Updated Expenditure Analysis and Summary of Proposed EPS Model for Gifted and Talented Education

June 15, 2010

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Background

K – 12 students served within the Gifted and Talented (G/T) programs in Maine are those who have been deemed to excel, or have the potential to excel, beyond their age peers, in the regular school program, to the extent that they need and can benefit from programs for the gifted and talented (Chap. 104, 104.1). Gifted and talented children shall receive specialized instruction through these programs if they have exceptional ability, aptitude, skill, or creativity in one or more of the following categories:

1. General Intellectual Ability as shown by demonstrated significant achievement or potential for significant accomplishment above their age peers in all academic areas.
2. Specific Academic Aptitude as shown by demonstrated significant achievement or potential for significant accomplishment above their age peers in one of more academic area(s)
3. Artistic Ability as shown by demonstrated significant achievement or potential for significant accomplishment above their age peers in the literary, performing, and/or visual arts

It is expected that children with exceptional intellectual ability or specific academic aptitude will make up approximately 5% of the school population, and students with exceptional artistic ability comprise approximately 5% of the school population.

Funding for gifted and talented is currently allocated using a percentage reimbursement model where districts receive a portion of two-year old reported expenditures inflated to the funding year. In other words, for the 2010 – 2011 school year, a district will receive a portion of their reported 2008 – 2009 expenditures inflated to 2010 – 2011 dollars. G/T is one of the last components to be brought within the Essential Programs and Services (EPS) funding model. MEPRI has been examining the potential to bring it within EPS since 2007. The first report, submitted in 2007, concluded with a recommendation for the creation of a G/T advisory

committee to discuss the concept of incorporating G/T within the EPS funding formula. A second report, presented in late 2008, was the result of a series of meetings held with the advisory committee. That report summarized the work of the committee and concluded with a recommendation to fund G/T through the use of student weights and a 5% cap on the proportion of students in the district that could be identified. This report is a follow-up to that report. The primary purpose of this report is to examine the current existence of programs, G/T identification rates, G/T expenditures, and make a comparison between actual expenditures and estimated district allocations using the weighted model for funding. The specific questions to be answered include the following:

Existence of Programs

- What proportions of districts currently operate G/T programs?
- What is the relationship between district size, region, and SES and the existence of a G/T programs?

Identification Rates

- What is the percentage of students identified as G/T?
- What is the range in G/T identification rates seen across districts?

Expenditures

- How much is spent on G/T and how has that changed over time?
- How much is spent per-pupil and how does that vary across districts?

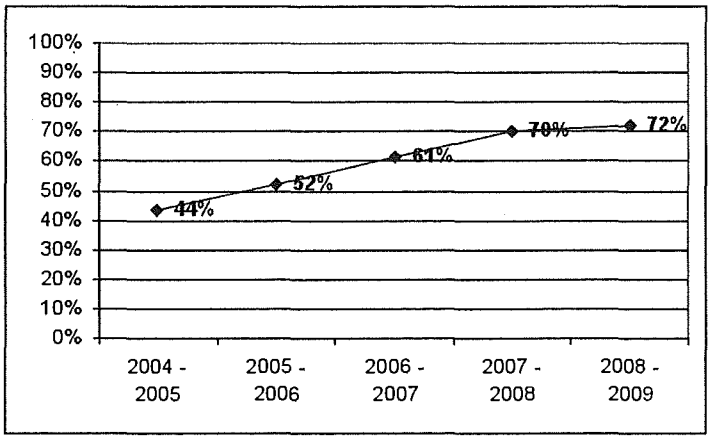
Comparison between Estimated Allocation and Expenditures

- How well does the funding model proposed in the 2008 report predict the actual 2008 – 2009 expenditures?

Existence of Programs

Since the 1991 – 1992 school year, all districts have been required to establish programs for G/T students. This was not strictly enforced until 2004 –2005 and during that year less than half of the districts actually had programs. Since the enforcement of the mandate the percentage of districts with programs has increased from 44% to 72%. Figure 1 displays this growth. Please see the appendix for maps displaying the location of districts with programs in 2004 – 2005 and 2008 - 2009.

Figure 1. Proportion of Districts Operating G/T Programs



District size is strongly related to the existence of a G/T program with larger districts being more likely than smaller districts to offer a program. As can be seen in Table 1, 100% of districts with at least 1500 students operate programs while only 30% of the smallest districts have funded G/T programs.

Table 1. Existence of Programs by District Size (2008 – 2009)

Enrollment Group	Districts	Districts with G/T	Percent of Districts with G/T
Fewer than 120	53	16	30%
120 - 249	40	29	73%
250 - 699	48	41	85%
700 - 1499	41	33	80%
1500 or more	42	42	100%

The superintendent regions with the highest proportion of districts with programs are Western Maine and Cumberland County. The regions with the lowest proportion of districts operating programs are Washington and Hancock counties. Table 2 displays these proportions.

Table 2. Existence of Programs by Superintendent Region (2008 – 2009)

	Districts with Schools	G/T Program 2008 - 2009	% of Districts with Programs
Aroostook	23	16	70%
Penquis	32	20	63%
Washington County	24	13	54%
Hancock County	30	18	60%
Mid-Coast	25	17	68%
Western Maine	22	21	95%
Cumberland County	21	19	90%
Kennebec	31	24	77%
York County	16	13	81%

To examine the relationship between the existence of G/T programs and district SES, districts were divided into three groups based on the percentage of students in the district identified as eligible for free or reduced lunch. Districts were characterized as low-SES if they had less than 35% of their students identified as free-reduced lunch, mid- SES if they had 35% - 49% eligible, and high-SES if they identified more than 50% as eligible. Approximately 80% of

schools in the low-SES and high-SES categories offer programs compared to only 62% of schools in the high-SES category. Table 3 displays these data.

Table 3. Existence of Programs by SES Groupings (2008 – 2009)

	Districts with Schools	G/T Program 2008 - 2009	% of Districts with Programs
Low SES	68	54	79%
Mid SES	75	61	81%
High SES	73	45	62%

Identification Rates

Gaining an accurate understanding of the prevalence of students identified as gifted and talented is challenging given the current reporting system. Prior to 2007 – 2008 districts reported counts for their gifted and talented students on the Special Education Program Report (EF-S-02). This report was no longer necessary with the development of the MEDMS financial system which went live in 2007 - 2008. The G/T flag in the MEDMS student database is now the only DOE database source for capturing the count of students in the programs. Unfortunately this flag is underutilized and, compared to counts from previous years, looks to only be capturing approximately half of the students. The DOE has speculated the reason for this inaccuracy to be the fact that the G/T flag is currently not listed as a field that impacts subsidy while the other flags, such as eligibility for free or reduced lunch, special education, and LEP, are directly tied to EPS funding.

In the absence of accurate MEDMS counts, MEPRI must turn to a second source of data. Each year, each district that operates a gifted and talented program and receives state subsidy tied to that program must submit to the DOE an application for program approval and approval of costs. Within this application districts must provide the number of students being served by

the program. Program approval is determined by one of the two DOE G/T consultants. The consultants were able to provide MEPRI the 2008 – 2009 plans to use as the source of student counts for this report. Table 4 displays the statewide G/T identification rates for 2008 – 2009.

Table 4. Statewide Identification Rates

	Elementary	Secondary	Total
Total Attending Students	128,931	63,355	192,286
Academic G&T	4,301	2,403	6,704
Academic G&T Percent	3.3%	3.8%	3.5%
Artistic G&T	820	517	1,337
Artistic G&T Percent	0.6%	0.8%	0.7%
Total G&T	5,121	2,920	8,041
Total G&T Percent	4.0%	4.6%	4.2%

This however does not provide a true indication of what proportion of students might be eligible for programs because there are still a number of districts that do not have programs or are still in the early stages of identifying G/T students. To look at the proportion of students identified, we examined the range of elementary and secondary identification rates for districts that had both student counts and student expenditures for each year. There were some districts that reported expenditures and submitted plans for 2008 – 2009 but did not include student counts in those plans. Typically in these cases the districts are still going through the identification process. Approximately 85% of districts with reported elementary expenditures reported elementary student counts and approximately 78% of districts with secondary expenditures reported secondary student counts. The average academic rates are 4.4% for

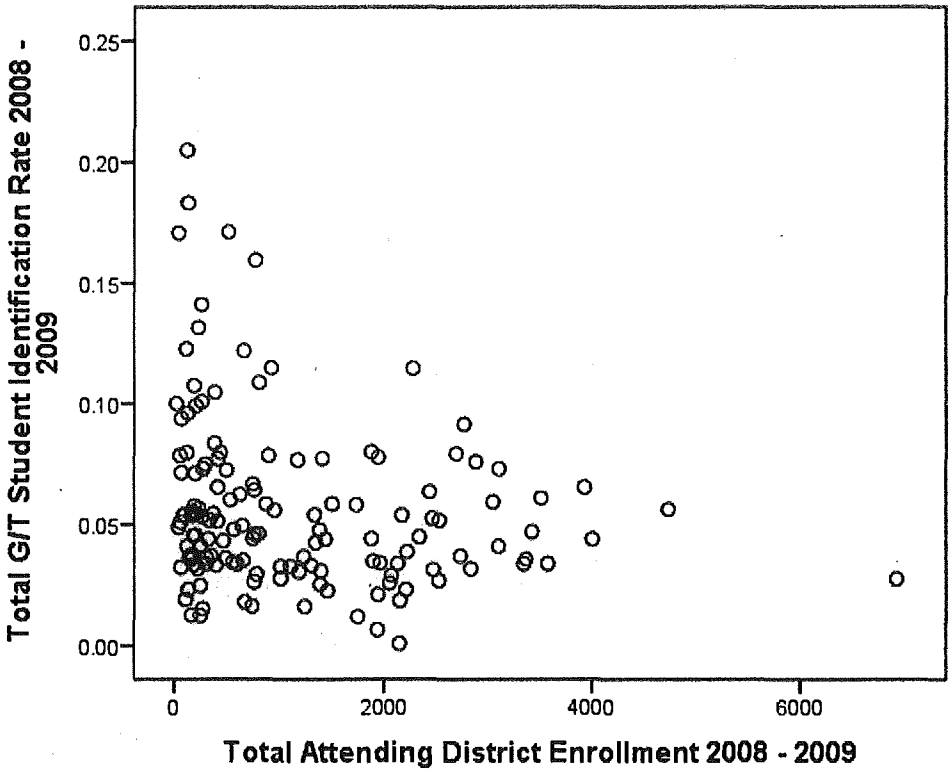
elementary and 5% for secondary and the average artistic rates are 2.8% for elementary and 2.9% for secondary. There is a wide range of rates across districts, however, as can be seen from the minimum and maximum identification rates displayed in Tables 5.

Table 5. District-Level Identification Rates

		Districts	Mean	Min	Max	Standard Deviation
Elementary	Academic	139	4.4%	0.1%	14.0%	2.4%
	Artistic	52	2.8%	0.1%	9.0%	2.3%
	Total	140	5.4%	0.1%	20.0%	3.4%
Secondary	Academic	79	5.0%	0.4%	17.0%	2.6%
	Artistic	37	2.9%	0.2%	10.0%	2.5%
	Total	81	6.2%	1.0%	17.0%	3.3%

The wide range of identification rates can partially be explained by district size, as the very small districts are those with the widest range in identification rates. There is still, however, a broad range among the larger districts. This is visually depicted in Figure 2 which displays the linear relationship between overall G/T identification rates and total district enrollment. The scatter plot shows that even among districts above 2,000 identification rates still can range from less than 2% to approximately 10%.

Figure 2. Relationship between Identification Rates and Enrollment



Expenditures

The total expenditures for gifted and talented have grown from $7.6 million in 2004 – 2005 to approximately $10.8 million in 2008 – 2009. Table 6 displays this information.

Table 7. G/T Expenditures over Time

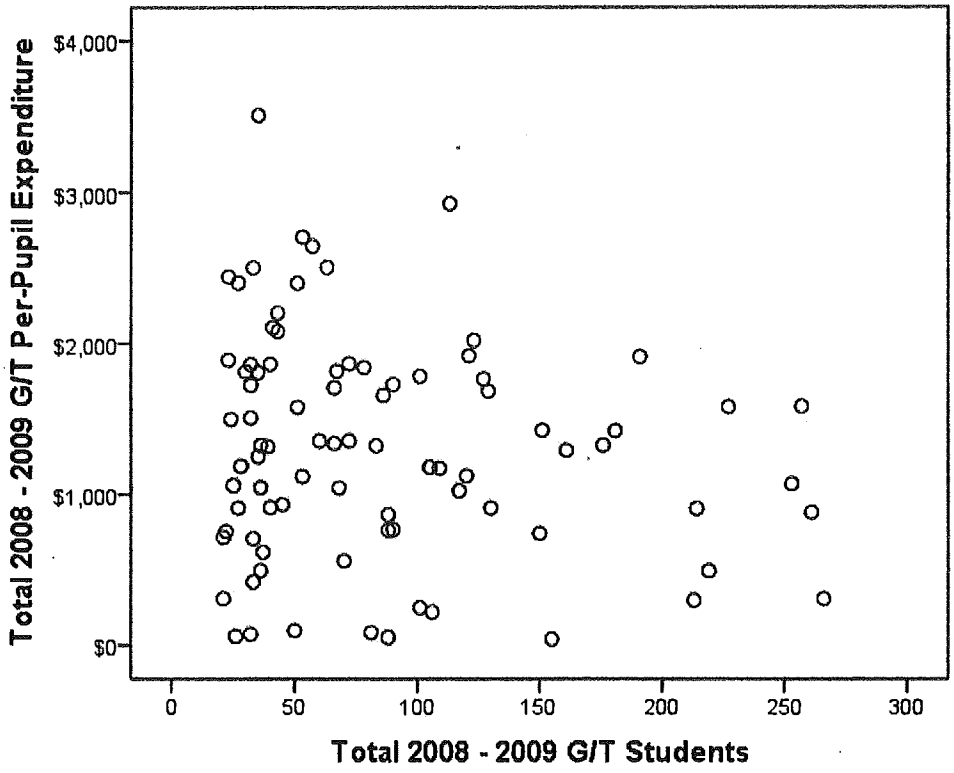
Year	Total Expenditures (Local/State/Federal)
2004 - 2005	$7,677,413
2005 - 2006	$9,056,038
2006 - 2007	$10,211,737
2007 - 2008	$10,532,451
2008 - 2009	$10,779,368

The average amount spent per-pupil for G&T in 2008 – 2009 was $1,839 at the elementary level and $1,328 at the secondary level. There was a wide range in the per-pupil rates with the widest range seen in the districts with the fewest G/T students (20 or fewer). Table 8 displays the average and range of per-pupil G/T expenditures and Figure 3 displays the relationship between G/T enrollment and per-pupil expenditures.

Table 8. G/T Expenditures per Pupil (2008 – 2009)

			Total		
	Elementary	Secondary	All Districts	Districts with 20 or Fewer G/T Students	Districts with Over 20 G/T Students
Number of Districts	133	77	135	42	85
Mean	$1,874	$1,328	$1,662	$2,191	$1,315
Min	$60	$15	$41	$93	$41
Max	$9,782	$7,394	$7,443	$7,443	$3,511
Standard Deviation	$1,582	$1,161	$1,257	$1,612	$741

Figure 3. Relationship between G/T Per-Pupil Expenditures and G/T Enrollment



The majority of expenditures are spent on salaries and benefits for program staff (93%) and approximately 2.2% are devoted to supplies and equipment. The remaining is spread among a number of categories such as purchased services, tuition, or miscellaneous expenses. Table 8 displays a breakdown of how districts spent G/T expenditures in 2008 – 2009.

Table 8. G/T Expenditures by Category (2008 – 2009)

Category	Total 2008 - 2008 Expenditures	Proportion of Expenditures
Salaries/Benefits	$10,030,751	93.1%
Professional Development	$47,037	0.4%
Supplies/Equipment	$240,427	2.2%
Other	$389,255	3.6%
Federal Stabilization Fund	$71,898	0.7%
Total	$10,779,368	

Comparison between Actual Expenditures and Allocation Estimate

The 2008 MEPRI report included a proposed model for funding gifted and talented that was developed as part of the work of the advisory committee. The overall recommendation was to allocate additional funds for G/T students through the use of weights similar to the method used to provide incremental funding for low-SES and LEP students. There would be a limit, however, on the proportion of students that would receive an additional weight. Districts would be limited to identifying 5% of their students in the academic category and 5% of their students in the visual/performing arts category. The weights are as follows:

Table 9. G/T Weights in Proposed Funding Model

Grade Level	400 or fewer students	More than 400 students
Elementary	.41	.25
Secondary	.30	.12

Please refer to the 2008 report for a description of how these weights were calculated.

To examine the relationship between the estimated allocation and actual expenditures in 2008 – 2009, the student counts provided in the 2008 – 2009 plans and the base EPS rates used in calculating the operating EPS allocation for 2008 – 2009 were used. Student count data from the 2008 – 2009 plans was available for 136 or the 161 districts that reported 2008 – 2009 expenditures.

Figures 3 - 5 display the relationships between the estimated allocation using the model and actual expenditures. Overall, approximately 62% of the variance in actual expenditures is explained by the model.

Figure 3. Relationship between Elementary Expenditures and Elementary Allocation Estimate

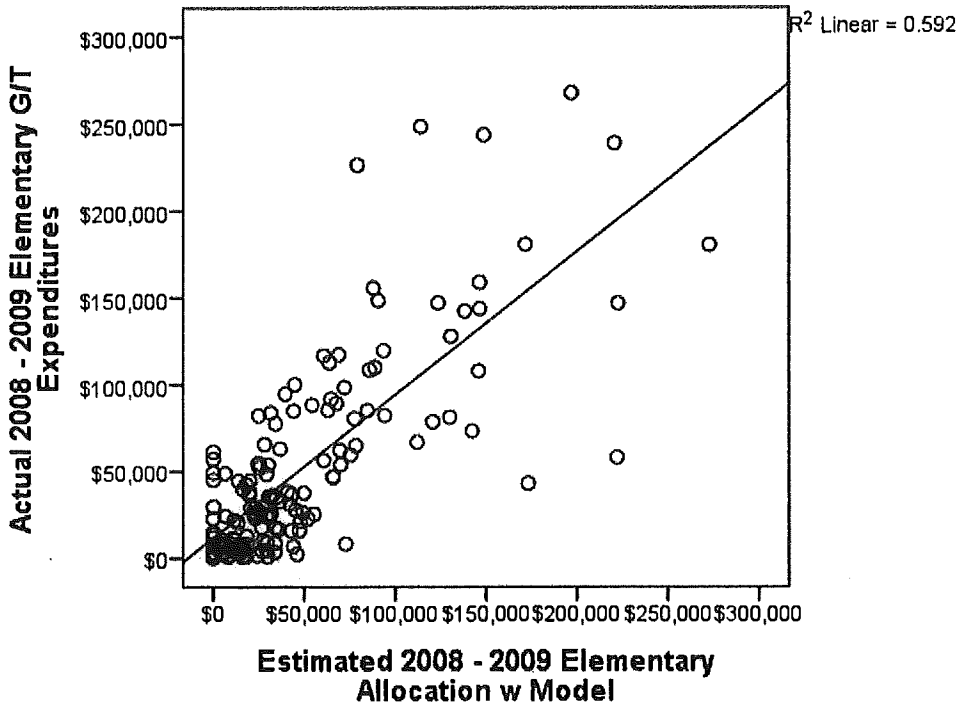


Figure 4. Relationship between Secondary Expenditures and Secondary Allocation Estimate

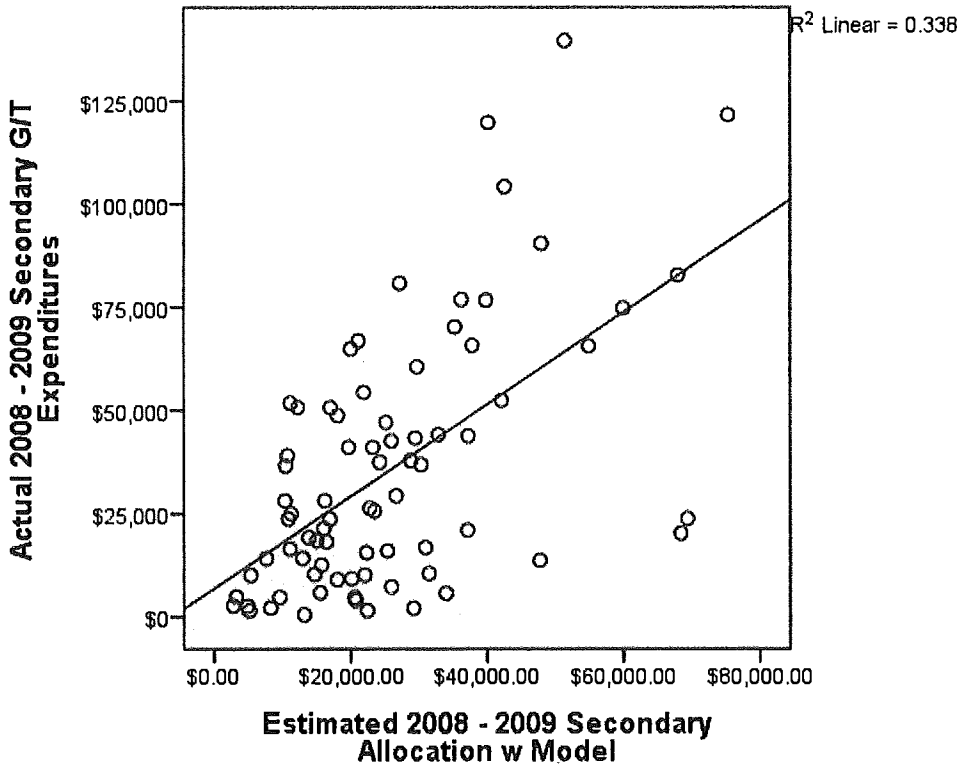
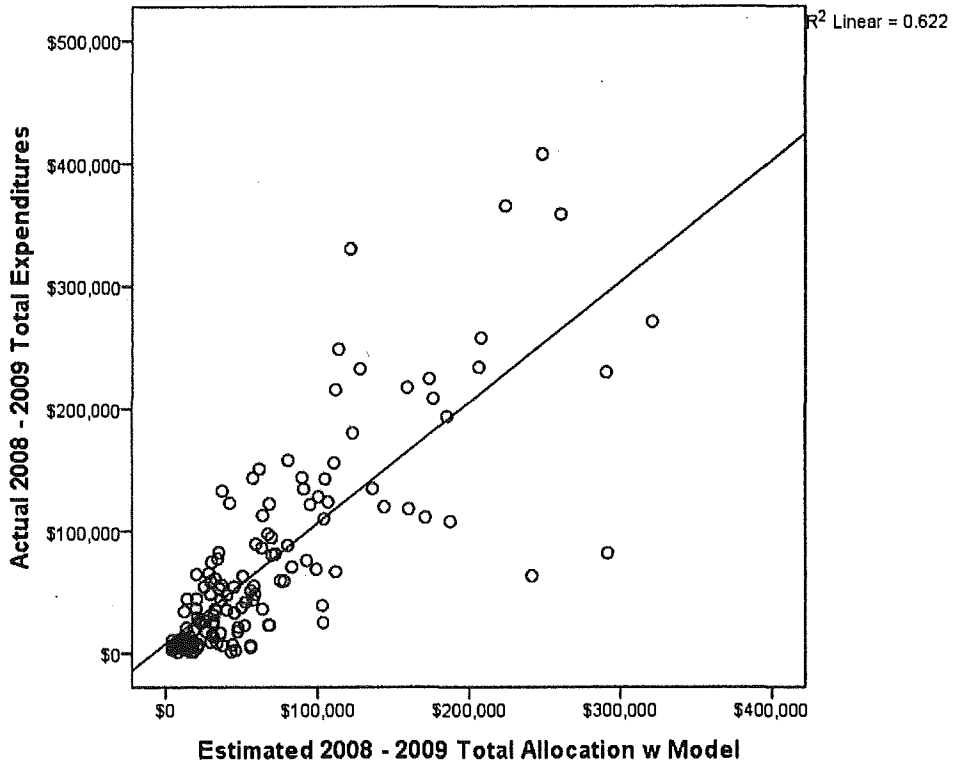


Figure 5. Relationship between Total Allocation and Total Allocation Estimate



To gain an understanding of how many districts are spending above or below the proposed allocation, districts were divided into three spending categories based on the percentage difference between actual expenditures and the estimated allocation using the model above. The majority of the districts (66%) spent within 25% or less than the allocation. The remainder 35% spent at least 25% above the allocation. The characteristics of each spending group were examined to identify whether there were significant differences based on size, socioeconomic makeup, or identification rates. There were significant differences based on enrollment, number of years programs have been in existence, and per-pupil expenditures. The districts spending more than the allocation are larger on average than districts spending less than the allocation. The districts that have had programs in existence for a longer period of time are more likely to spend more than the allocation as well but this may also be a function of size given that the larger districts have been more likely to offer programs than smaller districts.

Table 10 displays some general characteristics of the districts in each of the three spending groups.

Table 10. Spending Group Characteristics

Characteristic	Spent more than 25% less (n = 42)	Spent within 25% (n = 46)	Spent more than 25% more (n = 46)
Elementary Attending Enrollment*	605	792	1013
Secondary Attending Enrollment	271	375	477
Elementary Gifted Students	35	38	40
Secondary Gifted Students	20	22	23
Free-Reduced Lunch Percent (08 - 09)	43%	43%	38%
Number of years since 2004 - 2005 that program has been in existence*	3.5	4.5	4.6
Elementary G/T Identification Rate	6.00%	5.60%	4.50%
Secondary G/T Identification Rate	6.78%	5.54%	4.73%
Elementary 08-09 Expense Per-Pupil*	$618	$1,587	$3,207
Secondary 08-09 Expense Per-Pupil*	$438	$1,032	$2,055

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

Size appears to play a factor in whether or not a district spends more or less than the proposed allocation. Larger districts are represented in the *spent more* group at a disproportionately higher rate than smaller districts. This is not surprising given the fact that larger districts are assigned a lower weight in the model (please see Table 9). Although this lower weight reflects the fact that, on average, larger districts spend less per-pupil, there are still going to be some that spend more.

Conclusions and Recommendations

Conclusions. This report was intended to provide information related to identification rates and spending in addition to an examination of the potential impact of a proposed funding model. The following are some key points to take away from the data:

- G/T programs are more common in larger districts than smaller districts

- The average identification rate is just below 5% with a wide range in rates across districts.
- On average, larger districts spend less than smaller districts on a per-pupil basis though there is a wide range in per-pupil expenditures across districts of all sizes (Please see Figure 3 on page 10.).
- The proposed funding model explains approximately 62% of the variance in actual expenditures with over 60% of districts spending within 25% of less than the allocation.

Recommendations. The following are MEPRI's recommendations for the future of funding G/T:

- A weighted model with caps on identification percentage and acknowledgement of the higher per-pupil cost in smaller districts appears to be a reasonable way to move forward. The weights, however, should be recalculated based on the new district configurations as the trend toward larger districts is likely to impact the per-pupil costs associated with running G/T programs.
- A qualitative look at districts that spend significantly above the allocation may help identify additional factors that may need to be taken into consideration in the model.
- The DOE needs to improve the systematic collection of G/T student information. The current flag on MEDMS is not accurate. The counts from the G/T plans submitted each year are accurate but are not systematically entered into a database at the DOE. If a model is to be rolled out in the future, an accurate method for identifying the number of students identified in a district is necessary.

References

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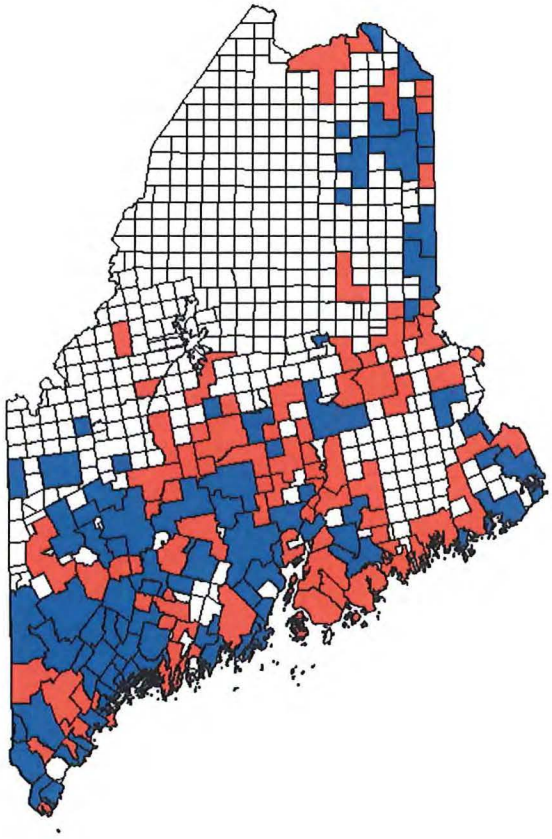
APPENDIX

Locations of Districts with Gifted and Talented Programs in 2004 – 2005

No G&T G&T



Locations of Districts with Gifted and Talented Programs in 2008– 2009

No G&T G&T