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Essential Programs and Services Review: The Special Education Funding Model

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The Maine Education Policy Research Institute (MEPRI), a nonpartisan institute co-located at the University of Southern Maine and the University of Maine was established in 1995 to collect and analyze education information and perform targeted research for the Maine Legislature.

Essential Programs and Services Review:

The Special Education Funding Model

Executive Summary

The special education component of the Essential Programs and Services funding model was first implemented in 2005 – 2006 and reviewed in 2007 – 2008. This report provides background information on special education enrollment and funding in Maine and the nation, reviews and updates current parameters and suggests specific changes.

Background Information

- The Individuals with Disabilities Act (IDEA), first enacted in 1975 requires all states to provide a free and appropriate public education to children with disabilities ages 3 to 21.
- Across the nation there are many types of special education funding formulas. Maine uses a student weight formula which is similar to 19 other states.
- Maine's prevalence of students with disabilities, 17.5% in 2008, has consistently been among the highest in the nation.
- In Maine, all categories of disabilities have seen decreases since 2005 with the exception of Other Health Impairment (+25%) and Autism (+111%).
- In 2008 – 2009 special education expenditures constituted 14.6% of the total education budget, an increase from 13.5% in 2004 – 2005.
- Since 2004 – 2005 special education expenditures increased 26.66% while regular education expenditures increased 7.04%.
- Since 2004 – 2005 special education per-pupil operating expenses have increased 18.42%, slightly less than regular education per-pupil operating expenses at 20.35%.

Review of the Special Education Funding Model

Base Weight

The EPS model uses a weighting system to convert cost to weight. A typical student is assigned a weight of 1.0. Students who need additional programs or services to meet the Learning Results are assigned an incremental weight. Incremental weights are additive. That is, the cost for each additional program or service is added to the 1.0 weight that represents the cost of a typical student.

Special education students are currently assigned an incremental weight of 1.27. Recalculating this weight using the last three years of data yields an incremental weight of 1.39. This new weight is recommended for use in future calculations.

High Prevalence Adjustment

Currently each special education student is weighted at 1.27 for up to 15% of resident enrollment. An incremental weight of .38 is applied to each student above the 15%. Recalculation of this weight using 2007 – 2009 data indicates that this weight has declined slightly to .36. This new weight is recommended for future calculations of the high prevalence adjustment.

Small Size Adjustment

The small size adjustment is based on the lower teacher and director ratios and higher per-pupil costs of related services in small districts and applies to districts that enroll fewer than 20 students with disabilities. The current method of calculating this adjustment compares each district to state averages of 15 students per teacher, and 213 students per director, and \$1,844 per student for related services. Proportionate ratios are calculated for districts with fewer than the state average of 15 students per teacher.

Analysis of recent data suggests that applying a weight of .29 per special education student in districts with less than 20 students with disabilities would achieve the same result as the more complex calculation currently in use. Using an incremental weight of .29 would be easily incorporated into the financial system and is more easily understood than the current method. The incremental weight of .29 is therefore recommended for future calculations of the small size adjustment.

High Cost In-District Adjustment

Districts receive an adjustment for special education students who are educated within the district when costs exceed three times the special education EPS rate (Base plus Prevalence per-pupil cost). These costs are typically related to the need for multiple programs and services for individual students such as speech therapy, physical therapy, psychological services and occupational therapy. The current method of calculating this adjustment requires placement data, disability data, and an estimate of the cost of related services. Related service costs are

estimated because the specific costs of related services for individual students are no longer available in the Infinite Campus financial system.

The lack of student specific related services cost data and the complexity of this calculation led to the exploration of an alternative calculation that was more transparent. It was determined that using readily available placement and disability data alone, without estimated related services costs, would provide an allocation that reflects expenditures more accurately than the current model. This method is suggested for future use in calculating the high cost in-district adjustment.

High Cost Out-of-District Placement

Some students, often with severe and multiple disabilities, require programs and services that cannot be provided in their school districts but instead require residential treatment, or hospital placements. Districts receive an adjustment for every student placed in a program or facility outside the district when the costs per student exceed four times the EPS special education per pupil rate.

The number of students requiring out-of-district placements has increased from 360 in 2006 – 2007 to 429 in 2009 – 2010 or 19%. The total adjustment has increased from \$5,368,536 in 2006 – 2007 to \$7,086,866 in 2010 – 2011 or 32%. No changes are needed to this adjustment.

Maintenance of Effort (MOE) Adjustment

School districts receive federal funds for special education that may be used to supplement, but not supplant, state and local funds. In order to receive these funds the federal government requires each district to meet maintenance of effort requirements. Briefly, a school district may not reduce the level of expenditures for support of special education below the level of expenditures for the preceding year. Exceptions to this rule include the loss of special education personnel, a decrease in enrollment of students with disabilities, and the termination of programs that are no longer needed.

In Maine, adjustments are made to a district's EPS allocation when prior fiscal year expenditures for special education exceed the EPS allocation. The total state wide allocation

for maintenance of effort adjustments has varied between \$36,717,407 in 2007 - 2008 and \$39,855,017 in 2009 – 2010. No changes are needed to this adjustment.

Estimating the Fit of Proposed Model Revisions

To determine the degree to which the updated parameters suggested above correlate with actual expenditures, the 2008 – 2009 allocations were revised and compared to actual 2008 – 2009 expenditures. A linear regression of actual expenditures and allocations based on updated parameters accounted for 97% of the variance. Use of the updated parameters is therefore recommended.

Next Steps

Several questions surfaced in the process of this review which should be explored prior to the next three year review.

- Is the current single pupil-weight model with adjustments still the best model of funding special education in Maine schools?
- Can the Base Weight conversion be simplified or eliminated?
- Is the 15% limit on enrollment that receives a 1.27 per-pupil weight still appropriate?
- Are the high cost in-district threshold of three times the base EPS rate, and the high cost-out-of district threshold of four times the base EPS rate serving as incentives to provide in-district programs and services?
- How do the characteristics, policies and practices of districts that consistently spend above their allocations differ from those that consistently spend below their allocations?

Essential Programs and Services Review: The Special Education Funding Model

Introduction

The purpose of this document is to review the special education funding component of the Essential Programs and Services funding model. This component was first implemented in 2005 -2006 and first reviewed in 2007-08. In order to establish a context for this second review, the sections below include an overview of special education and funding in the U.S. and in Maine.

Overview of special education enrollment

The Individuals with Disabilities Act (IDEA-97), first enacted in 1975, requires all states to provide a free and appropriate public education to children with disabilities ages 3 to 21. Children who are eligible for special education are those who are identified by a team of qualified professionals as having a disability that adversely affects their academic performance. Further, these special education programs and services must be provided in the least restrictive educational environment.

From 1975 to 2005 the number and percentage of children ages 3–21 in the U.S. who received special education programs increased from 8.3 percent to 13.8 percent. Beginning in 2005 this trend began to decline and in 2008 the national prevalence rate was 13.4%.

In Maine special education prevalence paralleled the national trend with increasing enrollment until 2005 followed by a gradual decrease. However, the prevalence of Maine students enrolled in special education is higher than the national prevalence during this time period. Table 1 describes special education enrollment in Maine from 2000 to 2010.

Table 1. Special Education Enrollment in Maine 2000 - 2010

Students	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Public School*	212,957	210,946	209,745	207,517	205,000	201,912	202,417	198,094	194,545	192,202	190,395
Total Special Education **	35,633	36,580	37,139	37,784	37,573	36,522	35,564	34,425	33,284	32,766	32,258
% Special Education	16.7%	17.3%	17.7%	18.2%	18.3%	18.1%	17.6%	17.4%	17.1%	17.1%	16.9%

Source: Maine Department of Education, Special Services Team, March 2011

Note: Data reflect special education enrollment ages 3 through 21 years while regular education enrollment in Maine is for students' ages 4 through 21 years old.

*Age 4-21, resident enrollment: <http://www.maine.gov/education/enroll/resident/staterespub.htm>

**Age 3-21, special education enrollment: <http://www.maine.gov/educationspecedata/14yeardata.htm>

Maine's prevalence of students with disabilities has consistently been one of the highest in the nation. Table 2 displays U.S. Office of Education data representing Maine's prevalence, the national prevalence, and the prevalence rates of four states that consistently report the highest prevalence of students with disabilities in the nation. (Note: The prevalence figures below differ from those in Table 1 because the federal government uses a different method of calculation).

Table 2. The National Prevalence (%) of Students with Disabilities Ages 3 to 21 in Maine and in Four Selected Highest Ranking States

	2001-2002	2003-2004	2005-2006	2006-2007	2007-2008
National average	13.4	13.7	13.8	13.6	13.4
Rhode Island	20.1	20.2	20.1	19.9	19.7
New Jersey	17.1	17.5	17.6	18.0	18.1
Maine	17.8	18.7	18.9	18.3	17.5
Massachusetts	15.4	16.2	16.6	17.1	17.3
West Virginia	17.7	18.1	18.0	17.4	16.9

Source: U.S. Office of Education http://nces.ed.gov/programs/digest/d09/tables/dt09_052.asp

In Maine, students receive special education services for one of thirteen disabilities. Table 3 displays the number of children enrolled in special education by category of disability and the change in enrollment between 2004 and 2010.

Table 3. Special Education Disabilities by Category 2004 - 2010

Disabilities	2004	2005	2006	2007	2008	2009	2010	% Change 2004 - 2010
Mental Retardation	898	858	846	798	759	744	722	-20%
Hearing Impairment	217	219	215	219	216	245	168	-23%
Deafness	71	63	60	72	57	65	63	-11%
Speech & Language Impairment	9,797	9,487	9,118	8,612	7,842	7,515	7,075	-28%
Visual Impairment including Blindness	95	90	92	81	82	76	71	-25%
Emotional Disability	3,336	3,173	3,118	2,943	2,841	2,685	2,560	-23%
Orthopedic Impairment	81	75	68	71	77	66	65	-20%
Other Health Impairment	4,603	4,963	5,325	5,528	5,528	5,648	5,772	25%
Specific Learning Disability	12,020	11,355	10,648	10,053	9,827	9,510	9,331	-22%
Deaf Including Blindness	4	5	10	7	3	5	4	0%
Multiple Disabilities	3,317	3,274	3,152	3,082	2,955	2,892	2,878	-13%
Developmentally Delayed	1,782	1,364	1,069	888	665	710	794	-55%
Autism	1,255	1,471	1,760	1,990	2,231	2,471	2,646	111%
Traumatic Brain Injury	97	97	83	81	81	76	63	-35%
Total all disabilities	37,573	36,522	35,564	34,425	33,284	32,766	32,258	-14%
Total Resident Enrollment	205,000	201,912	202,417	198,094	194,545	192,202	190,395	-7.1%
% all Disabilities	18.3%	18.1%	17.6%	17.3%	17.1%	17.1%	16.9%	-1.4%
Ages 6 – 21 with disabilities	32,767	32,174	31,419	30,536	29,584	28,923	28,438	-13%
% ages 6 – 21 with disabilities	15.9%	15.9%	15.5%	15.4%	15.2%	15.1%	14.9%	-1%

Source: Maine Department of Education, Special Services Team, March 2011.

As evident in Table 3, the largest disability category is Specific Learning Disability followed by Speech and Language Impairment and Other Health Impairment. Since 2004 the overall prevalence of children with disabilities as a percent of the total resident enrollment has declined from 18.3% to 16.9%. The prevalence of children with disabilities ages 6 to 21 in the

same period declined from 15.9% to 14.9%. Notable increases have occurred in the Other Health Impairment (25%) and Autism (111%) categories.

Special education expenditures 2004 – 2009

Total expenditures for education in Maine for 2008 - 2009 fiscal year were \$2,085,858,086 with regular education and special education comprising 54.77% of the total. Regular education instruction including teacher and support staff salaries, benefits, and supplies and materials accounts for 40.17% of this amount or \$837,794,568. Special education instruction accounts for 14.60% of total education or \$304,548,098. Special education expenditures, as a percentage of total education expenditures, have ranged from 13.44% in 2004 to 14.60% in 2008. The percentage increases in special education expenditures have been greater than regular education expenditures and total education expenditures as indicated in Table 4.

Table 4. Percentage Increases in Regular, Special, and Total Education Expenditures

	Expenditures 2004-2005	Expenditures 2006-2007	Expenditures 2008-2009	% increase 2005-2007	% increase 2007-2009	% increase 2005-2009
Regular Ed	\$782,723,296	\$823,703,553	\$837,794,568	5.24%	1.71%	7.04%
Special Ed	\$240,437,245	\$273,025,244	\$304,548,098	13.55%	11.55%	26.66%
Total Ed	\$1,781,822,683	\$1,957,709,051	\$2,085,858,086	9.87%	6.55%	17.06%

Source: Maine Department of Education <http://www.maine.gov/education/data/sfinstatwide/statewide%20rvsd2010.pdf>

As indicated in Table 5 per pupil operating expenses for both regular and special education increased between 2005 and 2009. Regular education per-pupil expenses increased slightly more than special education per pupil expenses.

Table 5. Regular and Special Education Per Pupil Operating Expenses

	2004-2005	2006-2007	2008-2009	% increase 2005-2007	% increase 2007-2009	% increase 2005-2009
*Regular Ed	\$6,345	\$7,063	\$7,636	11.32%	8.11%	20.35%
**Special Ed	\$8,013	\$8,719	\$9,489	8.81%	8.83%	18.42%

*Regular Ed excludes Special Ed, CTE, Transportation, Debt Services, & Other exp

**Special Ed includes federal but no Medicaid

Summary of overview key points

- Maine's prevalence of students with disabilities, 17.5% in 2008, has consistently been among the highest prevalence rates reported in the nation (U. S. Department of Education).
- In Maine, all categories of disability have seen decreases recently with the exception of Other Health Impairment (+25%) and Autism (+111%).
- In 2008-09 special education expenditures constituted 14.6% of the total education budget while regular education accounted for 40.17%.
- Since 2004-2005 special education expenditures increased 26.66% while regular education expenditures increased 7.04% and total education expenditures increased 17.06%.
- Since 2004-2005 special education per-pupil operating expenses increased 18.42%, slightly less than regular education per-pupil operating expenses at 20.35%.

Special Education Funding Models

Special education funding is the allocation of money to support the education of students with disabilities. Federal law, the Individuals with Disabilities Education Act (IDEA), and state laws specify the processes by which students with disabilities are identified and special education programs are provided. Funds to support special education programs are derived from federal, state, and local sources. How states allocate special education funds to school districts varies tremendously across the nation.

A recent study of state special education funding formulas (Ahern, 2009) categorized each state's formula into one of eight categories (Table 6).

Table 6. State Special Education Funding Formulas 2008-2009

Formula Type	Description	States
Multiple student weights	Funding (either a series of multiples of the general education amount or tiered dollar amounts) allocated per special education student that varies by disability, type of placement, or student need	Arizona, Colorado, Florida, Georgia, Indiana, Iowa, Kentucky, New Mexico, Ohio, Oklahoma, South Carolina, Texas (n=12)
Census-based	A fixed dollar amount per total enrollment or Average Daily Membership (ADM)	Alabama, California, Idaho, Massachusetts, Montana, New Jersey, Pennsylvania (n=7)
Single student weights	Funding (either a single multiple of the general	Louisiana, Maine, New Hampshire, New York, North

	education amount or a fixed dollar amount) allocated per special education student	Carolina, Oregon, Washington (n=7)
No separate special education funding	Funding to support special education is rolled into the overall funding levels	Arkansas, Connecticut, Hawaii, Missouri, North Dakota, Rhode Island, West Virginia (n=7)
Resource-based	Funding based on payment for a certain number of specific education resources (e.g., teachers or classroom units), usually determined by prescribed staff/student ratios that may vary by disability, type of placement or student need	Delaware, Kansas, Mississippi, Nevada, Tennessee, Virginia (n=6)
Combination	Funding based on a combination of formula types	Alaska, Illinois, Maryland, South Dakota, Vermont (n=5)
Percent reimbursement	Funding based on a percentage of allowable, actual expenditures	Michigan, Minnesota, Nebraska, Wisconsin, Wyoming (n=5)
Block grant	Funding based on base-year or prior year allocations, revenues, and/or enrollment	Utah (n=1)

Source: Developed on the basis of descriptions provided on the Survey on State Special Education Funding Systems, 2008-2009, conducted by Project Forum, National Association of Directors of Special Education

Ahern (2009) compared these results to an earlier study (Parish, T. et al., 2003) and drew the following conclusions:

- The most prevalent funding model is based on student weights (19 states in 2009).
- Except for an increase in states using no separate special education funding formula (2 states in 2000, 7 in 2009) and a decrease in states using block grants (4 states in 2000, 1 in 2009), there has been little change in state funding formulas over the past ten years.

Other findings of this study included:

- Eight states are currently considering changes to the way they allocate funds for special education. There is little commonality in their efforts.
- Seven states reported a cap on the number of students who can be reported for state aid.
- Eleven states reported a cap on the total amount of state aide per year that is available for special education.

Overview of Maine's Special Education Funding Model

Maine's special education funding model can be described as a single-pupil weight model with adjustments. This model was derived in 2003-2004 by Maine Education Policy Research Institute (MEPRI) staff with consultation from the Working Group on Special Education Issues convened by the Commissioner of Education. Models used in other states were examined and consideration given to the significant differences in the size of Maine school districts, the wide variance in the prevalence of students with disabilities among districts, and the unpredictable need for high-cost programs for some students. The single-pupil weight model with adjustments for specific conditions and circumstances was determined to be the model that best fit the characteristics of Maine school districts and was congruent with the adequacy and equity goals of the Essential Programs and Services (EPS) funding model. The model was approved by the Maine State Legislature for implementation in FY2006.

A single-pupil weight model means that an incremental cost for a special education student is calculated and added to the EPS base rate for a regular education student. The ratio of the cost of a special education student to the cost of a regular education student becomes the basis for the special education allocation to a school district. Adjustments are made for specific conditions or circumstances.

Maine's special education funding model can be viewed as having six components with the following parameters:

- **Base weight:** The EPS base rate for a regular education student is weighted at 1.0. Each special education student, up to 15% of a district's resident enrollment, is weighted at an additional 1.27.
- **Prevalence adjustment:** Special education students above 15% of resident enrollment are weighted at an additional .38.
- **Small district adjustment:** Districts with fewer than 20 students with disabilities receive an adjustment to reflect lower student-staff ratios and higher costs.
- **High cost in-district adjustment:** Districts receive an adjustment for special education students educated within the district when costs are estimated to be more than three-times the special education per-pupil base amount.
- **High cost out-of-district:** Districts receive an adjustment for special education students educated outside the district when costs are estimated to be four-times the special education per-pupil base amount.

- ***Maintenance of effort (MOE):*** Federal law requires that district per-pupil expenditures for special education be at least equal to the previous year per-pupil expenditures except when there has been a loss of high cost students, a voluntary loss of personnel, or termination of high cost programs. Districts are given a “hold harmless” adjustment so that their allocation is equal to at least the previous year per-pupil expenditure minus adjustments for these losses.

Review of Components

Data Used in Adjustment Calculations

The following sections summarize a review of each component of the model and provide updated parameters based on available data from the last three years. Some data sources have changed since the original model was created. More accurate attending student counts are now available with the incorporation of special education into MEDMS/Infinite Campus, and more accurate expenditure data became available with the creation of the new financial system in 2007 – 2008. In some cases these new data allow for calculations that were not possible under the old reporting system and in others the new data improve the accuracy of the calculations.

In addition to presenting the updated parameters, the following sections include a number of comparisons between actual expenditures and allocations.

Base Weight

The EPS model uses a weighting system to convert cost to weight. A typical student is assigned a weight of 1.0 which reflects the cost of providing the education program needed to achieve the Learning Results. Students who need additional programs or services to meet the Learning Results are assigned an incremental weight reflecting the additional cost of these programs and services. Incremental weights are additive. That is, the additional cost for each needed program or service is added to the 1.0 weight that represents the cost of the typical student.

Special education students are currently estimated to cost 2.1 times as much as non-special education students or an incremental weight of 1.1. Recalculating this base weight using the last three years of expenditure data (2006 – 2008) yields an updated ratio of 2.2 (see Table 7) or an incremental weight of 1.2.

Table 7. Calculation of Base Weight

Calculation of Weights Excluding State Ward and State Agency Clients 2006 - 2007	
Regular Ed Per-Pupil Expense	\$7,063
Total Special Ed Expenses	\$258,326,561
Medicaid Revenues (General Fund)	\$20,034,102
State and Local Special Ed Costs Excluding Medicaid	\$238,292,459
Federal Expenditures	\$39,632,340
Total	\$277,924,799
Special Ed Pupils December 1, 2006..excluding an estimate of state ward and agency clients)	31876
Special Ed Added Per Pupil Expense	\$8,719
Total Special Ed Per Pupil Expense	\$15,782
Ratio or Total Special Ed Per Pupil to Regular Ed Per Pupil	2.2

Calculation of Weights Excluding State Ward and State Agency Clients 2007 - 2008	
Regular Ed Per-Pupil Expense	\$7,636
Total Special Ed Expenses	\$265,426,383
Medicaid Revenues (General Fund)	\$24,953,859
State and Local Special Ed Costs Excluding Medicaid	\$240,472,524
Federal Expenditures	\$37,555,124
Total	\$278,027,648
Special Ed Pupils October 1, 2007..excluding an estimate of state ward and agency clients)	30027
Special Ed Added Per Pupil Expense	\$9,259
Total Special Ed Per Pupil Expense	\$16,896
Ratio or Total Special Ed Per Pupil to Regular Ed Per Pupil	2.2

Calculation of Weights Excluding State Ward and State Agency Clients 2008 - 2009	
Regular Ed Per-Pupil Expense	\$7,891
Total Special Ed Expenses	\$271,731,872
Medicaid Revenues (General Fund)	\$24,645,162
State and Local Special Ed Costs Excluding Medicaid	\$247,086,710
Federal Expenditures	\$33,363,300
Total	\$280,450,009
Special Ed Pupils October 1, 2008..excluding an estimate of state ward and agency clients)	29556
Special Ed Added Per Pupil Expense	\$9,489
Total Special Ed Per Pupil Expense	\$17,380
Ratio or Total Special Ed Per Pupil to Regular Ed Per Pupil	2.2

Three-Year Average	2.2
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Base Weight Conversion

Table 7 exposes the relationship between regular education per-pupil expense and special education per-pupil expense. This relationship must be translated to funding allocation. The current additional incremental cost of 1.1 for special education is converted to a weight of 1.27 to reflect an equivalent relationship between the weighted and non-weighted EPS rates. The updated incremental cost of 1.2 converts to an incremental weight of 1.39. Table 1 in the appendix explains the Base weight conversion.

Updated parameter: The incremental weight applied to each special education student based on recent data is 1.39. Note: Title 20A, section 15681-A allows a weight of at least 1.2 but no greater than 1.4.

High-Prevalence Adjustment

Currently, each special education student is weighted at 1.27 for up to 15% of resident enrollment. The current incremental weight used to account for the number of students above 15% of resident enrollment is .38. Recalculation of this weight using 2007 – 2009 data shows that the incremental weight based on students in regular classroom settings has decreased slightly to .36. Table 8 allows a comparison of the original and updated weight calculations.

Table 8. Updated Calculation of the High-Prevalence Adjustment

	Updated (2008 - 2009)		Updated (2007 - 2008)		Original Model	
	Resource Room	Regular Class Placement	Resource Room	Regular Class Placement	Resource Room	Regular Class Placement
Students	8,749	16,474	8,801	18,054	10,179	18,181
Special Ed Expense	\$115,219,229	\$34,317,654	\$112,530,138	\$35,257,049	\$69,651,104	\$31,101,452
Allocated Administration Expense	\$6,868,905	\$12,933,860	\$6,533,426	\$13,402,395	\$4,773,951	\$8,526,889
Total Expense	\$122,088,134	\$47,251,514	\$119,063,564	\$48,659,444	\$74,425,055	\$39,628,341
Total Expense Per Student	\$13,955	\$2,868	\$13,528	\$2,695	\$7,312	\$2,180
Regular Ed Expense Per Student	\$7,891	\$7,891	\$7,636	\$7,636	\$5,721	\$5,721
Incremental Weight	1.77	0.36	1.77	0.35	1.28	0.38

Updated Parameter: A calculation of the incremental weight of regular class placement indicates the adjustment for special education students in excess of 15% of resident enrollment is now .36.

Small-Size Adjustment

The small size adjustment is based on the lower teacher and director ratios and higher per-pupil costs of related services in small districts and applies to districts that enroll fewer than 20 students with disabilities. This method was chosen because at the time there were not accurate attending special education enrollment counts on which to calculate attending per-pupil expenditures.

The current method for calculating this adjustment uses state average ratios for each of three components; students with disabilities per teacher, students per director, and related expenses per student. Proportionate ratios are calculated for districts with fewer than the state average of 15 students per teacher using two enrollment ranges, fewer than 10 students, and fewer than 20 students. Adjustments are provided that equate to the difference between the state average cost of each component and the proportionate cost for the enrollment group. Table 2 in the appendix provides an example of this calculation. Table 9 allows a side by side comparison of the original parameters used for the adjustment and the updated calculations with 2008 – 2009 staffing and expenditure data.

Table 9. Updated and Original Small Size Adjustment Parameters

	Updated (2008 - 2009)			Original Model		
	Students Per Teacher	Students Per Director	Related Expense Per Student	Students Per Teacher	Students Per Director	Related Expense Per Student
State Average	14	213	\$1,844	15	216	\$1,581
Fewer than 10	10	90	\$3,972	10	38	\$3,640
10 - 19	11	75	\$3,024	14	80	\$1,933

The original method of calculating this adjustment was created at a time when accurate data for calculating attending per pupil expenditures were not available. We now have more accurate counts on which to calculate these figures. Due to this change, an alternate method for calculating the small size adjustment is possible and suggested below. The current model simply updates the parameters used in the original calculations. The suggested alternative uses per-pupil attending expenditures by enrollment ranges and creates an incremental weight that would greatly simplify the adjustment process.

Suggested alternative. Table 10 displays the mean attending per-pupil expenditure (2008 – 2009) by enrollment group. A comparison of mean expenditures reveals that the per-pupil expenditures for districts with fewer than 20 students with disabilities are significantly higher than expenditures in larger districts.

Table 10. Mean Attending Per-Pupil Expenditures by Enrollment Group

Enrollment Group	Districts	Attending Per-Pupil Expenditure	Additional Expenditure
Fewer than 10*	28	\$14,703	29%
10 - 19*	25	\$14,784	30%
20 – 29	17	\$11,291	-1%
30 – 39	14	\$10,608	-7%
40 – 49	12	\$10,543	-8%
50 – 59	10	\$10,032	-12%
60 – 69	8	\$10,701	-6%
70 – 79	4	\$8,334	-27%
80 – 89	8	\$10,902	-4%
90 – 99	5	\$9,893	-13%
100 or more	88	\$10,153	-11%
Overall	219	\$11,405	

*Statistically different from districts with 20 or more students with disabilities.

This analysis suggests that a weight of .29 (the current additional per pupil expenditure) might be used to calculate the small size adjustment for all schools with fewer than 20 students with disabilities. To further examine the relationship between the current calculation and the suggested alternative and actual expenditures we calculated the 2008 – 2009 EPS allocations (without MOE) for districts with fewer than 20 students with disabilities using both methods. Figures 1 and 2, respectively, show these linear relationships. The suggested alternative, Figure 2, actually explained more of the variance in the actual expenditures than the current version (0.66 vs. 0.58).

Figure 1. Relationship between Allocation and Expenditures Using Original Small Size Adjustment (Only Small Size Districts are Displayed)

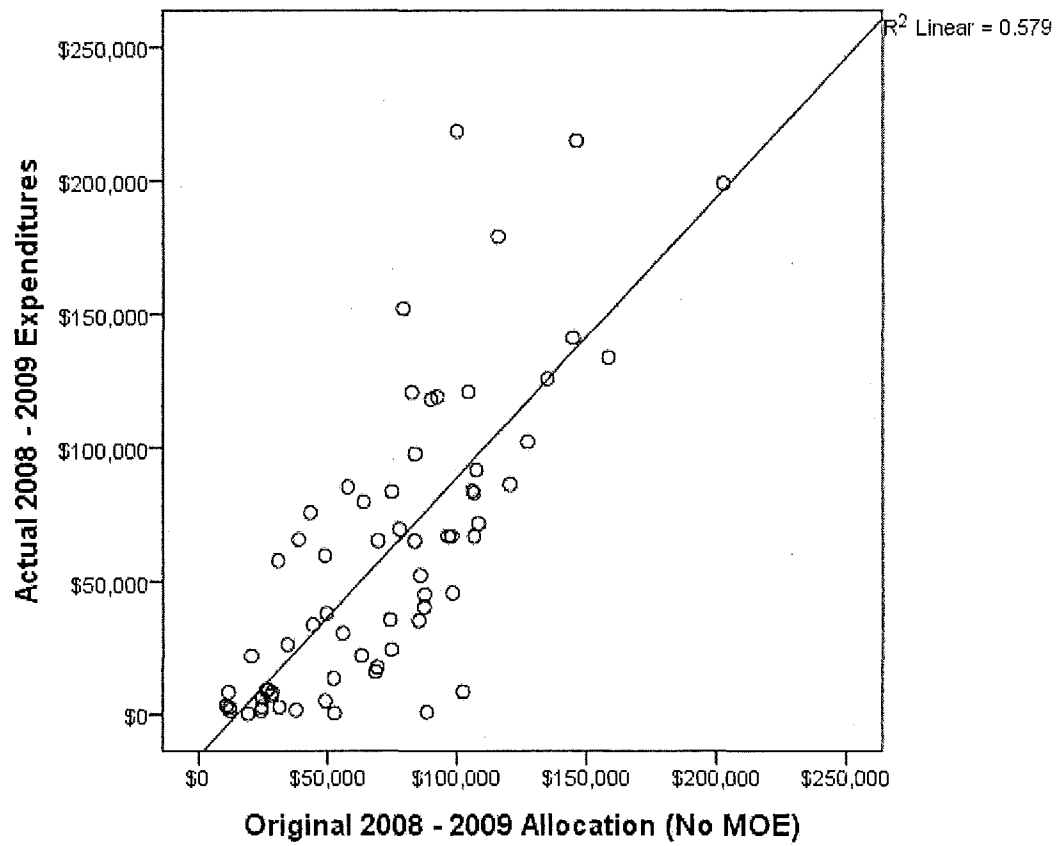
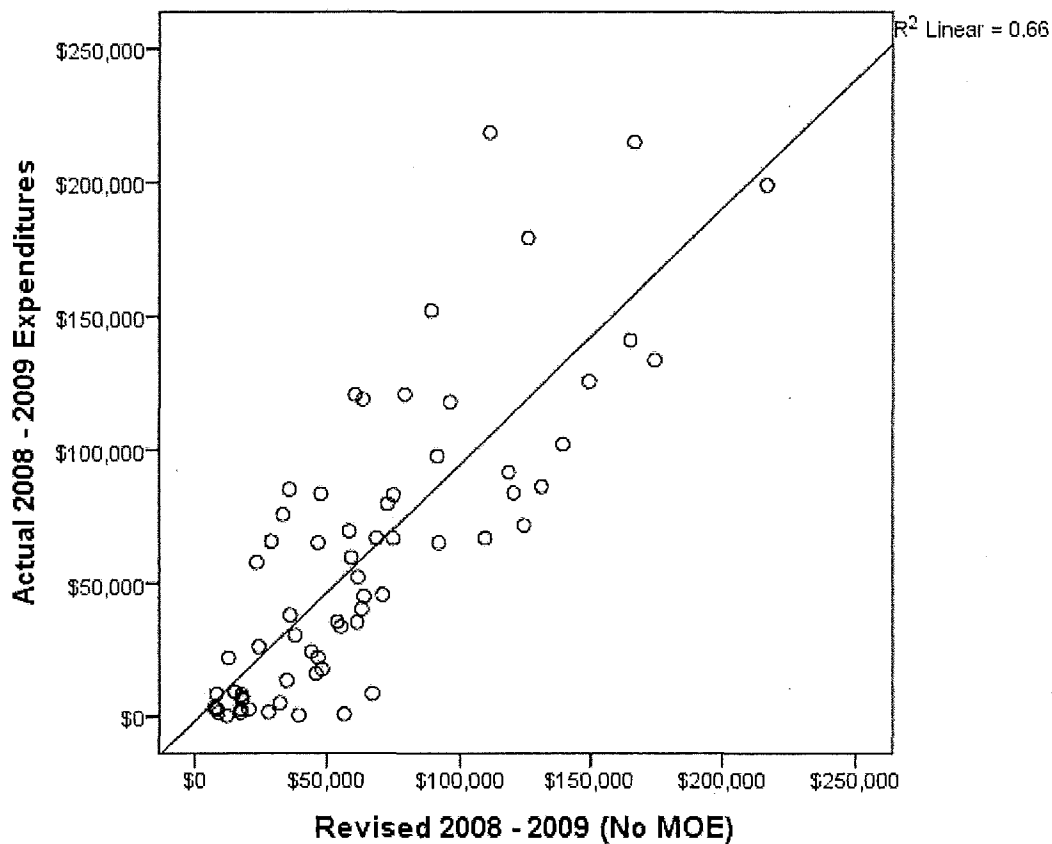


Figure 2. Relationship between Allocation and Expenditures Using Alternative Small Size Adjustment (Only Small Size Districts are Displayed)



Updated Parameter: A weight of .29 added to the special education EPS rate (Base plus Prevalence per pupil cost) could be used to calculate the small size adjustment. The benefit of this alternative calculation is that it can be easily incorporated into the financial system for calculating EPS allocations and is easier to understand than the original option.

High Cost In-District Adjustment

The threshold for high cost in-district students is three-times the special education EPS rate (Base plus Prevalence per-pupil cost). Districts currently receive an adjustment for the estimated costs above that threshold. These costs are typically related to the need for multiple programs and services for an individual child who might need special class placement, and services such as speech and language therapy, physical therapy, and occupational therapy.

Table 11 describes how the high-cost in-district allocation has changed from 2005 - 2006 through 2010 - 2011.

Table 11. Trends in High Cost In-District Allocation

District	*High Cost In-district Threshold	Estimated High Cost In-District Students	Change in Estimated High Cost In-District Students	Cost of High Cost Students	Change in Cost of High Cost Students	Total Adjustment	Change in Total Adjustment
2010-11	\$22,656	2,683	-1.07%	\$71,687,694	1.58%	\$10,901,646	-5.97%
2009-10	\$21,747	2712	-12.83%	\$70,571,689	-9.21%	\$11,593,825	-13.22%
2008-09	\$20,691	3111	22.19%	\$77,730,163	22.41%	\$13,360,462	21.57%
2007-08	\$20,623	2546	107.84%	\$63,497,289	125.85%	\$10,990,362	188.30%
2006-07	\$19,839	1225	NA	\$28,114,933	NA	\$3,812,158	171.87%
2005-06						\$1,402,219	NA

*Maine Department of Education

Beginning in 2009 - 2010 the number of high cost in-district students began to decline as did the expenditure for this allocation. The reason for this is not clear but may be related to the reorganization of school districts allowing larger units to employ specialists who were previously contracted providers. Also during this period Maine's special education regulations were being rewritten to include more specific and better defined criteria for identification of students with disabilities. Both of these possible explanations would require further study to determine if either is valid.

Three factors are used in the current model to determine which students fall above the threshold; a student's special education placement (regular, resource, self-contained or homebound/hospital), the average costs of related services provided to a student (occupational therapy, physical therapy, psychological services, etc.), and a student's disability. The calculation of both estimated placement and related services costs are described below.

Placement Estimates. The estimates used to calculate per-student placement costs are based on instructional expenditures and an allocated portion of administrative expenses. Dividing the expenditures for regular classroom room placement, resource room placement, and homebound/hospital placement by the number of special education students in each placement category provides estimates of costs. A proportion of administrative expenditures is added to each placement category. Table 12 displays a comparison of current and updated estimates for each placement category for 2006 – 2007 and 2008 - 2009. The biggest change was in the homebound/hospital category where there was a significant decrease in per-pupil expenditures. This appears to be a function in the change in the reporting systems.

Table 12. Comparison of Placement Estimates for High Cost In-District Adjustment Calculation

	Updated (2008 - 2009)				Previous Estimates (2006 - 2007)			
	Resource Room	Regular Class Placement	Self-Contained Placement	Homebound Hospital*	Resource Room	Regular Class Placement	Self-Contained Placement	Homebound Hospital*
Students	8,749	16,474	3,783	61	8,774	18,502	3,706	82
Special Ed Class Expense	\$115,219,229	\$34,317,654	\$67,186,314	\$291,700	\$83,441,511	\$43,988,911	\$64,272,049	\$1,829,438
Allocated Administration Expense	\$6,868,905	\$12,933,860	\$2,970,061	\$47,892	\$5,755,744	\$12,137,312	\$2,431,136	\$53,792
Total Expense	\$122,088,134	\$47,251,514	\$70,156,376	\$339,591	\$89,197,255	\$56,126,223	\$66,703,185	\$1,883,230
Total Expense Per Student	\$13,955	\$2,868	\$18,545	\$5,567	\$10,166	\$3,034	\$17,999	\$22,966

* This difference may be due to changes in the change in the financial reporting system.

Related Service Estimates. The MEDMS financial database provides more accurate data on expenditures for related services than was previously available but does not provide visibility to the specific students receiving the services. In order to update the related service estimates the 2008 – 2009 expenditures as reported in MEDMS were used and student counts for each service were estimated by assuming a 4% decline from the student counts reported in 2007 – 2008. The 4% decrease was the overall change in attending students between December 1st 2007 and December 1st 2008. The updated estimates are found in Table 13.

Table 13. Updated Related Service Estimates

	Updated (2008 - 2009)			Updated (2007 - 2008)			Previous Estimates (2006 - 2007)
	Expenditures	Students	Estimated Per-Student	Expenditures	Students	Estimated Per-Student	
Psychological	\$12,268,585	1,143	\$10,730	\$12,477,384	1,191	\$10,476	\$11,696
Social Worker	\$8,321,050	3,076	\$2,705	\$7,941,200	3,204	\$2,479	\$2,946
Occupational Therapy	\$8,367,482	5,919	\$1,414	\$7,295,161	6,166	\$1,183	\$1,480
Speech Pathology	\$22,140,123	12,535	\$1,766	\$21,009,691	13,057	\$1,609	\$1,662
Audiology*	\$935,856	64	\$14,550	\$677,017	67	\$10,105	\$19,836
Physical Therapy	\$2,542,521	1,428	\$1,781	\$2,066,739	1,487	\$1,390	\$2,119
Health	\$233,563	182	\$1,283	\$243,390	190	\$1,281	N/A
Other (total related service/total related services)	\$54,809,180	24,347	\$2,251	\$51,710,581	25,362	\$2,039	\$1,247

* The EF-S-02 had lines for sign-language interpreters and teachers of the deaf. The new system has a category called audiology where it is expected that districts report such expenditures. Because it is unclear whether all services for students with hearing impairments are included in this category, only students reported as receiving audiology services were included in the denominator.

Disability/Placement Estimates. To update the disability/placement estimates the estimated cost of each in-district student on the 2007 – 2008 special education file was calculated using the updated placement and related service estimates (2008 – 2009) seen in Tables 12 and 13. The mean estimated per-student cost for each disability and placement category was then calculated. Table 14 displays a comparison between the current estimates and the updated estimates by disability.

Table 14. Updated Disability/Placement Estimates

	Regular Class		Resource Room		Self-Contained	
	Updated Estimates (08 - 09)	Current Estimates*	Updated Estimates	Current Estimates*	Updated Estimates	Current Estimates*
Mental Retardation	\$4,644	\$5,803	\$16,075	\$13,105	\$21,873	\$22,702
Hearing Impairment	\$5,995	\$7,483	\$19,394	\$15,703	\$23,681	\$36,590
Deafness	\$19,223	\$24,615	\$32,426	\$35,822	\$35,659	\$41,754
Speech & Language	\$5,091	\$5,434	\$16,655	\$13,407	\$22,299	\$22,943
Visual Impairment	\$4,904	\$5,345	\$15,846	\$12,069	\$23,734	\$35,768
Emotional Disability	\$5,202	\$6,293	\$16,532	\$13,635	\$22,068	\$22,508
Orthopedic Impairment	\$6,256	\$6,647	\$16,710	\$17,229	\$22,590	\$25,122
Other Health Impairment	\$4,302	\$4,907	\$15,916	\$12,822	\$22,132	\$22,639
Specific Learning Disability	\$3,520	\$4,014	\$14,972	\$11,951	\$20,808	\$21,200
Deaf-Blindness	\$7,666	\$3,209	\$13,955	N/A	N/A	N/A
Multiple Disabilities	\$5,456	\$6,151	\$17,227	\$14,250	\$23,054	\$23,819
Developmentally Delayed	\$5,298		\$18,823		\$21,634	
Autism	\$6,531	\$7,296	\$18,093	\$14,889	\$23,993	\$24,809
Traumatic Brain Injury	\$5,097	\$6,564	\$16,704	\$14,046	\$23,053	\$23,451

*For comparison purposes these estimates reflect 06 - 07 expenditures inflated to 08 - 09 dollars.

The shaded cells in Table 14 indicate categories that would typically be considered high-cost based on a threshold of three-times the special education per-pupil rate (\$6,897) or \$20,691 for 2008 - 2009.

Because of the lack of student-specific related services cost data, and to simplify the model, alternative means of calculating this adjustment were explored. We examined the relationships between the actual 2008 – 2009 expenditures and:

- 1) **Original Estimate** – The 2008 – 2009 allocation (before the MOE adjustment).
- 2) **Revised Estimate Option 1** – A revised 2008 – 2009 allocation (before the MOE adjustment) with the high cost in-district adjustment calculated using the updated placement and related service estimates in Tables 12 and 13.
- 3) **Revised Estimate Option 2** – A revised 2008 – 2009 allocation (before the MOE adjustment) with the high cost in-district adjustment calculated using just the disability and placement estimates in Table 14.

Figure 3 displays the relationship between the original EPS allocation (without the maintenance of effort adjustment) and actual expenditures (Option 1 above). The relationships between allocations and expenditures using Options 2 and 3 are displayed in Figures 4 and 5 respectively.

Figure 3. Relationship between 2008 – 2009 Actual Expenditures and Original Allocation (No MOE)

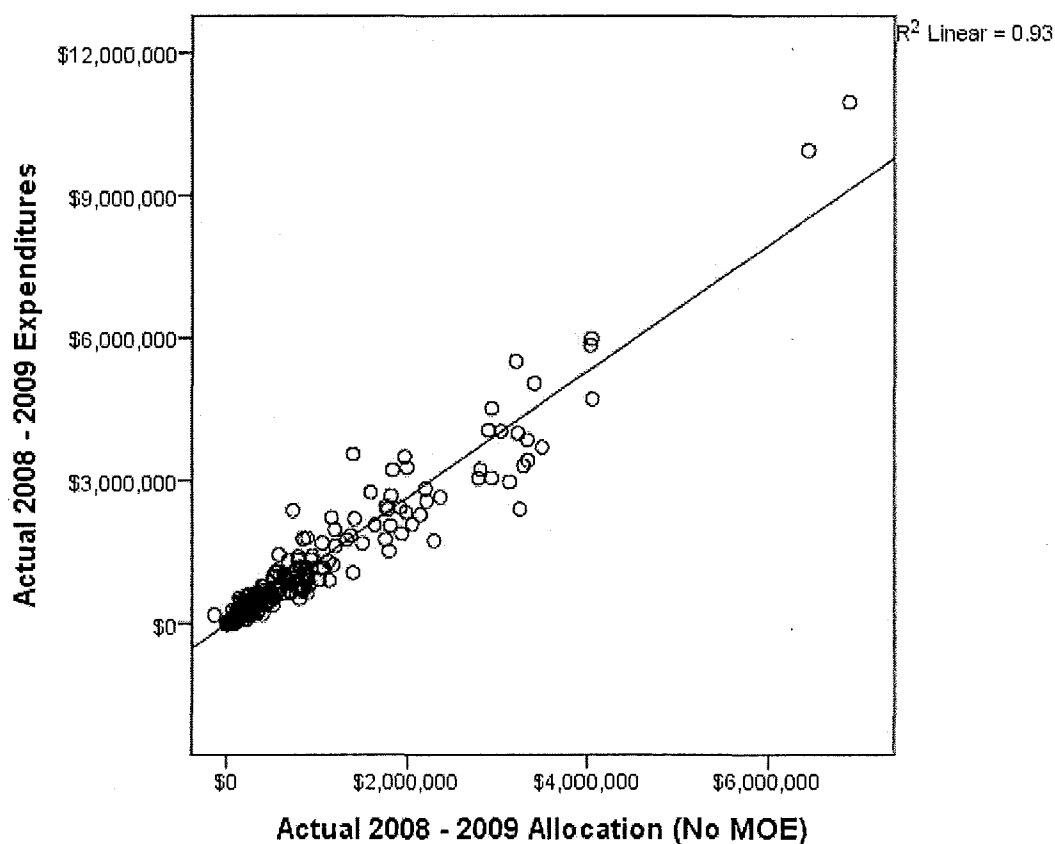


Figure 4. Relationship between 2008 – 2009 Actual Expenditures and Revised Allocation Option 2 (No MOE, placement and related services cost estimate)

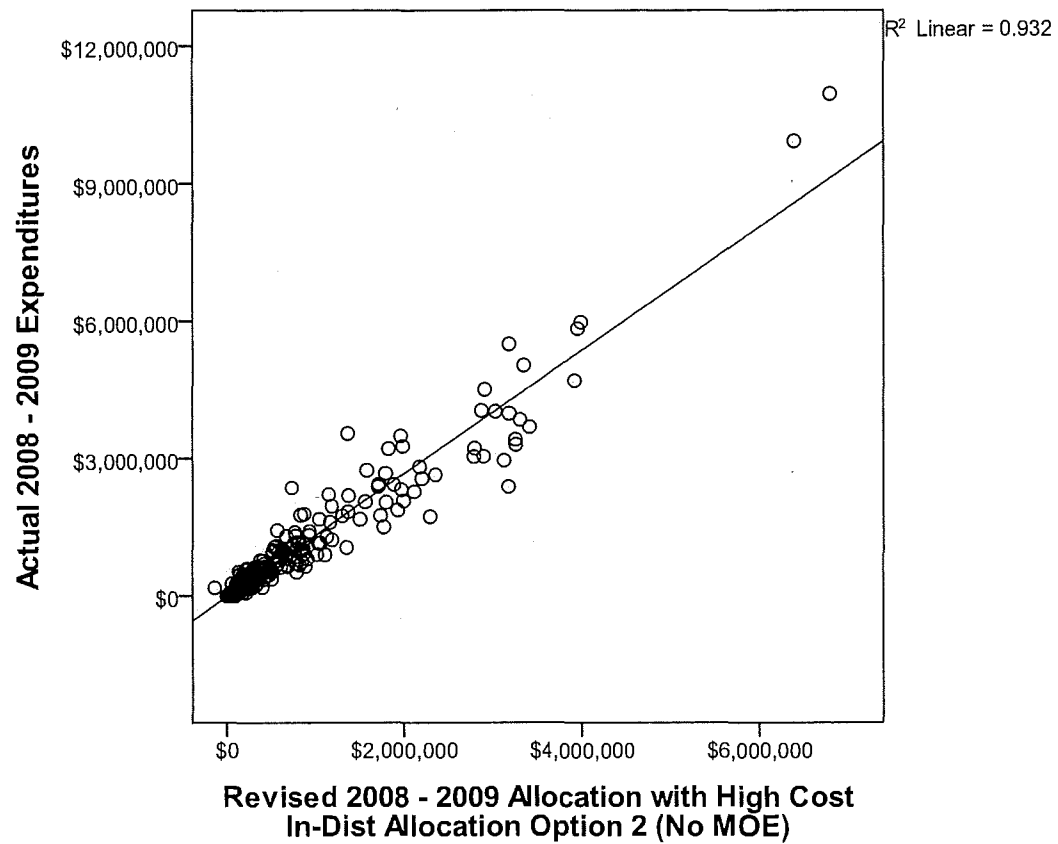
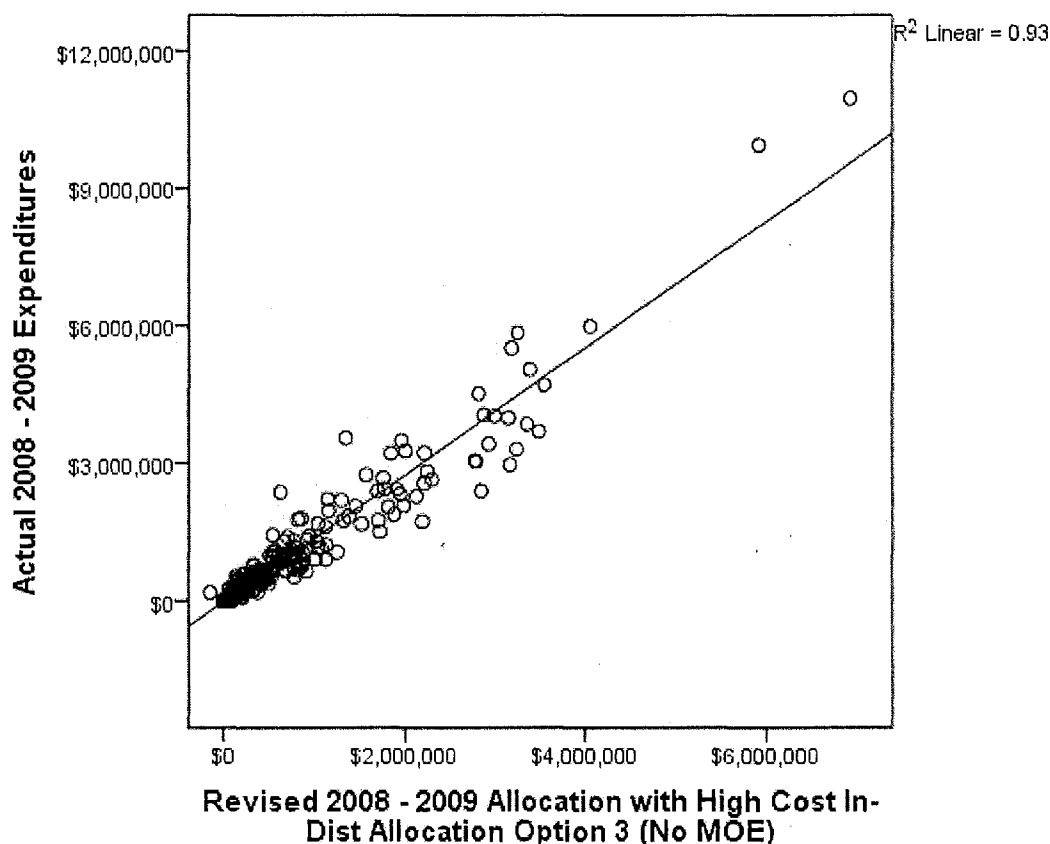


Figure 5. Relationship between 2008 – 2009 Actual Expenditures and Revised Allocation Option 3 (No MOE, placement and disability)



It is clear from this analysis that there is very little difference in the relationship among the three options. All three options explain approximately 93% of the variation in actual expenditures.

Updated Parameter: Use of placement and disability data (Option 2 above) which are readily available from the existing financial system would provide a more efficient and simpler means of calculating the high cost in-district adjustment with no loss of precision.

High Cost Out of District Adjustment

Some students, often with severe or multiple disabilities, require programs and services that cannot be provided in their school districts but instead require residential treatment or hospital placements. Districts receive an adjustment for every student placed in a program or facility outside the district when costs per student exceed four times the special

education per-pupil rate. Table 15 describes the number of students exceeding this threshold between 2006 – 2007 and 2009 – 2011.

Table 15. Trends in High Cost Out-District Allocation*

Year	4* Statewide Special Ed EPS Rate	Estimated High Cost Out- District Students	Change in Estimated High Cost Out-District Students	Total Adjustment
2010-11	\$30,208			\$7,086,866
2009-10*	\$28,996	429	2.14%	\$7,044,599
2008-09*	\$27,889	420	14.75%	\$6,941,510
2007-08*	\$27,497	366	1.67%	\$7,010,235
2006-07	\$26,452	360	NA	\$5,368,536
2005-06				\$3,691,867

*Updated to Actual High Cost Out-District within the MOE adjustment

As indicated in Table 15 the number of students placed out-of-district and costing more than four times the statewide special education EPS rate increased significantly between 2007 – 2008 and 2008 – 2009. The cause of this increase is unclear but may be related to the data in Table 3 (2008 – 2009) which reflects increased numbers of students with disabilities in the high cost categories of Hearing Impairment, Deafness, Other Health Impairment, and Autism.

Maintenance of Effort (MOE) Adjustment

School districts receive federal funds for special education that may be used to supplement, but not supplant, state and local funds. In order to receive federal funds for special education the federal government requires each school district to meet maintenance of effort requirements. Briefly, a school district may not reduce the level of expenditures for support of special education below the level of expenditures for special education for the preceding fiscal year (34 CFR 300.231(a)). Exceptions to this rule include the loss of special education personnel, a decrease in enrollment of special education children, and the termination of programs that are no longer needed.

In Maine, adjustments are made to a district's EPS allocation when prior fiscal year expenditures exceed the EPS allocation. This adjustment is reduced by proportionate amounts if a district is serving fewer high cost students, certain voluntary personnel changes have occurred or if programs have been terminated that are no longer needed. Table 16 reflects the number of districts receiving MOE adjustments and the total amount of these adjustments from 2005 - 2006 through 2010 - 2011.

Table 16. Trends in Updated Maintenance of Effort Allocation*

Year	Number of District	Total Adjustment	Change in Total Adjustment
2010-11	105	\$37,670,261	-5.48%
2009-10	132	\$39,855,017	9.11%
2008-09	151	\$36,527,916	-0.52%
2007-08	147	\$36,717,407	23.36%
2006-07	138	\$29,764,013	1.76%
2005-06	141	\$29,249,831	NA

*Updated to Actual High Cost Out-District within the MOE adjustment

Estimating Fit of Model Revisions

To determine the degree to which a revised version of the special education funding model based on the updated parameters included in this report correlates with actual expenditures, the 2008 – 2009 allocations were revised and compared to the actual 2008 – 2009 expenditures.

Revised Allocation with Updated Parameters

Base Weight: 1.39

Prevalence Weight: .36

Small Size: Students in districts with fewer than 20 students with disabilities receive additional weight of .29

High Cost In-District: Estimated costs based on student placement and disability (as seen in Table 14)

High Cost Out-of-District: Estimate the same as original

Maintenance of Effort: At least the same amount per-pupil excluding the loss of high-cost students

Relationship of Actual Expenditures to Model Options. Figures 6 and 7 show the linear relationship of actual expenditures to the original allocation and revised allocations. Both regressions explain over 95% of the variance in expenditures.

Figure 6. Relationship of the Original 2008 – 2009 Allocation to Actual Expenditures

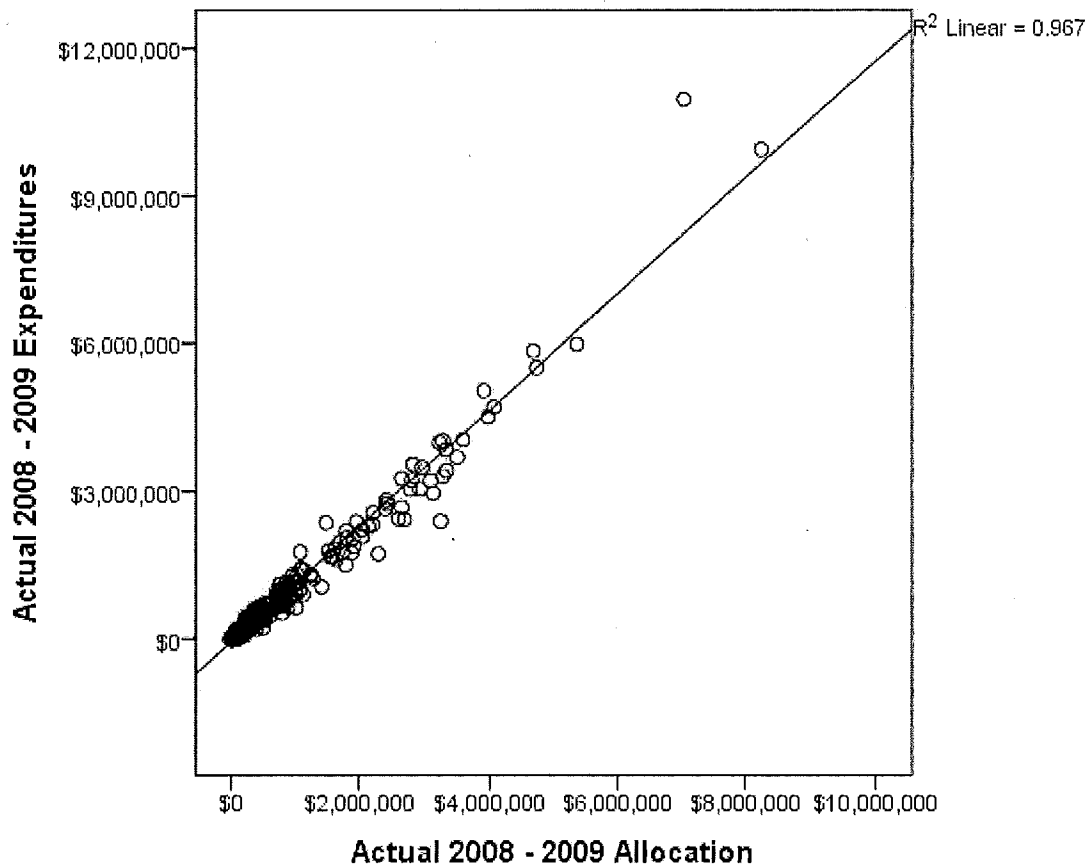


Figure 7. Relationship of the Revised 2008-2009 Allocation with Updated Parameters to Actual Expenditure

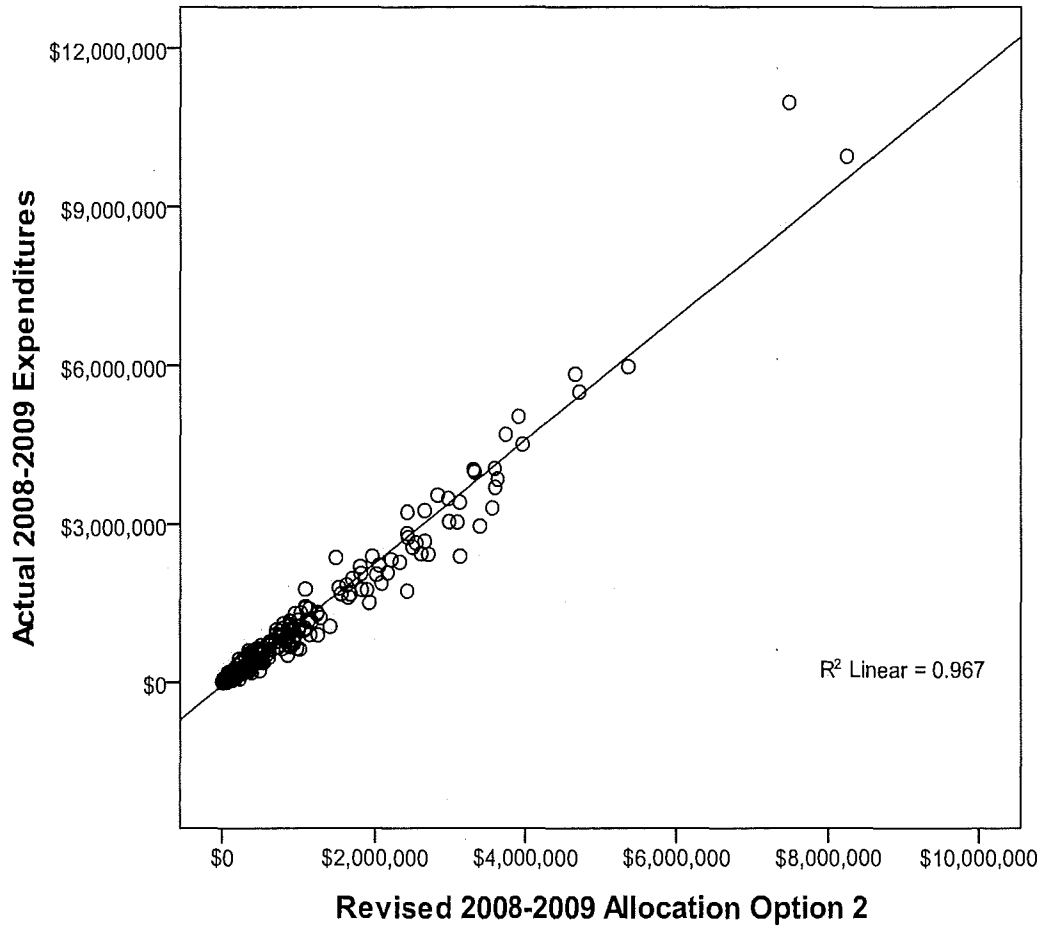


Table 17 displays the number of districts that spent over 5% less, within 5%, or at least 5% more than the actual and revised allocations. Just four more districts are shifted into the “spent above” category with the revised allocation.

Table 17. Distribution among Spending Categories by Model

	Original 2008 - 2009 Allocation	Revised 2008 - 2009 Allocation (Using 1.39)
Spent over 5% less than allocation	114	116
Spent within 5% of allocation	37	42
Spent over 5% more than allocation	118	110

These minimal shifts and the above regressions confirm that the suggested updated parameters and calculations are consistent with actual prior expenditures.

Total 2010 - 2011 Allocation and Revised Allocation. To determine what the financial impact of making these model revisions may be on the overall state allocation the 2010 – 2011 allocation was compared to the revised allocation estimate using the following parameters:

Revised 2010 – 2011 Estimates

Base Weight: 1.39

Prevalence Weight: .36

Small Size Weight: .29

High Cost In-District Adjustment: Used the disability/placement estimates from Table 14 inflated by 2.5% per year to 2010 – 2011 dollars.

High Cost Out-of-District Adjustment: Kept as is

Maintenance of Effort: At least the same amount per-pupil excluding the loss of high-cost students

Table 18 compares the total 2010 – 2011 Original Allocation to the Revised Estimate.

Table 18. Total Estimated 2010 – 2011 Allocations

Original Allocation	\$239,404,188
Revised Estimate	\$242,657,038
Difference from Original	\$3,592,534

Suggested Next Steps

The sections above have provided updated parameters for the components of Maine's special education funding model and suggested changes in certain calculations based on an analysis of the past three years of data. In the process of this review several questions have surfaced that deserve exploration prior to the next three year review.

Can the Base Weight conversion be simplified or eliminated?

The base weight (1.27 or 1.1 of total per-pupil expenditures) is based on total expenditures, not just what would be included in the base. This needs to be recalculated each year. The creation of a calculation that would not require a transformation should be explored. Federal revenues are currently included in the calculation of the weight and later subtracted. The need to continue this process should be examined and alternatives explored.

- **Is the 15% limit on enrollment that receives a 1.27 per-pupil weight still appropriate?**

This limit was established in 2005 when the prevalence of students with disabilities was at its highest (18.9%). Using a lower weight (.38) for enrollments above 15% was intended to encourage more judicious interpretation of special education eligibility criteria. Since 2005 the prevalence of students with disabilities has declined. Although there are many factors other than the 15% limit that may have contributed to this reduction, a reconsideration of the 15% and .38 limits are warranted.

- **Are the High Cost-In District threshold of three times the base EPS and the High Cost Out-of District threshold of four times the base EPS rate serving as incentives to provide in-district programs and services?**

These high cost thresholds were intended to encourage in-district and regional programs when appropriate for students' needs. Recent school district reorganization, the increased availability of regional programs and services for students with disabilities suggest the need to reconsider these limits.

- **How do the characteristics, policies and practices of districts that consistently spend above the allocation and districts that consistently spend below the allocation differ?**

An examination of comparable school districts that consistently spend more and less than their allocations may reveal differences in policies and practices that would lead to constructive change.

- **Is the current single pupil-weight model with adjustments still the best model for Maine schools?**

School district reorganization and improved data systems will undoubtedly impact special education over the next three years. School district reorganization may change the administration, structure and delivery of special education programs. Improved data systems will allow the Department of Education to collect more specific student level data and increase the accuracy of allocations. These potential changes suggest that, prior to the next three year review, alternatives to the overall model, and each of the components be examined.

APPENDIX

Table 1. Base Weight Conversion

Total Allocation (100% EPS)	\$1,370,353,857	A
Total Base EPS Allocation	\$1,185,705,717	B
Average EPS Pupil weight	1.16	$C=A/B$
Current Special Ed incremental weight	1.10	D=Calculated from Special Ed/Regular Ed Expense Ratio
Converted Current Special Ed incremental weight	1.27	$E=C*D$
Updated Special Ed incremental weight	1.20	F= Calculated from Special Ed /Regular Ed Expense Ratio
Converted Updated Special Ed incremental weight	1.39	$G=C*F$

Table 2. Example of Small Size Adjustment

Students with Disabilities	7
Teachers with State Average Ratio (15:1)	0.47
Teachers with 10:1 Ratio	0.70
Additional Teachers Permitted	0.23
Incremental Adjustment for Teachers*	\$11,919
Directors with State Average Ratio (216:1)	0.03
Directors with 37:1 Ratio	0.18
Additional Directors Permitted	0.15
Incremental Adjustment for Directors**	\$12,238
State Average Expense Per-Pupil	\$1,581
Allowable Related Service Expense Per-Pupil	\$3,640
Additional Related Service Expense Per-Pupil	\$2,059
Incremental Adjustment for Related Service Expenses	\$14,413
Total Small District Adjustment	\$38,570

* A teacher salary + 19% for benefits of \$51,082 was used.

** A director salary + 19% for benefits of \$80,618 was used.

References

- Parrish, T., Harr, J., Anthony, J., Merickely, A, & Esra, P. (2003). *State special education finance systems, 1999 – 2000 Part I*. Palo Alto, CA: Center for Special Education Finance.
- Ahern, Eileen (2010) *Financing Special Education: State Funding Formulas*, in *In Forum: In Depth Policy Analysis*. Alexandria, VA: Project Forum, National Association of State Directors of Special Education.