MAINE STATE LEGISLATURE

GIFTED AND TALENTED EPS ADVISORY COMMITTEE

Summary of Work Completed and Recommendations

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Maine Education Policy Research Institute
University of Maine and University of Southern Maine

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Summary of Work Completed and Recommendations of the Gifted and Talented EPS Advisory Committee

Background

Since April 2008 the Gifted and Talented EPS advisory committee has met five times to discuss the development of a funding model to bring G/T within EPS. This document outlines the analyses that were conducted to guide the discussions of the group, the results of an online survey of G/T coordinators that was conducted to gain information on program types and methods of delivery, and the final recommendations for the implementation of a funding model and necessary subsequent analyses.

Preliminary Analyses

MEPRI provided the committee with some preliminary analyses to give them a comprehensive view of such issues as identification rates, the percentage of districts with programs, and per-pupil expenditures.

Districts with Programs

The number of districts with gifted and talented programs in 2004 – 2005, 2005 – 2006, 2006 – 2007, and 2007 – 2008 was examined. The determination that a program existed in 2004 – 2005, 2005 – 2006, and 2006 – 2007 was made if gifted and talented expenses were reported during those years. For 2007 – 2008, a district is reported to have a program if they submitted a G/T plan to the DOE for that year.

Overall, over 65% of districts with schools submitted plans for programs for the 2007 – 2008 school year. Only 81 districts, however, have consistently had programs since 2004 – 2005. When looking at the existence of programs by enrollment grouping it is evident that programs are more likely to exist in the larger districts than the smaller districts. Tables 1 and 2 display this.

Table 1. Districts with G/T Programs 2004 - 2008

Year	Districts with Programs	% (of 227 districts with schools)
2004 - 2005	99	44%
2005 - 2006	119	52%
2006 - 2007	139	61%
2007 - 2008*	151	67%
All four years	81	36%

* These are the numbers of districts that submitted plans with student counts and expenses.

Table 2. Districts with G/T Programs by Enrollment Group

		2004 - 2005		2005 - 2006		2006 - 2007		2007 - 2008	
Enrollment Group	Districts	n	%	n	%	n	%	n	%
Fewer than 120	52	9	17.31%	12	23.08%	14	26.92%	18	34.62%
120 - 249	41	16	39.02%	18	43.90%	24	58.54%	27	65.85%
250 - 699	46	15	32.61%	20	43.48%	30	65.22%	33	71.74%
700 - 1499	44	25	56.82%	30	68.18%	31	70.45%	32	72.73%
1500 or more	44	34	77.27%	39	88.64%	40	90.91%	41	93.18%

Identification Rates (2007 – 2008 Plans)

Almost half of the districts that submitted plans indicated identification rates of 5% or lower in the area of intellectual ability; 44% indicated rates higher than 5%. The majority of districts (59%) did not identify G/T students in the area of artistic abilities. Table 3 displays these proportions.

Table 3. G/T Identification Rates

	General Intellectual/Specific Content Area		Visual/Performing Arts	
	n	%	n	%
Greater than 10%	16	10.39%	3	1.95%
Greater than 5%/Less than or equal to 10%	52	33.77%	5	3.25%
5% or lower	74	48.05%	55	35.71%
Did not identify G/T students	12	7.79%	91	59.09%

The districts with the largest and smallest proportion of their students identified as G/T tend to be the smaller districts (fewer than 120 students) as seen in Tables 4 and 5 below.

Table 4. G/T Identification Rates (General Intellectual/Specific Content Area) by Enrollment Grouping

	Greater than 10%		Greater than 5%/Less than or equal to 10%		5% or lower		Did not identify G/T students	
Enrollment Group	n	%	n	%	n	%	n	%
Fewer than 120	6	38%	5	10%	5	7%	7	58%
120 - 249	3	19%	10	19%	12	16%	2	17%
250 - 699	2	13%	12	23%	17	23%	2	17%
700 - 1499	3	19%	11	21%	19	26%	1	8%
1500 or more	2	13%	14	27%	21	28%		

Table 5. G/T Identification Rates (Visual/Performing Arts) by Enrollment Grouping

	Greater than 10%		Greater than 5%/Less than or equal to 10%		5% or lower		Did not identify G/T students	
Enrollment Group	n	%	n	%	n	%	n	%
Fewer than 120	0	0%	0	0%	6	11%	17	19%
120 - 249	3	100%	1	7%	6	11%	17	19%
250 - 699	0	0%	2	14%	10	18%	21	23%
700 - 1499	0	0%	0	0%	15	27%	19	21%
1500 or more	0	0%	2	14%	18	33%	17	19%

Overall Elementary/Secondary Per-Pupil Expenses

Table 6. Overall Elementary Per-Pupil Expenditures

Year	All Districts		Excluding Outliers		Districts with Established Programs*	
2004 - 2005	82	$1,810	79	$1,512	70	$1,617
2005 - 2006	109	$1,619	108	$1,551	89	$1,584
2006 - 2007	111	$1,892	111	$1,892	93	$1,892

*Excludes programs that were reporting expenses for the first time during that year.

Table 7. Overall Secondary Per-Pupil Expenditures

Year	All Districts		Excluding Outliers		Districts with Established Programs*	
2004 - 2005	43	$1,276	42	$1,115	34	$1,019
2005 - 2006	47	$1,935	44	$1,212	37	$1,074
2006 - 2007	58	$1,562	57	$1,336	49	$1,249

*Excludes programs that were reporting expenses for the first time during that year.

Relationship Between Enrollment and Elementary/Secondary Per-Pupil Expense

There is a significant relationship between the number of G/T students and per-pupil expenses at both the elementary and secondary levels. Figures 1 and 2 display the relationship between G/T students and per-pupil expenditures at the elementary and secondary levels, respectively. This relationship is more curvilinear than linear with wide variance seen in per-pupil expenditures in districts with fewer G/T students.

Figure 1. Relationship Between G/T Students and Per-Pupil Expenses: Elementary

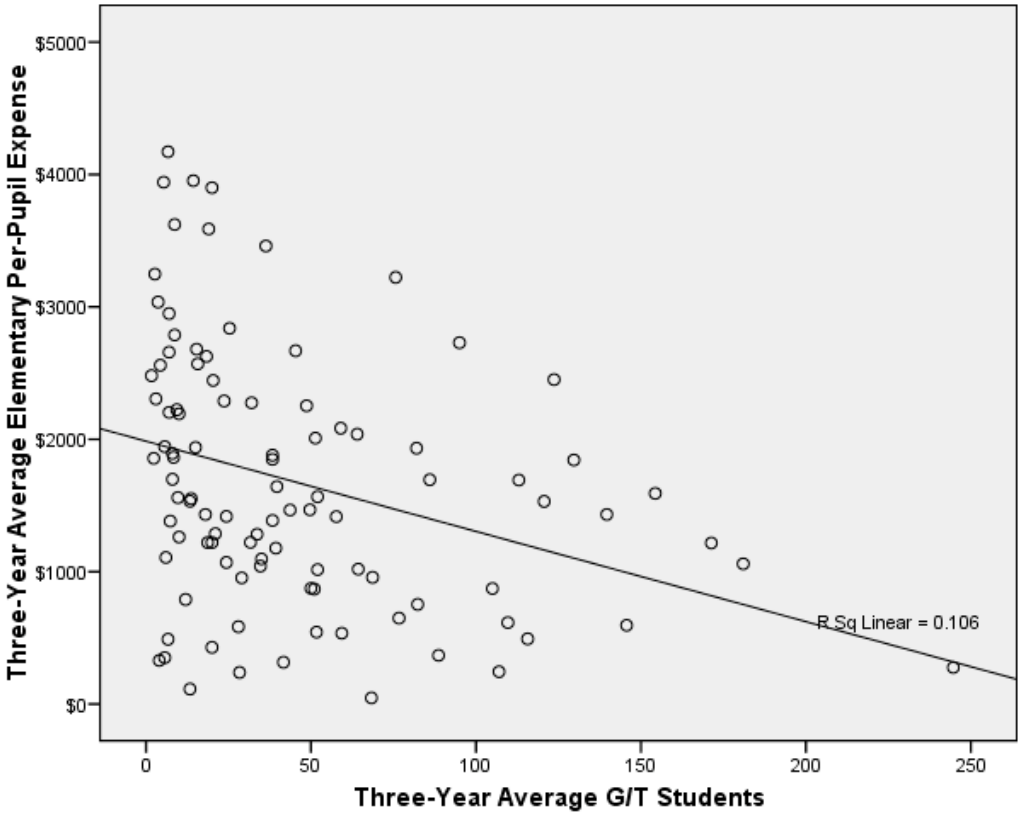
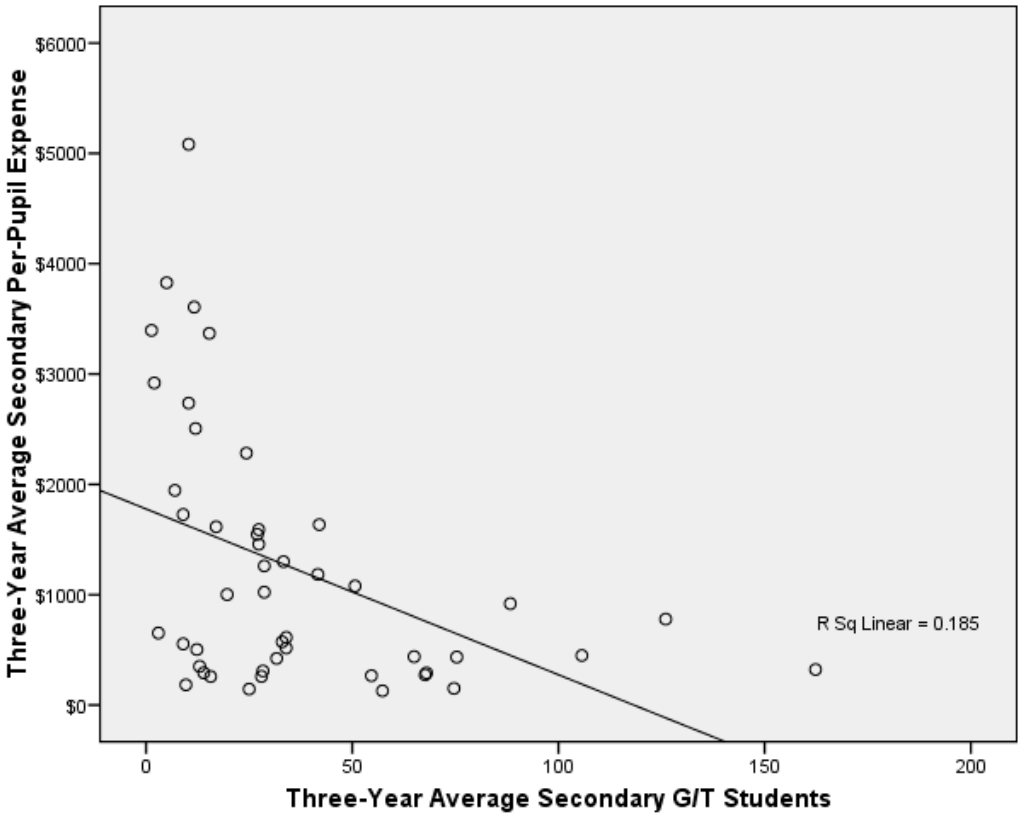


Figure 2. Relationship Between G/T Students and Per-Pupil Expenses: Secondary



Development of a Funding Model

The advisory committee discussed the possible options for a funding formula and decided that a weighted formula would be appropriate. Two stipulations were outlined in the discussions, however:

- The enrollments used to determine differing weights for districts of different sizes should be based on total attending enrollment rather than G/T enrollment. The group felt that applying it to G/T enrollment may create an incentive to identify fewer students due to the higher weight given to smaller districts.
- There should be a 5% cap within each category (academic and artistic) for weighting students

District Size

The relationship between per-pupil expenditures and the number of G/T students suggests that the weighted funding model may need to incorporate enrollment as well. We conducted some preliminary analyses to look at what types of enrollment categories would be reasonable. We first looked at whether there were statistically significant differences across three enrollment groupings based on the number of G/T students (*20 or fewer*, *21 – 70*, *More than 70*) and found that there was a statistically significant difference between 20 or fewer and 21 – 70 but no difference between 21 – 70 and more

than 70. This suggests that two categories of weights may be sufficient within the funding model. Tables 8 and 9 display the per-pupil amounts (based on the 2007 – 2008 plans) relative to the 2007 – 2008 EPS rates for elementary and secondary, respectively.

Table 8. Elementary Per-Pupil Amounts and Weights by Enrollment Group

	Number of Districts	Elementary EPS Rate	Per-Pupil Amount*	Potential Weight
20 or Fewer	34	$5,430	$2,215	0.41
More than 20	54	$5,883	$1,458	0.25

* The mean of the three-year average per-pupil expenditures for "established" programs.

Table 9. Secondary Per-Pupil Amounts and Weights by Enrollment Group

	Number of Districts	Secondary EPS Rate	Per-Pupil Amount*	Potential Weight
20 or Fewer	14	$5,844	$1,764	0.30
More than 20	26	$6,289	$753	0.12

* The mean of the three-year average per-pupil expenditures for "established" programs.

The advisory committee discussed relating weights to the number of G/T students and decided that the enrollment categories should be based on the total number of students rather than the number of G/T students so as not to create an incentive to identify fewer students. We therefore created attending enrollment groups by simply using the 5% assumption (5% of what would equal 20 students) to come up with 400 or fewer and more than 400 as the attending enrollment groups. Table 10 displays the number of districts that fall into each enrollment category and the preliminary weight associated with each category.

Table 10. Preliminary Weights by Enrollment Grouping

	400 or fewer	More than 400
Elementary Total Districts	127	96
Elementary Districts with Plans (2007 - 2008)	68	80
Preliminary Elementary Weight	0.41	0.25
Secondary Total Districts	162	61
Secondary Districts with Plans (2007 - 2008)	47	52
Preliminary Secondary Weight	0.30	0.12

Applying 5% Cap

The advisory committee discussed that, given that there are districts that identify above 5% of their students as G/T, it may be necessary to apply this limit to the funding model. One option would be to allow districts to identify up to 5% of their students in the visual/performing arts category and up to 5% of their students in the academic category. They would therefore be allocated funds for all students in either category up to 5%, but not for additional students over. An example would be:

Table 11. Example of 5% Cap on Allocation

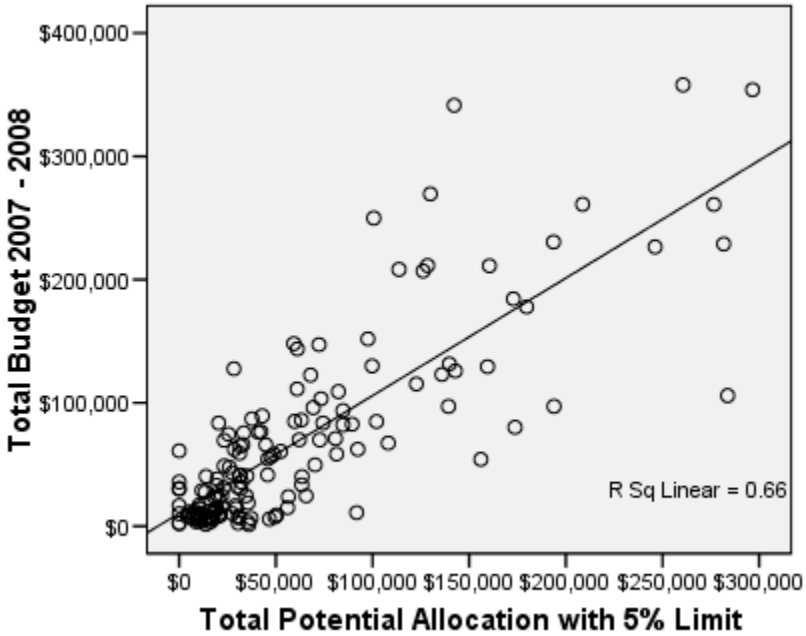
	Example 1 (Under 5%)	Example 2 (Over 5%)
Elementary Attending Enrollment	3,221	1,839
5% of Attending Enrollment	161	92
Visual/Performing Arts Students	32	25
Visual/Performing Arts Students Counted Toward Allocation	32	25
Academic Students	130	186
Academic Students Counted Toward Allocation	130	92

Potential Allocations vs. Budgeted Expenditures

The weights displayed in Table 10 along with the 5% cap were applied to each district and compared to their budgeted expenditures for 2007 – 2008. We then looked at the relationship between the potential allocation and budgeted expenditures two ways. First we looked at the linear relationship between the two and second we looked at the percentage of districts that had budgeted at least 25% more than the allocation, within 25%, or 25% less than the allocation. Finally we looked at the characteristics of districts that fell in each category.

There was a strong linear relationship between the budgeted expenditures and potential allocation, with approximately 66% of the variance in budgeted expenditures explained by the potential allocation. Figure 3 displays this relationship.

Figure 3. Relationship Between Potential Allocation and Budgeted Expenditures: 5% Limit



Sixty-one percent of the districts in the analysis dataset would receive within 25% or over 25% more than what they budgeted. Table 12 displays the number and percent of districts within each budget group.

Table 12. Districts Within Budget Groups

Budget Group	n	%
Budgeting more than 25% less	46	34%
Budgeting within 25%	37	27%
Budgeting more than 25% more	54	39%

We examined how the groups in Table 34 differed on the following characteristics:

- Attending enrollment
- Number of G/T students
- Free-reduced lunch percentage
- Number of years during the study time period that the program was in existence
- Identification percent
- Budgeted G/T per-pupil expenditures
- Regular education per-pupil operating expenditures
- Per-Pupil valuation
- Superintendent region

The statistically significant differences among the budget groups were in attending enrollment (smaller districts tend to budget less than the potential allocation), number of gifted and talented elementary students (districts with more students tend to budget within 25% of the potential allocation), and budgeted g/t expenditures per-pupil. There were no differences related to free-reduced lunch, identification rates, regular per-pupil expenditures, or per-pupil valuations. Table 13 displays these data.

Table 13. Budget Group Characteristics

Characteristic	Budgeting more than 25% less (n = 46)	Budgeting within 25% (n = 37)	Budgeting more than 25% more (n = 54)
Elementary Attending Enrollment*	530	974	770
Secondary Attending Enrollment*	231	467	380
Planned Elementary Gifted Students*	32	61	37
Planned Secondary Gifted Students	19	32	21
Free-Reduced Lunch Percent (07 - 08)	41.4	37.8	37.4
Number of Years for Elementary Program*	1.8	2.5	2.5
Number of Years for Secondary Program*	0.9	1.7	1.4
Elementary G/T Identification Rate	6.42%	7.35%	7.23%
Secondary G/T Identification Rate	7.94%	8.61%	6.67%
Elementary Budgeted Per-Pupil*	$667	$1,503	$3,011
Secondary Budgeted Per-Pupil*	$531	$892	$1,862
Regular Education Per-Pupil Expenditure (06 - 07)	$8,092	$8,162	$8,157
Per-Pupil Valuation (2006 - 2007)	$510,512	$639,389	$691,162

* Statistically significant difference ($p < .05$)

Table 14 displays the number and proportion of districts within each superintendent region that fell into each of the budget groups. The superintendent regions with the largest proportion of districts budgeting to spend at least 25% more than the allocation are in Hancock County and Cumberland County.

Table 14. Budget Groups by Superintendent Region

	Budgeting more than 25% less		Budgeting within 25%		Budgeting more than 25% more	
Region	n	%	n	%	n	%
Aroostook	4	27%	5	33%	6	40%
Penquis	10	59%	2	12%	5	29%
Washington County	7	70%	1	10%	2	20%
Hancock County	4	29%	1	7%	9	64%
Mid-Coast	3	30%	4	40%	3	30%
Western Maine	7	35%	8	40%	5	25%
Cumberland County	4	25%	2	13%	10	63%
Kennebec	5	23%	6	27%	11	50%
York County	1	8%	8	67%	3	25%

Survey of G/T Coordinators

In addition to the analyses above, MEPRI conducted a survey of G/T coordinators to collect information pertaining to the type of programs districts are offering and how they are delivering those programs. The options for program type were: acceleration, enrichment, differentiation, curriculum compacting, independent study, and other. The options for method of delivery were: pull out programs, in class with consultation, in class no support, internet classes, specialized classes, and other. Email notification of the online survey was sent to 144 G/T coordinators and their superintendents representing 161 districts (Only those districts that had submitted a 2007 – 2008 G/T plan to the state were sent emails.) We received surveys back for 107 districts, a 67% response rate.

The information gathered from the survey was merged with expenditure data to determine whether there appeared to be a relationship between method of delivery and G/T per-pupil expenditures. There did not appear to be a clear relationship. Some key findings from the survey were:

- Over 95% of responding districts indicated they had programs in ELA and/or math and more than half reported having programs in science, social studies, and visual arts. Only 37% reported they had programs in performing arts.
- At the K – 8 level, districts are more likely to use differentiation in ELA, science, and social studies but acceleration for math. At the high school level, acceleration is more often used for math while programs for ELA, science, and social studies tend to be either differentiation or acceleration.
- At the K – 8 level, districts are likely to offer their programs through pull out or in class with consultation for ELA and math and in class with consultation for science and social studies. The arts are typically offered through in class with consultation or specialized classes.
- At the high school level, districts appear to be offering programs through either in class with consultation or specialized classes in ELA, math, science, and/or social studies. More than 40% of respondents indicated offering visual/performing arts through specialized classes.
- The survey data were analyzed to identify whether there were differences among districts related to district size. Some of the findings from this analysis were:
    - A larger proportion of larger districts offer programs in all content areas while smaller districts are less likely to have programs in science, social studies, and the arts.
    - Specialized classes are used more often in larger districts than smaller districts.
    - A larger proportion of larger districts than smaller districts use acceleration in math.

Recommendations made by the Gifted and Talented EPS Advisory Committee

Funding Model

- Use a weighted funding model that weighs students identified as gifted and talented (artistic or academic) for up to 5% of a district's enrollment. A district will be allowed to identify up to 5% of students as artistic and up to 5% of students as academic.

- Exceptions to this limit will be made for very small districts (potentially districts with elementary or secondary enrollments of fewer than 100). (Can't really use the small, geographically isolated definition because it is school-based, not district based).
- Separate elementary and secondary weights will be generated and further broken down by district size. The table below displays the enrollment groups, number of districts that fall into each group, and the weights as they have been generated so far. The size categories and the weights will need to be recreated with updated data prior to implementation (which is now expected to be 2010 – 2011) to reflect changes in district sizes due to the reorganization law, changes that are being made within gifted and talented (mainly the increase in the development of the artistic programs, and the change in how districts can receive funds for AP courses).

Table 15. Preliminary Weights by Enrollment Grouping

	400 or fewer	More than 400
Elementary Total Districts	127	96
Elementary Districts with Plans (2007 - 2008)	68	80
Preliminary Elementary Weight	0.41	0.25
Secondary Total Districts	162	61
Secondary Districts with Plans (2007 - 2008)	47	52
Preliminary Secondary Weight	0.30	0.12

- In addition the committee would like the plan approval process to continue and the receipt of funds contingent on a district having submitted a plan that has been approved. The plans, however, may be simplified. For example, due to the fact that districts will be receiving an allocation rather than reimbursement they should no longer be required to include their budgets in the plan.
- The committee would like the funds to be targeted funds.

Other Recommendations

- To implement the 5% limitation the G/T flag on Infinite Campus will need to be changed so that students can be identified as academic, artistic, or both.
- The group would like to look at how the law is written for K – 2 targeted funds. Is it written to improved education for K – 2 students that are both high and low achieving?
- The committee feels additional work is needed to address the programmatic aspects of G/T. They feel the high school programs in particular are in need of examination.