



Massachusetts Title II-D Technology Enhancement Competitive Grants (Fund Code 170)

Summary Report for 2005 through 2007

Prepared for the Massachusetts Department of Education

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Introduction

Purpose, eligibility and awards

Funded through Title II-D of the No Child Left Behind Act, the Massachusetts Department of Education's Technology Enhancement Competitive grant program (fund code 170¹) supports school districts in the development of two-year sustainable projects that use technology to:

- Improve student academic achievement;
- Assist every student in becoming technologically literate;
- Provide high quality professional development that uses research-based instructional strategies to integrate technology effectively into instruction;
- Provide for assessment, data gathering, and analysis to inform and enhance teaching; and
- Provide specialized or rigorous courses through online distance learning.

Eligibility is limited to "high-need local educational agencies" or partnerships including one or more high-need districts. (See appendix for the FY 2006 Title II-D high need criteria and a list of high need districts.) The Department received 41 proposals for new projects to begin in the 2005-06 school year. Total requests exceeded \$3.1 million. Of the proposals received, 20 partnerships were funded to support 94 districts, higher education institutions, and public or private organizations. Two school districts received two grants each to form two partnerships. Each partnership included at least one high-need school district. Total awards were in excess of \$3.2 million and ranged from \$75,000 to \$363,132. Table 1 provides an overview of the awards. Brief descriptions of each grant can be found at <http://www.doe.mass.edu/edtech/grants/fy06/170-b.pdf>.

Table 1: Total Two Year Awards (2005-2007) for Fund Code 170

Recipient	Amount	Recipient	Amount
ACCEPT Metrowest Education Collaborative	\$225,000	Ipswich Public Schools	\$101,772
Barnstable Public Schools	\$114,604	Lowell Public Schools (2 grants)	\$363,132
Beverly Public Schools	\$150,000	New Bedford Public Schools	\$168,182
Boston Public Schools	\$290,782	North Adams Public Schools	\$75,150
Burlington Public Schools	\$216,506	Springfield Public Schools	\$224,778
Community Day Charter School	\$92,337	Wareham Public Schools	\$186,701
Greater Lowell Vocational Technical HS	\$75,000	West Springfield Public Schools (2 grants)	\$252,570
Greenfield Public Schools	\$129,210	Whitman-Hanson Regional School District	\$100,000
Hudson Public Schools	\$231,048	Worcester Public Schools	\$276,963

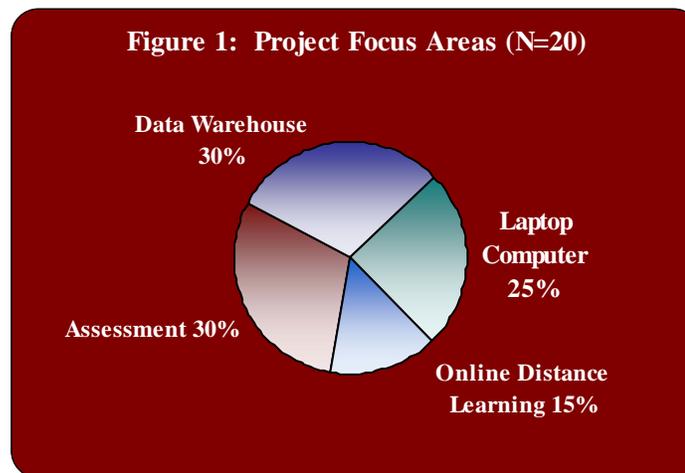
¹ In their first year, projects are funded under Fund Code 170B. Continuation grants for projects' second year are funded under Fund Code 170A. A copy of the FY 2005 RFP for Fund Code 170B can be found at <http://finance1.doe.mass.edu/Grants/grants06/rfp/170B.html>

Project focus areas

Each grant addressed one of the following four focus areas.

- Use a one-to-one computing environment (with a wireless **laptop computer** for every student) and appropriate technologies (particularly tools in the Department's MassONE) to support the teaching and learning of middle/high school mathematics, science, and English language arts;
- Use technology to **assess students' learning, report results, and support analysis** of students' performance to inform instruction and programmatic decision-making;
- Participate in the state sponsored educational **data warehouse** project: grant recipients in this focus area are pilot districts in the State-wide Data Warehouse initiative;
- Use appropriate **online distance learning** technologies (e.g., the tools in the Department's MassONE) for the delivery of specialized or rigorous courses and curricula (with focus on mathematics, science, English language arts, and foreign languages).

Figure 1 shows the distribution of focus areas among the awarded grants. The two most prevalent focus areas were data warehouse and assessment, each of which was addressed by 6 of the 20 funded projects (30% each). The laptop computer area was addressed by 4 (25%) of the grants and online distance learning was addressed by 3 grants (15%).

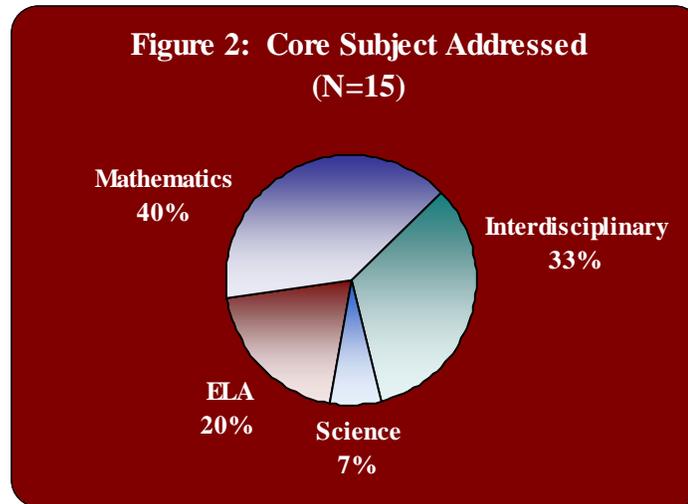


Core subject areas and grade-levels

Grantees were also asked to identify the core subject area(s) that would be addressed by their projects. Figure 2 shows the distribution of subject areas among the awarded grants. Projects in the data warehouse or assessment areas may have involved all subject areas. Eight of the projects (42%) were interdisciplinary in nature. Six of the projects (32%) addressed mathematics, three (16%) English language arts, and one (5%) science. Identification of a core subject area was not applicable for one project. Looking at the core subject areas addressed by project focus area reveals that:

- Four of the six (67%) assessment projects focused on mathematics as their core academic area. One (17%) focused on English language arts and one (17%) was interdisciplinary.

- Two of the three (67%) distance learning projects were interdisciplinary in nature. One (33%) was focused solely on English language arts.
- Three of the five (60%) laptop projects focused on mathematics for their core academic area. One (20%) focused on science and one (20%) on English language arts.



There is a wide variation in the grade-levels impacted by each project. Table 2 shows the number and percentage of projects impacting each of the following grade-level categories: elementary (PreK-5), middle (6-8), and high school (9-12). These groupings are consistent with those generally used by the US Department of Education for reporting related to No Child Left Behind. The reader should note that most projects impacted students at multiple grade-levels, thus the percentages shown sum to more than 100 percent.

Table 2: Grade-levels Impacted		(N=14)
Grade-level	Number of projects	Percentage of projects
Elementary School (PreK-5)	8	57%
Middle School (6-8)	9	64%
High School (9-12)	6	43%

Looking at the grade-levels impacted by project focus area reveals that:

- Five of the six (83%) assessment projects involved elementary schools. Three of the six (50%) involved middle schools and three of the six (50%) involved high schools.
- One of the three (33%) distance learning projects involved schools at all three grade levels. One (33%) involved elementary schools only and one (33%) involved both middle and high schools.
- Four of the five (80%) laptop computer projects involved middle schools. One (20%) involved elementary schools and one (20%) involved high schools.

About this report

The remainder of this report summarizes data gathered through year-end reports submitted by each 170 grantee using an online survey component of the Department's Massachusetts Online Network for Education (MassONE)². The reporting template was available from August 15 through September 15, 2007. Reported expenditures are based on grantee estimates as the project was coming to an end. At the time not all of the project accounting had been completed. As such, dollar figures in this report are generally rounded so as not to indicate inappropriate levels of accuracy.

² Formerly the Virtual Education Space (VES)

Budget and Expenditures

From 2005 to 2007, over \$3.2 million was awarded to the 20 grantees that submitted reports. The end of 2007, approximately \$2.8 million was spent, leaving slightly less than 14% of the FY 2006 and 2007 available funds unspent. Figure 3 and the accompanying table display the proportion of expenditures by category. At 38%, the largest expenditure category was professional development. This exceeds the federal guidelines that require at least 25% of Title II-D funds to be spent for professional development. At 27% and 26% respectively, hardware purchases and administrative costs (including evaluation) also accounted for a significant portion of the total expenditures. Only 9% of the funding was used to purchase software.

Figure 3: 2005 - 2007 Total Expenditures by Category (Total =\$2.8 million)

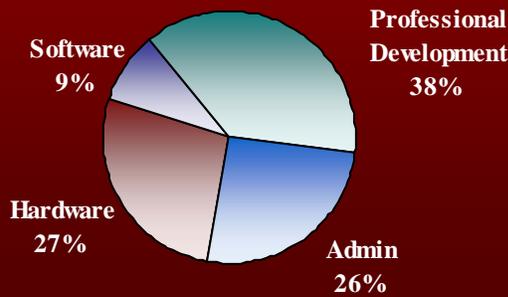


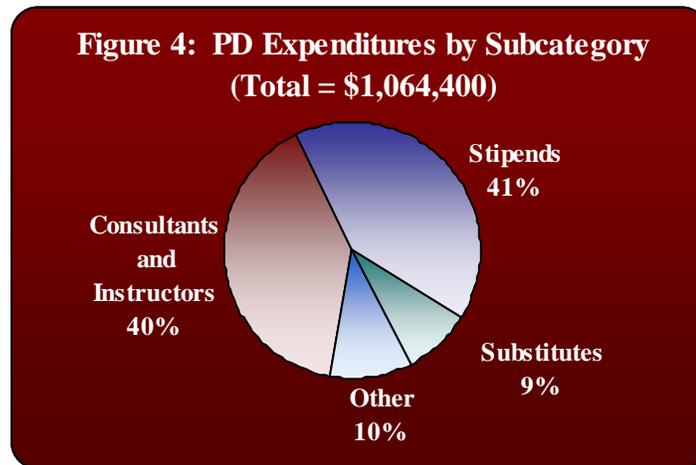
Table 3: 2005 - 2007 Approximate Expenditures by Category

Category	2005-2007 Total		2005-2006		2006-2007	
	Approximate Expenditure	Percent of Award	Approximate Expenditure	Percent of Award	Approximate Expenditure	Percent of Award
Professional Development	\$1,064,400	38%	\$464,900	40%	\$599,400	37%
Hardware	\$765,400	27%	\$346,200	30%	\$452,800	28%
Administrative	\$726,200	26%	\$273,400	23%	\$419,200	26%
Software	\$259,600	9%	\$89,000	8%	\$170,700	10%
TOTAL	\$2,815,700		\$1,173,500		\$1,642,100	

Professional Development Expenditures

Professional development expenditures were reported by all 20 grantees. On average, these grantees spent more than \$53,000 on professional development. As illustrated by Figure 4, a further breakdown of total professional development expenditures reveals that:

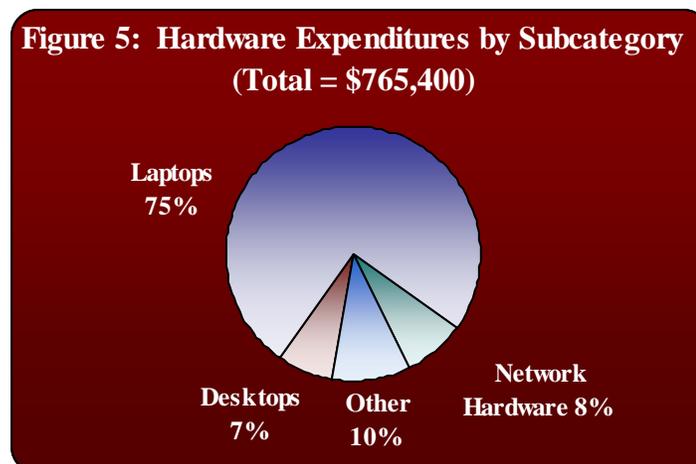
- 40% (\$425,800) was used for consultant and instructor costs.
- 41% (\$436,200) was used for participant stipends.
- 9% (\$92,700) was used for substitute teachers, which allowed teachers to participate in professional development during the regular school day.
- 10% (\$109,600) was used for other expenditures including: training programs, honoraria, graduate credit and private school participation.



Hardware Purchases

Hardware purchases were reported by 16 of the grantees. On average, these grantees spent over \$47,000. As illustrated by Figure 5, a further breakdown of total hardware expenditures reveals that:

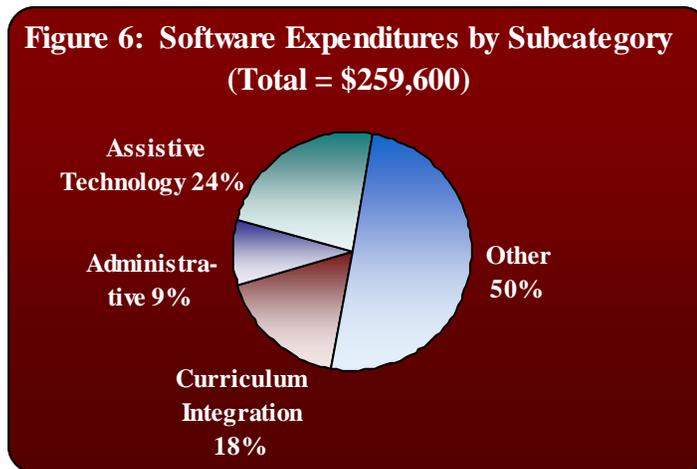
- 75% (\$573,800) was used for purchasing laptop computers. Most (\$462,340 or 81%) of the amount spent on laptops can be attributed to the five laptop projects.
- 7% (\$53,900) was used for purchasing desktop computers.
- 8% (\$60,300) was used for purchasing network hardware.
- 10% (\$77,500) was used for other hardware purchases including assistive technology, printers, scanners, projectors, equipment carts and flash drives.



Software Purchases

Software purchases were reported by 15 grantees. Among them the average software purchase was over \$17,000. As illustrated by Figure 6, a further breakdown of total software expenditures reveals that:

- 24% (\$61,400) was used to purchase assistive technology software.
- 18% (\$45,700) was used to purchase curriculum integration software.
- 9% (\$22,500) was used to purchase administrative software.
- 50% (\$130,100) was used to purchase other software.



Administrative Expenditures

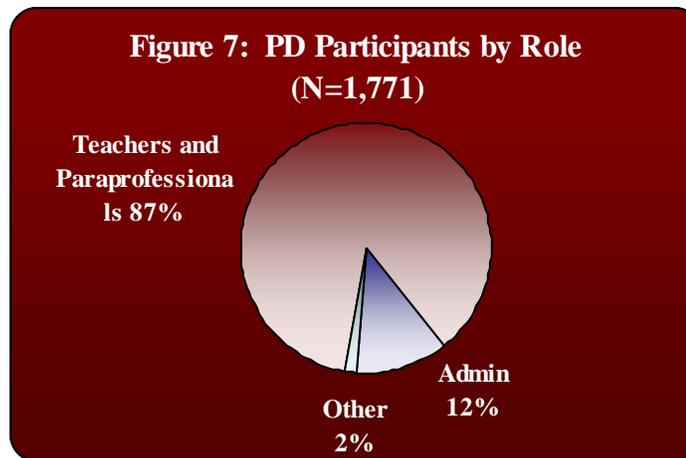
Remaining expenditures can be described as follows:

- 5% of total expenditures (\$148,400) are attributable to program evaluation costs. Fourteen projects reported expenses in this subcategory with an average of about \$10,600.
- 9% of total expenditures (\$244,200) are attributable to project coordination and administrative costs. Fourteen projects reported expenses in this subcategory with an average of about \$17,400.
- 12% of total expenditures (\$333,600) are attributable to other costs such as supplies, maintenance and support, and travel. Eighteen projects reported expenses in this subcategory with an average of about \$18,500).

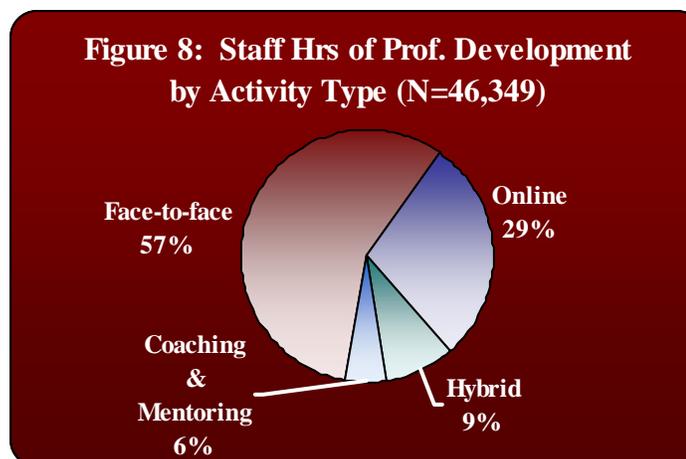
Program Activities

Professional Development Activities

During FY 2007, the NCLB Title IID Technology Enhancement Competitive Grant Program (Fund Code 170A) supported 581 individual professional development activities. The average number of activities was 29 per project with actual numbers as high as 107 activities. Overall the grants provided professional development to 1,771 individuals. The average number of professional development participants was 115 per project with actual participation as high as 281 individuals. Grantees reported that a total of 1,545 participants completed at least 45 hours of grant-funded professional development. On average each grant had 77 participants completing 45 hours or more with actual figures ranging from 14 to 245 individuals. As shown in figure 7, 87% of the 170A professional development participants were teachers or paraprofessionals and 12% were administrators.



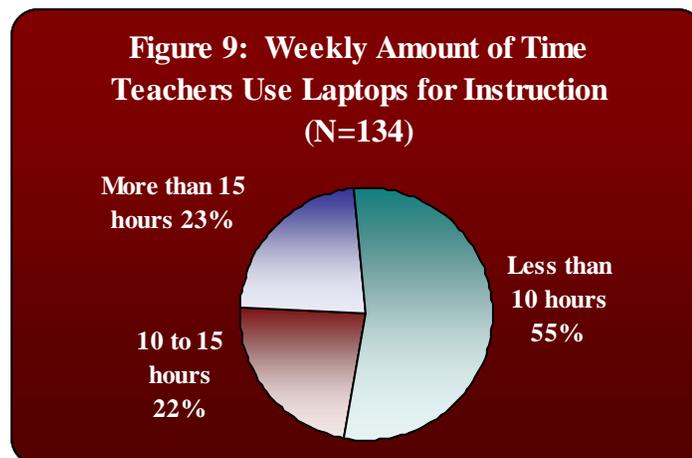
Grantees were also asked to report on the number of staff hours of professional development provided for seven types of professional development: face-to-face, online and hybrid courses; face-to-face, online and hybrid workshops; and coaching and mentoring. In total, the grantees provided more than 46,000 staff hours of training. As shown in figure 8, 57% of the hours were provided through face-to-face activities, 29% through online professional development, 9% through hybrid activities and 6% through coaching and mentoring activities.



Other Implementation Activities

One open-ended question asked grantees to describe how their programs were utilizing MassONE. Sixteen grantees reported that they used MassONE for grant-oriented communication and reporting with the DOE. Fifteen grantees used MassONE for general research, communication and/or survey purposes such as creating lesson plans, posting meeting materials, taking the Technology Self-Assessment Tool (TSAT), and intra-group communication. Three grantees reported using MassONE for online training sessions, workshops, and/or graduate courses. Four grantees reported that they did not use MassONE or did not answer the question. Among the three grantees that fell into the “online distance learning” focus area, all three reported that they had migrated over to MassONE already or planned on migrating over to MassONE after their grant funding had ended.

All five of the one-to-one laptop grantees reported on the extent to which their teachers were using laptops for in-classroom instruction. Of the 134 teachers for whom data were reported 23% were using laptops for in-classroom instruction more than 15 hours per week, 22% were using laptops between 10-15 hours per week, and 54% were using laptops less than 10 hours per week.



In addition, one-to-one laptop grantees reported on the approximate number of students who had participated in the project during the full two years of the grant and the estimated amount of time per week students spent using laptops at home. The approximate total number of students who had participated across all five of the one-to-one laptop projects was 3,950 and ranged from 270 to 1,200 students. Two projects (total number of students: 1,800) estimated that their students spent 10 hours or more per week using laptop computers at home. The other three projects (total number of students: 2,150) estimated that their students spent five hours or fewer per week using laptop computers at home.

Data warehouse grantees were asked to report on how many staff had been trained to use the data warehouse during the full two years of your grant (i.e., both FY06 and FY07). A total of 56 individuals were trained through five of the data warehouse projects (one project did not answer the question). Of the five reporting projects, the number of staff trained ranged from three to 24. Data warehouse projects were also asked how they will continue to train staff to use the data warehouse. Three of the five projects that responded stated that they would expand the number of staff who are trained through a “train-the-trainer” model: training would begin with school staff who are most likely to use the data warehouse and those individuals, once they are trained, will then provide

training to other individuals within their schools who need or are interested in it. The other two projects that responded stated that they would use a centralized training format: those who are currently trained will conduct all future trainings, beginning with members of the administration and then moving on to involve teachers who need or are interested in the data warehouse.

Formative assessment grantees were asked how many students had participated in the formative assessment program by the end of year 2 (August 31, 2007). Of the six formative assessment projects that were funded, five responded: among these five projects a total of 14,480 students participated ranging from 2,200 to 5,182 students per project with an average of 2,896 students participating.

Program Impact

Impact on Staff

Technology Use Survey

Each grantee was asked to administer the “Title II-D Technology Use Survey” to each of its participating teachers and administrators prior to the year-end reports. Participants were asked to answer a series of questions related to their activities during the preceding school year. For the 2005-2006 school year, 12 of the 20 grantees reported results for the survey for a total of 1,177 teachers. Nine of the grantees reported results of the survey for a total of 71 administrators. For the 2006-2007 school year, 12 of the 20 grantees also reported results for the survey for a total of 766 teachers. Seven of the grantees reported results of the survey for a total of 47 administrators.

Table 4 summarizes the responses. Overall, the majority of teachers reported that they used technology for professional activities or with students at least once per week. In addition, the majority of teachers reported that their students used technology at school or that they used technology for data-driven decision making at least once per month. Almost all administrators reported they used technology for professional activities nearly every day.

Table 4: Technology Use Survey Responses

Item	2007 Teacher Responses (N=747)	2007 Administrator Responses (N=47)	2006 Teacher Responses (N=1,177)	2006 Administrator Responses (N=71)
How often do you use technology for professional activities such as lesson planning, administrative tasks, communication and collaboration?				
Nearly every day	72%	98%	76%	97%
About once a week	17%	0%	12%	3%
About once a month	5%	0%	4%	0%
Rarely or never	1%	0%	3%	0%
No response	6%	2%	4%	0%
How often do you use instructional technology with students for activities such as research, multimedia, simulations, data interpretation, communications and collaboration?				
Nearly every day	32%	6%	22%	7%
About once a week	40%	11%	36%	10%
About once a month	18%	15%	22%	8%
Rarely or never	3%	19%	12%	14%
No response	7%	49%	6%	60%
How often do your students use technology at school for activities such as research, multimedia, simulations, data interpretation, communications and collaboration?				
Nearly every day	22%	11%	12%	7%
About once a week	44%	6%	29%	7%
About once a month	19%	6%	14%	4%
Rarely or never	8%	2%	8%	7%
No response	8%	74%	35%	75%
How often do you use technology to support data-driven decision making?				
Nearly every day	11%	57%	8%	55%
About once a week	18%	34%	23%	24%
About once a month	48%	4%	27%	6%
Rarely or never	15%	0%	12%	0%
No response	8%	4%	30%	15%

In the first year of the grant, at least weekly:

- 88% of teachers and 100% of administrators reported using technology for professional activities.
- 58% of teachers reported using instructional technology with their students.
- 41% of teachers had students using technology for in-class academic activities.
- 31% of teachers and 79% of administrators reported that they use technology to support data-driven decision making.

In the second year of the grant, at least weekly:

- 89% of teachers and 98% of administrators reported using technology for professional activities.
- 72% of teachers reported using instructional technology with their students.
- 66% of teachers had students using technology for in-class academic activities.
- 29% of teachers and 91% of administrators reported that they use technology to support data-driven decision making.

Very few participants reported using technology to deliver distance learning courses to students or other professionals.

Impact on Students

Six grantees reported that their project directly involved students. Table 5 summarizes the available information on students directly involved by the projects. Each grantee was also asked to estimate the percentage of students who had mastered skills from the Massachusetts Recommended PreK-12 Instructional Technology Standards (<http://www.doe.mass.edu/edtech/standards/itstand.pdf>). Note: the survey question did not explicitly ask grantees for either the total number of students for the full two years of their project or the number of students for only the second year of their project.

Table 5: Students Directly Involved					
Grade-levels	Number of Grantees	Number of Students	% of Students Mastering 90 to 100% of Skills	% of Students Mastering 50 – 89% of Skills	% of Students Mastering 0 – 49% of Skills
PreK-4	1	530	31%	33%	36%
5-8	5	1,701	24%	50%	26%
9-12	3	1,232	34%	56%	10%

Appendix: FY 2006 Title II-D High Need School Districts

The term high-need school district means a school district that meets two conditions:

- (A) The district has at least 12% of the student population or at least 1000 children come from families with incomes below the poverty line (based on the U.S. Census)³, and
- (B) The district operates one or more schools identified under section 1116 or the district has a substantial need for assistance in acquiring and using technology, based on the guidelines stated in the “Local Technology Benchmark Standards for 2003 (School Year 2004-2005 through 2006-2007)”.

Public Schools

Barnstable	Fitchburg	North Adams	Southbridge
Boston	Greenfield	Oak Bluffs	Springfield
Brockton	Haverhill	Oxford	Taunton
Cambridge	Holyoke	Pittsfield	Tisbury
Chelsea	Hull	Provincetown	Ware
Chicopee	Lawrence	Quincy	Wareham
Easthampton	Lowell	Revere	Westfield
Everett	Lynn	Salem	West Springfield
Fall River	New Bedford	Somerville	Worcester

Regional School Districts

Adams-Cheshire	Gill-Montague	Northampton-Smith
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Agricultural/Vocational Technical School Districts

Greater Lawrence RVT	Montachusett Regional RVT	So Middlesex RVT
Greater Lowell VT	Nashoba Valley RVT	Upper Cape Cod VT
Greater New Bedford	Northern Berkshire	Whittier VT

Charter Schools

Abby Kelley Foster	Boston Renaissance	New Bedford Global Learn. HMCS
Academy of Pacific Rim	City On A Hill	North Central Charter Essential
Atlantis	Community Day	Prospect Hill
Barnstable Horace Mann	Holyoke Community	Sabis International
Benjamin Banneker	Lowell Community	Seven Hills
Boston Collegiate	Neighborhood House	South Shore

³ The FY 2005 High Need School Districts list is the same as the FY 2004 list because the new U.S. Census data has not been published at the time the FY 2005 Request for Proposals were issued.