prior year, weighted by the proportion of students in each of three primary disability category cost groupings (i.e., high, mid, and low) over the prior three years. To more closely align the allocation to the actual costs of programs that will promote academic achievement for students with disabilities, allocate state special education funding based on the actual count of students with disabilities rather than on a census count. The education cost function model showed differences in cost to achieve the same academic growth for students in different disability categories (exhibit 3). All ongoing allocations could be differentiated to ensure that each SELPA's or LEA's level of special education resources more closely align with the differing needs of its students by weighting each entity's allocation based on the proportion of its students in each of the three cost groupings.

To explore possible ways of mitigating the limitations on differentiating funding by disability category (discussed in finding 4) and to create more stable allocations, the research team examined statewide data trends for students with disabilities, including the LRE and secondary disability category analyses provided in appendix C. The study team explored multiple grouping strategies and ultimately grouped disability categories based on cost distinction — that is, for which categories were additional costs below, nearer to, and furthest from the average per-student cost for all students with disabilities. To address outliers and minimize differences based on small groups of students, the study team combined Deafness, Hearing Impairment, Deaf-Blindness, and Visual Impairment into one category — Sensory Impairments — in the mid-cost grouping. Even without combining them, three of those separate categories would have been in the mid-cost grouping (see exhibit 3 in finding 4). In addition, the team combined Medical Disability, another low-incidence category within which the education cost function model produced a very high-cost variation based on its small number of students, with Multiple Disabilities, also in the high-cost grouping. The examination of student-level data found that all of the approximately 100 students in the Medical Disability category had multiple academic and other needs, supporting that combination.

This resulted in three cost groupings: low cost, mid cost, and high cost (exhibit 15). For the low-cost grouping, the average program cost per student was 14.8 percent *below* the average for all students with disabilities. For the mid-cost grouping, the average program cost per student was 14.7 percent above the average for all students with disabilities. And for the high-cost grouping, the average program cost per student was 41.3 percent above the average cost for all students with disabilities.

Exhibit 15. Percentage difference in cost from the average additional cost for programs for all students with disabilities, by disability category and cost groupings.



Source. Authors' calculations from the education cost function. Note that Sensory Impairments includes Visual Impairment, Hearing Impairment, Deafness, and Deaf-Blindness. The Multiple Disabilities category includes Medical Disability.

Weights to be used in an allocation formula for each cost grouping were calculated using the education cost function model, based on the average cost to achieve equivalent academic growth for students in each cost grouping, as described in finding 4.

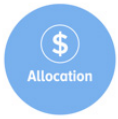
Exhibit 16. Weights to be applied to the proportions of students identified in each disability category, by cost grouping, in each SELPA or LEA.

Cost grouping	Disability categories	Applied weight for each cost grouping if 1.00 = average per-student allocation for students with disabilities
Low cost	Other Health Impairment Speech Language Impairment Specific Learning Disability	0.842
Mid cost	Autism Emotional Disturbance Intellectual Impairment Sensory Impairment Traumatic Brain Injury	1.184
High cost	Orthopedic Impairment Medical Disability Multiple Disabilities	1.421

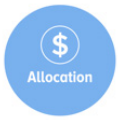
Source. Authors' calculations from the education cost function.

The study team conducted numerous lines of inquiry into low-incidence, high-cost disability categories for students. However, some critical components of resources to support these students, such as the state special schools, which were not included in this study, need to be considered in combination with LEA spending. Prior to implementing the proposed weights, the state should further study the proposed weights as they would apply to the disability categories that are also served by state special schools.

One limitation of this investigation was lack of access to a more robust set of student-level IEP data. Such information has been used in previous research (Willis et al., 2019a) to create an alternative and more precise outcome measure for students with disabilities, so as to further refine the education cost function and associated funding weights. Having better data on IEPs and the range of services students received through them would have supported the development of more precise cost estimates. This study's suggested weights should be considered in light of this limitation.



A1. Near term. Allocate base state special education funding using the count of students with disabilities. There are limitations to the use of disability categories as a proxy for student need and program cost. So, as an interim step, allocate funds using a statewide average per-student rate calculated by applying the current per-student rates to the prior year's count of students with disabilities.



A2. Near term. Develop a more precise measure of cost and need using additional IEP data. A more precise measure by disability category or other groupings, specific to California, would be beneficial in future decisions about allocation of resources on the basis of student characteristics, assuming subsequent investigations were to have access to more robust data.

If the state opts not to use the provided weights, it could collect additional data (e.g., on the intensity of services provided to students, on students' nonacademic needs, on alternate outcomes related to the IEP) to inform weights that are not dependent on disability category, but more directly reflect student need.

Benefits and drawbacks of these considerations, as suggested by stakeholders in the California special education system

Considerations A, A1, and A2 (allocate funding based on count of students with disabilities and disability category cost groupings): Despite the study team's presentation of data indicating that census-based funding does not appear to have any long term effect on special education identification rates, many stakeholders expressed concern that basing funding on a count of students with disabilities could incentivize overidentification, although no such evidence was presented to substantiate this concern. In a similar vein, some LEA leaders expressed concern that basing funding on a count of students with disabilities could disincentivize early intervention practices, such as the use of a multi tiered system of support (MTSS), which have the potential to reduce the number of students identified for special education. It is important to consider that a reduction in the number of students identified for special education is an allowable exception to the federal MOE requirement. This means that although an LEA would receive less in state funds, it also would have the flexibility to decrease the amount of local and/or state general funds that it spends on special education.

A few stakeholders acknowledged that it would be beneficial to have more funding for students with high-cost disabilities. However, several stakeholders expressed concerns about the groupings of disability categories, with some suggesting that the cost categories were flawed (e.g., some asked why Emotional Disturbance and Autism were only in the mid-range for cost). Stakeholders also suggested that using the weighted categories could incentivize identification for more costly disabilities. Several stakeholders cited the LAO's 2018 report on the history of special education funding, which indicated that the previous funding formula (J-50) incentivized LEAs to find students eligible for disability categories that received more funding. This concern was expressed despite the fact that the J-50 formula design was different from what is proposed in this consideration. Other stakeholders expressed concerns that a student's disability category does not necessarily define student need, that parents will expect more services if their students fall into a higher-cost funding category, and that because assignment to disability categories is subjective, the categories should not influence funding.

Some stakeholders also noted that for various reasons, a student's main disability might be listed as their secondary rather than their primary disability. Some of the reasons mentioned were to appease parents and the availability of teachers who are credentialed to address a given type of disability. They expressed worry that if funding were based on a student's primary disability category, funding decisions would not account for the additional needs potentially signified by the secondary category. The evidence provided in the discussion of finding 4 implications and in appendix C on the use of the secondary disability category demonstrates these concerns are unfounded, indicating the need for an education campaign about these topics as part of any revised funding formula.

B. Long term: Establish and sufficiently fund a single state-level extraordinary cost pool to provide funds for the most expensive IEPs, even when such programs are provided within an LEA (rather than in a nonpublic placement). Establish a single new extraordinary cost pool that consolidates funds from two separate existing pools (i.e., the Extraordinary Cost Pool for NPS/LCI and the Necessary Small SELPAs' Extraordinary Cost Pool for Mental Health Services Funding) and from two additional AB 602 funding streams (i.e., Low-Incidence Disabilities and Out-of-Home Care). Once the pool is established, augment its funding as new state monies become available.

Based on the study team's analyses, the cost pool should be funded with at least $348 million, with the state augmenting that initial funding as student need grows. The initial $348 million amount was calculated based on the median per-student amount for high-cost pools from other states across the United States (see Willis et al. [2020] for more information on the sizes of the high-cost pools in other states). The median value across states was $452 per student. When the median value is applied to the more than 725,000 students with disabilities in California, it adds up to approximately $348 million. Combining the existing pools and streams identified above would alone result in an extraordinary cost pool of $267 million. Bringing in Regionalized Services and Program Specialist (RS/PS) funds would raise the pool total to approximately $360 million, exceeding the median per-student amount from other states.

Related Findings:

Finding 1: There was a positive correlation between cost and academic growth.

Finding 4: Cost varied by disability category.

Finding 6: Cost varied based on LEA identification rates.

Findings 8 & 9: SELPAs and LEAs created economies of scale.

Finding 15: Nonpublic placements for students with disabilities were more expensive and yielded less academic growth for students than public placements.

Finding 16: Extraordinary cost pool funds were restricted to NPS placements.

Finding 17: White students were more likely to be served in NPS placements.

Data presented in both the earlier descriptive report and this report raise concerns about the size, access to, and administration of the current extraordinary cost pools. In particular, one ongoing challenge has been that funds available through the state and SELPA extraordinary cost pools for NPS placements are *not* available for an LEA or a SELPA that provides similar services itself, at the same or a lower cost. As stated in the Study Results and Their Implications section of this report, the current funding policy may incentivize LEAs and SELPAs to place students in an NPS setting. Yet, in addition to being the most restrictive placements as defined by IDEA, NPS settings are less cost-effective than other placements (finding 15), yielding less academic growth for students than public placements. It's possible that LEAs could provide equally appropriate and more cost-effective services to a portion of the 31,467 students with disabilities now receiving services in an NPS setting, and a change in funding incentives may encourage them to do so. Many of these students need the types of services already commonly provided by LEAs (e.g., speech and language services), and having them served directly by their LEA or SELPA would likely produce multiple benefits, including cost reductions, higher achievement, and students' spending increased time in inclusive general education settings.

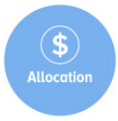
To remove the potential incentive for LEAs and SELPAs to make NPS placements, these entities would need to be able to request reimbursement from the new pool for public placements, with the elimination of current restrictions that allow reimbursements only for NPS, including LCI, placements. In addition, if the new pool were not sufficiently funded to reimburse all individual student program costs above three times the amount allocated for the high-cost grouping of disability categories, then the existing program cost threshold for reimbursement eligibility could be incrementally decreased as funding allows. (The cost threshold for 2019/20 was $81,627.73 per student, meaning there was no reimbursement until the annual cost of a student's program exceeded that amount, at which point the cost pool could reimburse the excess beyond that threshold.) Additional detail on this issue is provided under consideration B1.

In addition, the requirements for accessing the high-cost pool should reflect the recommendations of the 2021 workgroup that examined the need to update the special education Out-of-Home Care formula (Petek, 2021). If the Out-of-Home Care funds were included in the high-cost pool, the state could reimburse LEAs at a higher rate, based on an adjusted cost threshold, for students with disabilities in foster care and for students who need short-term congregate care placements. A Child and Adolescent Needs and Strengths based formula that objectively identified the extent of student needs could be an asset for students in these circumstances and for all students in need of services that require high-cost pool funding.

The state could also consider reimbursing costs for smaller LEAs or SELPAs once a student's costs meet an adjusted cost threshold based on the size of the LEA. For example, it could authorize the use of a sliding threshold for reimbursement eligibility that would take into account the size of the LEA or SELPA and its relative opportunities to create economies of scale or, alternatively, it could establish a reimbursement threshold that was contingent upon the size or budget of the individual LEA.

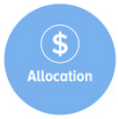
As discussed in the Study Results and Their Implications section, LEAs and SELPAs can both create economies of scale. To encourage LEAs to create relationships that allow them to meet student needs more cost efficiently by attaining program enrollment sizes associated with maximizing economies of scale, allow multiple LEAs to apply as a consortium for reimbursement of shared program expenses — including administrative expenses — from the extraordinary cost pool when individual student program cost thresholds are met. Eventually, the state could transition RS/PS funds to the increased extraordinary cost pool, as these funds are intended to support the administration of programs serving students from multiple LEAs.

B1. Immediate: Combine the Extraordinary Cost Pool for NPS/LCI with the Necessary Small SELPAs Mental Health Service Extraordinary Cost Pool and revise extraordinary cost pool eligibility rules to provide funding for LEAs that serve students needing out-of-home placements in their local community. Remove current restrictions that limit the use of these funds to reimbursing NPS placements or special education and related services for student(s) residing in LCIs. Instead, allow reimbursement for students who receive services within their LEA of residence or a neighboring LEA (i.e., services that are not provided in an NPS setting). In this case, eligibility would be based only on the per-student program cost threshold (e.g., for 2019/20, the threshold was $81,627.73) and not on whether the placement was public or private. Consider a threshold for small SELPAs or LEAs that is lower than the standard program cost threshold (e.g., 1 percent of the LEA's or SELPA's total AB 602 apportionment), but in all cases, continue to reimburse only the difference between the established threshold and the actual cost of a student's program.



B2. Immediate: In coordination with the LAO workgroup's recommendations for the Out-of-Home Care program and funding, merge this funding stream with either the existing or a new extraordinary cost pool and create exceptions, such as lower thresholds or higher reimbursement rates, for students in foster care and for short-term congregate care. Currently, reimbursement from this particular fund is based on the number of beds available within an LEA or a SELPA, but future reimbursement rules could be adjusted to reflect the needs of students, consistent with the recommendations from the Out-of-Home Care workgroup. Consolidating the funds into the proposed new extraordinary cost pool instead would make them available to a larger number of LEAs and SELPAs that may currently be paying for those placements outside their geographic boundaries. Requiring a similar plan for returning students to the LRE could also eliminate the unintended incentive for making placements in out-of-home settings — mostly NPS settings — by, instead, reimbursing for appropriate programs that are implemented within an LEA or a SELPA and do not require placement outside a student's home.

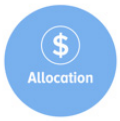
B3. Immediate: Broaden the definition of "low incidence" disabilities and, thus, access to Low-Incidence Disabilities funds. Expand the low-incidence disabilities, as defined in California Education Code Section 56026.5, currently, "hearing impairments, vision impairments, severe orthopedic impairments, or any combination thereof," to also include students classified in Medical Disability and Multiple Disabilities,. Because shifting to a weighted formula (as called for in consideration A) would take time, this interim step could more quickly provide greater access to funding for students who require high-cost programs.



B4. Near term: Transition Low-Incidence Disabilities funds to the existing or new extraordinary cost pool. If the state adopted a weighted special education formula based on disability category, it would result in additional funds being allocated for students with greater needs (e.g., students with low-incidence disabilities who are now in the high-cost category grouping), which means that supplemental funding streams to provide additional resources for those students would no longer be necessary. Thus, the state could collapse the Low-Incidence Disabilities funding stream into the extraordinary cost pool, thereby simplifying the current funding formula.

B5. Near term, using one-time funding: Study the current use of all supplemental AB 602 funds for NPS placements and study mechanisms for LEAs to provide similar supports and services in more inclusive settings. As explored in detail in finding 16, California's current extraordinary cost pools, together with additional funds from the Out-of-Home placements funding stream, have the potential to inadvertently incentivize placement in more-restrictive settings. This is because these funds are only available to reimburse costs associated with placing students in NPS settings. Not only are such settings the most restrictive, as defined by IDEA, but this study found them to be the costliest while resulting in poorer academic outcomes for students (finding 15). Further exploration of this placement option is needed, including understanding the factors that might drive such placement decisions, such as parent advocacy, wealth, and race, as described in finding 17.

In addition, the state might want to study which services currently available in NPS settings could also be provided in a public setting, with the study seeking to determine the circumstances in which those services would be more cost efficient and better for the student's achievement if provided in a public setting.



B6. Near term, using ongoing funding: Continue to increase extraordinary cost pool funding and, when possible, decrease the program cost threshold for reimbursement eligibility while extending the "immediate consideration" change of no longer limiting reimbursement to students placed in NPS settings. The state could revise rules to provide a higher level of reimbursement for LEAs that serve students in a public setting in their local community. For additional details on this consideration, please see consideration B.

Benefits and drawbacks of these considerations, as suggested by stakeholders in the California special education system

Consideration B (establish a single, sufficiently funded extraordinary cost pool with no requirement for an NPS placement): There was widespread support for increasing the size of the extraordinary cost pool and lowering the threshold for accessing these funds. The primary concern expressed was whether this pool would be sufficiently funded.

Consideration B1 (combine the Extraordinary Cost Pool for NPS/LCI with the Necessary Small SELPAs Mental Health Service Extraordinary Cost Pool and remove restrictions limiting reimbursement to NPS placements): Opinions were mixed as to whether it would be beneficial or detrimental to combine the two cost pools. The main concern was that it would merely move around what many stakeholders already consider to be insufficient funding. However, there was substantial support for removing the requirement that only NPS placements can be reimbursed. One stakeholder offered strong support for this consideration as long as there were parameters and requirements for how per-student cost was calculated, the threshold for accessing the extraordinary cost pool remained high, and documentation was standardized to ensure comparability across LEAs. Some other stakeholders expressed skepticism that the current funding formula incentivizes NPS placements. For example, some noted that because it is labor intensive to apply for cost pool reimbursement and the dollar amounts of reimbursements are relatively low, it is hardly worth applying for them; these stakeholders felt that parent advocacy played a much larger role in determining such placements.

Consideration B5 (conduct further study of trends around NPS placements): Although only a few stakeholders commented on this consideration, those who did generally expressed support for studying these placements. A study could help the state understand the degree to which, if at all, tying the use of extraordinary cost pool funds to this type of placement incentivizes such placements, a question raised by stakeholders.

Considerations Related to Prioritizing Appropriate Early Intervention and Identification

C. Long term: Use one-time and ongoing funds to invest in preparation of special education personnel for early childhood and K-12. As in IDEA, include funds to universities and LEAs for pre- and in-service preparation of an expert special education workforce in annual special education allocations. Such expenditures would be consistent with the body of research cited in finding 14 and would reflect state priorities by allowing the development and hiring of additional qualified staff. Given the state's investments in early learning, creating similar investments for preparing personnel to serve students with disabilities and students at risk for being identified as needing special education would increase the likelihood that the state's early learning investments will result in improved outcomes for students with disabilities.

Related Findings:

Finding 3: Cost increases for combinations of EL, disability, and economic status.

Finding 4: Cost varies by disability category.

Finding 12: EL students are disproportionately identified for special education and the Specific Learning Disability category.

Finding 13: Hispanic, Spanish-speaking EL students are most likely to be identified for special education.

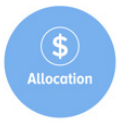
Finding 14: Effective preschool reduces the likelihood of identification for special education.

C1. Immediate: Continue investments in service scholarships, classified staff supports, and teacher residencies for preparing transitional kindergarten (TK)-12 special education teachers to stem the teacher shortage, and include early childhood professionals in these programs.

C2. Immediate: Through the California Commission on Teacher Credentialing (CTC), invest in developing and expanding programs for the preparation and credentialing of special education teachers in early childhood and TK-12 to meet the state's new credentialing requirements. Although not a key finding, the education cost function showed that one factor that increased LEAs' efficiency in creating academic growth for their students was related to their proximity to an institute of higher education with a personnel preparation program.

C3. Immediate: Allow the state's current Low-Incidence Disabilities funds to be used for inclusive preschool programs that include students with low-incidence disabilities, other students with disabilities, and students without disabilities. Allow these funds to cover the costs of including peers without disabilities in the same preschool classrooms as those with disabilities. In doing so, the state could require a match from other local, state, or federal funds, such as from the state's preschool program or other preschool subsidy programs, for costs that are not specific to students with low-incidence disabilities.

C4. Immediate: Build the expertise of existing CDE special education and federal program staff to provide LEAs with guidance on allowable braiding and blending funding strategies, incidental benefit, and the allowability of using special education funds, including AB 602 base funds and Low-Incidence Disabilities funds, to support inclusive preschools. The state could continue to provide and increase allocations for professional learning and provide time-limited seed money for initial investment in LEAs' establishing ongoing systems and knowledge on allowable braiding and blending funding strategies, incidental benefit, and the allowability of using special education funds to support inclusive preschools.



C5. Near term, using one-time or ongoing funding: Provide competitive time-limited (e.g., one to two years) grants to LEAs to provide seed money for adopting best practices for early-grade and preschool personnel preparation, inclusive preschool environments, and effective core instruction (beyond preschool) to reduce misidentification for special education. These expenditures would reflect the priorities of the state and also would provide staff to support the other long term considerations. Projects and best practices could be maintained over time with local funding.

Benefits and drawbacks of these considerations, as suggested by stakeholders in the California special education system

Considerations C, C1, C2 (use one-time and ongoing funds to invest preparation of special education personnel): All stakeholders who responded to this consideration voiced support for it. Stakeholders agreed that funding for teacher preparation and early childhood education is sorely needed, and they noted that such investments are widely known to improve outcomes for students. However, many stakeholders cautioned against using one-time funds because without an ongoing commitment of state funding, LEAs would be unlikely to build and retain quality programs for recruiting and retaining high quality personnel.

Consideration C3 (allow Low-Incidence Disabilities funds to be used for inclusive preschool programs for all students): Stakeholders' opinions on this consideration were mixed. The flexibility and the focus on early identification were seen as beneficial, but stakeholders noted that current funding is insufficient to serve the intended population. They expressed concern that if this consideration were adopted, services for low-incidence disabilities could be jeopardized — or that parents would perceive such to be the case.

Consideration C4 (build CDE staff expertise to provide LEAs with guidance on allowable braiding and blending funding strategies, incidental benefit, and the allowability of using special education funds to support inclusive preschools): There was general agreement that practitioners need guidance on funding strategies for coordinated interventions. Some stakeholders suggested that some other technical assistance providers may also be well suited to provide assistance on these topics, so this consideration should not be limited to CDE. A few stakeholders expressed concern about using special education funds for inclusive preschools given that funding is already insufficient to meet the needs identified in students' IEPs.

Consideration C5 (provide competitive grants to LEAs to provide seed money for best practices for early childhood education and early grade personnel preparation, inclusive preschool environments, and effective core instruction): Although stakeholders supported the adoption of best practices, they expressed concerns that if the seed money is provided through a competitive grant process, larger LEAs would have an advantage over smaller LEAs, as larger LEAs have greater capacity to apply for grants.

Considerations Related to Promoting Inclusive Practices

D. Long term: Transition from distributing state special education funds exclusively to SELPAs to distributing them to LEAs, which can then, at their discretion, provide funds to a regional entity (e.g., COEs, SELPAs) for regional services. Special education programs, supported in part by AB 602 funds, are intended to ensure that students with disabilities gain access to and make progress in the general education curriculum. Because most students with disabilities spend most of their school day in general education programs, they could benefit from coordination of services between general and special education, which could be optimized by distribution of AB 602 funds directly to LEAs, allowing LEA leaders to make decisions about how best to use the funds for coordination purposes.

Related Findings:

Finding 2: The additional cost of programs for students with disabilities was at least 50.5 percent more.

Finding 4: Cost varied by disability category.

Finding 5: The total cost of programs for students with disabilities was approximately $28,000 per student.

Findings 8 & 9: SELPAs and LEAs created economies of scale.

Finding 10: Most mental health services were provided by LEAs.

Finding 11: Cost varied by region.

Finding 12: EL students were disproportionately identified for special education and the Specific Learning Disability category.

Finding 13: Hispanic, Spanish-speaking EL students were most likely to be identified for special education.

In addition, decisions about how services are provided for students with disabilities, and the location of those services, are currently made by LEAs as part of their responsibility to provide FAPE. Some services can be provided by an individual LEA or another public or nonprofit agency in a student's community. In some instances, however, particularly for students in low-incidence disability categories, it may make more sense for a specific service to be provided across a group of LEAs, perhaps at the regional level.

As described below in consideration E, the transition proposed in this consideration could be initiated by distributing ERMHS funds directly to some LEAs rather than to SELPAs; ERMHS funds are a good starting point for the shift because they are available for use outside special education, and they require LEA-level coordination between general education and special education. For the next step in the transition, funds for services that could benefit from local-level coordination between general and special education programs to promote inclusive practices could be distributed directly to LEAs. Alternatively, if cross-LEA coordination or regional services were also a high priority, some funds could continue being distributed to SELPAs or to another SELPA-like entity for a period of time. In the What Change Would Look Like section, we model this scenario, in which RS/PS funds continue to flow to SELPAs or COEs for a period of time while LEAs establish new procedures for administering state funds directly and enter into new agreements with regional entities. Eventually, however, all funds would go to LEAs. If LEAs decided they needed the help of a regional intermediary agency — for regional service provision or coordination across LEAs — they could provide funds to that entity.

D1. Near term: Distribute funds allocated by counts of students in the low- and mid-cost disability categories directly to LEAs to promote service coordination for those students, most of whom are included in the general education classroom for 80 percent or more of the day. One way of handling distribution during the transition is as follows: For students in the low- and mid-cost groupings of disability categories, who tend to spend most of their time in the general education classroom, send funding directly to the LEA to support coordination between general education and special education. For students in high-cost categories, where the need for a regional service or program is more likely, especially for small LEAs, funding could go to the regional entity. In this case, it should still be clear that the LEA, not the regional entity (COE or SELPA), is responsible for convening the IEP team and making an individualized decision about each child's services and placement.

D2. Near term: Clarify SELPA governing boards' authority to allocate and distribute state special education funding using a funding formula different from the state's formula. Whether or not the state implements other considerations from this report, it should clarify whether SELPA governing boards have broad authority to use funding formulas that are different from the state's formula for allocating and distributing funding and that may not reflect state priorities for special education. If continuing to give SELPAs the authority to allocate and redistribute funds (including allowing them to establish high-cost pools), evaluate the potential duplication of funding from Low-Incidence Disabilities funds, the extraordinary cost pools funded under AB 602, and the extraordinary cost pools funded in most SELPAs to help LEAs pay for NPS placements. Evaluation results could, in turn, inform a more in-depth study. The state could also evaluate potential duplication in funding for students with low-incidence disabilities and funding for state special schools.

Benefits and drawbacks of these considerations, as suggested by stakeholders in the California special education system

Considerations D, D1, and D2 (transition over time toward a mixed distribution of funding at the discretion of each LEA): One group representing LEAs supported this idea, and another group generally supported it but had concerns about implementing it gradually. The second group recommended, instead, a "rip off the Band-Aid" approach that would effect swift change. Parents were also in favor of the latter idea, expressing the belief that compared with SELPAs, LEAs might have a better understanding of their students' needs. SELPA stakeholders, however, voiced extreme opposition to this consideration, and they reported that some of their concerns were on behalf of their LEAs. Many expressed the worry that the intention of this consideration is to weaken or eliminate SELPAs given that the locus of control would be with each LEA, rather than with the SELPA governing board. SELPA stakeholders and some LEA stakeholders were concerned that taking away SELPAs' ability to retain funds "off the top," prior to distributing to LEAs, could reduce SELPAs' capacity to provide regionalized services, including for small and isolated LEAs that heavily depend on them and for students with low-incidence disabilities. Some LEA and COE stakeholders supported providing local control of the funding and decision-making by allowing each LEA to determine its participation in regional services.

Another specific concern raised by both SELPA and COE stakeholders was that if special education funds were distributed directly to LEAs, these funds could be seen as additional dollars on the table that were open to collective bargaining. However, many collective bargaining agreements already include terms related to special education staffing and responsibilities, indicating that AB 602 funds are open to collective bargaining even when distributed to LEAs through a SELPA.

E. Long term: Continue providing Educationally Related Mental Health Services funds to pay for services for students both with and without IEPs, potentially by allowing flexible use of a portion of base funds. Continue allowing LEAs to use ERMHS funds for behavioral and mental health services designed for prevention and intervention for students irrespective of their special education status, as is current practice. If the state decides to simplify the special education funding system by including ERMHS funds in the AB 602 base, the state could allow a portion (e.g., 10 percent) of special education base funds to be used for this purpose.

Related Findings:

Finding 3: Cost increased for combinations of EL, disability, and economic status.

Finding 4: Cost varied by disability category.

Findings 8 & 9: SELPAs and LEAs created economies of scale.

Finding 10: Most mental health services were provided by LEAs

Finding 14: Effective preschool reduced the likelihood of identification for special education.

ERMHS funds could also be used, temporarily, for the initial setup costs of school-based health partnerships and for the startup costs of using the Medi-Cal billing infrastructure for eligible health services, so as to maximize the federal reimbursement drawn down using the ERMHS funding stream.

If maintained as a separate fund, the amount of ERMHS funds provided should continue to be based on ADA in order to communicate to LEAs that the funding is available to serve students irrespective of whether they have been identified as having a disability, to promote better mental health for all students.

E1. Immediate: Allow ERMHS funds to be used for development of school-based health centers and other health-focused infrastructure, including partnerships with other agencies, such as county behavioral health agencies and Medi-Cal managed care plans. Develop expertise at the state, regional, and local (e.g., local health department) levels for providing guidance to LEAs on school-based Medi-Cal billing for eligible educationally related mental health services, highlighting best practices in LEAs, COEs, and/or nongovernmental partners regarding billing for these services.

E2. Immediate: Allocate and distribute ERMHS funds directly to each LEA (including charter school LEAs) rather than to the SELPA. It is reasonable to distribute the funds in this way for two reasons. One reason is that as of the 2019/20 school year, these funds can be used for a student's educationally related mental health services even if the services are not included in a student's IEP or if a student has not been identified for special education and, therefore, does not have an IEP. The other reason for considering this change in distribution is that local partnerships — that is, between LEAs and other local service providers — can play an important role in providing the services. Providing funds directly to LEAs can support these partnerships. Further, this change in distribution may encourage LEAs to establish or enhance their match for federal drawdown programs, such as School-Based Medi-Cal Administrative Activities or the Local Educational Agency Medi-Cal Billing Option Program, thereby enabling LEAs to receive additional health funds from federal sources.

E3. Near term, using one-time or ongoing funding: Provide competitive, time-limited (e.g., two to three years) grants to LEAs for establishment of school-based health centers and other health-focused infrastructure, including partnerships and Medi-Cal billing systems. Make funds available for LEAs that demonstrate capacity through evidence of either progressing toward or having already developed partnerships with other agencies (e.g., county behavioral health agencies, Medi-Cal managed care plans). Place a priority on those applications received from more remote geographic locations within the state. Establish an expectation that funded programs will be sustained with local funding over time. Supporting LEAs in launching and expanding health-focused partnerships and Medi-Cal reimbursement systems can help them acquire new, long term sources of additional resources (both fiscal and nonfiscal) for supporting students' mental health and other health needs.

E4. Near term, using one-time or ongoing funding: Provide LEAs with professional learning focused on the use of school-based Medi-Cal billing. Learning and training opportunities should highlight best practices in LEAs, COEs, and/or partners for billing for mental health and other health-related student services. As with consideration E3, this strategy could build LEAs' capacity to access additional resources to support students' mental health and other health needs.

Benefits and drawbacks of these considerations, as suggested by stakeholders in the California special education system

Consideration E (continue flexibility for ERMHS funds to pay for services provided to students with and without IEPs): COE and LEA stakeholders voiced support for this consideration, noting that mental health services are an area of need for all students. However, SELPA stakeholders voiced strong opposition, expressing concerns that ERMHS funds are already insufficient to cover the needs of students with disabilities and need to be preserved for that student population. Stakeholders also expressed the concern that using ERMHS funds for any student could trigger a legal obligation to evaluate the student for an IEP unless the school could identify that a student's mental health need was connected to an isolated situational event. The study team does not agree that any student who receives mental health services should be suspected of having a disability and referred for a special education evaluation. Clarification on the IDEA Child Find requirements and the lack of an obligation for an LEA to evaluate every student who receives a mental health service for special education would be needed before this finding was implemented.

Consideration E1 (allow ERMHS funds to be used for development of school-based health infrastructure, including health services partnerships and Medi-Cal billing systems): Stakeholders' opinions on this consideration were mixed. Some noted that support for developing Medi-Cal billing infrastructure would be beneficial. Some argued that because the process is cumbersome, it is not cost-effective for LEAs to seek Medi-Cal reimbursement, so developing Medi-Cal billing infrastructure would not be helpful until that system improved. Parents expressed concern that schools' billing the student's Medi-Cal insurance could hinder the family's ability to use the insurance. The study team's research did not find any evidence to support the belief that a school's billing Medi-Cal limited the family's access to services outside school or limited the number of available benefits.

Consideration E2 (distribute ERMHS funds directly to LEAs rather than to SELPAs): COE and LEA stakeholders supported this idea, but SELPA stakeholders voiced extremely strong opposition. In particular, they expressed concern that existing effective SELPA programs that coordinate ERMHS would end up being dismantled or greatly reduced in size if some LEAs pulled out of the regional partnership, resulting in less access for small LEAs that rely heavily on these regional services.

These stakeholders suggested verifying that each LEA could independently provide services before changing funding distribution. This concern should be considered together with the study team's finding based on CASEMIS data that most students received mental health services directly from their LEA (see finding 10).

Consideration E3 (provide competitive grants to support LEAs' development of school-based health infrastructure, including health services partnerships and Medi-Cal billing systems): As with consideration C3, some stakeholders expressed concern that larger LEAs would have an inequitable advantage in applying for competitive grants. Furthermore, as noted in consideration E1, stakeholders were mixed in their support for developing Medi-Cal billing infrastructure.

F. Given the number of students with disabilities who have needs beyond those related solely to their disabilities, encourage LEAs to create a single system for planning and coordinating funding and programs. Currently, students with needs related to disabilities, learning English, and economic disadvantage may receive three separate, uncoordinated services or interventions. For example, a third grade student with needs related to reading who meets each of those criteria might: participate in core instruction in reading with the general education teacher; participate in a small group for supplemental reading intervention funded through LCFF supplemental or concentration funds; leave the general education classroom for 30 minutes each day to receive reading instruction from a resource specialist in a special education class; and spend 30 minutes twice a week in a supplemental program for English learners working on reading and language.

Related Findings:

Finding 3: Cost increased for combinations of EL, disability, and economic status.

Finding 4: Cost varied by disability category.

Findings 8 & 9: SELPAs and LEAs created economies of scale.

Finding 10: Most mental health services were provided by LEAs.

Finding 12: EL students were disproportionately identified for special education and the Specific Learning Disability category.

Finding 13: Hispanic, Spanish-speaking EL students were most likely to be identified for special education.

Currently, separate funding streams distributed to separate programs and agencies (in the case of special education) do not encourage one system for planning and coordination of these interventions. State and federal special education funds are restricted to specific uses, but the majority of funds required to operate special education programs are local funds, allocated from each LEA's general fund (Willis et al., 2020; Petek, 2019). And although each LEA must meet MOE requirements, they can each reevaluate how to better coordinate the local funds used for special education and other programs to ensure better coordination of services for students with multiple, overlapping needs. In findings 12 and 13 and in appendix C, the study team provides examples of the types of data review and analysis needed to explore which students would benefit from better-coordinated intervention through the examination of data related to students with disabilities who are English learners. An LEA or the state might examine similar data for other student groups to identify other areas to target coordinated efforts across programs.

To encourage LEAs to create a single system for planning and coordinating funding and programs, CDE could model inclusive planning across programs (e.g., the Special Education Division, Multilingual Support Division, Student Achievement and Support Division, and School Fiscal Services Division) by issuing joint guidance on the importance of and practical ways for LEAs establishing one system for planning and coordination. CDE could also coordinate the development of criteria for both program and fiscal monitoring to examine the extent to which coordination is occurring. When examining LEAs' performance on accountability measures, specifically for students with disabilities who are also in other student groups, CDE could monitor how well the LEA is coordinating supports and interventions and encourage adoption of more inclusive planning and coordination processes. CDE could also partner with other state and regional entities, for example, the California Collaborative for Educational Excellence and COEs, to deploy direct training and support to LEAs in order to build local leaders' capacity for coordinating supports and inclusive planning. Further, CDE could adjust the criteria for audits or monitoring of federal funds to examine the coordination of funds and to ensure LEAs are not penalized for appropriately braiding or blending funding streams.

As described in the introduction to this section, the right of students with disabilities to receive the services identified in their IEPs is protected by federal law (IDEA), and that protection is, in part, guaranteed through the MOE and excess cost fiscal requirements. Coordinating funding and services should not impede an LEA's ability to meet these requirements, as funds that are used to provide coordinated special education services may still be counted as funds budgeted and expended to provide special education and related services.

F1. Immediate: Ensure that existing planning and reporting requirements encourage coordinated LEA planning between special education and general education. Currently, CDE requires each LEA to submit a special education plan (SEP) for improving the performance of students with disabilities on a set of indicators that, in some cases, overlap with and are related to the indicators for LCFF accountability, including student performance on statewide assessments, graduation rates, discipline rates, and placement of students with disabilities in the least restrictive environment. The SEP is separate from the local area plan, which is submitted annually by each SELPA to address how it allocates funds. The SEP potentially duplicates the planning done for all students through the local control and accountability plan (LCAP). CDE should consider recommendations from the forthcoming special education governance and accountability study required by the 2020 budget bill for reducing duplication between general and special education; that report is due to the California legislature on October 1, 2021.

F2. Near term: Ensure that California's statewide system of support identifies and promotes best practices related to coordinating instructional supports for students in groups most likely to be misidentified or overidentified as having disabilities. Prioritize state funds available through the statewide of system of support for development of coordinated planning that, after an initial investment from the state, could be sustained through local funding. Support COEs to launch and expand coordinated planning at the regional level. Highlight and promote best coordination-related practices through conferences, newsletters, and other media. As recommended in consideration C2, build the expertise of CDE staff and technical assistance providers, including through the statewide system of support, to provide LEAs with guidance on allowable braiding and blending funding strategies, incidental benefit, and the allowability of using special education funds, including state and local funds, to support inclusive planning and coordination.

Benefits and drawbacks of these considerations, as suggested by stakeholders in the California special education system

Consideration F (create and fund one system for planning and coordination of special education and other supplemental services): Across stakeholder groups, there was substantial support for this idea, and stakeholders identified the need for general education participation and ownership in providing interventions during early grades. Furthermore, stakeholders affirmed that this consideration aligns with the state's priorities, promotes equity, reduces redundancy, and has the potential to improve outcomes for students with disabilities. However, stakeholders noted that building one coordinated system will require a major culture shift toward a more inclusive education approach — including by school boards and with educators and others at the ground level — and that changes to the funding system may not do much to change the siloed mindsets and culture. Some stakeholders also noted that the needs of SELPAs and LEAs vary dramatically across the state (particularly in small LEAs that may rely more on regionalized services) and expressed the need to maintain local control. In other words, there appeared to be a concern among some that creating "one system" could lead to a "one-size-fits-all" system.

Consideration F1 (incentivize coordinated LEA planning between special education and general education): Across stakeholder groups, there was strong support for this consideration. Potential benefits noted by stakeholders include greater alignment between special education and general education programs and planning, support for inclusive settings, and less redundancy in planning processes. Some stakeholders also noted that legislative action has already begun to try to bridge the gap between the special education and general education accountability systems (e.g., by proposing adding LRE to the California School Dashboard and making SELPAs more involved in the LCAP), reflecting that this consideration is aligned with current legislative priorities. However, here, too, stakeholders voiced concern that this step alone would not be enough to break down the siloes between special education and general education and that this consideration should be paired with other initiatives to encourage service provision in inclusive settings. In addition, some stakeholders observed that some LEAs lack sufficient expertise in special education goal setting and progress-monitoring, so they would need outside support (e.g., from CDE, technical assistance providers, a SELPA) to help ensure special education is addressed in the LCAP. A few stakeholders also suggested that it could be difficult to incorporate all of the SEP's information into the LCAP, particularly as the SEP is seen as a high-stakes compliance document, which the LCAP is not.

Areas for additional study and learning

Several of the immediate and near term considerations propose professional learning, studies, or funding for mini grants. Each of those specific suggestions should be evaluated carefully in light of the multiple special-education-related studies currently underway in California, specifically,

- the Medi-Cal for Students workgroup report;
- the C to B transition workgroup report;
- the LAO Workgroup examining Out-of-Home Care program;
- CDE's special education governance and accountability study; and
- CDE's IEP template and alternate pathways workgroups.

What Change Would Look Like

The previous sections provided the findings from the study's statistical analyses and detailed considerations for changes to the California special education funding system that are based on those findings and relevant research. This section includes a summary of what the changes proposed in this study's considerations would look like when applied to a given year's state special education funding. It does so by first presenting, for comparison, how state special education funding was allocated and distributed under the current system for fiscal year 2020/21 (FY21). It then provides a scenario for how that same money would flow if all of the study's long term considerations were implemented, and it identifies the impact of funding to LEAs.

Current Special Education Funding and Future Scenario if Considerations Were Implemented

The current special education funding picture and the new funding scenario presented in this section were calculated using the total AB 602 funding amounts for FY21, the most recent year for which final apportionment data were published. Exhibit 17 describes FY21 California special education funding under the current system, with detail on allocation, distribution, and expected expenditures for each of AB 602's existing funding streams. The scenario that follows it, exhibit 18, shows how the FY21 funds would flow in the revised system proposed by the combination of the long term considerations from this study.

Funding Adequacy

As stated in this study's first report and reiterated in this one, this was not a study about the adequacy of California's special education funding. Instead, this study examined how existing state funding for special education could be allocated and distributed, with expenditure expectations appropriately set, in new ways to better communicate and advance state priorities for the funding.

Exhibit 17. AB 602 funding stream details, FY21.

Current Funding Stream	FY21 Amount	FY21 Special Education Funding Formula
AB 602 Base	$3,428,323,000 (CDE, 2020e)	**Allocation:** By SELPA ADA multiplied by a historical per-pupil amount adjusted for growth, declining enrollment, cost of living, and property tax revenue. **Distribution:** Funds are distributed to SELPAs. **Expected Expenditures:** Any special education expense.

Current Funding Stream	FY21 Amount	FY21 Special Education Funding Formula
Educationally Related Mental Health Services	$380,907,000 (CDE, 2020f)	**Allocation:** By SELPA ADA. **Distribution:** Funds are distributed to SELPAs. **Expected Expenditures:** Funds must be exclusively used to support educationally related mental health services; the FY21 budget allowed for non-IEP services in addition to services included on an IEP.
Out-of-Home Care	$141,758,000 (CDE, 2020g)	**Allocation:** Per-bed or per-pupil amount multiplied by number of beds available or number of pupils served in licensed children's institutions in the SELPA. **Distribution:** Funds are distributed to SELPAs. **Expected Expenditures:** Any special education expense.
Low-Incidence Disabilities	$118,754,000 (CDE, 2020a; CDE, 2020c)	**Allocation:** Number of students who are deaf, hard of hearing, visually impaired, or orthopedically impaired multiplied by a per-pupil rate. **Distribution:** Funds are distributed to SELPAs. **Expected Expenditures:** Services and materials for students with qualifying conditions.
RS/PS	$101,119,770 (CDE, 2020c)	**Allocation:** Current-year average per-pupil rate multiplied by SELPA ADA and adjusted for necessary small SELPAs. **Distribution:** Funds are distributed to SELPAs. **Expected Expenditures:** Any special education expense.
Extraordinary Cost Pool for NPS/LCI	$3,000,000 available; $4,594,743 expended (CDE, 2020b)	**Allocation:** Amount beyond threshold for individual student placements, divided proportionally among eligible applicants. **Distribution:** Funds are distributed to qualifying SELPAs or LEAs. **Expected Expenditures:** Any special education expense if the child is served in an NPS or LCI.
Necessary Small SELPAs Mental Health Service Extraordinary Cost Pool	$3,000,000 available; $1,405,257 expended (CDE, 2020d)	**Allocation:** Amount beyond threshold for individual student placements, divided proportionally among eligible applicants. **Distribution:** Funds are distributed to qualifying SELPAs or LEAs. **Expected Expenditures:** Any special education expense for children served in an NPS to receive mental health services.

Exhibit 18. Proposed new California special education system aligned with state priorities.

<table>
<tr><th>Proposed New Funding Stream</th><th>FY21 Amount and Source (Funding Stream)</th><th>Proposed Funding Formula Based on State Priorities</th></tr>
<tr><td>Special Education Base</td><td>$3,428,323,000 (AB 602 base)</td><td>Allocation: Total available funding allocated to LEAs by proportions in each of three disability category groupings: low cost, mid cost, and high cost. Each LEA's allocation is calculated using a rolling three-year average of child count (i.e., count of students with disabilities) in each cost grouping multiplied by the applicable weight below in exhibit 19. Proportions are adjusted every three years based on average count of the last three years.

Exhibit 19. Weights for cost groupings of disability categories
<table><tr><th>Cost grouping</th><th>Disability categories</th><th>Weight</th></tr><tr><td>Low cost</td><td>Other Health Impairment
Speech Language Impairment
Specific Learning Disability</td><td>0.842</td></tr><tr><td>Mid cost</td><td>Autism
Emotional Disturbance
Intellectual Impairment
Sensory Impairment
Traumatic Brain Injury</td><td>1.184</td></tr><tr><td>High cost</td><td>Orthopedic Impairment
Medical Disability
Multiple Disabilities</td><td>1.421</td></tr></table>A minimum (floor) amount of base funding is ensured for small LEAs, with the funding floor and size threshold for small LEAs adjusted every three years.

Adjustments are made for declining enrollment of students with disabilities. Although growth is funded at the full amount, a declining enrollment adjustment allows LEA funding based on the highest of the three prior years' counts of students with disabilities.

Cost of living and property tax revenue adjustments will continue as currently calculated in the AB 602 apportionment.

Distribution: Funds are distributed to LEAs, which may, in turn, provide some of the funds to a regional entity (e.g., SELPA, COE) through a contract or other interagency agreement, based on the needs of the LEA and with the approval of the LEA's governing board.

Expected Expenditures: Any special education expense, including special education services provided in coordination with other programs and interventions.</td></tr>
</table>

Proposed New Funding Stream	FY21 Amount and Source (Funding Stream)	Proposed Funding Formula Based on State Priorities
Regionalized Services	$101,119,770 (RS/PS)	**Allocation:** LEA prior-year child count (count of students with disabilities) multiplied by a per-pupil amount of funding (total available funding divided by the prior-year count of students with disabilities statewide), aggregated to regional counts. **Distribution:** Funds are distributed to a regional entity (e.g., SELPA, COE). **Expected Expenditures:** Activities specified by CDE, including technical assistance and monitoring activities on behalf of CDE, for which the regional entity is held accountable to CDE, including increasing the capacity of LEAs to receive and manage the use of state special education funding. *Note: This study did not examine the SELPA role in monitoring, technical assistance, or other activities assigned by the state. As CDE continues to examine the role of SELPAs, the study team proposes a model that would continue to distribute this funding to SELPAs, but with clearer expectations and accountability mechanisms.*
Educationally Related Mental Health Services	$380,907,000	**Allocation:** By each LEA's ADA. **Distribution**: Funds are distributed to LEAs and may be aggregated to a regional entity (e.g., SELPA, COE), based on the needs of the LEA and at the request of the LEA's governing board. **Expected Expenditures:** Funds must be exclusively used to support educationally related mental health services; IEP and non-IEP services are included; funds may be used to establish Medi-Cal billing infrastructure and necessary school health partnerships.

Proposed New Funding Stream	FY21 Amount and Source (Funding Stream)	Proposed Funding Formula Based on State Priorities
Extraordinary Cost Pool	Total: $266,512,000 This total combines: Out of Home Care ($141,758,000) Low Incidence ($118,754,000) Extraordinary Cost Pool for NPS/LCI ($3,000,000) Necessary Small SELPAs Mental Health Service Extraordinary Cost Pool ($3,000,000)	**Allocation:** Reimbursement for a proportion (up to 100 percent) of the cost for an individual student's IEP, above an established threshold established threshold, in most cases, of more than three times the average per-pupil expenditure. Threshold may be adjusted based on LEA size (e.g., for LEAs serving fewer than 100 students with disabilities, the threshold could be adjusted to two times the average per-pupil expenditure). **Distribution**: Funds are distributed to LEAs or consortia of LEAs that provide programs for qualifying students. **Expected Expenditures:** Any special education expense.

Impact of Implementing the Recommended Funding Scenario

If implemented as described, within the FY21 funding amounts and allocated to LEAs, this scenario would result in AB 602 allocations to LEAs as follows:

- Special Education Base – The FY21 funding amount divided by the 2020 child count yields approximately $4,750 per child with a disability. The actual amount distributed, of course, depends on the proportion of students in and weight established for each cost-grouping of disability categories. For the proportion of students in the Speech or Language Impairment category (low-cost grouping), the amount would be around $4,000, whereas for those in the Multiple Disabilities category (high-cost grouping) the amount would be $6,750.
- A comparison of the change in allocations to LEAs is not possible because special education funding is not currently allocated to LEAs. Assuming those per-child amounts were allocated per LEA in the current formula and not the actual amounts that the SELPA passed on to each LEA, approximately half of LEAs receive more funding under this scenario; the other half receive less funding. Funding to the largest LEAs generally increases or decreases by less than 5 percent. However, small LEAs, including charter school LEAs, have larger amounts of variation, with some receiving double their previous allocation and others receiving half or less. Given that charter school LEAs tend to serve smaller proportions of students in the more costly disability categories compared to non-charter LEAs, charter school LEAs stand to receive less money, consistent with the findings that charter schools have lower costs. The recommended minimum funding floor applied to small LEAs will protect against substantial funding decreases for these LEAs.
- Educationally Related Mental Health Services – ERMHS funds are distributed directly to LEAs. If LEA governing boards determine that the LEA is unable to provide needed services, the LEA may enter into an interagency agreement with a regional entity to provide those services.
- Extraordinary Cost Pool – With a total combined amount from other AB 602 supplemental funding streams of $266,512,000, the extraordinary cost pool is funded at nearly $370 per student with a disability, only slightly less than the median cost pool value per student across states with high-cost pools. The substantial increase to and a continued investment in the statewide pool may also eliminate the need for regional entities (e.g., SELPA, COE) to retain their own extraordinary cost pools.
- Regionalized Services – The proposed funding system continues to allocate $140 per child with a disability to this funding stream and did not evaluate the use of these funds. The study team recommends reevaluating the amount and expected expenditure of these funds based on the results of CDE's pending study of special education governance and accountability.

Conclusion

California's statewide special education funding system is separate from funding for general education and had not been substantively revised for more than 20 years until increases were made to the per-student base amounts and additional funding became available through the Budget Acts of 2019, 2020, and 2021.

This study recommends revisions to California's special education funding system that would make it more responsive to California's increasing population of students with disabilities. In particular, the changes, collectively, would communicate and reinforce the importance of coordination between general education and special education to ensure inclusive practices that, ultimately, would both improve outcomes for students with disabilities and benefit their peers without disabilities. Although there are limitations to using disability categories to differentiate special education funding, disability category data are available for every student and are part of consistent data collection and reporting. The state should continue to consider whether additional statewide data might be collected that would better allow funding differentiation and cross-program planning and coordination based on students' needs, whether those needs derive solely from students' disabilities, or whether they derive from a combination of students' disabilities and their status as English learners, youth in foster care, and/or being economically disadvantaged.

A sufficiently funded extraordinary cost pool that would support LEAs in implementing the IEPs for students placed in their LEA of residence or a neighboring LEA, as well as for students in nonpublic placements, would end any incentive that has existed for making nonpublic placements when they are not essential. The sufficient funding of a statewide high-cost pool would also eliminate the need for regional entities, such as SELPAs, to set aside funds to have their own high-cost pools.

To communicate the messages of prioritizing inclusive practices and supporting students with diverse needs across programs, this study recommends distributing special education funds to LEAs, which may then, as needed, enter into agreements with other entities to provide regionalized services. This would represent a significant shift in the state funding system, as it would require the responsibility for receiving and administering virtually all state special education funding to be transferred from SELPAs to LEAs. But this proposed change ultimately aligns with the accountability placed on LEAs by the LCFF to ensure equitable, improved outcomes for all students, including students with disabilities. The need for some regionalized services, and the potential for attaining economies of scale and, thus, cost reduction through their regionalization, are clear. However, the locus for decision-making about the best way to provide services to students with disabilities should lie with the LEA in order to maximize funding coordination.

Finally, the entire special education funding system should be regularly revisited, in part to consider whether there are opportunities for increased coordination through integration of special education funding into the LCFF as LEAs engage in increased coordination and planning of services for students who belong to multiple groups with similar or overlapping needs. The population of students with disabilities, on its own and in relation to the broader population, has changed significantly over the past 20 years. Prioritizing inclusive practices and ensuring improved learning experiences and outcomes for students with disabilities requires consistent reevaluation both of the funding system and of the intervention system. The funding system alone cannot bring forth necessary changes, but it can communicate the state's intent to ensure that the right amount of funding goes to the right agencies so that they can provide the right services to the right students.

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Appendices

Appendix A: Methodology, Data, and Measures

Overview

The measures and analyses used throughout this report required various data sources to be merged and analyzed together. The core data sources were administrative data provided by the California Department of Education and the California Department of Finance (DOF). Public data sources were also used to measure district, county, and regional characteristics. For several analyses related to school performance, student-level data were necessary. For others, school, district, county, or regional variables were sufficient. The next sections discuss in detail the data and measures used in this study, specifically:

- Student-level and other performance data provided by CDE;
- Financial data published publicly by DOF; and
- Public data sources for districts, counties, and regions provided by the state of California, the National Center for Education Statistics, the Census Bureau, and the American Community Survey.

This appendix concludes by discussing other challenges relevant to the analyses (e.g., limitations of the data) as well as avenues to address these challenges.

Student-Level Data

Some essential measures of school performance and school characteristics required student-level data. CDE provided student-level data from its *CALPADS (California Longitudinal Pupil Achievement Data System), CASEMIS* (California Special Education Management Information System), and *CAASPP* (California Assessment of Student Performance and Progress) databases for the 2016/17, 2017/18, and 2018/19 school years. The measures used in the analyses are shown in exhibit A-1, with the raw variables used listed where applicable.

Exhibit A-1. Variables created from the student-level data.

Variable	Data Source	Raw Variables Used
Normalized Curve Equivalent	CAASPP	Scale scores for English language/arts and mathematics
4-Year Cohort Graduation Rate	CALPADS *Publicly available source used*	Due to missing data, the study team used a pre-processed measure for the graduation rate.

Proportions (students with disabilities, English learner students, economically disadvantaged students, and their combinations)	CASEMIS, CAASPP	Indicators for having an IEP, being an English learner, and being economically disadvantaged
Proportions of each disability category (as a proportion of students with disabilities)	CASEMIS, CAASPP, CALPADS	Primary disability indicator, secondary disability indicator
Demographic characteristics	CASEMIS, CALPADS	Least restrictive environment, race, grade, age, attendance

Source. Data manuals for CASEMIS, CAASPP, and CALPADS.

Each of these measures are described in more detail below.

Normalized Curve Equivalent Score

The NCE score is a measure of student growth constructed by assessing how a student is actually performing relative to how they were expected to perform based on their prior-year performance. The score directly answers the question: How did the student perform relative to other students who performed the same as the student did the previous year? This approach is particularly helpful for comparing assessment scores across years, grade levels, and test subjects. This measure relies on normalized (or, equivalently, standardized) test scores, following Reback (2008), and yields gain score measures of student performance that are not biased by typical patterns of reversion to the mean. The equation below shows how the NCE is calculated:

$$NCE_{igt} = \frac{S_{igt} - E(S_{igt} \mid S_{ig-1,t-1})}{\sqrt{E(S_{igt}^2 \mid S_{ig-1,t-1}) - E(S_{igt} \mid S_{ig-1,t-1})^2}} \times 21.06 + 50$$

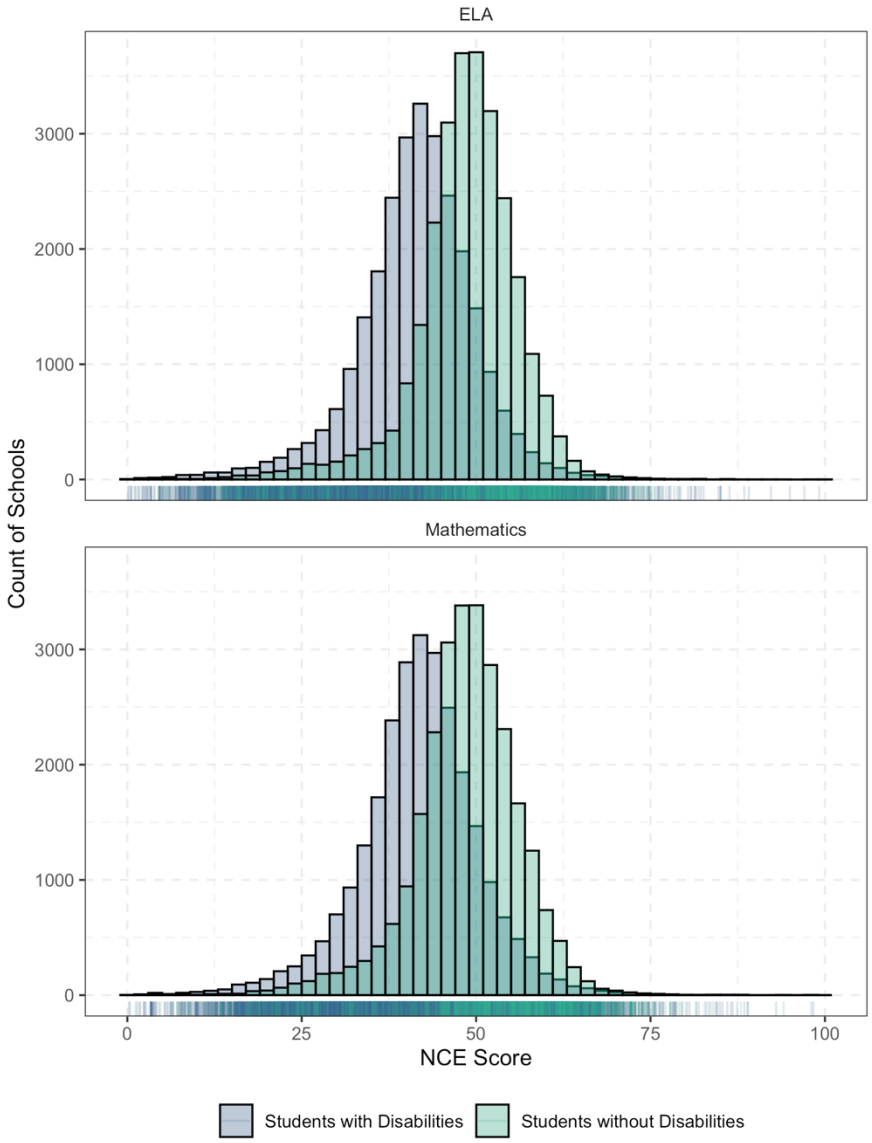
where the student is denoted with *i*, grade is *g*, and time is *t*. *Sigt* is the student's current score. In all, it can be read as the difference between the observed score and the student's expected score based on their score from the previous year divided by the variability in expected scores. The last piece (21.06 + 50) monotonically transforms it from a conditional z-score to the NCE metric, commonly interpreted as if it were a percentile rank.[3] An NCE score of 50 indicates that (on average) the student performed exactly as expected given their prior test performance, and an NCE score of 90 indicates that (on average) they performed as well as or better than 90 percent of their peers.

3 This approach relies on the assumption of normally distributed scores within cohorts. Given the vast size of California, it is not surprising that this assumption holds true in most cases. Cohorts smaller than 20 were removed as these can be too heavily influenced by outliers and strange distributions. Further, students with seemingly impossible trajectories across the three years of the study data were considered to result from administrative error and were removed from the calculation of NCE scores per school.

Consider an example to understand the utility of the measure: Say a student scores 2500 in grade 3 in 2016/17 and then 2550 the following year. Is this the growth that would have been expected for that student? Using the NCE approach, this student's score for 2017/18 would be compared with the 2017/18 scores of all students who had scored 2500 in 2016/17. For this example, let's say those students had an average score of 2545 in 2017/18 with a standard deviation of 5. That student would then have a score of (I x 21.06 + 50 = 71.06). Thus, this student scored higher than 71 percent of students who had the same performance in the prior year that the student had.

To understand school-level performance, this calculation was done for all students and the mean score calculated per school. For this study, this aggregation was done separately for students with disabilities and students without disabilities. This provided an estimate of how much value the school added to student growth beyond what was expected across the state for both student groups. On average, students with disabilities had lower growth than students without disabilities (exhibit A-2).

Exhibit A-2. The distribution of NCE scores in California, by disability status, for both English language arts and mathematics across the 2016/17, 2017/18, and 2018/19 school years.



Source. Authors' calculations using data from CALPADS, CASEMIS, and CAASPP from 2016/17 to 2018/19.

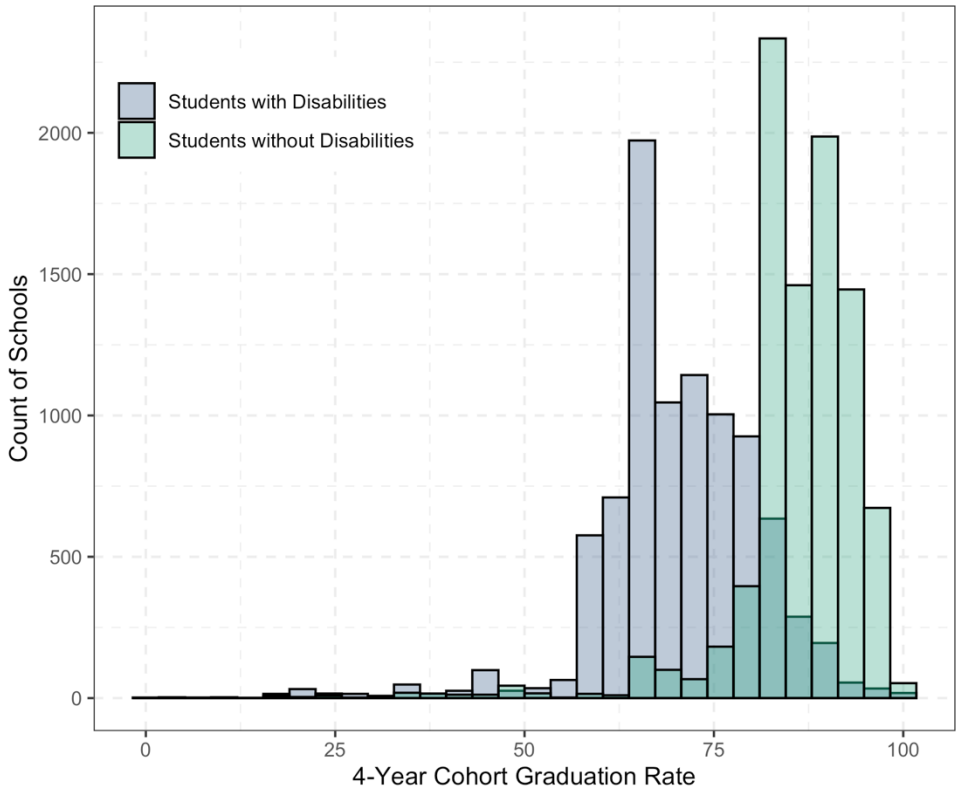
It is commonly accepted that schools produce unmeasured outcomes — for example, social skills and other skills that will prepare students to succeed in society and in the workforce — that may be uncorrelated with mathematics and ELA test scores, and standardized tests may not measure the growth of all of the important higher-order skills. However, test outcomes and graduation rates are performance measures for which LEAs are held accountable by the state, and these are the most common measures of school district output in the literature (e.g., Gronberg et al., 2011a, 2011b; Gronberg et al., 2012; Gronberg et al., 2015; Imazeki & Reschovsky, 2005). As such, even though these measures are limited, they are reasonable output measures for this study.

4-Year Cohort Graduation Rate

The California Department of Education provided a preprocessed measure of the 4-year cohort graduation rate. This was provided by school, and it measures the number of students who graduate from high school in four years with a regular high school diploma, divided by the number of students who form the adjusted cohort for the graduating class. For schools that did not have a graduation rate (e.g., elementary schools), the district average was used. For elementary schools in elementary districts, the county average was used.

Each year of available data showed a similar distribution of graduation rates between students with disabilities and students without disabilities. The graduation rates from 2018/19 are shown in exhibit A-3.

Exhibit A-3. Four-year cohort graduation rates by disability status in the 2018/19 school year.



Source. CDE 4-year cohort graduation rates from 2016/17 to 2018/19.

Proportion Measures

A major factor in both school performance and the cost of education is the proportion of the student population made up of students with disabilities, English learners, economically disadvantaged students, and their combinations. The following variables were aggregated to the school level, using student-level indicators, by using the following general calculation:

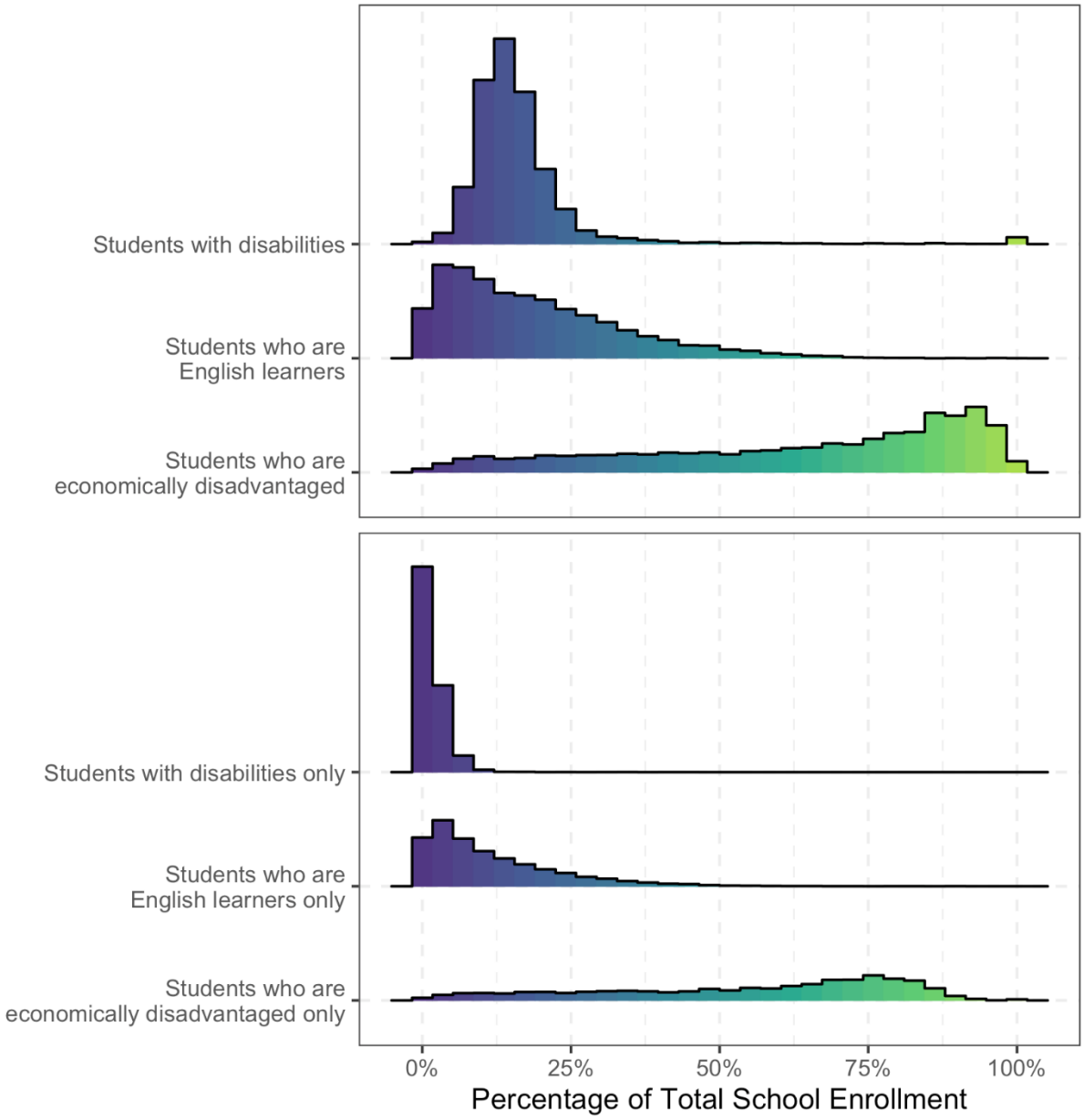
$$Proportion\ per\ School = \frac{Sum\ of\ Students\ With\ Indicator}{School\ Enrollment}$$

This school-level aggregation was done for the following variables:

- Students with disabilities
- Students with disabilities that are not English learners or economically disadvantaged
- Students who are English learners
- Students without disabilities who are English learners and not economically disadvantaged
- Students who are economically disadvantaged
- Students who are economically disadvantaged without disabilities and not English learners

The distribution of each proportion at the schools is shown in exhibit A-4.

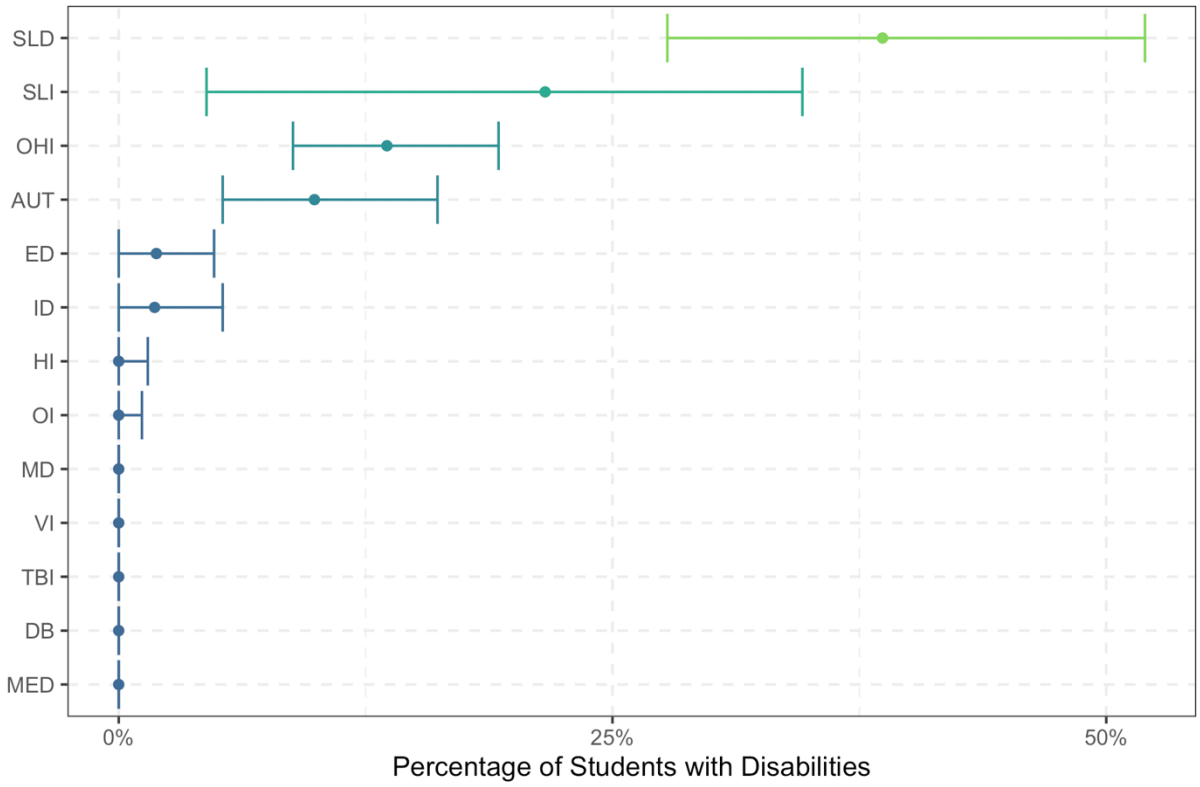
Exhibit A-4. Distributions of the students with disabilities, English learners, and economically disadvantaged students.



Source. Authors' calculations using data from CALPADS and CASEMIS from 2016/17 to 2018/19. Note that in the top portion of the exhibit, each of the three indicators (e.g., students with disabilities) may include students who, in addition to having that specific designation, have another designation as well (e.g., students with disabilities can include students with disabilities who are also English learners and/or economically disadvantaged). In contrast, in the bottom portion, each of the three indicators is exclusive of the others.

The school-level aggregation was also done for each primary disability category, as a proportion of total enrollment (e.g., of all students at that school, how many are identified as having a specific learning disability?) and as a proportion of the number of students with disabilities (e.g., of the students that have disabilities at that school, how many are identified as having a specific learning disability?).

Exhibit A-5. The distribution of each disability category as a percentage of the students with disabilities at the school.



Source. Authors' calculations using data from CASEMIS from 2016/17 to 2018/19. Note that the point shows the median value; the error bars show the range for the middle 50 percent of schools. Abbreviations used for disability categories: SLD = Specific Learning Disability, SLI = Speech/Language Impairment, OHI = Other Health Impairment, VI = Visual Impairment, AUT = Autism, MD = Multiple Disability, HI = Hearing Impairment, ID = Intellectual Disability, MED = Medical Disability, DB = Deaf/Blindness, ED = Emotional Disturbance, TBI = Traumatic Brain Injury, OI = Orthopedic Impairment.

Demographic Characteristics

Student demographic characteristics were aggregated to the school level using two general approaches: mean scores and proportions. To track if students are being served in the least restrictive environment, as required by federal law, California provides a continuous measure for each student of the time spent in a regular classroom. The school-level LRE was simply calculated as the average across all students with disabilities at each school. This was also the case for attendance rates, using the days attended divided by the expected days attended. For race, the proportions of the enrollment that were White and the proportions that were Hispanic were calculated. For gender, the proportions of

the enrollment that were female were calculated. Grade level was not aggregated to the school level, but was used in the creation of NCE scores discussed previously. Other demographic characteristics used in the analyses included age and early intervention status.

Missing Values in the Student-Level Data

Missing values occurred at the item level (single variables missing for that individual), area level (groups of variables all missing for that individual), and year level (individual not found in that school year). These missing values were very rare (less than 0.1 percent of students) and were unlikely to influence results in any way. In the calculation of NCE scores, two situations resulted in students being removed from the analyses. First, the cohort size needed to be 20 individuals or more to appease distribution assumptions of the measure. Across all assessments (including the alternate assessments), less than 0.1 percent of students were removed for this purpose. Second, there were also some students (0.5 percent) who did not have assessment scores for one or more years or who had more than one test score per year. These students were dropped from the NCE score calculation.

A situation unique to California is that each service that students with disabilities receive is tied to a SELPA. The data for this study showed a number of students received services as part of more than one SELPA. That is, students may receive a service from an LEA in one SELPA and receive another service from an LEA in another SELPA. For purposes of the analysis, the primary SELPA was identified as the one most commonly listed across each student's services.

Finally, for the majority of the analyses, only K–12 students were included, except where otherwise indicated (e.g., in analyses regarding preschool students with disabilities).

Financial Data

Two financial data sources were used to calculate expenditures relating to education for each school: the Standardized Account Code Structure data and the Charter School Alternative. Both are considered "unaudited actual" data sets. The SACS data include information for COEs, school districts, joint powers agencies, and charter schools, whereas the second source is just for charter schools. The majority of entities used the SACS form (92.9 percent). Both forms had sufficient information to extract the relevant expenditures. Notably, the full-time-equivalent (FTE) education staff data publicly provided by CDE was also used in conjunction with the other financial data.[4]

For purposes of this study, expenditures related to the education of students were the primary focus in looking at the financial data. To get at these expenditures, the study team relied on three sources of information: LEA-level financial data, school-level enrollment data, and school-level staffing files. For each LEA, the study team extracted expenditure data for all object codes relevant to the education of the students. Relevancy to education was defined as operating expenditures that are directly tied to education (e.g., salaries for instructors, but not transportation costs). Exhibit A-6 shows the cost codes used to extract the relevant expenditures.

Exhibit A-6. Cost codes used to extract operating expenditures from the financial data.

Included		
Object Codes: 1100-4400	Payroll	Salaries and benefits
Object Codes: 4000-4400	Other	Books, supplies, and equipment
Object Codes: 5000-5600	Other	Other operating expenditures
Object Codes: 6000-6500	Other	Land and building costs
Object Codes: 7213, 7223, 7283 *when the goal code was either 1110, 3800, 5001, or 8600*	Other	Payments to joint powers of attorney for regular education, special education, and county services to districts
Excluded		
Function Codes: 4000–4900	Ancillary	Of the object codes included, these function codes were removed because they were for ancillary services (e.g., extra-curricular sports).

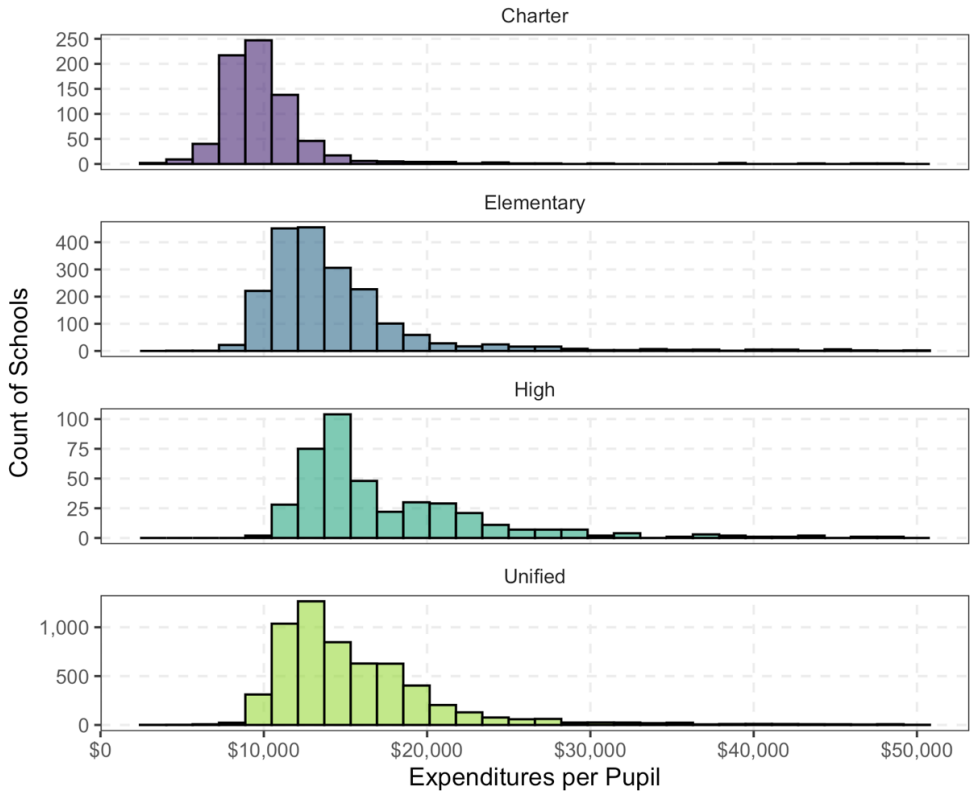
Source. California School Accounting Manual 2019 Edition.

4 The staff data did not include salaries, which limited how the data could be used.

The expenditures related to payroll were then applied to the schools within the LEA, proportional to their staff size (using the FTE staff data). The expenditures related to other costs were applied to the schools based on total student enrollment. Finally, the per-pupil expenditures were calculated based on the sum of expenditures applied to each school divided by the student enrollment. Although it is clear there is some measurement error in this measure of expenditure, it proved to be more informative than the alternative approaches, which tended to have even more measurement error (in either expenditures or other measures, like student performance). These alternatives included doing all analyses at the LEA level and using the average LEA-level expenditures for all schools of an LEA.

Exhibit A-7 shows the range of expenditures per pupil by the type of district or LEA.

Exhibit A-7. Expenditures per pupil.



Source. Authors' calculations from the SACS data and the Charter School Alternative for 2016/17 to 2018/19.

An important point here is that the study is ultimately trying to understand costs associated with special education, yet isolating those costs from the costs of general education is difficult. A primary challenge in doing so is the fact that students with disabilities are general education students first — general education funding is provided for all students with disabilities, and nearly all students with disabilities spend at least some time in the general education classroom. This means that students with disabilities are also benefiting from general education funds. Ideally, the accounting for this contribution of general education resources would be more transparently accounted for when considering all resources used

to educate students in this population, reaffirming their primary status as general education students. From among the few analytic options available for trying to isolate specific costs associated with special education, the study team employed a commonly used statistical estimation approach (Duncombe & Yinger, 2005). This is discussed in detail in Appendix B: Education Cost Function Technical Report.

Using this approach, average per-pupil expenditures (for all students) were assumed to range from $3,000 to $50,000 for each school, similar to other cost studies (e.g., Gronberg et al., 2012). Any values outside that range were assumed to be an administrative error. Only very small and otherwise special schools were removed for being outside this range. Three COEs were also included in the financial files, but because they did not have other student-level data connected to them, they were removed.

Public Data

Several public data sources were used to measure demographic and other characteristics of the schools, districts, and counties in California (exhibit A-8).

Exhibit A-8. Public data sets and their variables used to measure demographic and other characteristics of the schools, districts, and counties.

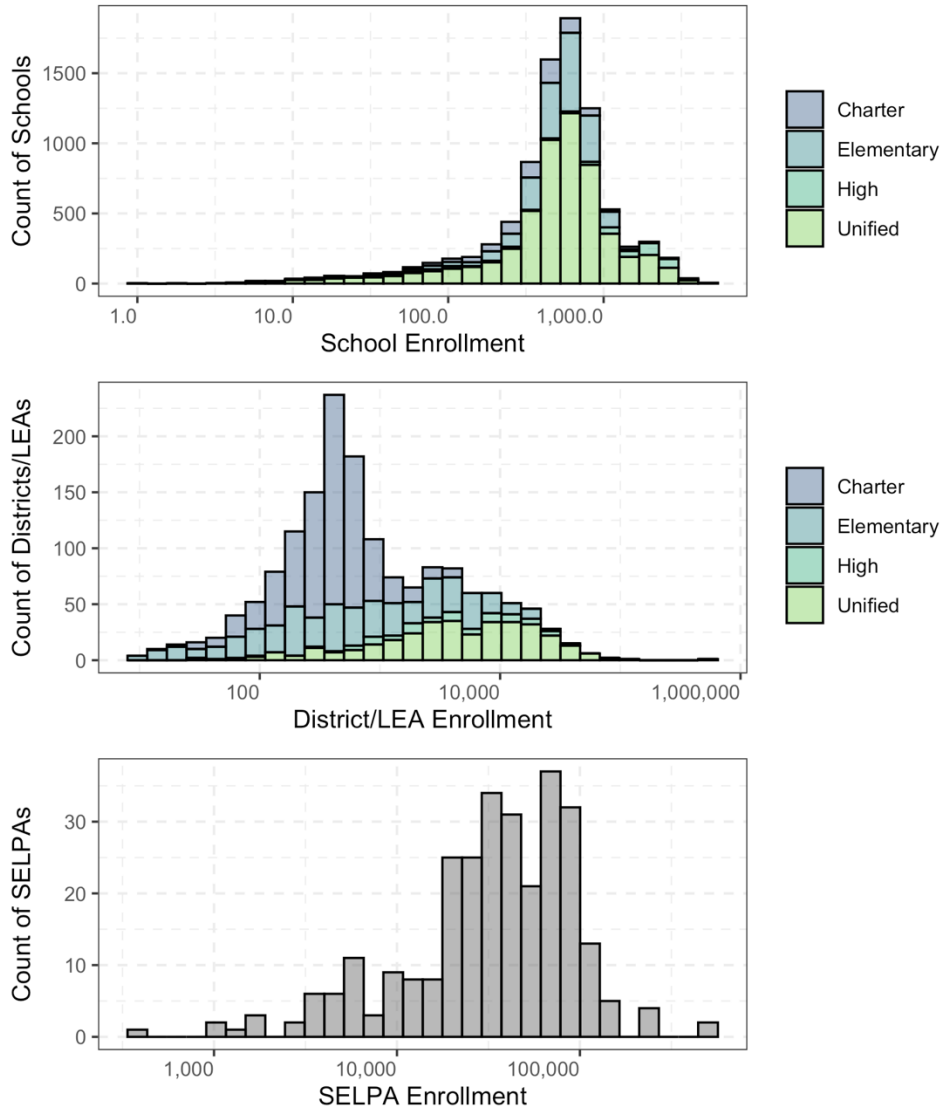
Data Source	Raw Variables Used
NCES School Directory	Identifiers for each school and district in California
NCES CWI-FT	"Comparable Wage Index for Teachers" data for California
U.S. Bureau of Labor Statistics County Data	Unemployment rate
U.S. Census Bureau District and County Shape Files	Area of land mass, latitude and longitude, shape data
U.S. Census Bureau County Business Data	Total number of establishments and the numbers of construction, manufacturing, retail, and accommodation establishments
U.S. Census Bureau's American Community Survey	Total count of households, number of households with no individuals aged 60+, percent of owner-occupied houses , count of individuals with college degree, count of individuals with some college, total population, percent of individuals 16+ employed who are part of the labor force, percent of labor force working in natural resources, construction, and maintenance occupations, Percent of labor force working in management, business, science, and arts occupations, percent of labor force working in production, transportation, and material moving occupations, percent of labor force working in sales and office occupations, percent of labor force working in service occupations, percent of individuals 16+ unemployed who are part of the labor force, percent of total unemployment
National Oceanic and Atmospheric Administration (NOAA)	Average heating degree days per county, average cooling degree days per county, average elevation of the stations within the county
U.S. Department of Housing and Urban Development	Fair market rent, whether county is considered metropolitan, count of private schools that cover all K–12 grades within a district, count of all private schools within a district, the total enrollment of the private schools within a district

Source. Data dictionaries for the NCES, the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the NOAA, and the U.S. Department of Housing and Urban Development.

In addition to these data, the study also used publicly reported average daily attendance and enrollment files from CDE.

Enrollment was an essential variable for estimating economies of scale — the observed phenomenon that smaller entities tend to have higher per-unit (or in this case, per-pupil) costs than larger entities. This phenomenon has been consistently observed in education settings (e.g., Gronberg et al., 2015). To assess economies of scale in the California education system, there are three potential levels to examine: schools, districts, and SELPAs. This means the study required enrollment numbers at all three levels (exhibit A-9). Notably, at the school level, unified school district schools were more common than schools in other district types; however, at the district/LEA level, charters were plentiful compared with the others. This is because a charter school is often the sole school in its LEA.

Exhibit A-9. Enrollment (log scale) at the school level, district level, and SELPA levels



Source. CDE Enrollment data for 2018/19. Note that colors represent district/LEA type for both the schools (top panel) and the districts/LEAs (middle panel). SELPAs do not have a district/LEA type, so no color is shown for that panel (bottom panel).

Missing Values in the Public Data

Some schools and LEAs were not included in one or more public data sets. Missing values can be due to a lack of reporting for that unit or the relatively new creation of the unit. This was particularly true of charter schools, many of which were not represented in some of the data. Where possible and appropriate, data were imputed using the average in the county. Unfortunately, some charters are not geographically based, so their data could not be imputed.

Analyses Using These Data

The final data set with all data combined comprised 26,800 observations at the school level, with nearly 9,000 schools represented across 2016/17, 2017/18, and 2018/19. These schools represented between 1,400 and 1,600 LEAs across those three years.

This final data set was used in both of the two main analyses reported in this study:

1. Education Cost Function. The education cost function used school-level data to estimate costs associated with education. This was the study's core analysis that provided important estimates of costs relating to students with disabilities and other student characteristics, of the costs of improving student performance, and of economies of scale. The methods used are discussed in more detail in appendix B.
2. Supplemental Analyses. The supplemental analyses report summary data at both the student level and the school level. These analyses were conducted to clarify and provide further insights into results from the education cost function and to identify benefits and drawbacks of policy considerations.

Data Challenges

Although there were sufficient data for the purposes of the study, some data-related challenges limited some of the conclusions.

- **IEP Progress Measure.** One limitation was the inability to access information related to student progress on an IEP. This information would have been beneficial because, as commonly acknowledged, for many students with disabilities, standardized tests cannot adequately measure their growth. California is in the process of improving the IEP template, making it more possible to have a centralized database of IEPs and track student progress over time.
- **School-Level Staff Salary and Benefit Information.** California began collecting data about teacher salaries and benefits by school after the start of this study. As such, the study team did not have access to these data for the studied years. This information would have been beneficial in assigning more accurate costs to each school. Although the study team was able to work around this data gap for this study, such information will be useful for future research.
- **Charter School Data.** Charter schools are different from other public schools in terms of the regulations under which they operate. In some cases, it was impossible to find data associated with their demographics and costs. An additional challenge related to charter school data is that because many charter schools are relatively new, they did not yet have adequate performance data.

Appendix B: Education Cost Function Technical Report

Overview

The core analysis of this study was to assess costs associated with the education of students with disabilities. Three challenges were immediately clear in conducting such an analysis. First, for each LEA, California does not have cost data, but rather expenditure information (California is not alone among states in not having these various cost-related data readily available). Although similar to each other, cost and expenditures are distinct and need to be disentangled from one another. Herein, *expenditures* are the amounts that were paid in order to fund educational programs; *costs* are the actual amounts that are necessary to fund those educational programs. Ultimately, costs are necessary for the research questions. Second, costs occur at various levels of the education system. For example, some costs are incurred at the school level, such as building costs that apply equally to all students at that site, whereas other costs are at the staff level, such as salaries and benefits. Other costs are at the student level, such as some behavioral services. Third, and particularly pertinent in researching special education costs, is the challenge of isolating costs associated with specific aspects of education.

These challenges were addressed by using statistical estimation tools that mathematically distinguish and separate costs from expenditures, that can account for various levels of the costs, and that can isolate costs associated with particular factors, including, in this case, those related to special education. These statistical estimation tools are generally known as *cost functions,* and when appropriately applied, they can provide insights that would otherwise be more difficult and expensive to obtain.

With these benefits in mind, the study team selected a powerful education cost function technique called *stochastic frontier analysis* (SFA) to assess costs associated with the education of students with disabilities. This specific approach is an economically valid framework to estimate costs using the type of expenditure data California has available. This approach was chosen for three key reasons:

1. It can handle several variables at once. This allows for the inclusion of all the factors necessary to answer the research questions.
2. It can estimate “marginal” costs associated with each variable. This means that it provides information on the cost of changing the characteristics (e.g., improving student performance, increasing enrollment, increasing the proportion of students with disabilities).
3. It accounts for school efficiency. This is to say that it statistically allows the schools to not be perfectly efficient and will even estimate the relative efficiency of schools in relation to the other schools in the model. This is a core way the expenditure information can be used to estimate costs. Note that in this context, inefficiency should not necessarily be interpreted as wasteful expenditures, but as unexplained expenditures in excess of the minimum. For this study, this also measures costs not associated with academic outcomes.

In the education cost function, the study team used several measures aimed at quantifying school-level expenditures, student performance, regional factors, and other characteristics of SELPAs, LEAs, and schools. Specifics about the data and the measures are discussed in appendix A.

Stochastic Frontier Analysis

The education cost function is built on the economic principle of cost frontiers. A cost frontier is a theoretical, mathematical boundary that, given input prices and production technology, defines the costs associated with producing certain outcomes. In the context of school systems, a cost frontier describes the costs associated with producing education outputs (e.g., learning, graduation) based on input prices (e.g., staff salaries, regional costs) and the production technology (e.g., how efficient and effective the instruction is).

The SFA is a statistical approach to estimating the cost frontier. As such, its use can provide insights into which of the various variables are affecting costs and by how much. This approach, which has been used in other states to assess education costs (e.g., Gronberg et al., 2011a, 2012; Gronberg et al., 2015; Willis et al., 2019a; Willis et al., 2019c), allows for the possibility that the expenditures might exceed minimum cost for one of two reasons: random errors or inefficiency. If there is no inefficiency in the system (and all relevant outcomes are measured), the SFA will yield the same model estimates as ordinary regression analyses. However, if there are inefficiencies (or unmeasured outcomes), the SFA will yield a better prediction of the cost of education.

Formally, the education cost function can be expressed as:

$$ln\,E^* = lnC(w_1, \ldots, w_k; z_1, \ldots, z_l; y, N|\beta) - lnN + v(x, \lambda) + u(x, \delta)$$

where E^* are observed expenditures per pupil in the school, wk are input prices, zk are quasi-fixed inputs, including environmental factors, y is a vector of outcomes, N is the number of students (at the school, LEA, and SELPA levels), is the cost parameter vector to be estimated, is the random noise error function representing exogenous random shocks (e.g., noisy thunderstorm on a test day), and is a one-sided error function that represents the inefficiency and the factors that predict inefficiency.

Unit of Analysis

The education cost function is a school-level analysis, and it provides insights based on the system at a school. As such, all estimates are of proportions and averages within each school (e.g., proportion of school enrollment made up of students with disabilities). The education cost function can provide insights into student-level costs, but, importantly, generally it uses data averaged across all students at the school, region, or state. In this study, each variable was averaged at either the school, region, or county level.

School-Level Expenditures (Dependent Variable)

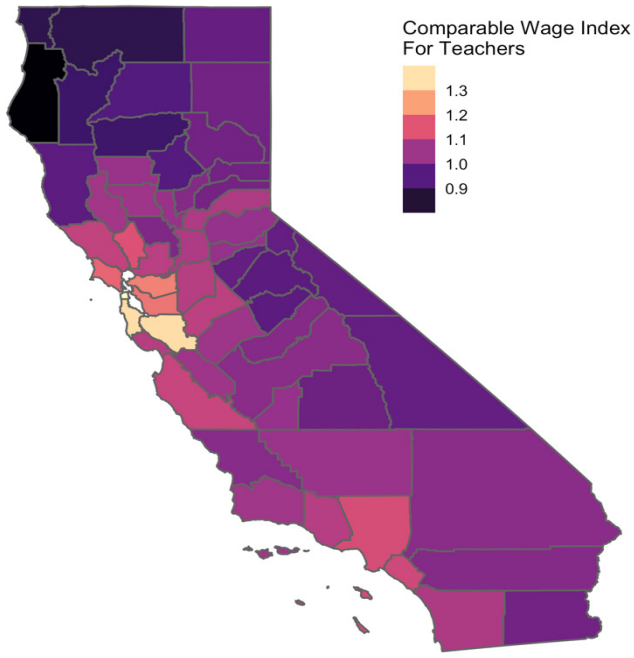
The natural log of the observed expenditures per pupil for each school is the dependent variable in the education cost function. See exhibit A-7 for the distribution of this variable.

Input Prices

Input prices are the relative costs associated with a given unit, including the price of labor and other local prices. Two assumptions underlie the inclusion of a measure of regional cost variation in the cost function analysis. First, it is assumed that labor costs vary according to differences in the local wage demands in a job location even when applicant qualifications and job duties are identical. This is a reasonable assumption, given the vast variability in economies throughout California. Second, it is assumed that this geographical variation in labor costs is driven by two primary factors: local cost of living and local amenities impacting attractiveness of the community. With this in mind, failing to account for this variation in labor costs would result in inequity in funding for the LEAs because a dollar in one area does not go as far as a dollar in another area.

There are several approaches to adjusting for this variation, although given the data constraints, some of those are not available. Herein, the study team used the Comparable Wage Index for Teachers. The NCES provided data representing "a measure of the systematic, regional variations in the wages and salaries of college graduates who are not PK–12 educators as determined by reported occupational category" (NCES, 2018, n.p.). In essence, these data show regional differences in costs that are not controlled by the educational system. Exhibit B-1 shows the range and distribution of the CWI-FT across the state.

Exhibit B-1. The Comparable Wage Index for Teachers across the state of California.



Source. Comparable Wage Index for Teachers for 2018 published by the NCES

In addition to the price of labor, other costs can vary across the state, including, for example, costs of equipment and education materials. Unfortunately, data are not available on the relative costs of such factors. Although the costs of education equipment (e.g., pencils and paper) are determined in a competitive market and likely do not vary much across schools, other factors do vary. This includes prices for nonprofessional labor and building rents, which are largely a function of school location. An indicator of whether the school is in a metropolitan area or not was used to account for variation in these last two factors.

Quasi-Fixed Inputs

The quasi-fixed inputs are aspects of the education environment that affect cost, but are not purchased. Several of these inputs were core to answering the research question about costs associated with educating students with disabilities. Among the inputs are the different proportions of school enrollment made up, respectively, of (1) students with disabilities, (2) students who are English learners, (3) students designated as being economically disadvantaged, and (4) students with disabilities who also have one or both of the other two designations. Because student needs and costs can vary

within subgroups of students with disabilities (i.e., numbers 1 and 4, above), we further isolated some variables by using particular disability categories. At the school level, this meant identifying, for every disability category, the proportion of the school's students with disabilities whose primary disability was represented in that category. For example, in one school, 50 percent of students with disabilities were identified as having a Specific Learning Disability, another 10 percent were identified with Speech\ Language Impairment, and so on.

Although these proportions of student groups do not directly measure student need (i.e., there is variability within each category regarding service needs), such characteristics are currently being used for that purpose by administrators and policymakers, and they do represent some important aspects of the school environment. Moreover, such characteristics are essential for answering the research questions, particularly those about additional costs associated with students with disabilities.

In addition to these core inputs, the other quasi-fixed inputs used for this study included SELPA type (i.e., multi-LEA or single-LEA), school type (i.e., elementary, middle, high), district type (i.e., elementary, high, unified, charter), distance to the nearest metropolitan area, and an indicator for Los Angeles Unified (by far the largest district).

School Performance (Outcomes)

Two school-level performance measures were used: NCE scores and the 4-year cohort graduation rate (see appendix A for more details on these variables). Each measure incorporated all students — those with and those without disabilities — because the outcomes for each group were highly correlated when split into scores and graduation rates by group, suggesting that, in general, schools benefited their students in similar ways regardless of the disability status.

Enrollment

An essential environmental factor in the education cost function is enrollment. Special education in California has three levels of enrollment: schools, districts, and SELPAs. Thus, the model included enrollments at each level. Although enrollment at each level contains similar information, by including each, the model can estimate the economies of scale at each level, independent of the other levels.

Heteroskedasticity and Efficiency Factors

As mentioned previously, the SFA approach has two error functions (and): a two-sided term that measures the random shocks and a one-sided function that measures school inefficiency. To improve model performance, both terms can be predicted by either heteroskedasticity factors (for the two-sided error function) or efficiency factors (for the one-sided error function). Here, for heteroskedasticity, the percentage of students tested at each school and the average absences in each school were used. This adjusts for the potential error associated with systematic measurement error. The one-sided variance function is modeled as a linear combination of six variables: Herfindahl-Hirschman indices (HHI),5 enrollment in private schools, percentage of the population with at least a bachelor's degree, district enrollment, the proportion of total enrollment that is economically disadvantaged, and the distance to the closest teacher training. These variables represent competition and technology at the school. All but the distance to the closest teacher training are representing competition and are similar to the efficiency factors used in other states (e.g., Belfield & Levin, 2002; Duncombe & Yinger, 2005; Millimet & Collier, 2008; Gronberg et al., 2015). The distance to the closest teacher training represents a measure of the instructing technology at the school, based on the assumption that being closer to teacher training would allow for more efficient instruction.

5 The HHI are a measure of school competition (Gronberg et al., 2015). Given a certain area (e.g., a district), one can measure how much of the student body that school represents in the area. The higher the amount, the less the competition in the area.

Instrumental Variables

A challenge that must be addressed within cost function analyses is *endogeneity*. An endogenous variable is one that is influenced by other variables in the model. For example, school quality can be considered endogenous because the same administrators that can influence school quality can also decide on the school funding. As a result, one cannot easily claim that a funding change caused a change in school quality or that school quality caused a change in funding. Without an adjustment, the resulting estimates can be biased, even to the point that they are in the wrong direction. One of the most popular approaches in economics literature to alleviating endogeneity issues is to use instrumental variables. An instrumental variable is one that highly correlates with the endogenous variables and is only correlated with the dependent variable through its relationship with the endogenous variables.

In the education setting, viable instruments are needed for school quality and school size (the endogenous variables). Viable instruments for school quality and size are well correlated with quality or size and not correlated with school expenditures except through their relationship with quality or size. In this analysis, three instruments were used: (1) the percentage of business establishments that are in the construction industry, (2) the percentage of chronic unemployment, and (3) the number of heating days (i.e., days when the average temperature drops below 65 degrees Fahrenheit). Arguably, all three fit human capital theory, which suggests that labor market conditions can influence both the demand for education quality and the opportunity cost of staying in school (Gronberg et al., 2017). Although the influence of the third instrument is less obvious, the number of heating days has been shown to affect labor market conditions (International Labour Office, 2019).

Results

The full education cost function analysis is done in two stages:

1. First-stage results (using the instrumental variables)
2. Second-stage results (the education cost function)

These two stages are reported below.

First-Stage Results

Any observations that had missing values in the expenditures, enrollment, input prices, environmental factors, efficiency or heteroskedasticity factors, or school performance measures were dropped. This resulted in 21,965 observations from across California, representing schools and districts from small to large.

The first stage included three ordinary least squares regression models, one for each endogenous variable. These models include the endogenous variables as the dependent variables in this stage predicted by the three instrumental variables. These models also include all environmental and input prices as covariates. A key to assessing if the instrumental variables are valid is assessing the F-statistic for just the instrumental variables. Here, all F-statistics were above 10 (81.3, 157.2, and 94.5 for NCE scores, graduation rate, and school enrollment, respectively).

Exhibit B-2. Results of the first stage.

	NCE Scores	Graduation Rate	School Enrollment
Percentage Construction	−0.044**	0.274***	−0.007***
Percentage Chronic Unemployment	−0.041	−0.306***	0.040***
Number of Heating Days (in 100s)	−0.068***	−0.116***	0.008***
R^2	0.505	0.267	0.381
Observations	21,965	21,965	21,965

Source. Authors' calculations using data from CALPADS, CASEMIS, CAASPP, the U.S. Census Bureau, the NOAA, and the U.S. Department of Housing and Urban Development. Note that these results are controlling for all environmental factors, input price factors, and district and SELPA enrollment.

Second-Stage Results

The model specification can ultimately be described as a modified trans-log model. Generally speaking, this means it includes all main effects, all quadratics, and many interactions (see model output for all variables included). The complexity was chosen to adequately represent the complexities in California's education system. Because of the complexity, interpretation directly from the coefficient shown in exhibit B-3 is not beneficial. Instead, the study team used average and conditional marginal effects to have interpretable and actionable insights. These average and conditional marginal effects are shown throughout this report.

These two-stage models are reported in exhibit B-3. Four models are shown, with the first being the model the study team considers the final one. The other three show alternative specifications that allowed for the estimation of the cost groups. Importantly, though, all three suggest the same conclusions.

Exhibit B-3. Results of the second stage (the education cost function) with four different specifications.

	Main Model	Model 2	Model 3	Model 4
Frontier				
NCE	0.0417	0.0420*	0.0454*	0.0415*
NCE Sq.	−0.000660	−0.000672*	−0.000664*	−0.000590
NCE Cubed	0.00000554**	0.00000564**	0.00000571**	0.00000502**
Graduation Rate	0.0240***	0.0248***	0.0254***	0.0259***
Graduation Rate Sq.	0.0000485***	0.0000485***	0.0000368**	0.0000380**
School Enrollment (log)	0.615*	0.619*	0.609**	0.546*
School Enrollment (log) Sq.	−0.0143	−0.0150	−0.0141	−0.00955
NCE x Graduation Rate	−0.000218***	−0.000218***	−0.000228***	−0.000225***
NCE x School Enrollment (log)	0.00155**	0.00150**	0.00134*	0.00143**
NCE x Proportion SWD	−0.0196	−0.0198	−0.0181	−0.0162
NCE x Proportion EL	0.00475*	0.00484*	0.00600**	0.00616**
NCE x Proportion EconDis	−0.00569***	−0.00566***	−0.00511***	−0.00495***
NCE x SPED Proportion SLD	0.00683***	0.00677***		
NCE x SPED Proportion SLI	0.00210	0.00223		
NCE x SPED Proportion OHI	0.00313	0.00314		
NCE x SPED Proportion VI		−0.0187		
SPED Prop VI		0.940		
NCE x Metropolitan	0.0109	0.0112	0.0116	0.0115
NCE x Elementary School	−0.0150	−0.0151	−0.0159	−0.0186
NCE x Middle School	−0.00855	−0.00872	−0.00765	−0.00832
NCE x High School	−0.00859	−0.00896	−0.0102	−0.0101
NCE x LEA Enrollment (log)	−0.000198	−0.000191	−0.0000636	−0.000167
Graduation Rate x School Enrollment (log)	0.000131	0.000126	−0.0001000	0.0000517
Graduation Rate x Proportion SWD	−0.00678	−0.00666	−0.00842	−0.00671
Graduation Rate x Proportion EL	−0.00449*	−0.00465*	−0.00562**	−0.00539**
Graduation Rate x Proportion EconDis	0.00536***	0.00541***	0.00493***	0.00422***
Graduation Rate x SPED Proportion SLD	−0.00682***	−0.00698***		
Graduation Rate x SPED Proportion SLI	−0.000470	−0.000598		
Graduation Rate x SPED Proportion OHI	−0.000326	−0.000487		

	Main Model	Model 2	Model 3	Model 4
Graduation Rate x Metropolitan	0.00178	0.00184	0.00167	0.00168
Graduation Rate x Elementary School	0.00146*	0.00142*	0.00217***	0.00232***
Graduation Rate x Middle School	0.00245**	0.00242**	0.00185*	0.00210**
Graduation Rate x High School	0.00548***	0.00548***	0.00480***	0.00485***
Graduation Rate x No Regular Classroom	−0.00325***	−0.00326***	−0.00307***	−0.00305***
Graduation Rate x LEA Enrollment (log)	−0.00271***	−0.00270***	−0.00267***	−0.00264***
School Enrollment (log) x Proportion SWD	−0.154**	−0.153**	−0.144**	−0.114*
School Enrollment (log) x Proportion EL	0.0178	0.0194	0.0187	0.0186
School Enrollment (log) x Proportion EconDis	0.000698	0.0000752	0.00526	−0.00129
School Enrollment (log) x SPED Proportion SLD	−0.0618**	−0.0606**		
School Enrollment (log) x SPED Proportion SLI	−0.110***	−0.108***		
School Enrollment (log) x SPED Proportion OHI	−0.0635*	−0.0627*		
School Enrollment (log) x Metropolitan	−0.0849	−0.0898	−0.0838	−0.0763
School Enrollment (log) x Elementary School	−0.207*	−0.205*	−0.178	−0.175
School Enrollment (log) x Middle School	0.0686	0.0665	0.105	0.0622
School Enrollment (log) x High School	0.140	0.137	0.162*	0.124
School Enrollment (log) x LEA Enrollment (log)	−0.0995***	−0.101***	−0.113***	−0.106***
NCE Sq. x Elementary School	0.000164	0.000163	0.000172	0.000196
NCE Sq. x Middle School	0.0000637	0.0000653	0.0000652	0.0000728
NCE Sq. x High School	0.0000286	0.0000330	0.0000558	0.0000552
NCE Sq. x Proportion SWD	0.000302	0.000296	0.000312	0.000287
NCE Sq. x Proportion SWD Sq.	−0.00000498	0.00000307	−0.0000969	−0.0000879
NCE Sq. x Metropolitan	−0.000135	−0.000138	−0.000149	−0.000147
LEA Enrollment (log) Sq. x Elementary School	0.000274**	0.000271**	0.000377***	0.000387***
LEA Enrollment (log) Sq. x Middle School	0.000662***	0.000657***	0.000681***	0.000658***
LEA Enrollment (log) Sq. x Metropolitan	0.000102	0.0000881	−0.0000294	−0.000270
LEA Enrollment (log) Cubed	0.00380***	0.00387***	0.00422***	0.00429***
School Enrollment (log) Sq. x Metropolitan	0.00528	0.00580	0.00540	0.00449

	Main Model	Model 2	Model 3	Model 4
School Enrollment (log) Sq. x LEA Enrollment (log)	0.000799	0.000822	0.00113	0.000596
School Enrollment (log) Sq. x Elementary School	0.0116	0.0114	0.00808	0.00789
School Enrollment (log) Sq. x Middle School	−0.0100	−0.00987	−0.0129	−0.00945
School Enrollment (log) Sq. x High School	−0.0136*	−0.0134*	−0.0151*	−0.0120
Proportion SWD Sq.	−0.215	−0.252	−0.214	−0.159
Proportion SWD Cubed	2.436*	2.397*	2.470*	2.206*
Proportion SWD Only	0.153	0.178	0.129	−0.118
Proportion EconDis Only	0.0143	0.0101	−0.00941	0.0847
Proportion EL Only	0.270***	0.261***	0.299***	0.240***
CWI-FT	0.175***	0.181***	0.202***	0.227***
Distance to Metropolitan	0.00000262**	0.00000263**	0.00000233**	0.00000276**
SPED Proportion SLD	0.548**	0.533**		
SPED Proportion SLI	0.427	0.411		
SPED Proportion OHI	0.148	0.122		
Year (2016)	−0.414***	−0.414***	−0.396***	−0.395***
Year (2017)	−0.369***	−0.370***	−0.352***	−0.350***
Elementary School	1.017*	1.015*	0.908*	0.963*
Middle School	−0.00902	0.00349	−0.106	0.0172
High School	−0.334	−0.321	−0.322	−0.230
LEA Enrollment (log)	0.824***	0.848***	0.855***	0.874***
LEA Enrollment (log) Sq.	−0.0281	−0.0296*	−0.0280	−0.0328*
LEA Enrollment (log) Cubed	0.000367	0.000419	0.000316	0.000512
LEA Enrollment (log) x Elementary School District	0.0522***	0.0493***	0.0495***	0.0486***
LEA Enrollment (log) x High School District	0.0608***	0.0577***	0.0580***	0.0568***
LEA Enrollment (log) x Unified School District	0.0495***	0.0457***	0.0459***	0.0445***
LEA Enrollment (log) x Distance to Metropolitan	−0.0000003**	−0.0000003**	−0.0000003**	−0.0000003**
SELPA Enrollment (log)	−0.332***	−0.333***	−0.316***	−0.320***
SELPA Enrollment (log) Sq.	0.0160***	0.0160***	0.0153***	0.0155***
Multi-LEA SELPA	−0.0308***	−0.0289***	−0.0288***	−0.0292***

	Main Model	Model 2	Model 3	Model 4
LAU Indicator	−0.172***	−0.187***	−0.178***	−0.194***
SPED Proportion NPS/A	0.279	−2.253*	0.652**	0.741**
SPED Proportion NPS/A x SPED Proportion VI		1.714		
SPED Proportion NPS/A x SPED Proportion SLD		4.482*		
SPED Proportion NPS/A x SPED Proportion SLI		2.746		
SPED Proportion NPS/A x SPED Proportion OHI		2.847		
NCE x SPED Proportion AUT			−0.00970***	
NCE x SPED Proportion HI			−0.00871	
NCE x SPED Proportion MD			0.0275*	
NCE x SPED Proportion ID			−0.00239	
Graduation Rate x SPED Proportion AUT			0.00324	
Graduation Rate x SPED Proportion HI			0.0292***	
Graduation Rate x SPED Proportion MD			0.0296*	
Graduation Rate x SPED Proportion ID			0.00786*	
School Enrollment (log) x SPED Proportion AUT			0.0682	
SPED Proportion AUT			−0.114	
School Enrollment (log) x SPED Proportion MD			0.0378	
SPED Proportion MD			−3.734**	
School Enrollment (log) x SPED Proportion HI			0.189*	
SPED Proportion HI			−2.997**	
School Enrollment (log) x SPED Proportion ID			−0.0210	
SPED Proportion ID			−0.196	
SPED Proportion Deafness			0.415***	
SPED Proportion NPS/A x SPED Proportion HI			3.336	
SPED Proportion NPS/A x SPED Proportion AUT			−2.097	
SPED Proportion NPS/A x SPED Proportion ID			−0.804	

	Main Model	Model 2	Model 3	Model 4
SPED Proportion NPS/A x SPED Proportion MD			13.67	
SPED Proportion NPS/A x SPED Proportion Deafness			−16.21	
NCE x SPED Proportion MeD				−0.205
NCE x SPED Proportion DB				−0.222
NCE x SPED Proportion ED				0.00504
NCE x SPED Proportion TBI				0.0295
NCE x SPED Proportion OI				−0.00386
Graduation Rate x SPED Proportion MeD				−0.244
Graduation Rate x SPED Proportion DB				0.189
Graduation Rate x SPED Proportion ED				−0.00130
Graduation Rate x SPED Proportion TBI				0.00871
Graduation Rate x SPED Proportion OI				0.0195
School Enrollment (log) x SPED Proportion MeD				0.0535
SPED Proportion MeD				30.76
School Enrollment (log) x SPED Proportion DB				4.217*
SPED Proportion DB				−28.56
School Enrollment (log) x SPED Proportion ED				0.0354
SPED Proportion ED				−0.317
School Enrollment (log) x SPED Proportion TBI				−0.166
SPED Proportion TBI				−0.969
School Enrollment (log) x SPED Proportion OI				−0.0313
SPED Proportion OI				−0.781
SPED Proportion NPS/A x SPED Proportion MeD				65.12
SPED Proportion NPS/A x SPED Proportion DB				−147.9
SPED Proportion NPS/A x SPED Proportion ED				−0.873
SPED Proportion NPS/A x SPED Proportion TBI				42.57**

	Main Model	Model 2	Model 3	Model 4
SPED Proportion NPS/A x SPED Proportion OI				−30.40*
Residuals (NCE)	−0.00341	−0.00305	−0.00301	−0.00237
Residuals (Graduation Rate)	−0.000422	−0.00122	−0.00177	−0.00289
Residuals (School Enrollment)	0.0405	0.0522	0.0516	0.0482
Constant	4.289***	4.204***	4.168***	4.216***
One-Sided Error				
HHI	−9.286***	−9.272***	−9.262***	−9.786***
Total Enrollment in Private Schools	−0.101***	−0.102***	−0.0968***	−0.0981***
Percent With at Least a Bachelor's Degree	0.0158***	0.0159***	0.0161***	0.0158***
Distance to Teacher Training	1.163***	1.168***	1.201***	1.240***
LEA Enrollment (log)	−0.541***	−0.540***	−0.544***	−0.539***
Proportion EconDis	−0.968***	−0.972***	−0.959***	−0.909***
Constant	0.809***	0.801***	0.789***	0.743***
Two-Sided Error				
Percent Tested	−0.0172***	−0.0172***	−0.0172***	−0.0171***
Average Absences	0.0443***	0.0446***	0.0453***	0.0450***
Constant	−3.004***	−3.008***	−3.018***	−3.005***
N	21,965	21,965	21,965	21,965

Source. Education cost function. Note. Abbreviations used for disability categories: SLD = Specific Learning Disability, SLI = Speech/Language Impairment, OHI = Other Health Impairment, VI = Visual Impairment, AUT = Autism, MD = Multiple Disability, HI = Hearing Impairment, ID = Intellectual Disability, MeD = Medical Disability, DB = Deaf/Blindness, ED = Emotional Disturbance, TBI = Traumatic Brain Injury, OI = Orthopedic Impairment. Abbreviations used for other need categories: EL = English learner, EconDis = Economically disadvantaged. Note: All model specifications shown produced the same conclusions. NPS/A refers to service provision through nonpublic schools or nonpublic agencies.

As part of the second-stage results, robustness checks were conducted for influential samples and specifications that could impact conclusions. Robustness checks suggested that changes to the model specification and/or sample was not overly influential on the results. That is, conclusions produced in the main model shown in exhibit B-3 were not influenced unduly by a few schools and can be considered generalizable in California. Below are the notable differences for each robustness check.

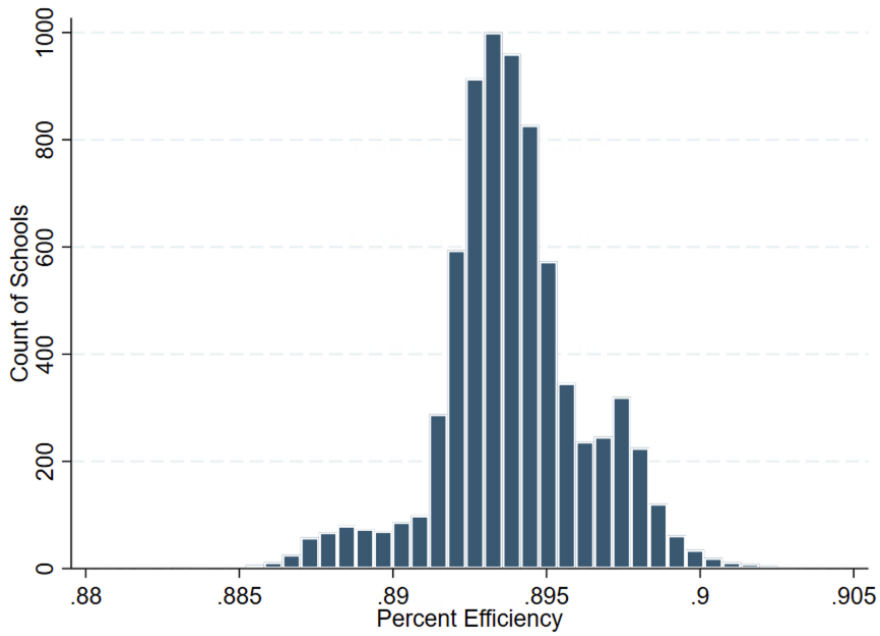
- **Model without Los Angeles Unified.** This model had very few differences in the average marginal effects. The differences were with economies of scale. In the full model, Los Angeles Unified has a higher cost than the minimum (the curve slopes back up after sloping down to a minimum). Without Los Angeles Unified, there is not an upward slope at the end. This was expected, as Los Angeles Unified was the only district having meaningful diseconomies of scale. In addition, the SELPA economies of scale is not as strong, although it is still present. This model also has a lower marginal cost of NPS/A (around 16 percent, instead of the 24 percent with the full model).
- **Model without the largest and smallest districts.** This model removes Los Angeles Unified and any districts with an enrollment less than 1,000 (approximately 3,000 schools were dropped, including charters). The only meaningful change was to estimates of economies of scale, with there being much smaller economies of scale (both at the district and SELPA levels). The average marginal costs associated with special education programs decreased slightly, to an average of approximately 40 percent. This model also has a lower marginal cost of NPS/A (around 12 percent instead of the 24 percent with the full model).
- **Model without charter LEAs.** When removing all charter LEAs from the model, the average marginal costs associated with special education programs decreased slightly, to an average of approximately 45 percent. This model also has a lower marginal cost of NPS/A (about 3 percent, instead of the 24 percent with the full model).

Ultimately, these robustness checks suggest that the overall conclusions are fairly stable, even without major aspects of the California education system. Although some estimates are lower in the robustness checks, the full model should be used, as it represents all available schools in California.

School Efficiency

The model suggested a high level of school efficiency in California, with the majority of schools in 2018/19 between 89 and 90 percent efficiency. Exhibit B-4 shows the distribution of efficiency.

Exhibit B-4. Efficiency of California schools in 2018/19.



Source. Education cost function.

Key Strengths and Limitations

Cost function methods are valuable as compared with alternative analytic approaches for three main reasons.

1. The method is able to use the observed experiences of nearly all public schools in the state, rather than relying on a sample of experiences or settings, whether by way of a selected group of practitioners or case studies of successful schools. That is, results from this method tend to be more generalizable than other approaches to the whole state. They are also specific, in this case, to California instead of relying on cases outside the state based on previous research.
2. It is able to provide insights on the impact of the environmental context on spending and outcomes. In this study, this included student characteristics and need, regional costs, and operational scale (the size of the school, district, and/or SELPA). This attribute of cost functions is particularly useful in a state like California that does not have data on costs associated with educating students with disabilities and how that might be intensified if joined with language needs (i.e., English learners) or economic disadvantages. That is, an estimate of additional cost, controlling for other school factors, can provide insights to help shape funding decisions that otherwise could not be informed by available data.
3. And finally, the specific cost function analysis method used for this study allows for estimates to consider spending that does not contribute to the outcomes included in the model (or other outcomes correlated with the outcomes included). In other words, it can adjust for cases of inefficiency.

Of course, there are also limitations to the cost function approach. Of these, four are most relevant. First, cause-effect relationships are not necessarily shown in the model. For example, researchers cannot claim that a particular level of funding will cause a change in school performance for any given school. Although the correlation is strong, it is still a correlation in this study. Second, estimates are averages across the state. Even though the model takes into account the complexity of the system, in order to have interpretable and action-oriented insights, the results are averages. This means that individual students are likely to differ from what was observed across the state. Third, data constraints limit the extent to which the results can represent all schools in California. In this study, data constraints were mostly in the form of missing data. The end of appendix A highlights some of the data gaps and how those could potentially be improved for future research. And fourth, the model did not include any indicators of nonacademic outcomes for students with disabilities. As such, there are costs that are certainly associated with educating students with disabilities that are not accounted for fully in this study.

Appendix C: Supplemental Data Analyses

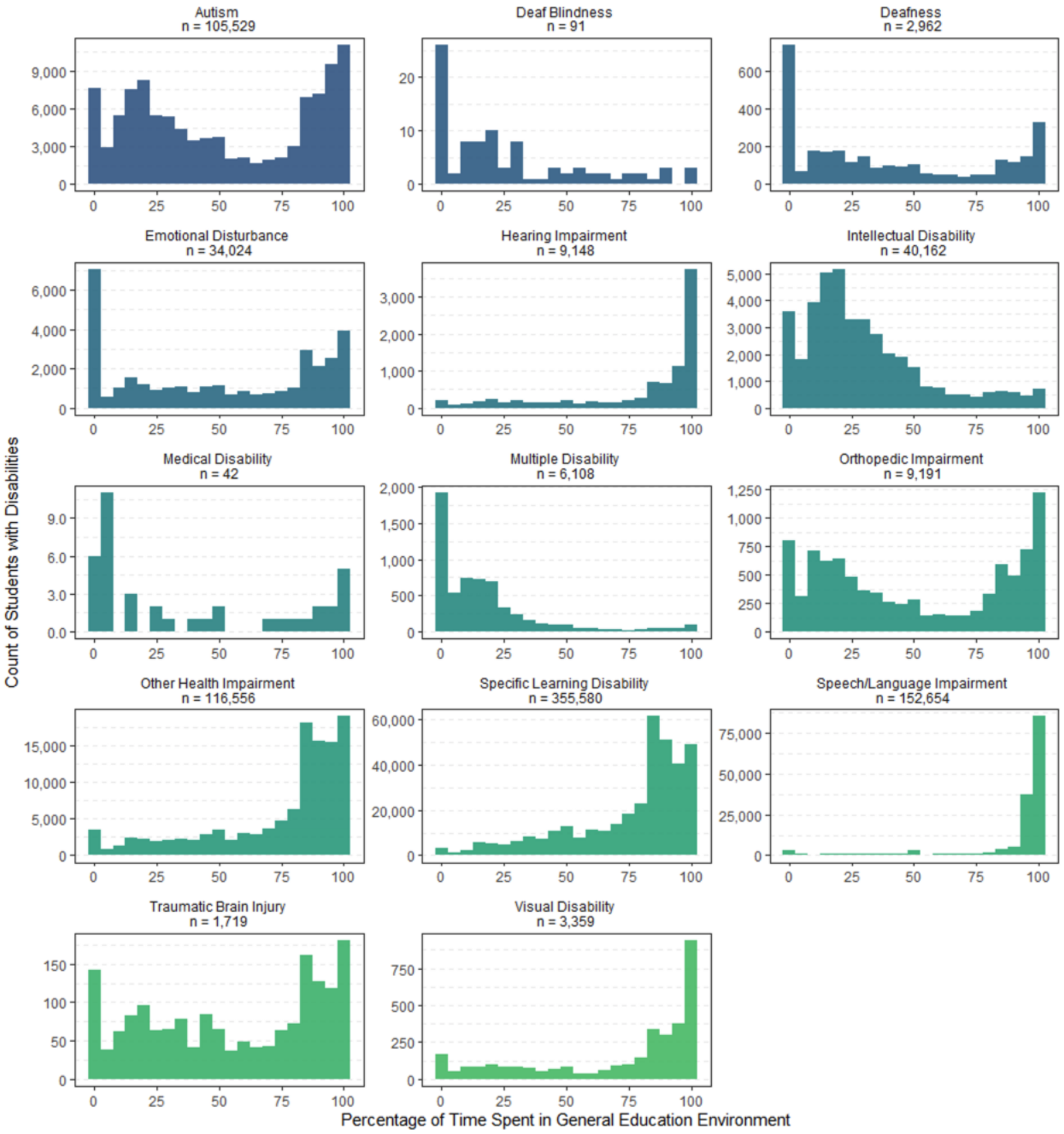
These additional analyses support and provide context for the findings and considerations in this report in the following areas:

- Cost Variability Within Disability Categories
- Secondary Disability Categories
- English Learners With Disabilities
- Economies of Scale
- Regional Cost Differences
- Preschool Students With Disabilities

Cost Variability Within Disability Categories

To better understand cost as it varies *within* disability categories, the study team examined the distribution of time, by percentage, that students in each category spent in the general education classroom. Although placement (i.e., time spent in or outside the general education classroom) is not an ideal proxy for cost, programs that are offered outside the regular classroom or school tend to cost more. Thus, looking at the time students spent in general education classrooms, by disability category, provides some data for understanding cost differences. Exhibit C-1 shows the distribution of students within disability categories across the range of placement in the general education classroom, from 0 percent of the day to 100 percent of the day. For some disability categories, there were clear patterns, with students spending either a large or a small amount of time in the general education classroom. This was especially true for disability categories that the cost function model found to be low cost (such as Speech/Language Impairment) or high cost (such as Multiple Disabilities). For other categories, there were bimodal distributions of time spent in the general education classroom. This was especially true for disability categories that the cost function model found to be in the mid-cost range, such as Autism, noted earlier, and Emotional Disturbance.

Exhibit C-1. Count of K–12 students with disabilities by percentage of time in general education classroom, by disability category.

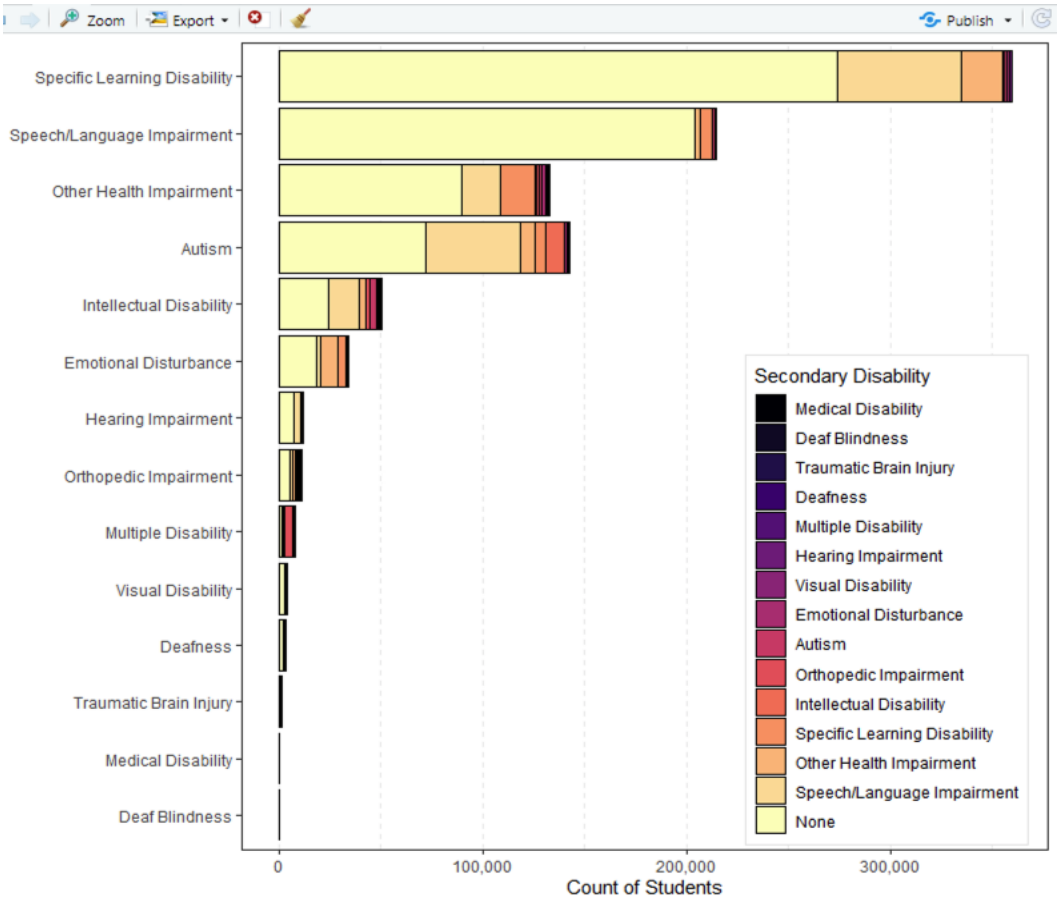


Source. Data from CASEMIS, 2017/18. Note that counts on the y-axis vary by disability category. Students in the 0 percent column on the x-axis spend no time in a general education classroom.

Secondary Disability Categories

Most (74 percent) students with disabilities in California did not have a secondary disability category, shown by the lightest section of each bar in exhibit C-2. The students most likely to have a secondary disability category were those with a primary disability category of Autism (49 percent), Other Health Impairment (32 percent), or Specific Learning Disability (24 percent). The team also examined any secondary identifications for students whose primary identification was Speech Language Impairment — found to be a low-cost category — to determine how often the second identification was one with a higher cost. It found that for students in each of the primary disability categories in the low-cost grouping (Specific Learning Disability, Speech/Language Impairment, and Other Health Impairment), the large majority of the secondary disability categories had similar costs. Among students with a secondary category, Speech/Language Impairment was the secondary category for 71 percent of students with a primary disability category of Specific Learning Disability and for 84 percent of students with a primary disability category of Other Health Impairment. For students with a primary disability category of Autism who also had a secondary category, Speech/Language Impairment was the secondary disability category for 67 percent. Exhibit C-3 provides the data used to create exhibit C-2.

Exhibit C-2. Proportion of students with secondary disability categories, by primary disability category, 2018/19.



Source. Data from CASEMIS, 2018/19.

Exhibit C-3. Counts of students with secondary disability categories, by primary disability category, 2018/19.

Primary Disability	Secondary Disability	Count of Students
Autism	Deaf-Blindness	4
Autism	Deafness	55
Autism	Emotional Disturbance	1,374
Autism	Hearing Impairment	389
Autism	Intellectual Disability	9,342
Autism	Medical Disability	14
Autism	Multiple Disability	113
Autism	Orthopedic Impairment	251
Autism	Other Health Impairment	7,176
Autism	Specific Learning Disability	4,880
Autism	Speech/Language Impairment	46,698
Autism	Traumatic Brain Injury	24
Autism	Visual Disability	183
Deaf-Blindness	Autism	4
Deaf-Blindness	Deafness	2
Deaf-Blindness	Hearing Impairment	2
Deaf-Blindness	Intellectual Disability	14
Deaf-Blindness	Multiple Disability	19
Deaf-Blindness	Orthopedic Impairment	15
Deaf-Blindness	Other Health Impairment	21
Deaf-Blindness	Speech/Language Impairment	9
Deaf-Blindness	Visual Disability	4
Deafness	Autism	103
Deafness	Deaf-Blindness	2
Deafness	Emotional Disturbance	17

Deafness	Hearing Impairment	24
Deafness	Intellectual Disability	106
Deafness	Medical Disability	1
Deafness	Multiple Disability	24
Deafness	Orthopedic Impairment	50
Deafness	Other Health Impairment	186
Deafness	Specific Learning Disability	97
Deafness	Speech/Language Impairment	808
Deafness	Visual Disability	35
Emotional Disturbance	Autism	477
Emotional Disturbance	Deaf-Blindness	1
Emotional Disturbance	Deafness	9
Emotional Disturbance	Hearing Impairment	91
Emotional Disturbance	Intellectual Disability	179
Emotional Disturbance	Medical Disability	1
Emotional Disturbance	Multiple Disability	13
Emotional Disturbance	Orthopedic Impairment	24
Emotional Disturbance	Other Health Impairment	8,128
Emotional Disturbance	Specific Learning Disability	4,317
Emotional Disturbance	Speech/Language Impairment	1,971
Emotional Disturbance	Traumatic Brain Injury	21
Emotional Disturbance	Visual Disability	22
Hearing Impairment	Autism	77
Hearing Impairment	Deafness	20
Hearing Impairment	Emotional Disturbance	21
Hearing Impairment	Intellectual Disability	91
Hearing Impairment	Medical Disability	4

Hearing Impairment	Multiple Disability	27
Hearing Impairment	Orthopedic Impairment	80
Hearing Impairment	Other Health Impairment	458
Hearing Impairment	Specific Learning Disability	568
Hearing Impairment	Speech/Language Impairment	3,157
Hearing Impairment	Traumatic Brain Injury	4
Hearing Impairment	Visual Disability	57
Intellectual Disability	Autism	3,347
Intellectual Disability	Deaf-Blindness	16
Intellectual Disability	Deafness	93
Intellectual Disability	Emotional Disturbance	354
Intellectual Disability	Hearing Impairment	974
Intellectual Disability	Medical Disability	4
Intellectual Disability	Multiple Disability	124
Intellectual Disability	Orthopedic Impairment	2,125
Intellectual Disability	Other Health Impairment	3,298
Intellectual Disability	Specific Learning Disability	102
Intellectual Disability	Speech/Language Impairment	14,985
Intellectual Disability	Traumatic Brain Injury	32
Intellectual Disability	Visual Disability	597
Medical Disability	Autism	7
Medical Disability	Deafness	1
Medical Disability	Hearing Impairment	16
Medical Disability	Intellectual Disability	5
Medical Disability	Orthopedic Impairment	41
Medical Disability	Other Health Impairment	5
Medical Disability	Speech/Language Impairment	291

Medical Disability	Visual Disability	11
Multiple Disability	Autism	209
Multiple Disability	Deaf-Blindness	60
Multiple Disability	Deafness	213
Multiple Disability	Emotional Disturbance	9
Multiple Disability	Hearing Impairment	358
Multiple Disability	Intellectual disability	239
Multiple Disability	Medical Disability	3
Multiple Disability	Orthopedic Impairment	3,636
Multiple Disability	Other Health Impairment	273
Multiple Disability	Specific Learning Disability	4
Multiple Disability	Speech/Language Impairment	590
Multiple Disability	Traumatic Brain Injury	13
Multiple Disability	Visual Disability	1,008
Orthopedic Impairment	Autism	122
Orthopedic Impairment	Deaf-Blindness	10
Orthopedic Impairment	Deafness	28
Orthopedic Impairment	Emotional Disturbance	20
Orthopedic Impairment	Hearing Impairment	222
Orthopedic Impairment	Intellectual Disability	1,263
Orthopedic Impairment	Medical Disability	9
Orthopedic Impairment	Multiple Disability	482
Orthopedic Impairment	Other Health Impairment	1,117
Orthopedic Impairment	Specific Learning Disability	440
Orthopedic Impairment	Speech/Language Impairment	1,723
Orthopedic Impairment	Traumatic Brain Injury	52
Orthopedic Impairment	Visual Disability	561

Other Health Impairment	Autism	1,080
Other Health Impairment	Deaf-Blindness	3
Other Health Impairment	Deafness	33
Other Health Impairment	Emotional Disturbance	1,998
Other Health Impairment	Hearing Impairment	877
Other Health Impairment	Intellectual Disability	1,023
Other Health Impairment	Medical Disability	6
Other Health Impairment	Multiple Disability	47
Other Health Impairment	Orthopedic Impairment	947
Other Health Impairment	Specific Learning Disability	16,943
Other Health Impairment	Speech/Language Impairment	18,775
Other Health Impairment	Traumatic Brain Injury	61
Other Health Impairment	Visual Disability	414
Specific Learning Disability	Autism	1,020
Specific Learning Disability	Deaf-Blindness	4
Specific Learning Disability	Deafness	12
Specific Learning Disability	Emotional Disturbance	1,159
Specific Learning Disability	Hearing Impairment	895
Specific Learning Disability	Intellectual Disability	54
Specific Learning Disability	Medical Disability	2
Specific Learning Disability	Multiple Disability	17
Specific Learning Disability	Orthopedic Impairment	330
Specific Learning Disability	Other Health Impairment	20,618
Specific Learning Disability	Speech/Language Impairment	61,191
Specific Learning Disability	Traumatic Brain Injury	42
Specific Learning Disability	Visual Disability	272
Speech/Language Impairment	Autism	922

Speech/Language Impairment	Deaf-Blindness	2
Speech/Language Impairment	Deafness	16
Speech/Language Impairment	Emotional Disturbance	78
Speech/Language Impairment	Hearing Impairment	669
Speech/Language Impairment	Intellectual Disability	132
Speech/Language Impairment	Medical Disability	38
Speech/Language Impairment	Multiple Disability	11
Speech/Language Impairment	Orthopedic Impairment	226
Speech/Language Impairment	Other Health Impairment	2,260
Speech/Language Impairment	Specific Learning Disability	6,084
Speech/Language Impairment	Traumatic Brain Injury	14
Speech/Language Impairment	Visual Disability	88
Traumatic Brain Injury	Autism	21
Traumatic Brain Injury	Deaf-Blindness	1
Traumatic Brain Injury	Emotional Disturbance	20
Traumatic Brain Injury	Hearing Impairment	34
Traumatic Brain Injury	Intellectual Disability	56
Traumatic Brain Injury	Medical Disability	1
Traumatic Brain Injury	Multiple Disability	12
Traumatic Brain Injury	Orthopedic Impairment	209
Traumatic Brain Injury	Other Health Impairment	138
Traumatic Brain Injury	Specific Learning Disability	112
Traumatic Brain Injury	Speech/Language Impairment	280
Traumatic Brain Injury	Visual Disability	84
Visual Disability	Autism	81
Visual Disability	Deaf-Blindness	1
Visual Disability	Deafness	5

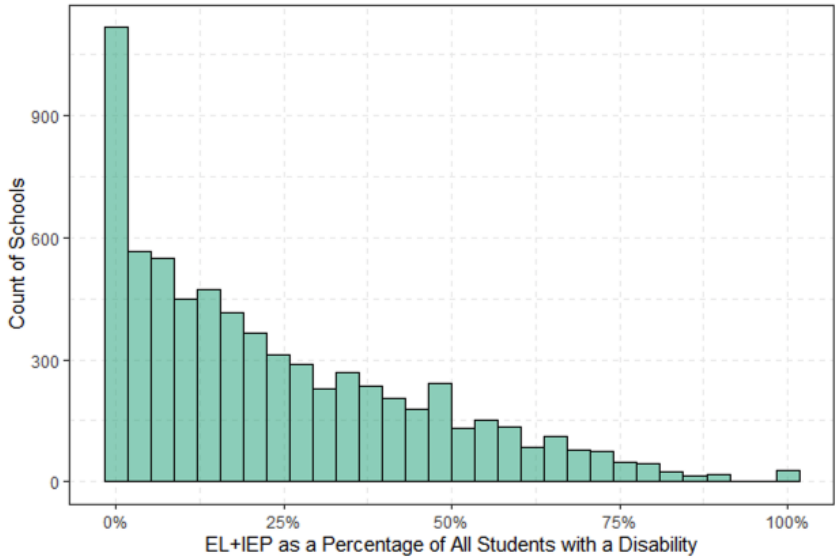
Visual Disability	Emotional Disturbance	9
Visual Disability	Hearing Impairment	47
Visual Disability	Intellectual Disability	147
Visual Disability	Medical Disability	2
Visual Disability	Multiple Disability	73
Visual Disability	Orthopedic Impairment	119
Visual Disability	Other Health Impairment	322
Visual Disability	Specific Learning Disability	186
Visual Disability	Speech/Language Impairment	263
Visual Disability	Traumatic Brain Injury	10

Source. Data from CASEMIS, 2018/19.

English Learners With Disabilities

In California, there are more than 222,000 students who are classified as both English learners[6] and students with disabilities.[7] Exhibit C-4 shows the proportion per school of students with disabilities who were also classified as English learners from 2016/17 through 2018/19. The distribution of proportions by school indicates that there may be schools with better practices for appropriately differentiating between academic needs that are due to language acquisition and those due to disability. It is worth noting that there are more than 1,000 schools where no students with disabilities are also English learners.

Exhibit C-4. Count of California schools by the proportion of students with disabilites that are also classified as English learners.



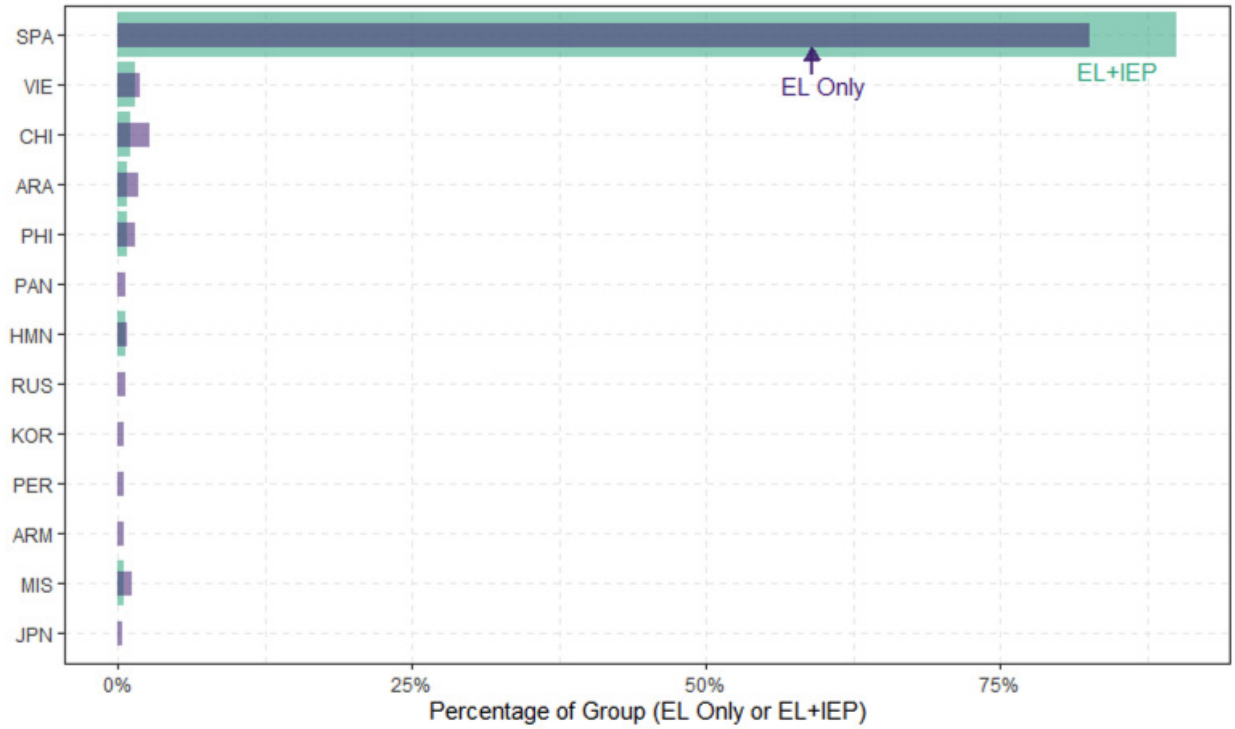
Source. Data from CASEMIS, 2018/19. Note: EL+IEP are students that are English learners with a disability.

Native language. Spanish was by far the most common native language spoken by California's population of English learners with disabilities. When comparing students classified as both having a disability and being an English learner (EL+IEP) and English learners only (EL), it was clear, as shown in exhibit C-5, that the proportion of Spanish speakers was greater for EL+IEP. That is, a student who was classified as EL+IEP was more likely to speak Spanish than a student who was classified as EL only. The opposite pattern occurred for most other languages (including Chinese, Arabic, and Filipino).

6 Note that throughout this section, the following abbreviations are used:
EL – Student who is an English learner
IEP – Student who has an IEP ("student with a disability")
EL+IEP – Student who is an English learner and has a disability

7 Specifically: 224,326 in 2016; 223,46 in 2017; 222,466 in 2018

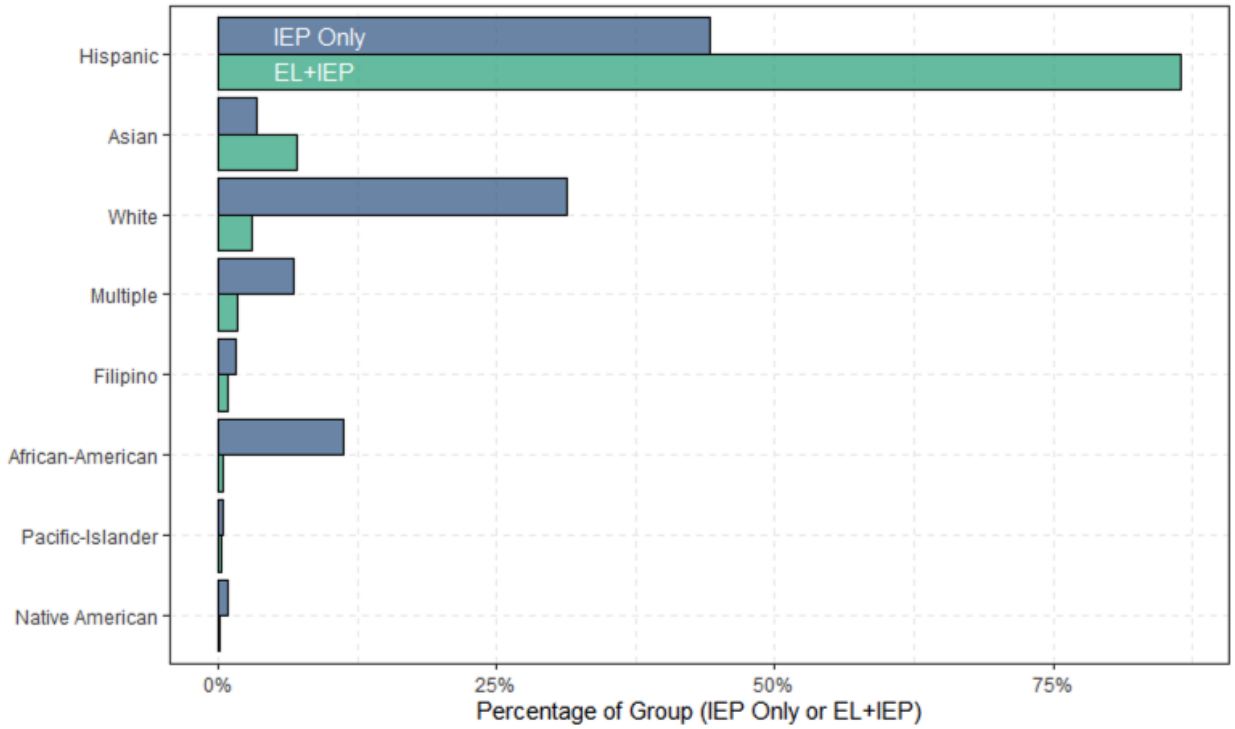
Exhibit C-5. Proportion of each group (English learners or English learners with a disability) by native language.



Source: Data from CASEMIS, 2018/19. Note: EL Only are students that are English learners without a disability; EL+IEP are students that are English learners with a disability.

Race and ethnicity. Of the Spanish-speaking EL+IEP students, 97.6 percent were identified as Hispanic, 1.4 percent as multiple races, and 0.7 percent as White. Unfortunately, the study team did not have the data to compare these percentages with the EL-only group. Hispanic students made up a larger proportion of the English learner with disabilities population than they did of the overall population, as shown in exhibit C-6.

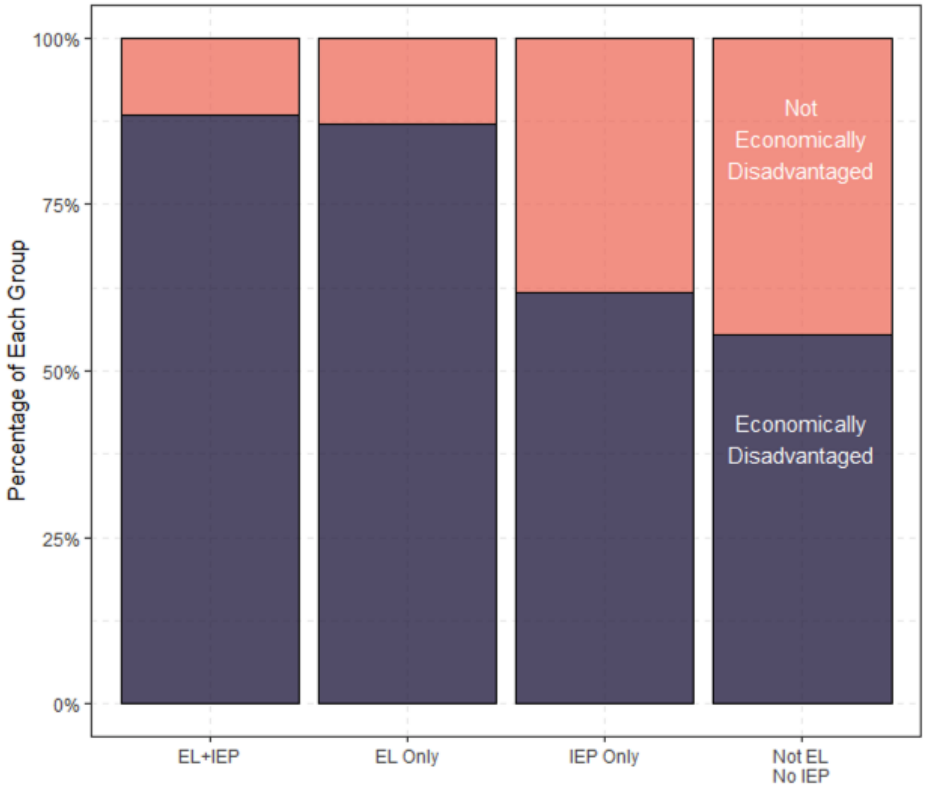
Exhibit C-6. Proportion of students with disabilities and English learners with disabilities, by race and ethnicity.



Source. Data from CASEMIS, 2018/19. Note: IEP Only are students with disabilities that are not English learners; EL+IEP are students that are English learners with a disability.

Furthermore, exhibit C-7 shows that English learners with disabilities and students who were designated only as English learners tended to be economically disadvantaged to a greater extent than students with disabilities only and students who were neither English learners nor students with disabilities.

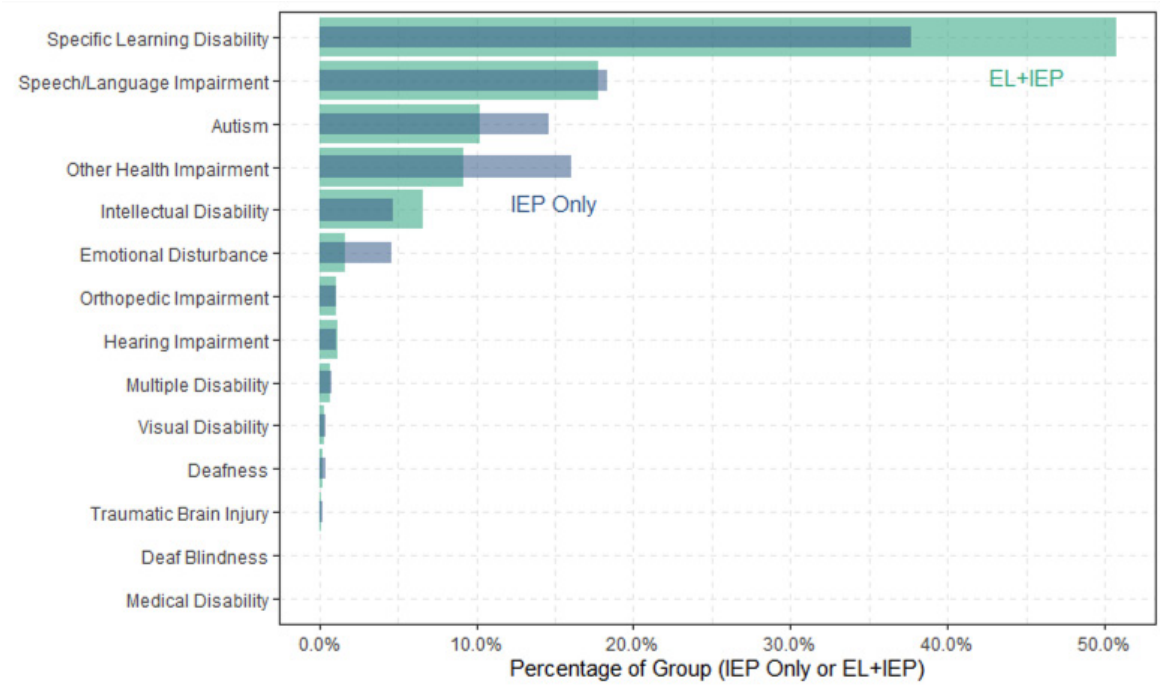
Exhibit C-7. Proportion of students with disabilities and English learners with disabilities by economic disadvantaged status.



Source. Data from CASEMIS, 2018/19. Note: IEP Only are students with disabilities that are not English learners; EL Only are English learners without a disability; EL+IEP are students that are English learners with a disability; and Not EL No IEP are students who are not English learners and do not have a disability.

Disability category. As discussed in the Findings section of this report, examining the primary disability category for students who were EL+IEP compared with IEP showed only the disproportionality associated with having a Specific Learning Disability. Students identified as EL+IEP had a much higher likelihood of being identified as having a Specific Learning Disability than other IEP students. Comparing the disability category identification rates between EL+IEP students and IEP Only students showed differences in identification rates for nearly every common disability category except Speech Language Impairment, as shown in exhibit C-8. This may be an indicator of the difficulty practitioners face in assessing English learners for special education eligibility in their native language and the lack of clarity on whether or not students' academic struggles are due to disability.

Exhibit C-8. Proportion of each group of students (students with disabilities who are and are not English learners) by primary disability category.

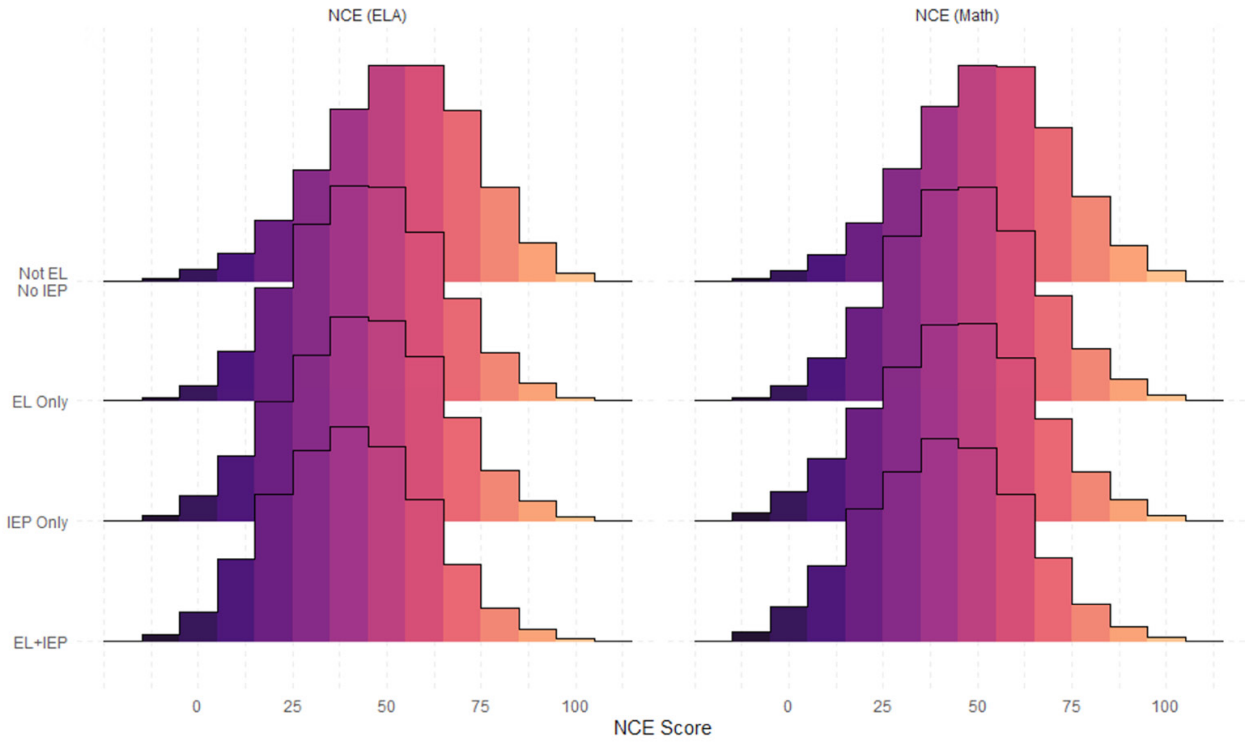


Source. Data from CASEMIS, 2018/19. Note: IEP Only are students with disabilities that are not English learners; EL+IEP are students that are English learners with a disability.

Identification rates over time. Most differences for the combined population occurred or appeared most clearly in grades 3–8, when the majority of English learners with disabilities were found in the Specific Learning Disability category. This disability category came to represent the vast majority of the EL+IEP group, but was not as common among the IEP Only group. This pattern is further highlighted earlier in the report in exhibit 10 (note the y-scales for the two groups where there are fewer EL+IEP compared with IEP Only).

Academic achievement. Concerning achievement, the NCE growth scores show that English learners with disabilities were generally the lowest-performing combination, followed closely by IEP Only and EL Only, with Not EL, No IEP performing best. Exhibit C-9 shows the distribution of NCE scores for both English language arts (ELA) and math for each group across 2016/17, 2017/18, and 2018/19.

Exhibit C-9. The distribution of NCE growth scores for both ELA and math across 2016/17, 2017/18, and 2018/19 for students who are not English learners and do not have a disability, students who are English learners only, students who are only students with disabilities, and students who are both English learners and have disabilities.



Source. Data from 2016/17, 2017/18, and 2018/19 from the CALPADS, CASEMIS, and CAASPP. Note: Color corresponds to the x-axis (NCE score). IEP Only are students with disabilities that are not English learners; EL Only are English learners without a disability; EL+IEP are students that are English learners with a disability; and Not EL No IEP are students who are not English learners and do not have a disability.

Exhibit C-10 shows average combined ELA and math scores by group across 2016/17, 2017/18, and 2018/19.

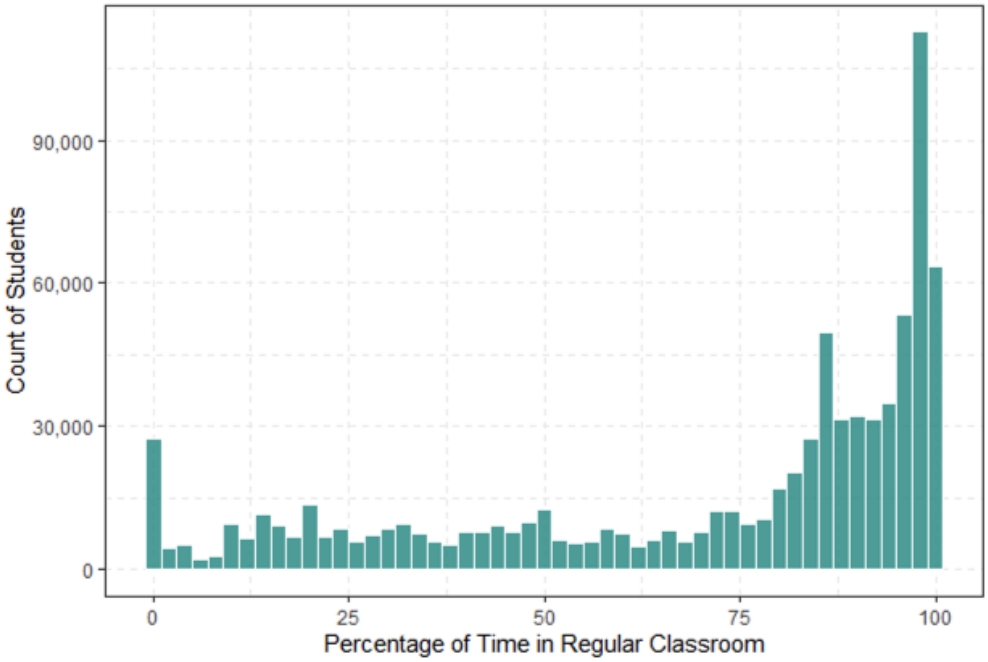
Exhibit C-10. Average combined ELA and math scores for each group

Group	Average NCE Score
EL+IEP	40.5
IEP Only	43.7
EL Only	45.4
Not EL/No IEP	52.1

Source. Data from 2016/17, 2017/18, and 2018/19 from the CALPADS, CASEMIS, and CAASPP. Note: IEP Only are students with disabilities that are not English learners; EL Only are English learners without a disability; EL+IEP are students that are English learners with a disability; and Not EL No IEP are students who are not English learners and do not have a disability.

Least restrictive environment. Finally, though there was a wide distribution of placements, English learners with disabilities generally spent at least 80 percent of their time in a regular classroom (data shown in exhibit C-11 are for 2017/18). The distribution shown in the exhibit is similar to the distribution for students who have disabilities but are not in the other groups.

Exhibit C-11. Count of English learners with disabilities by percentage of time in the regular classroom.



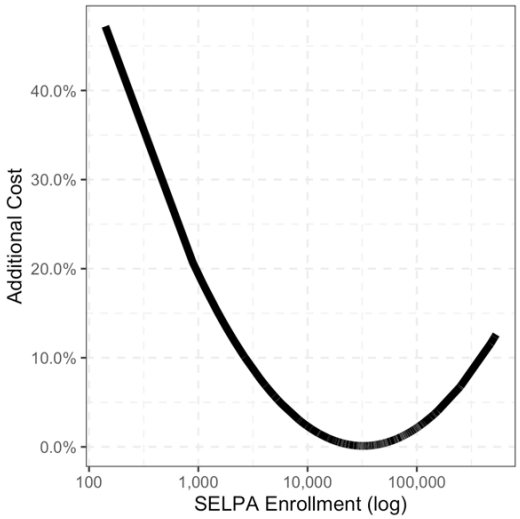
Source. Data from CASEMIS, 2017/18.

Economies of Scale

As reported in findings 8 and 9, economies of scale and their associated costs were observed at the school, LEA, and SELPA levels in the education cost function. The J-curves for the SELPA and LEA levels are presented in exhibits C-12 and C-13.

For SELPAs, holding LEA and school enrollment constant, the ideal SELPA size to produce the lowest cost per pupil is approximately 40,000 total enrolled students, as indicated in exhibit 7. In 2018/19, 56 of the 94 multi-LEA SELPAs were below that enrollment threshold.

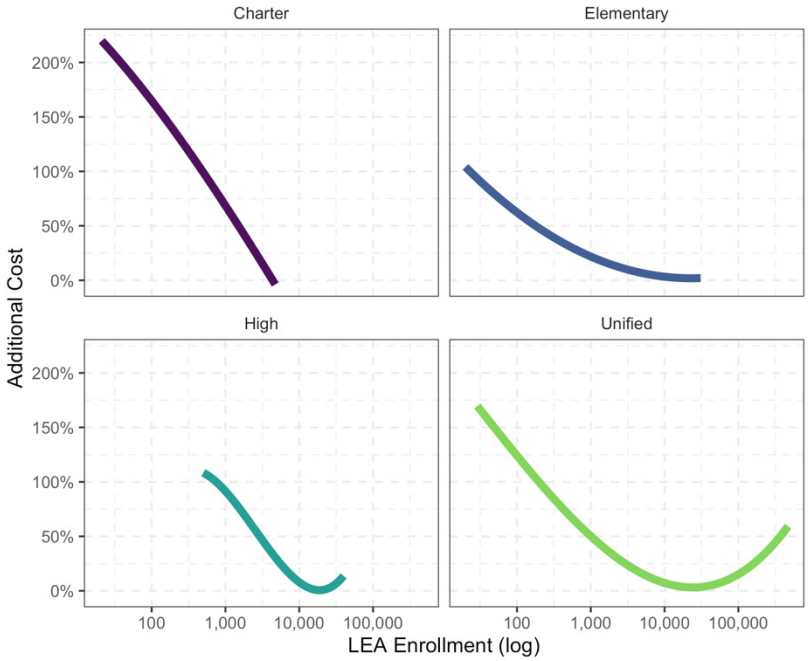
Exhibit C-12. Relative cost from minimum based on the size of the SELPA ("economies of scale" by SELPA size).



Source. Education cost function.

At the LEA level, implications for economies of scale differ by type of LEA. There is no known ideal size for charter LEAs, as they are all too small to reach any point at which increasing the size increases costs.

Exhibit C-13 Relative cost from minimum, based on the size and type of the LEA ("economies of scale" by LEA size).



Source. Education cost function.

For elementary and unified school LEAs, the ideal size for economies of scale is approximately 30,000 enrolled students; for high school LEAs, the ideal size is around 20,000. The largest cost differences were projected for both charter and unified LEAs, suggesting that economies of scale offer the greatest potential benefit for those LEAs. It is important to note that these projected economies of scale hold SELPA and school sizes constant and that the percentage of change in cost refers to the cost associated with LEA size (holding all other factors in the model constant). Exhibit C-14 indicates 2018/19 enrollment in California LEAs, excluding charter schools that belong to district LEAs.

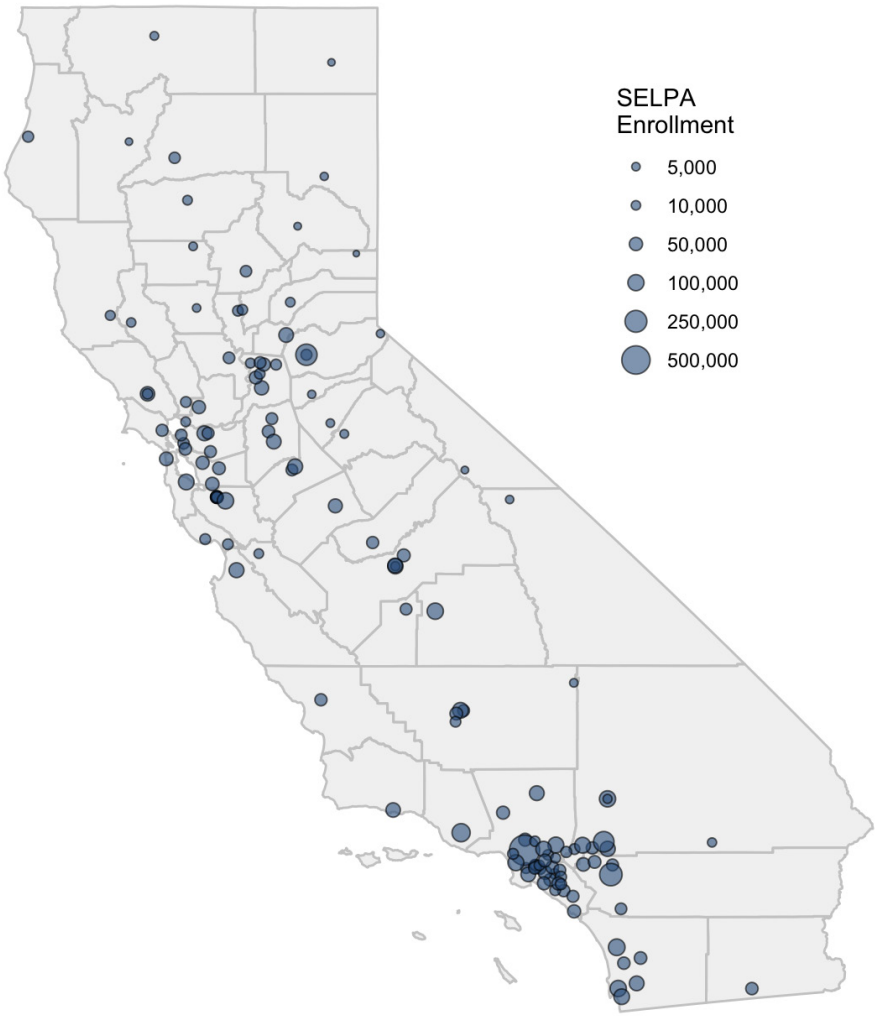
Exhibit C-14. Counts of LEAs by LEA enrollment and type of LEA, 2018/19.

	<10k	10k–20k	20k–30k	>30k
Charter	725	0	0	0
Elementary	432	18	2	1
High	52	11	4	3
Unified	214	57	34	24

Source. Data from 2018/19 from CALPADS and CASEMIS.

SELPA Type and Location. Some SELPA economies of scale appeared to interact with geographic differences. SELPAs are located in nearly every county with only a few exceptions, in very small counties, but are mostly congregated in three groups: southern California, the Bay Area, and the Sacramento area. Notably, the single-LEA SELPAs are congregated mostly in southern California and the Sacramento area. Exhibit C-15 places each SELPA on a map with the size of the circle representing total enrollment in the SELPA.

Exhibit C-15. SELPA location; size of circle represents SELPA enrollment.

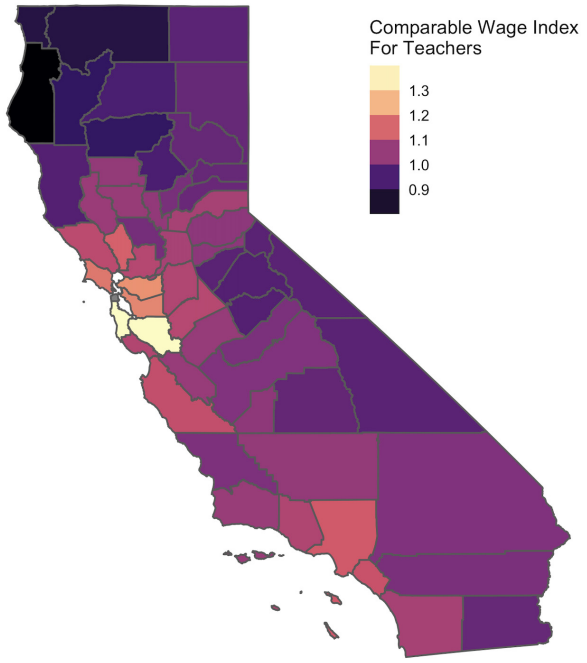


Source. Data from 2018/19 from the Tigris shape files for the map (from the U.S. Census Bureau) and SELPA Directory (provided by CDE).

Regional Cost Differences

These analyses and figures support finding 11: There were regional differences in the cost of providing services across California. Some evidence emerged from the model suggesting that even with the comparable wage index applied, there remained unexplained cost differences between schools by level. Exhibit C-16 illustrates the application of the CWI by California county.

Exhibit C-16. Cost difference between schools by level using the CWI for teachers, by county.



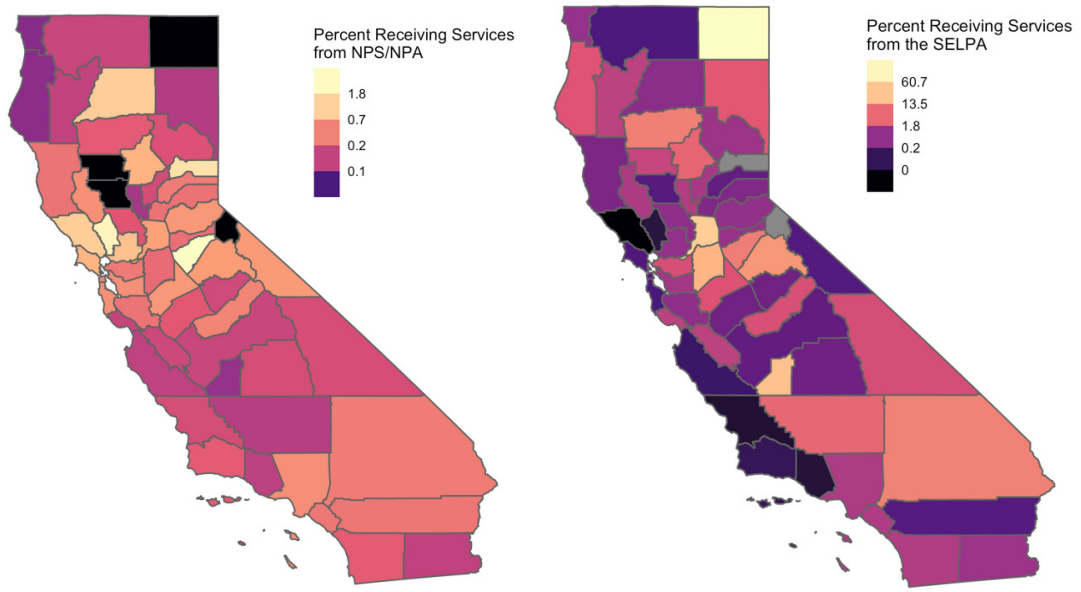
Source. Data from 2018/19 from the Tigris shape files for the map (from the U.S. Census Bureau) and the National Center for Education Statistics' CWI for Teachers.

The impact of this adjustment is notable. For example, hypothetically, two students can be identical by every measure that can be accounted for, including individual student demographic group, IEP services, service delivery, disability category, and school demographics, with the only difference being their location: one in a coastal community and the other in the Central Valley. On the basis of the current funding formula for special education in California, the student in the Central Valley will have access to more resources than their peer on the coast due to the limitation of the real costs associated with those respective communities. Systematically, this creates a disadvantage for students in coastal LEA and SELPA programs compared with their peers in the Central Valley or other similar lower-cost regions.

Service provision by the SELPA also varies geographically. Exhibit C-17 illustrates, by county, the proportion of students with disabilities who received at least one service from their SELPA compared with the proportion who received at least one service from an NPS/A provider. Notably, there is a far greater range in the proportion of students who received services from their SELPA; in several counties, fewer than 1 percent of students with disabilities received services from their SELPA, whereas in one county, more than 60 percent received services from their SELPA. The frequency with which

districts in different counties turned to their SELPA for services appears to have geographic trends. For example, smaller proportions of students living on the coast received services from the SELPA, and larger proportions of students living in geographically large, less densely populated inland counties received services from the SELPA. A possible explanation is that districts in these large inland counties have access to fewer service provider options compared with districts on the coast.

Exhibit C-17. Percentage of students with disabilities receiving services from NPS/A or SELPA.



Source. Data from 2018/19 from the Tigris shape files for the map (from the U.S. Census Bureau) and CASEMIS (from CDE).

Preschool Students With Disabilities

These findings supplement the evidence presented in finding 14 regarding the cost savings from providing early education and earlier intervention. Exhibit C-18 shows the types of services that preschool students with disabilities received. The number of students who received mental health services appears to be low; it will be interesting to see how that changes in the next year.

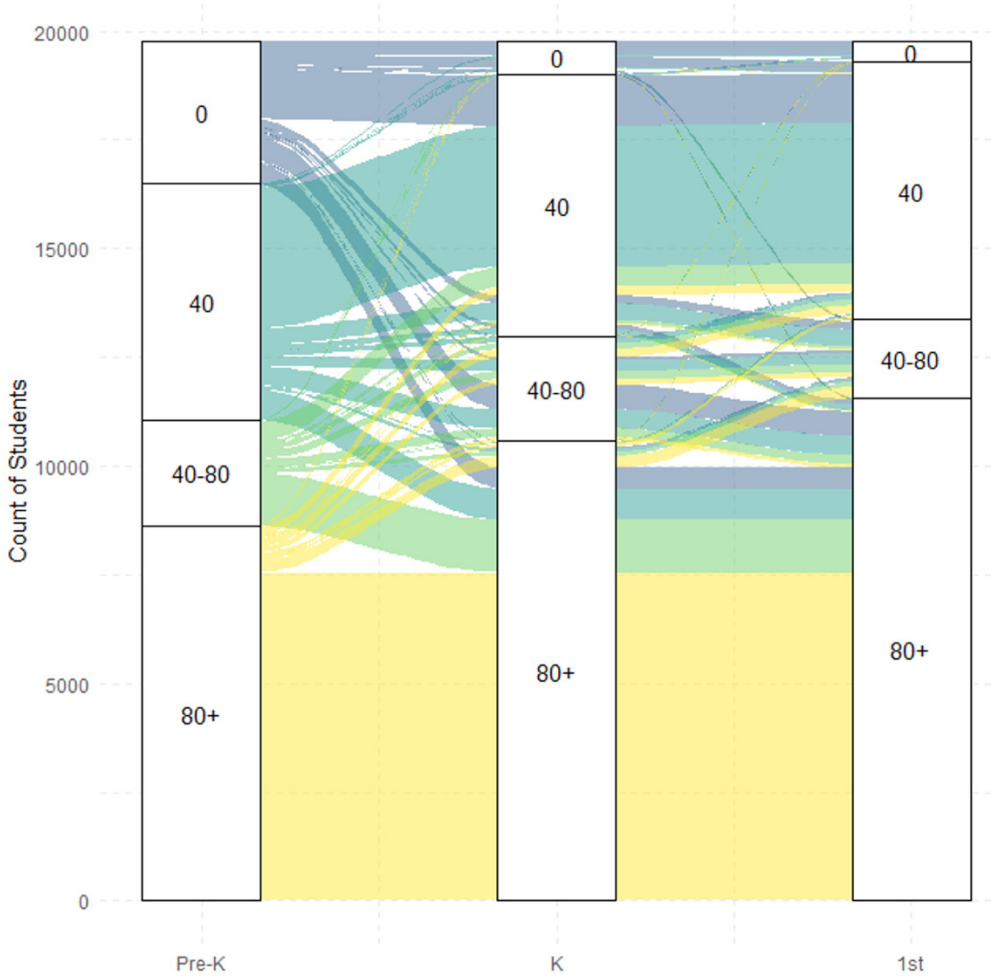
Exhibit C-18. Count of preschool students receiving each service by type of services, 2018/19.

Service	Students
Specialized Academic Instruction	48,615
Intensive Individual Services	1,389
Individual and Small Group Instruction	10,482
Language and Speech	84,042
Occupational Therapy	17,328
Counseling and Guidance	195
Parent Counseling	250
Social Work	64
Psychological Services	6,341
Behavior Intervention	3,874
Other Services	745

Source. Data from 2018/19 from the CALPADS, CASEMIS, and CAASPP from CDE.

To confirm research stating that children in inclusive preschool settings are more likely to be included in the general education class as they grow, the study team examined the kindergarten cohort across three years, from Pre-K through grade 1. As shown in exhibit C-19, there was very little movement among the students in the highest LRE category of 80 percent or more of the day spent in the general education classroom.

Exhibit C-19. Movement of students between LRE categories between preschool and grade 1.



Source. Data from CASEMIS, 2018/19.