Report

State-wide Evaluation of the New Hampshire ESEA Title II, Part D Grant Program

Interim Report

New Hampshire Department of Education

December 1, 2010

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EXECUTIVE SUMMARY

The Title II-D grant program, "Enhancing Education Through Technology," (EETT) provides financial assistance to higher poverty school districts that have the greatest need for technology support or have been identified as being in need of improvement. In 2009, the American Reinvestment and Recovery Act (ARRA) provided an additional $650 million in Title II-D funding to schools. With the ARRA Ed Tech funds, state educational agencies had the opportunity to implement 21st century classrooms in their schools with the goals of enhancing instruction, facilitating teaching and learning, and improving student achievement. Through both EETT regular and ARRA grant funds, the New Hampshire Department of Education (NHDOE) funded three technology-focused projects beginning in Fall 2009: 1) the Tech Leader Cohort (TLC) Program; 2) Classroom Technology Mini-Grants; and 3) ARRA 21st Century Classrooms.

Tech Leader Cohort (TLC) Program
Using regular EETT funds, NHDOE provided funding to four lead districts in the state to offer high-quality professional development to school administrators and teachers. A total of 54 school teams, consisting of two teacher leaders and one supporting principal per school, explored resources and approaches for creating 21st century learning environments that combined face to face learning with online learning. Each of the four districts coordinated and hosted TLC activities to ensure a common experience for participants.

Classroom Technology Mini-Grants
The NHDOE also used EETT regular grant funds to fund "exemplary projects" in 35 districts that used technology in core content areas and could easily be shared and replicated. Each grant recipient received $10,000, with at least $2,500 being used for professional development.

ARRA 21st Century Classrooms
ARRA Ed Tech grant funds were given to 19 districts across the state to purchase and implement new technologies to create 21st century K-12 classrooms.

Federal guidelines for the EETT grant program require that districts have a means of evaluating the extent to which grant activities are effective in (1) integrating technology into curricula and instruction; (2) increasing the ability of teachers to teach; and (3) enabling students to meet challenging state standards. To this end, the NHDOE worked with a consortium of district grantees to select Hezel Associates, LLC to conduct a statewide evaluation of their Title II-D grant program. The evaluation intends to provide a statewide common perspective on how grant recipients are using technology to implement 21st Century Classrooms and how these environments are affecting teacher instruction and student learning.

Hezel Associates' statewide evaluation of New Hampshire's ESEA Title II, Part D grant program is founded on a mixed-methods approach to answer its research questions. Hezel Associates developed its own instrumentation for the evaluation and also used extant instrumentation that was previously developed by NHDOE. Instruments used for the evaluation generated both qualitative and quantitative data, which allowed for greater depth and breadth of analysis.

In this interim report, the evaluation will focus on the program effectiveness, transparency, accountability, and equity of Title II-D grant program activities at the 19 districts receiving ARRA Ed Tech funding. Five research questions were developed by Hezel Associates to further refine the focus of the evaluation. These five research questions are presented below with a summary of the main findings.

1. How well are school staff members turning classrooms into technology-rich learning environments, fully equipped with hardware, software, and rich digital resources for learning?
There are a variety of technical provisions, solutions and infrastructure capabilities across ARRA-participating districts and schools. This has implications for varying degrees of challenges and barriers for technology use throughout the life of the grant, in addition to offering a variety of potential solutions for incorporating the resources.

Notable differences in technology usage are emerging between the teachers with access to the grant resources and those in the control group. In particular, frequency of use across a variety of technologies and pedagogical applications are on the rise for treatment teachers while levels of usage remain lower and unchanging among the control group. Technological abilities among treatment participants also appear to be improving while those among control group teachers remain as they had at the beginning of the year. These reported pedagogical developments may be a result of educators' increased confidence in using technology in the classroom which started at a relatively high level but nevertheless grew even further during the first year of the grant.

A stronger, more entrenched technology culture among all levels of stakeholders – administrators, teachers and students – appears to be taking hold in ARRA schools, despite the widely noted barriers and areas for improvement. Nearly all educators believe that instructional technology improves learning and report that using technology increases their instructional effectiveness. The percentage of teachers who strongly agreed with these statements increased notably over the year. Administrative support appears to be substantial and collegial support is reportedly on the rise. More educators have prompted their students to use technology during their downtime, contributing to a classroom culture in which technology is more securely embedded into both formal and informal facets of instructional practices.

2. To what degree are these settings encouraging mediating outcomes for students including interactive learning, higher-level thinking skills, and student engagement?
Educators reported that students appear increasingly engaged in the technology and have exhibited increased motivation and capacity to stay on-task. These increases were noted among several survey variables that compared the period prior to implementation to six months after the grant's launch. These changes were notably larger than the changes observed by teachers in the control group.

Students are increasingly using technology to support dynamic learning activities, though there is still room for growth. Educators reported prominent increases in using technology to address all areas of students' interactive learning and higher-level thinking skills. However, these most notable increases of technology use were often in less complex areas of student learning/thinking (i.e., practicing skills and reviewing) while more intricate thinking applications saw less substantial increases. This suggests that further growth is possible in higher-order learning

applications if teachers can become more comfortable with the technology and more confident in using the resources in complex ways.

While students in ARRA/Title II-D schools exhibited strong competency in ICT literacies, there is still ample room for growth in these areas. Across the six ICT competency requirements, between 82.1 and 89.0 percent of 8th grade students met the requirements at the end of the 2009-10 academic year. However, *critical thinking, problem solving & decision making* and *communication & collaboration* were among the competencies met by the smallest proportion of 8th graders. This suggests that there is particular room for growth in these higher-order thinking, innovative applications of technology.

There continue to be multiple potential barriers to achieving student outcomes that are commonly reported across the participating sites, including equipment delays, lack of infrastructure, few IT staff, and issues with providing proper professional development for teachers. Researchers will continue to assess continued challenges and strategies for overcoming these barriers as schools and educators continue with grant implementation.

3. To what degree does the provision of technology tools translate into real opportunities for students to collaborate and connect with new content?

The percentage of educators who report using technology to facilitate student collaboration is on the rise but preliminary student outcome data indicate that further progress can be made. Educators reported an increase in technology use among all types of student groups (independent, small groups, partner, and whole class) which indicates that the grant resources are positively impacting students both independently and in groups. Nevertheless, the average number of 8th grade students in 2009-10 who met the ICT competency requirement by the end of the year was lowest for the *communication and collaboration* portion, indicating room for potential growth as teachers gain more confidence in using technology with students in collaborative settings.

Students are likely to be exposed to the proper outlets to meaningfully connect with new content using technology as a result of the grant implementation. The percentage of students fulfilling the ICT competency requirements for *technology operations and concepts* and *research & information fluency/research tools* were the highest among the criteria. These skills may be potential gateways to connecting with new content via technology as the grant period progresses. Further, several related, purposeful learning activities facilitated by educators (e.g., researching, constructing new knowledge) were increasingly addressed with technology, providing potential outlets for students to connect with new subject matter.

4. How are new technologies and resources serving students of various groups, including those with the highest need?

Educators reported a disproportionate distribution of and access to the grant resources by school need status. As of Spring 2010, more than one in four educators from SINI (school in need of improvement) buildings had either not yet begun to implement the technology with students or not received sufficient resources to begin; in comparison, all non-SINI teachers had received at least some of their technology and had begun implementing resources with students. Further, 70.0 percent of non-SINI teachers had received all of their ARRA/Title II-D grant-funded

technology, compared to only 36.9 percent of SINI teachers (15.4% of SINI had not received any resources to date, compared to 0.0% of schools not in need).

Despite being less likely to have received all of their grant-appropriated resources and to have used them with their students, SINIs have been successful in increasing educators' ability to personalize learning activities and meet student needs using these tools. At the beginning of the school year, fewer than half of SINI educators felt they were able to use digital tools to personalize learning activities and meet individual student needs, compared to three-quarters of non-SINI teachers. By the spring, the gap between SINI and non-SINI teachers had disappeared, as roughly 80 percent of both groups reported being able to use the appropriate tools to facilitate individualized learning.

5. How are grantees doing in terms of training teachers not only how to use technology but also how to translate their new skills into practice in their teaching?
As of March 2010, most sites had either conducted training or had training planned for the coming months and throughout grant implementation. Further, participation in professional learning communities is on the rise. Both teachers and administrators generally believe that more professional development and time to learn, practice, and integrate the new technology will further facilitate meaningful implementation.

Over 80 percent of teachers indicated that most of the relevant professional development or training topics are a priority for them. However, topics teachers rated as either most highly generally involve direct implementation and effective use of the new technology while more novelty or long-term integration needs were rated lower.

More educators participate in district on-site professional development than other forms of training or professional development. As externally-provided professional development or training is often cost prohibitive and may include time outside of teachers' normal schedules, on-site professional development appears to benefit the largest number of teachers. Most educators indicated that their school provides them with time during regular school hours for professional development but they believe more time is needed to learn, practice, and integrate new equipment, as hands-on practice in particular appears to be missing from these opportunities.

Variations among sites in receiving, inventorying, and installing technology affect timing of professional development. Some teachers who had not yet received new equipment were unaware of when they would be receiving relevant trainings. Among those who had not yet received equipment but did receive professional development, teachers expressed concern over potentially forgetting what they had learned before putting those skills to use.

Based on main findings stemming from the research questions, we offer the following preliminary recommendations:

Recommendation 1: Continue to reach out to schools with limited technology support staff.

Recommendation 2: Encourage more discussions among educators about the benefits of allowing students to access the school network from home.

Recommendation 3: Encourage educators to continue to provide students with new opportunities to interact with the technology and to use the resources to connect to new content and collaborate with one another.

Recommendation 4: Provide additional assistance to schools in need of improvement for obtaining their full allocation of resources and identifying strategies for putting the resources to use.

Recommendation 5: Continue to provide teachers with high-quality, relevant, focused professional development opportunities.

Recommendation 6: To the extent possible, offer opportunities for staff members to participate in district on-site professional development or training during regular school hours.

I. Introduction

The No Child Left Behind (NCLB) Act of 2001 reauthorized the Elementary and Secondary Education Act (ESEA) of 1965 and consolidated the Technology Literacy Challenge Fund (TLCF) Program and the Technology Innovative Challenge Grant Program into a single state formula grant program (ESEA Title II, Part D, Subpart 1). The Title II-D grant program, "Enhancing Education Through Technology," (EETT) provides financial assistance to higher poverty school districts that have the greatest need for technology support or have been identified as being in need of improvement. In 2009, the American Reinvestment and Recovery Act (ARRA) provided an additional $650 million in Title II-D funding to schools. With the ARRA Ed Tech funds, state educational agencies had the opportunity to implement 21st century classrooms in their schools with the goals of enhancing instruction, facilitating teaching and learning, and improving student achievement.

Through both EETT regular and ARRA grant funds, the New Hampshire Department of Education (NHDOE) funded three technology-focused projects beginning in Fall 2009: 1) the Tech Leader Cohort (TLC) Program; 2) Classroom Technology Mini-Grants; and 3) ARRA 21st Century Classrooms. Due to the differing objectives, timelines, and data collection requirements for each of these grant programs, they are described separately in this report.

Tech Leader Cohort (TLC) Program
Using regular EETT funds, the NHDOE provided funding to four lead districts in the state to offer high-quality professional development to school administrators and teachers. A total of 54 school teams, consisting of two teacher leaders and one supporting principal per school, explored resources and approaches for creating 21st century learning environments that combined face to face learning with online learning. Each of the four districts coordinated and hosted TLC activities to ensure a common experience for participants.

Classroom Technology Mini-Grants
The NHDOE also used regular EETT grant monies to fund "exemplary projects" in 35 districts that used technology in core content areas and could easily be shared and replicated.[1] Each grant recipient received $10,000, with at least $2,500 being used for professional development. Specific project and participation requirements were outlined by the NHDOE (see section III.A.2 of this report).

ARRA 21st Century Classrooms
ARRA Ed Tech grant funds were given to 19 districts across the state to purchase and implement new technologies to create 21st century K-12 classrooms. The implementation varied by site and individual project descriptions are described in section III.A.3.

Federal guidelines for the EETT grant program require that districts have a means of evaluating the extent to which grant activities are effective in (1) integrating technology into curricula and

[1] http://www.nheon.org/oet/nclb/2009-10/TitleIID-Round8-RFP2009-10.htm#_Toc240762266

instruction; (2) increasing the ability of teachers to teach; and (3) enabling students to meet challenging state standards. To this end, the NHDOE worked with a consortium of district grantees to select Hezel Associates, LLC to conduct a statewide evaluation of their Title II-D grant program.

The evaluation intends to provide a statewide common perspective on how grant recipients are using technology to implement 21st Century Classrooms, and how these environments are affecting teacher instruction and student learning. Even though the grants provided extensive latitude to the recipients in how to develop their programs, all of the grants share the three goals listed above. Therefore, the evaluation approach employed by Hezel Associates is a statewide evaluation of all funded activities using a common set of outcome measures.

Data are not available for the TLC and Classroom Technology Mini-Grants to provide an interim evaluation but will be in place for the Final Evaluation Report. To this end, the data analysis in this interim evaluation report focuses only on the evaluation activities and outcomes for the ARRA 21st Century Classrooms grant. However, programmatic activities for all three programs will be reviewed in this report and are reported in section III.A.

In this interim report, the evaluation focuses on the program effectiveness, transparency, accountability, and equity of Title II-D grant program activities at the 19 districts receiving ARRA Ed Tech funding. In doing so, there are three main objectives:

Objective 1. Assess the degree to which districts receiving Title II-D Ed Tech funding are integrating technology into curricula and instruction as a result of project implementation.

Objective 2. Assess the degree to which districts receiving Title II-D Ed Tech funding have increased the abilities of teachers to teach as a result of project implementation.

Objective 3. Assess the degree to which districts receiving Title II-D Ed Tech funding are enabling students to meet challenging state academic standards as a result of project implementation.

In addition to the three objectives listed above, five research questions were developed by Hezel Associates to further refine the focus of the evaluation and to help assess whether the evaluation objectives have been met. These five research questions are at the crux of all evaluation instrumentation, analysis, and reporting for these grant programs (see section IV.B for more information).

Hezel Associates is the sole external evaluator for New Hampshire's (NH) statewide evaluation of these grant programs. This report was prepared by Hezel Associates, in coordination with Nashua School District and the NHDOE. The NHDOE, with input from Nashua, was responsible for the initial completion of section II and section III.B, and Hezel Associates was responsible for the initial completion of all other sections.

The evaluation timetables for the ARRA 21st Century Classrooms and TLC Program/Classroom Technology Mini-Grants are provided in Tables 1 and 2, respectively. The statewide evaluation

began in March 2010 and will conclude in June 2011. The total allocation for the evaluation is $257,721. As of November 1, 2010, the amount expended was $106,223.

Table 1. ARRA 21st Century Classrooms Timetable

ARRA	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
	School Year 2009-2010						School Year 2010-2011									
Evaluation Contract Signed	■															
Spring 2010 Instrument Development	■	■	■													
Spring 2010 Instrument Implementation	■	■		■												
Spring 2010 Data Analysis & Site-Level Reporting					■	■										
USDOE Reporting for School Year 2009-2010							■	■	■							
Fall 2010 Instrument Development					■	■										
Fall 2010 Instrument Implementation							■	■								
Fall 2010 Data Analysis & Site-Level Reporting										■	■					
Spring 2011 Instrument Implementation													■	■	■	
Spring 2011 Data Analysis & Site-Level Reporting																■
USDOE Reporting for School Year 2010-2011																■

Table 2. TLC Program/Classroom Technology Mini-Grants Timetable

TLC/Mini-Grants	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
	School Year 2009-2010						School Year 2010-2011									
Evaluation Contract Signed	■															
Fall 2010 Instrument Development (includes retrospective pre-test and post-test)							■									
Fall 2010 Instrument Implementation								■	■							
USDOE Reporting for School Year 2010-2011																■

The structure of this report follows the guidelines provided by the U.S. Department of Education (ED). The next section (section II) describes the funds allocated for the Ed Tech grant program and provides context for the evaluation. Section III details the activities being evaluated at the school and district level. The scope, objectives, research questions, and methods for the evaluation are described in section IV, followed by the evaluation findings in section V. Section VI concludes the report with recommendations and lessons learned.

II. State Ed Tech Program Context

A. Summary: State Ed Tech Allocations and Awards

1. Total amount of FY 2009 funding for the State

FY 2009 ARRA Allocation	FY 2009 Regular Allocation	Total FY 2009 Allocation
$3,209,375.00	$1,305,843.00	$4,515,218.00

2. The number, percent and amounts of FY 2009 grants awarded competitively and by formula based on the FY 2009 appropriation (the combined total of ARRA and regular funds).

Type of Award	Number of Awards	Percent of Awards	Range of Award Amounts (Lowest-Highest)	Average (Medan) Award Amount
Competitive: Tech Leader Cohort Program (TLC)	4	13%	$79,828.22 - $240,000.00	$125,000.00
Competitive: Classroom Technology Mini Grants Program	35	8%	$8,080.25 - $9,500.00	$9,500.00
Competitive: ARRA 21st Century Classrooms	23	79%	$29,310.00 - $270,000.00	$134,000.00

B. Competitive Grant Program Description

The New Hampshire 21st Century Classrooms program, funded by federal ESEA Title II-D, has an overall goal of providing grants to school districts and/or consortia of school districts to transform the learning environment through the substantial, innovative integration of educational technology and information literacy into their practices, in order to advance student learning.

New Hampshire's competitive program aligns with educational improvement goals by providing teachers and leaders with online and onsite professional development powered by technology, teams of teachers with project based learning mini-grants to infuse digital learning resources into their classrooms, and grants to higher poverty school districts to create digitally rich learning environments.

With these grants, teachers are assisted in the design and delivery of technology integrated with curriculum and instruction, while their school administrators are supported in acquiring the competencies of a 21st century leader.

The emphasis on developing a comprehensive evaluation process and set of instruments for data collection will result in a greater ability at the local and state levels to identify those characteristics of teaching and learning which contribute to teacher effectiveness and student achievement. The provision of resources to create digitally rich classrooms is intended to drive further innovations in the learning process.

III. The Activity

A. Features

Through both EETT grant funds and ARRA Ed Tech funds, the NHDOE was able to fund three technology-focused projects: 1) TLC Program; 2) Classroom Technology Mini-Grants; and 3) ARRA 21st Century Classrooms. A description of each grant program is below, along with example project summaries for the TLC and Classroom Technology Mini-Grants, and full project descriptions for all districts implementing ARRA/Title II-D grants.

1. Tech Leader Cohort (TLC) Program[2]

The NHDOE provided funding to four lead districts in the state to offer high-quality professional development to school administrators and teachers. The goal of the TLC Program is to "support a statewide cadre of skilled, informed teacher leaders and principals who are empowered to support their colleagues in creating truly 21st century learning environments." Through the TLC grant program, each of the four districts was to coordinate specific activities targeted towards providing professional development. A total of 54 schools state-wide, consisting of two teacher leaders and one supporting principal per school, explored resources and approaches for creating 21st century learning environments which combined face to face learning with online learning (see Appendix 5 for a listing of participating districts and schools). Districts were encouraged to participate in the following programs:

- *Project New Media Literacies* – New Media Literacies explores how we might best equip young people with the social skills and cultural competencies required to become full participants in an emergent media landscape and raise public understanding about what it means to be literate in a globally interconnected, multicultural world.
- *Intel Thinking With Technology Course* – This course provides from 24 to 40 hours (depending on number of modules chosen) of professional development to teachers to learn strategies for addressing and assessing thinking skills, using technology to support deeper understanding of core content.
- *Intel Teach Leadership Forum* - The Intel Teach Leadership Forum provides a 4-hour face-to-face professional development session focusing on the importance of leadership in promoting, supporting, and modeling the use of technology in instruction.
- *Online Professional Education Network New Hampshire (OPEN NH)* – This e-learning program provides online courses for professional development geared to school or district needs. Courses include several content areas and instructional topics.

Each lead district used grant funds to provide participants with observation subscriptions, handheld devices, stipends, and funds towards registration for: 21st Century Learner Conference, Christa McAuliffe Conference, OPEN NH courses, and Local Education Support Center Network (LESCN) sessions.

[2] Description of the TLC program comes from the NHDOE RFP (http://www.nheon.org/oet/nclb/)

Funds were awarded to a lead district (with a corresponding professional development center) and distributed to consortium schools that had individualized, though broad, needs for the funds. What follows is a brief description of each lead districts' approach to the program, as well as an example of one participating school's individual program goals.

Exeter School District

The Seacoast Professional Development Center provided professional development that focused on incorporating technology (i.e. interactive whiteboards, handheld devices, and e-portfolios) into the classroom. In addition, the Center increased schools' capacities for mentorship opportunities in the area of emergent technologies. While each consortium member reported individual goals, most project goals focused on creating 21st century classrooms through the integration of technology.

Barrington School District participated in the TLC project through Exeter School District. Barrington's primary goal was to improve student learning and teacher effectiveness by integrating technology into classrooms and curricula. The district aimed to increase their capacity to develop student portfolios, curriculum maps, and performance pathways by participating in professional development. The TLC Program supported the district's vision for technology integration in all classrooms, and provided extended training for the Technology Mentor Program, which aimed to increase professional development for staff at each grade level.

Keene School District

The SouthWest Center provided individualized technology-related professional development to each participating school, which will align with schools' Technology Plans, when applicable.

Kearsarge School District participated in the TLC project through Keene School District. Kearsarge's goal for the grant was to ensure that all staff are provided with professional development that will enable the effective and efficient integration of technology into the classroom. Members of the Leadership Team received training through the TLC grant, which will be disseminated to others in the district. The grant was built on prior training sessions offered, such as Smart Board and Google docs.

Merrimack Valley School District

The Capital Area Center for Educational Support (CACES) aimed to provide teachers and administrators with the skills needed to create a digital-age culture in their school. Project participants were trained on new technologies that can be used to improve student achievement, and modeled ways to build students' complex problem solving skills in both a physical and virtual environment. Needs expressed by consortia teachers that CACES aimed to address included: increased abilities for teachers to integrate technologies into the classroom, open discussions of regulations to protect schools and students, and pedagogical skills that facilitate students' higher order thinking skills in the areas of synthesis, evaluation, and creativity. In addition to the aforementioned professional development, CACES encouraged teachers to develop a new unit of study that integrates technology in instruction, and at least one teacher was to participate in the New Media Literacies Early Adopters monthly webinar.

Pembroke Academy participated in the TLC project through Merrimack. Pembroke aimed to increase teachers' understanding of all 2.0 tools, and ways to integrate these tools into the classroom. In addition, Pembroke hoped to gain a better understanding of media literacy as it applies to students and their future.

Milan School District

North County Education Services (NCES) aimed to engage project participants in developing lesson plans that utilize technology to engage students in higher order thinking. In addition to supporting the four TLC program activities mentioned above (e.g., Project New Media Literacies), NCES will provide an optional session on the iPod Touch.

Lisbon Regional School participated in the TLC project through Milan. Lisbon's goal was to have all teachers in the school designing lessons that utilize technology. Examples of technologies used included laptops, video conferencing programs, and interactive whiteboards.

2. Classroom Technology Mini-Grants

The NHDOE provided funding to 35 districts statewide to create "exemplary projects" that would use technology in core content areas and could easily be shared and replicated (see Appendix 5 for a listing of participating districts and schools). The core content areas include: The Arts, English Language Arts, Mathematics, Science, Social Studies, and/or World Languages, and all projects must also address ICT literacy skills.[3] Projects were to be carried out by teams of 2-4 educators from each school, and use project/problem-based learning with a constructivist approach. Specific project expectations and requirements were outlined by the NHDOE and included the production of a three-minute video, lesson plan, assessment rubric, and other related documentation to indicate how the project was carried out, attendance at after-school mini-grant meetings, and a final presentation of the project at the annual Mini-Grant Celebration. Four examples of classroom technology mini-grants that were implemented in 2009-2010 are presented below.

Amherst Middle School

Amherst aimed to use technology to improve student literacy by helping students make connections with humanitarian issues through the research of organizations that are making a difference in the world. Goals of the project included: 1) train staff and students on how to select organizations that demonstrate a great impact on people; 2) train staff and students on how to maximize the use of the new technology; and 3) train staff and students on video and multimedia. The project involved over 220 seventh grade students and 15 full time staff, and indirectly impacts 1,000 students every four years, as the Mac Computers will be used by seventh-grade students after the project's completion.

Impacts on student literacy are measured through New England Common Assessment Program (NECAP) and Northwest Evaluation Association (NWEA) assessments, with a target goal for the 2009-10 academic year being that 70 percent of students in each grade will meet or exceed

[3] From: http://www.nheon.org/oet/nclb/2009-10/TitleIID-Round8-RFP2009-10.htm#_Toc240762266

individual growth targets in reading comprehension (as measured by the NWEA testing) by June 2010. In addition, Amherst will use the Angel course management system to survey both students and staff participating in the grant to measure its success.

Chester Academy

Chester Academy aimed to use digital tools to increase student engagement by engaging students to ultimately increase their achievements. More specifically, second graders adopted *Webkinz* animals to compare animal habitats using a virtual environment. Students used interactive whiteboards, computers, document cameras, digital cameras, digital voice recorders, and the Internet to research how animals survive in their individual habitats. Chester expected project activities to foster cognitive and problem solving skills through the integration of social studies, language arts, math, science, and technology-related content.

Chester outlined numerous student goals for this project which included: 1) student identification of animals, their needs, and their habitats; 2) the identification of continents and the animals that live there; 3) participation in group decision making and collaboration; 4); safe use the Internet; 5) integration of math concepts into everyday life; 6) practice reading at independent fluency levels; 7) publication of an Animal Survival Guide (paper and digital); and 8) creation of an artifact for a student's personal digital portfolio. In addition, teachers would learn: 1) how to effectively use the interactive whiteboard in the classroom to enhance lessons and improve student achievement; 2) about video production to enhance lessons, improve student achievement, and provide alternative assessments; and 3) how to create digital books that can be used to showcase student work.

The grant focused on Grade 2 science and social studies curricula and included a variety of technologies, including: Webkinz.com, interactive whiteboards, computers, document camera, digital cameras, digital voice recorders, and *Kidspiration*. The grant directly impacted three teachers, one paraeducator, and 31 students. The grant indirectly impacted two grade 2 teachers, one paraeducator, and 32 students.

Litchfield School District

Litchfield School District replicated a project that aimed to improve student reading comprehension and critical analysis through the use of technology and social networking. Litchfield used a 1:1 environment with netbooks and uSync to support project-based learning, and teachers were trained on the administration of the uSync website, the use of netbooks in the classroom, and the integration of technology into lesson plans. The project directly impacted over 75 students and three teachers. Students indirectly involved in the project had opportunities to use the netbooks during study halls.

In addition, student learnings were shared using the uSync website and published to YouTube and community boards. One anticipated outcome for this project is an increase in students' motivation to produce quality work, due to their work being published and viewable world-wide. Improvements in students' reading, writing, and speaking will be measured through the examination of test scores on the NECAP, NWEA, and Scholastic Aptitude Test (SAT) assessments.

Rollinsford School District

Rollinsford's project aimed to provide students with technology tools that are age appropriate, accessible, and pertinent to their literacy development, with the ultimate goal of increased student fluency and comprehension. Technology tools that were used included FLIP video cameras and Mp3 players. These technology devices were used to upload and review oral reading, which incorporates the three dimensions of fluency (accuracy, speed, and expression), and will be saved to ICT portfolios to measure progress. Teachers received professional development on the various technologies being used, as well as training on Web 2.0 tools for sharing student work and progress. The project directly impacted 63 students and nine educators.

Student impacts are measured through Literacy Profile data, standardized test scores, and fluency data. International Society for Technology in Education (ISTE) National Education Technology Standards for Teachers (NETS-T) standards will be used to assess teacher proficiency.

3. ARRA 21st Century Classrooms

The NHDOE provided funding to 19 districts across the state to purchase and implement new technologies to create 21st century K-12 classrooms. Project descriptions for all districts receiving ARRA Ed Tech grant funds can be found below. It is important to note that all 19 districts receiving ARRA Ed Tech grant funds were required to complete evaluation instruments/surveys created by Hezel Associates and extant instruments created by NHDOE. These instruments include: the Walkthrough Observation Tool, Educator Survey, Student Survey, NH School Technology and Readiness (STaR) Chart, NH District Technology Survey, and NH School Technology Surveys. Districts that created their own local, site-specific instruments are noted below.

Alton School District

Alton School District's project evaluates the effects of technology on writing, mathematics, and science in the middle school grade levels. The project looks at the effects of technology on two 1:1 technology classrooms, in comparison to classrooms with fewer or no technology. In addition, those classrooms implementing a 1:1 technology environment have access to student netbooks and thin clients, and data collected are analyzed to measure the effectiveness of these differing technologies. Outcomes are measured using a pre- and post-test in science and mathematics, specifically, teacher assessments and the NWEA scores for these subject areas. Writing skills are evaluated using the NECAP assessments, and objectivity will be ensured by using a state-generated rubric for grading, and the use of an external scoring team.

In addition to using the evaluation instruments noted above, Alton is evaluating its success through the use of local, site-specific instruments (writing and technology surveys for teachers and students). Alton began project implementation in April 2010.

Bartlett School District

Bartlett School District's project objectives are to change the way teachers teach and students learn through technology. The main research question they aim to answer is: "Will 1:1 NEO2 word processors change the way teachers teach and students learn?" Bartlett's primary goal is to create a 1:1 computing environment using NEO2 word processors in two of their grades 1 and 2

looping classrooms, where teachers will instruct the same group of students for two years. Bartlett's secondary goal is to combine technology with job-embedded professional development, transforming the school into an "education portal of the future." Technologies to be used or purchased include: interactive whiteboards, teacher laptops, projectors, student response systems, document cameras, Flip cameras, NEO2 word processors, and printers. Bartlett's project focuses on four specific skill areas: Improving Writing, Scientific Inquiry and Critical Thinking Skills, Science Skills for Information, Communication and Media Literacy and Information and Communication Technologies (ICT).

Bartlett began its implementation in January 2010.

Chester School District

Chester School District's project is founded on the phrase "First Use Must Inspire Future Use" and is a school-wide initiative focusing on reading and language arts. Through the use of interactive whiteboards, personal response systems, document cameras, laptops, and other digital tools, Chester anticipates these tools will enhance teaching and learning, and increase student involvement and performance. In this technology-rich environment, the needs of varying styles of learners will be met, including: visual, auditory, and kinesthetic learners. The integration of technology with reading and language arts provides learners with 21st century classrooms.

In addition to using the evaluation instruments noted above, Chester is evaluating its success through the use of its own local, site-specific instruments (teacher rubrics and impromptu surveys). Chester began its implementation in February 2010.

Claremont and Unity School Districts

Claremont and Unity School Districts' project focuses on enhancing math instruction in elementary and middle school grade levels to improve learning for students of all abilities. "Tools of Learning," the intervention model being implemented integrates 21st century technology into the existing curriculum to deliver differentiated math instruction to students. The technology purchased includes: interactive white boards, student response systems, netbooks, flash drives, digital cameras, video cameras, mp3 players, and grade-level specific educational software. Professional development is provided to demonstrate how the technology can be used to enhance math instruction. Desired outcomes of the project include increased student test scores, increased student and teacher engagement, and increased access to technology in the classroom.

In addition to using the evaluation instruments noted above, Claremont and Unity is evaluating their success through the use of their own local, site-specific instrument (instrument measure teachers' and administrators' prior knowledge, skills, and attitudes about technology access and its use in classrooms). Claremont and Unity began their implementation in January 2010.

Laconia School District

Laconia School District's project focuses on transforming existing learning environments through the integration of educational technology and curriculum to advance student learning. In addition, the project provides and support teachers and Principal through robust professional development. The primary configuration of technology tools includes five, 21st century

classrooms equipped with teacher laptops, interactive whiteboards with projectors, netbook carts, digital/document/video cameras, printers and software, which creates 1:1 or 2:1 use of digital tools by students.

In addition to using the evaluation instruments noted above, Laconia is evaluating its success through the use of their own local, site-specific student survey and staff journal. Laconia began its implementation in March 2010.

Lafayette Regional School District

Lafayette Regional School District's project aims to create interactive classrooms in Grades K-6 through project-based learning and a 1:1 student to computer ratio. Lafayette purchased laptops, student response systems, document cameras, and a portable Mac lab to support the goals of their project. Desired outcomes of the project include: improved student literacy skills, increased student engagement, and the promotion of higher order thinking skills in math, science, reading, and history subject areas.

Lafayette began its implementation in January 2010.

Manchester School District

Manchester School District's project aims to use technology to increase student learning and achievement in language arts classrooms. Manchester intends to increase the use of technology in the classroom by implementing computer carts in middle school classrooms (Grades 6-8), and by providing professional development on integrating technology tools into languages arts curriculum for teachers. A desired outcome of this project is that students will be technology literate by eighth grade through the use of digital portfolios.

Manchester began its implementation in March 2010.

Milton School District

The Milton School District is implementing a 1:1 netbook computer program and interactive white boards in select math classes. Specific grade levels at the elementary, middle, and high school levels will participate, and include: a fifth grade class (elementary school), seventh and eighth grade classes (middle school), and high school math classrooms. It is anticipated that the combination of professional development in technology and leadership for teachers, and technology hardware in the classrooms, will improve student access to information, and increase their knowledge base and interest in math and science. The technological tools are used to support math and science curriculum, increasing students' preparedness for the workplace or higher education, once they complete high school.

In addition to using the evaluation instruments noted above, Milton is evaluating its success through its own local, site-specific instruments. These instruments include: measurement of student goals, longitudinal surveys of student attendance records, survey of annual student attitudes, student performance (i.e. electronic portfolios), case studies on involved students, and sample student work. Milton's implementation began in November 2009.

Nashua School District

Nashua School District's project aims to demonstrate how the integration of technology can result in changes in both teaching practices and student achievement. Nashua utilizes the revised science curriculum model as a way to infuse technology into all curriculum areas. Through the use of digital tools, including netbooks, Eno boards, student response systems, document cameras, flip cameras, and science probes, educators are able to create technology-rich lessons aimed to foster a student collaborative model, and a 21st century learning environment.

In addition to using the evaluation instruments noted above, Nashua is evaluating its success through the use its own local, site-specific instruments (Common Formative assessments, developed by school teams). Nashua began its implementation in April 2010.

Northumberland School District

Northumberland School District aims to answer the following question: How do we transform fifth through eighth grade classrooms to meet the needs of the new digital learner? The goal of the project is to enhance curriculum and instruction through the use of teacher and student integrated technology, encouraging students to be actively engaged and evaluate their own progress. Collaborative projects are being implemented and include the use of videotaped activities, interactive Smart Board lessons, iRespond student interaction, and daily connections with wikis, blogs, and pre/post assessments to promote higher-order thinking skills.

In addition to using the evaluation instruments noted above, Northumberland is evaluating its success through the use of its own local, site-specific instrument (teachers were surveyed to better understand their skill levels and training needs). Northumberland's implementation began in April 2010.

Oyster River School District

Oyster River School District's project focuses on the exploration of the outside world with digital tools. Students use technology to explore the ecosystem of the Lamprey River in NH, including the different habitats in the ecosystem as well as the varied flora and fauna. Oyster River purchased interactive whiteboards, student response systems, netbooks, document cameras, and science probes with the grant funds. The integration of these tools supports a 1:1 student to computer ratio, and is used during hands-on lessons to reinforce instruction. Additionally, Oyster River is providing students with technology in a 3:1 digital tool ratio through interactive whiteboards, with the goals of helping students relate learning to real-life applications, and increase students' comprehension of science and math concepts.

In addition to using the evaluation instruments noted above, Oyster River is evaluating its success through the use of their own local, site-specific instruments. Local, site-specific instruments measure motivation levels through a Teacher Engagement Survey, classroom observations, and Student Engagement Survey. Oyster River's implementation began in December 2009.

Pembroke Collaborative SAU 53

Pembroke Collaborative SAU 53 aims to increase student achievement in science for Grades K-12 through the integration of a hand-on inquiry approach to science and technology. Technology

equipment purchases, professional development, in-depth curriculum alignment, action research, and a commitment to higher-order cognitive processes supplement the continued work of four high-need collaborative districts as they move toward student centered learning and implementation of technology-rich 21st century classrooms. Goals of the project include: changes in teacher instruction (e.g., facilitation vs. traditional instruction; development of lessons that challenge students to higher order cognitive processes; engagement with the curriculum and with technology through inquiry), and an increase in student research that is both self-directed and based on primary research. Pembroke purchased laptops, mobile laptop carts, interactive white boards, video cameras, science probes (including electronic, motion, temperature, biology, and chemistry probes), document cameras, digital microscopes, weather stations, high speed cameras, and software.

In addition to using the evaluation instruments noted above, Pembroke is evaluating its success through the use of NECAP science scores (for student outcomes). Pembroke's implementation began in December 2009.

Pittsfield School District

Pittsfield School District aims to increase teachers' new media literacy skills through technology and Web 2.0 tools. Professional development is being provided to teachers to help them learn the new technology and Web 2.0 tools. Some desired outcomes of the project include: increased teacher and student collaboration to create inquiry- and project- based studies, and opportunities for students to publish original work, collaborate with others, and participate in digital learning communities. Pittsfield purchased interactive whiteboards and netbooks.

Pittsfield's implementation began in December 2009.

Portsmouth SAU 52

Portsmouth SAU 52's project equips math classes with technology tools, with the goal of enhancing the curriculum, motivating students, improving instruction, and assessing student learning. The technology being implemented includes: interactive whiteboards, student response systems, document cameras, LCD projectors, and mobile labs. It is anticipated that the multimedia, multi-sensory, and multi-dimensional lessons will impact students' math knowledge, students' cognitive thinking skills, and students' and teachers' technology literacy skills.

Portsmouth's implementation began in January 2010.

Profile School District

Profile School District aims to use technology to increase student engagement and student achievement in all grade levels and subject areas by providing individualized access to technology. Through the purchase of new technology, such as netbooks and accessories (including carry-on bags for netbooks, dual-band wireless routers and access points to ensure connection throughout the building), Profile anticipates that these technology tools will help meet their goals. Profile purchased netbooks and other peripherals to fulfill their project goals. In addition, Profile purchased interactive whiteboards through other grant funds, but will be fully deploying the whiteboards (including four days of training) through ARRA funds. Training is

being provided to teachers on both the equipment and skills necessary for the integration of technology into curricula.

In addition to using the evaluation instruments noted above, Profile is evaluating its success through the use of their own local, site-specific instrument, which consists of a post-training survey for teachers. Profile began its implementation in February 2010.

Raymond School District

Raymond School District's project aims to improve students' learning skills and strategies in the subject areas of reading, writing, and vocabulary development. Through the purchase of new technology (e.g., Smart Boards, LCD projectors, laptops and netboooks), Raymond anticipates that these technology tools will enhance teaching and learning. In order to improve students' skills, Raymond will train and support teachers on how to effectively integrate technology into their classroom, differentiate their instruction, and to engage and instruct all students.

Raymond began its implementation in January 2010.

Somersworth School District

Somersworth School District's project aims to increase student and teacher technology skill levels to improve student learning. Through the purchase of iPod touches, digital projectors, interactive whiteboards, netbooks (for students and teachers), and software, Somersworth is providing 1:1 mobile technology access to students. Student and teacher technology skill levels are measured using the ISTE National Education Technology Standard for Students (NETS-S) NETS-T. The technology is shared by faculty member "teams" and the teams assess their learning outcomes. In addition to the new technology, teachers are receiving professional development that focuses on technology integration tools, strategies, and resources.

In addition to using the evaluation instruments noted above, Somersworth is evaluating its success through the use of their own local, site-specific instrument (informal weekly checklist for teachers to tally the types and frequencies of technology use in the classroom). Somersworth began its implementation in January 2010.

Timberlane Regional School District

Timberlane Regional School District's project aims to use technology to enhance students' creativity, innovation, and academic performance in science. Through the purchase and use of tablets, laptops (for teachers), netbooks, iPods, projectors, student response clickers, flip video cameras, document cameras, and software, Timberlane is providing students and teachers with the knowledge, skills, and expertise needed to succeed in a 21st century world. Students' scientific literacy and problem solving skills, as measured by the ICT Literacy Standards, as well as district standards are serving as a student performance outcome measure.

In addition to using the evaluation instruments noted above, Timberlane is evaluating its success through the use of the Mid-continent Research for Education and Learning (McREL) Power Walkthrough. This instrument is implemented by administrators using a personal digital assistant (PDA) to record informal observations of classrooms. Timberlane began its implementation in April 2010.

White Mountain Regional School District

The White Mountain School District's project aims to increase students' critical thinking skills and strengthen the foundations of its schools to implement 21st Century Classrooms. To achieve this goal, the district is providing professional development on LoTi principles. The overall goals of LoTi implementation are to support effective teaching practices and increase students' test scores on the NECAP, and to ultimately improve the district's LoTi standing. In addition, White Mountain purchased new technology to support their project, including: laptops (for teachers), Promethean Boards, student response systems, and LCD projectors.

In addition to using the evaluation instruments noted above, White Mountain is evaluating its success through the use of surveys developed by other external organizations (e.g., LoTi), as well as professional development evaluations. White Mountains began its implementation in December 2009.

B. Resources Allocated

The TLC Program was funded for a total of $569,828.22, representing 13 percent of the total Title II-D funds for the period. Services included (a) staff at four regional professional development centers coordinated a limited number of onsite training activities for local teacher and administrator cohorts from area schools, (b) online course facilitation over a nine month period by a trained online facilitator, assisted by four mentors, (c) support in the form of materials, training, and technical assistance from the Intel Teach national program, and (c) ongoing course development and managerial support from SEA program staff. The total of all resources for this program is estimated at $1 million. Final figures will be available for the final report.

Classroom Technology Mini-grants Program was funded at $330,658.64, representing 8 percent of the total Title II-D funds for the period. Services included (a) onsite and online training provided by staff at regional professional development centers, (b) online development of a webspace for mini-grant teams to post and discuss their work, (c) coordination by a regional PD center of an annual "Technology Celebration Event" to showcase the projects completed by each mini-grant team. The total of all resources for this program is estimated at $500,000. Final figures will be available for the final report.

21st Century Classrooms Initiative was funded at $3,439,100.25, representing 79 percent of the total Title II-D funds for the period. This amount includes ARRA funds plus a portion of regular funds. Services included an intense level of activity at the local, state, and national level to support the creation of technology rich learning environments supported by appropriate bandwidth, equipment infrastructure, and professional development. The total of all resources for this program will be available in the final report.

C. Scale and Complexity

Table 3 below represents the number of sites, districts, and schools participating in the ARRA/Title-II D grant. Demographics of the schools, including school enrollment, free/reduced lunch, and participation numbers for grade levels, classrooms, teachers, and students are presented.

Table 3. Scale and Complexity

Site Name[1]	School Names[1]	Locale[2]	School enrollment[1]	Free / reduced lunch[1,3]	In need of improvement?[1]	Grade levels[4]	Number of Classrooms[4]	Number of Teachers[4]	Number of Students[4]
Alton School District	Alton Central School	Rural: Distant (42)	592	22.3%	No	5-8	5	3	145
Bartlett School District	Josiah Bartlett Elementary School	Rural: Remote (43)	284	34.5%	No	K-8	2	2	22
Chester School District*	Chester Academy	Rural: Fringe (41)	636	10.5%	Yes	1, 3-8	9	10	211
Claremont & Unity School Districts	Maple Avenue Elementary School [Claremont District*]	Rural: Fringe (41)	374	49.7%	Yes	4-5	5	5	91
	Unity Elementary School [Unity District*]	Town: Remote (33)	126	28.4%	Yes	2-8	4	5	72
Laconia School District*	Woodland Heights School	Town: Distant (32)	440	65.3%	Yes	1-3, 5	5	5	84
Lafayette Regional School District	Lafayette Regional School	Rural: Distant (42)	101	20.9%	No	K-6	7	14	101
Manchester School District*	Hillside Middle School	City: Midsize (12)	939	36.9%	Yes	6-8	15	15	939
	Middle School at Parkside	City: Midsize (12)	745	49.3%	Yes	6-8	11	11	745
	Southside Middle School	City: Midsize (12)	918	45.4%	Yes	6-8	15	15	918
	Henry J. McLaughlin Middle School	City: Midsize (12)	783	45.6%	Yes	6-8	14	14	783
Milton School District*	Milton Elementary School	Rural: Fringe (41)	260	35.3%	Yes	5	1	1	25
	Nute Junior High School	Suburb: Small (23)	152	40.1%	No	7-8	1	1	102
	Nute High School**	Suburb: Small (23)	200	31.5%	Yes	9-12	2	2	122
Nashua School District*	New Searles Elementary School	City: Small (13)	438	26.4%	Yes	2, 5	1	6	135
Northumberland School District	Groveton Elementary	Rural: Remote (43)	143	40.6%	Yes	5	2	2	31
	Groveton Middle School	Rural: Remote (43)	101	44.6%	No	6-8	4	4	109
Oyster River School District	Mast Way Elementary School	Rural: Fringe (41)	334	10.0%	No	3-4	4	4	80

Site Name[1]	School Names[1]	Locale[2]	School enrollment[1]	Free / reduced lunch[1,3]	In need of improvement?[1]	Grade levels[4]	Number of Classrooms[4]	Number of Teachers[4]	Number of Students[4]
	Moharimet Elementary School	Rural: Fringe (41)	372	4.5%	No	3-4	3	3	60
	Oyster River Middle School	Suburb: Small (23)	628	5.1%	Yes	8	2	2	160
	Oyster River High School	Suburb: Small (23)	695	4.8%	No	9-12	2	2	40
Pembroke Collaborative SAU 53	Allenstown Elementary School [Allenstown District*]	Town Fringe (31)	273	37.2%	Yes	1, 4	2	3	67
	Armand R. Dupont School [Allenstown District*]	Town: Fringe (31)	116	32.8%	Yes	6-8	2	2	81
	Deerfield Community School [Deerfield District*]	Rural: Distant (42)	485	13.7%	Yes	K, 4, 7-8	3	3	
	Epsom Central School [Epsom District]	Rural: Distant (42)	445	19.2%	No	1, 5-8	4	4	227
	Pembroke Academy [Pembroke District]	Town: Fringe (31)	952	18.9%	Yes	9-12	7	7	341
	Pembroke Hill School [Pembroke District]	Rural: Fringe (41)	246	24.4%	No	4	1	1	19
	Pembroke Village School [Pembroke District]	Town: Fringe (31)	163	32.6%	No	K	1	1	18
	Three Rivers School [Pembroke District]	Town: Fringe (31)	366	27.3%	Yes	5	1	1	86
Pittsfield School District	Pittsfield Elementary School	Rural: Distant (42)	332	43.5%	Yes	1-4	4	4	63
	Pittsfield Middle School	Rural: Distant (42)	84	34.5%	Yes	7,8	4	1	67
	Pittsfield High School**	Rural: Distant (42)	181	30.9%	Yes	9-12	6	3	74
Portsmouth SAU 52*	Portsmouth Middle School	Suburb: Small (23)	540	28.2%	Yes	6-8	10	11	487
Profile School District	Profile Junior High School	Rural: Fringe (41)	103	31.1%	No	7-12	26	30	289
	Profile Senior High School	Rural: Fringe (41)	186	25.8%	No	See above	See above	See above	See above
Raymond School District	Lamprey River Elementary School	Rural: Fringe (41)	604	33.4%	Yes	3-4	12	12	200
Somersworth School District*	Somersworth Middle School	Suburb: Small (23)	542	38.6%	Yes	7	6	6	136

Site Name[1]	School Names[1]	Locale[2]	School enrollment[1]	Free / reduced lunch[1,3]	In need of improvement?[1]	Grade levels[4]	Number of Classrooms[4]	Number of Teachers[4]	Number of Students[4]
Timberlane Regional School District	Timberlane Regional Middle School	Suburb: Large (21)	1077	35.6%	Yes	6-8	3	6	400
White Mountain Regional School District	Lancaster Elementary School	Rural: Remote (43)	456	42.8%	Yes	7	1	1	18
	Whitefield Elementary School	Rural: Distant (42)	357	51.0%	Yes	8	1	1	14
	Jefferson Elementary School	Rural: Remote (43)	94	24.5%	No	2-3	2	2	27
	White Mountains Regional High School	Rural: Distant (42)	419	29.1%	No	10-11	2	1	31

[1] Information from the NHDOE [http://www.education.nh.gov (2009-10 school year)]
[2] Locale information from National Center for Education Statistics (NCES) [http://www.nces.ed.gov (obtained 9/15/2010)]
[3] Free/reduced lunch percentages from the NHDOE, and only include Grade 1 and above; this statistic is used to represent percentage of families in poverty
[4] Information from ARRA Project Managers
*Denotes District In Need of Improvement (DINI)
**Denotes schools on NH's "Persistently Lowest-Achieving Schools" list, from: http://www.education.nh.gov/instruction/integrated/documents/title_i_per_low_ach2009-10.pdf (updated 2/2010)

IV. The Evaluation

A. Scope

As mentioned in the Introduction, this report focuses on the evaluation activities and outcomes for the ARRA 21st Century Classrooms grant only. The data are not yet available for the evaluation of the TLC and Classroom Technology Mini-Grants but they will be included in the Final Evaluation Report. The evaluation and reporting measures the extent to which the activities funded by Title II-D have achieved three major priorities: 1) integrating technology into curricula and instruction, 2) increasing the ability of teachers to teach, and 3) enabling students to meet challenging state academic achievement standards. From these three priorities, five main research questions were developed (see section IV.B); these questions represent the foundation for the findings section of this report.

In addition, this report provides an aggregate analysis of the data collected during the 2009-2010 school year for all ARRA 21st Century Classrooms grants, with the primary focus being on those classrooms receiving and implementing the new technology received from the grant (the treatment group). The findings for each data source are presented by research question and when applicable, comparisons are made to classrooms that did not receive the new technology (the control group). Individual district-level data are also reviewed for each grant recipient in an effort to identify innovative projects that positively impact teacher instruction and student learning, as well as those projects that could easily be replicated by others.

B. Objectives and Questions

Hezel Associates' statewide evaluation of NH's Title II-D grant program activities utilized a multi-tier approach to identify the main research questions that are the crux of this report and all subsequent reporting to the NHDOE and ED. Following from the three major priorities identified by the NHDOE, Hezel Associates developed three evaluation objectives for assessing the effectiveness, transparency, accountability, and equity of Title II-D grant activities. These objectives are:

Objective 1. Assess the degree to which districts receiving Title II-D Ed Tech funding are integrating technology into curricula and instruction as a result of project implementation.

Objective 2. Assess the degree to which districts receiving Title II-D Ed Tech funding have increased the abilities of teachers to teach as a result of project implementation.

Objective 3. Assess the degree to which districts receiving Title II-D Ed Tech funding are enabling students to meet challenging state academic standards as a result of project implementation.

Five research questions were developed by Hezel Associates to further refine the focus of the evaluation and to meet the three main evaluation objectives. These research questions are the main focus of the findings section of this report (see section V.A) and are aligned to the evaluation objectives.

1. How well are school staff members turning classrooms into *technology-rich learning environments*, fully equipped with hardware, software, and rich digital resources for learning? *(Objective 1)*
2. To what degree are these settings encouraging mediating outcomes for students including interactive learning, higher-level thinking skills, and student engagement? *(Objective 3)*
3. To what degree does the provision of technology tools translate into real opportunities for students to collaborate and connect with new content? *(Objective 3)*
4. How are new technologies and resources serving students of various groups, including those with the highest need? *(Objective 3)*
5. How are grantees doing in terms of training teachers not only how to use technology but also how to translate their new skills into practice in their teaching? *(Objective 2)*

In order to measure the degree to which the three identified project priorities were met by the grant activities, both extant data collection instruments developed by the NHDOE and new instrumentation are being used. As the evaluation instruments (discussed further in section IV.C) are aligned with the research questions and designed to measure changes from pre- to post-project implementation, the evaluation team will use descriptive and inferential statistics to assess project impact and success. Qualitative data collected during these same time periods will be used to provide additional context for key findings, as well as provide additional topics for further inquiry.

Most of the data that will be analyzed in the evaluation are quantitative. Therefore, the statistical significance of differences between pre- and post-project scores and between treatment and control groups will be used as the core evaluation criterion. Statistical tests of significance provide estimates of the likelihood that observed differences between pairs of scores (either pre-/post- or treatment/control) are due to chance. This in turn allows for estimations of the confidence level one can have that the program activities have had an effect on the outcomes of interest. In addition, the use of common metrics across the programs will also allow for basic comparisons to be made across the three Ed Tech grant programs.

C. Evaluation Methods

Hezel Associates' statewide evaluation of NH's ESEA Title II, Part D grant program is founded on a mixed-methods approach to answer its research questions. Hezel Associates developed both its own unique instrumentation for the evaluation and also used extant instrumentation that was previously developed by the NHDOE. Instruments used for the evaluation captured both qualitative and quantitative data, allowing for greater depth and breadth for interpreting key findings. Prior to the analysis of data, all questions appearing on the evaluation instruments were aligned with the five primary research questions, resulting in a matrix that outlined each research question and the corresponding data sources that would be used to answer it.

Presented below is a description of each instrument that was implemented during the 2009-10 school year, the first year of project implementation for the ARRA/Title II-D grant recipients. Additional instruments will be implemented during the 2010-11 school year (the second and

final year of project implementation for the ARRA/Title II-D grant recipients) which will be described below and analyzed in the Final Evaluation Report.

Evaluation Sample

The sample for this evaluation includes all teachers and students from the 19 districts that received ARRA/Title II-D grant funding, as well as the 54 districts that received TLC grants, and the 35 districts that received Classroom Technology Mini-Grants. Within the ARRA/Title II-D grant, classrooms receiving the technology (treatment classrooms) were invited to participate in the evaluation as well as classrooms that were not receiving new technology (control classrooms). In some districts, control classrooms were specified by the grant recipients in their local evaluation plan. In districts where no control classrooms were identified, it was requested that the evaluation instruments be distributed to all classrooms school-wide, with those classrooms not receiving the technology serving as the control group.

Due to the earlier start date in program implementation (September 2009) for the TLC grants and Classroom Technology Mini-Grants in comparison to the ARRA/Title II-D grants (January 2010), it was decided that the evaluation instruments would not be distributed to TLC and Mini-Grant participants during the 2009-10 school year. The rationale behind this decision was that the TLC and Mini-Grant participants were halfway through their project implementation by the time the instruments were fully developed whereas the ARRA/Title II-D grant participants were in the beginning stages of implementation. To rectify this timeline difference and ensure data collection requirements will be met, it was decided that the TLC and Mini-Grant participants would receive modified versions of the evaluation instruments—which will include a retrospective pre-/post-test—at the conclusion of their implementation (Fall 2010). As the modified instruments will be distributed during the 2010-11 school year, findings for these two groups will be reported in the Final Evaluation Report only.

Instruments Implemented During the 2009-2010 School Year

NH STaR Chart

The NH School Technology and Readiness (STaR) Chart is an extant instrument developed by the NHDOE to measure district technology proficiency in categories corresponding to four areas: teaching and learning; professional development; administration and support; and infrastructure for technology (see Appendix 4). A listing of all main categories and their sub-categories can be found in Table 4. The instrument was derived from the Massachusetts and Texas charts sharing the same name. Using a provided rubric, the ARRA/Title II-D Project Manager rated the district in each of the sub-categories using a 4-point scale, with 1 representing “Early Tech” and 4 representing “Advanced Tech.”

Table 4. NH STaR Chart Categories

Main Category	Sub-Categories
Teaching and Learning	Impact of Technology on Teacher Role
	Patterns of Teacher Use
	Design of Instructional Setting
	Curriculum Areas
	Patterns of Student Use
Professional Development	Content of Training
	Capabilities of Educators
	Leadership and Capabilities of Building Principals and District Administrators
	Models of Professional Development
	Levels of Understanding
	Universal Access: Integration of Universal Design and Assistive Technology
Administration and Support	Vision and Planning
	Technical Support (hardware, operating system, network)
	Technology Integration Specialist
	Budget Levels
	Budget Allocated for Technology (Total Cost of Ownership)
Infrastructure for Technology	Universal Design and Accessible Technology Considerations
	Students Per Instructional Computer
	Internet Access Connectivity/Speed
	E-Learning Environments
	LAN/WAN
	Other Technologies
	Security

For ARRA grant recipients, this rubric is scored at two points. Submission of this chart was required with the submission of an ARRA/Title II-D proposal (which occurred in Winter 2009-10) and it will be administered again at the end of the grant period.[4] Findings from the NH STaR chart will be reported in the Final Evaluation Report and changes across the two data points will be discussed in detail.

Educator Survey

The Educator Survey (see Appendix 4) is a web-based survey that will be implemented three times: Spring 2010, Fall 2010, and Spring 2011.[5] While the questions on the Educator Survey will remain the same for each round of data collection to measure changes in participant responses over time, the Spring 2010 Educator Survey asked individuals to respond in reference to both the beginning of school year and end of school year. Because the evaluation start date occurred after districts received their grant funds and began planning and implementing project activities, this retrospective pre-test allowed for the collection of baseline data. Subsequent Educator Surveys will ask for respondents to reflect solely on the "current" point in time.

ARRA/Title II-D Project Managers were informed about the Educator Survey and its role in the evaluation by email and they were responsible for distributing the information to teachers. Follow-up emails were sent by Hezel Associates and the NHDOE as needed. In total, 293

[4] Districts that applied only for Mini-Grants or TLC grants were not required to submit this chart with their applications.
[5] TLC and Mini-grant participants did not complete the Educator Survey in Spring 2010.

teachers from 15 ARRA/Title II-D districts completed the Educator Survey in Spring 2010. Of those 293 teachers, 85 were in the treatment group and 208 were in the control group.

The Educator Survey contains 26 questions and is estimated to take approximately 15 minutes to complete. Survey questions ask teachers to indicate the type(s) of technology purchased with the grant funds; its type and frequency of use by teachers and students; perceived impact technology has on student motivation/engagement; school and district support for teachers' use of instructional technology; and professional development and support received.

As mentioned above, the Spring 2010 Educator Survey captured baseline data and data corresponding to the conclusion of the first five months of project implementation (January to June 2010). The data are a principal component in answering the key research questions. Data were analyzed to see whether (and how) teachers' use of technology in instructional settings changed in the early stages of project implementation, whether changes in teachers' attitudes impacted technology use, as well as differences in use or attitude between control and treatment groups. In addition, grantees received their district-specific raw data (with respondent identifying information removed) and a corresponding analysis file. The district-specific data file included an aggregate analysis of all survey questions presented in tabular and graphic form, to be used for formative evaluation purposes.

NH District and School Technology Surveys

The NH District and School Technology Surveys consist of three separate web-based surveys and are extant instruments developed by the NHDOE. The surveys were administered in Spring 2010 and will be administered again in Spring 2011. All survey questions will remain unchanged for each round of data collection to measure changes in survey responses over time.

The NH District Technology Survey was completed by each district receiving ARRA/Title II-D grants funds and two NH School Technology Surveys (ICT Literacy and Professional Development, and Technology Access) were completed by each school implementing an ARRA/Title II-D grant project.[6] ARRA/Title II-D Project Managers were informed about the district and school technology surveys in an email facilitated by the NHDOE. Additional follow-up communications were sent by Hezel Associates and the NHDOE as needed. As these surveys asked for specific technical information, such as the technology building infrastructure, the Project Manager often forwarded the surveys to a district or school staff member that was most able to answer the survey questions. This person was often a technology director/coordinator or a school administrator. In total, 23 ARRA/Title-IID districts representing 19 individual or consortium grants completed the NH District Technology Survey, 40 schools completed the NH School ICT Literacy and Professional Development Survey, and 40 schools completed the NH School Technology Access Survey.

The NH District and School Technology Surveys aim to capture data on the technology infrastructure in schools and districts. The data were analyzed using descriptive statistics to summarize the amount and types of technology present in districts and schools at the beginning

[6] TLC and Mini-Grant participating districts/schools will complete these surveys for the first time in Fall 2010.

stages of project implementation. The Spring 2011 surveys will provide identical measures and comparisons across the two data points will provide an understanding of how the ARRA/Title II-D grant program has impacted technology infrastructure.

NH District Technology Survey

The NH District Technology Survey (see Appendix 4) contains 36 questions. No time estimates were given for the survey. The instrument was available in Microsoft (MS) Word format to ease data collection and the data were then entered into a web-based form. Survey questions asked about district-level Internet filtering, Internet connectivity (e.g., ISP provider, bandwidth, age and speed of connections), email solutions, IT staff members, technology maintenance and support, technology budgets, and planned technology upgrades.

NH School Technology Access Survey

The NH School Technology Access Survey (see Appendix 4) contains 38 questions. As with the NH District Technology Survey, no time estimates were made for completion and it was anticipated that data collection would occur using the MS Word version of the form, which was then entered into the web-based form. Survey questions asked about the quantities and types of computers and other technologies available in the school, software used, teacher and student access to online resources (e.g., presence of teacher and student accounts on the district/school network), and technical support available.

NH School ICT Literacy and Professional Development Survey

In addition to the NH School Technology Access Survey, all schools receiving ARRA grants were asked to complete the School NH ICT Literacy and Professional Development Survey (see Appendix 4). The 21 question survey asks about school-level processes to address and assess ICT Literacy standards, Internet safety, student use of digital files and portfolios, and staff professional development needs and participation.

Focus Group Protocols

Focus group visits to districts receiving ARRA/Title II-D grant funds are scheduled to take place twice during the evaluation period. The first visit to grantee sites occurred between March 22 and April 2, 2010 and the second visits are planned for March 2011.[7] Hezel Associates scheduled the focus group visits by contacting the project manager from each site and requesting date preferences for the visit. A staff member from the Hezel Associates evaluation team conducted two focus groups at each site: one with administrators (including technology directors, integrators, and coordinators) and one with teachers. This arrangement was intended to limit group size and promote full disclosure by eliminating possible hierarchical tensions. In total, 36 focus groups were conducted with a total of 77 administrators and 145 teachers. Not all teachers were grant recipients as some site Project Managers invited non-grantee teachers to participate in the discussion as control group members.

The focus groups generally lasted between 45 to 90 minutes and were facilitated by a Hezel Associates staff member using a pre-scripted protocol (see Appendix 4). The discussions were

[7] One site was not visited in March 2010, as it received grant funding after the focus groups had been conducted.

recorded (with participants' approval) to enhance the researcher's note-taking. The questions on the administrator and teacher protocols were nearly identical and focused on school/district culture, technology use prior to the ARRA/Title II-D grant, factors impacting implementation, professional development, dissemination, and impacts on student achievement.

The March 2010 focus groups aimed to capture baseline data prior to district's receipt of the ARRA/Title II-D grant funds and the anticipated outcomes associated with project implementation. These qualitative data, along with other data captured from additional evaluation instruments, will help answer the research questions. In addition, district-specific summary reports of the March 2010 focus groups were provided to all grantees for formative evaluation purposes.

The protocols that will be developed for the March 2011 focus groups will contain similar questions as the March 2010 protocol to allow for comparisons to be made between the two. In addition, questions about project sustainability and best practices will be added to the latter interview protocol.

Instruments to be implemented in the 2010-11 School Year

Three evaluation instruments will be implemented for the first time in Fall 2010. While these instruments will be described more fully in the Final Evaluation Report, brief summaries are provided below. These instruments are the Case Study Report, the Classroom Walkthrough Tool, and the Student Survey for Grades 4-12.

NH Case Study Report

The NH Case Study Report is an instrument developed by the NHDOE to gather data from grant recipients on the impact their ARRA/Title II-D project is having on the school, teachers, and students. The instrument collects descriptive information from participating schools and provides grant recipients an opportunity to "tell the story." The form contains 31 questions and includes topics such as general project information; planning and implementation challenges; role of evaluation and known/anticipated outcomes; areas for project improvement; and dissemination of project outcomes.

The Case Study Report is completed by the ARRA/Title II-D grant Project Manager in consultation with other project participants and will be implemented in Fall 2010 and Spring 2011.[8] Districts receiving only Mini-Grants or TLC grants will be required to submit the form only in Fall 2010 as that time period aligns with project completion.

Classroom Walkthrough Tool

The Classroom Walkthrough Tool was developed by Hezel Associates to document technology integration in classrooms. Information is recorded on the 25 item instrument pertaining to teaching style and strategies, technology use, technology integration, and student engagement (see Appendix 4). Each observation takes approximately five minutes.

[8] Some question items from the Fall 2010 Case Study Form were included in their interim report to provide additional project context (e.g. project/activity descriptions).

The Walkthrough Tool will be implemented during the 2010-11 school year, with treatment and control teachers in schools receiving ARRA/Title II-D grant finding being observed once a week over the course of the school year. The walkthrough observations occur either announced or unannounced. To ensure that teaching and learning are not disrupted, there are no interactions between the observer and teacher or the observer and students. The individuals conducting the observations vary by school; the schools will take a peer approach and utilize coaches, team teachers, and principals to increase their school's capacity for this activity, per the NHDOE's recommendation. As the Classroom Walkthrough Tool may contain terms that are new and/or unfamiliar to the observer, a technical document was created to support the tool and to give guidance on all terms appearing in the walkthrough instrument. Districts receiving only mini-grants or TLC grants are not required to implement the Classroom Walkthrough Tool due to the projects being completed by Fall 2010.

Student Survey for Grades 4-12

The Student Survey for Grades 4-12 was developed by Hezel Associates and will be distributed to schools in Fall 2010 and Spring 2011. The questions appearing on the Student Survey will remain the same for both rounds of data collection to allow for the assessment of changes in student responses over time. The survey is available in both web-based and hard copy formats and exists in two versions: one for students in the experimental/treatment group (classrooms receiving the new technology) and another version for students in the control/comparison group (classrooms not receiving the technology).

The Student Survey contains a total of 19 questions and is estimated to take approximately 15 to 20 minutes to complete (see Appendix 4). Students in Grades 7-12 are asked to complete all survey questions. Students in Grades 4-6 are given only a subset of survey questions (questions 1-14). Because research suggests that surveying children in grades three and below often leads to questionable results, it was decided that students in grades three and below would not be surveyed.[9]

The Student Survey contains questions about students' technology use inside and outside of school, the types of technologies they use, locations of their use, frequencies of use, and the amount of assistance needed. In addition, attitudinal questions measuring the impact of technology on areas such as student engagement and motivation were included. Districts receiving only mini-grants or TLC grants are not required to implement the Student Survey.

The evaluation matrix is presented below (see Table 5).

[9] Borgers, N., de Leeuw, E., & Hox, J. (2000, April). Children as respondents in survey research: Cognitive development and Response quality. *Bulletin de Methodologie Sociologique*, *66*, 60-75.

Table 5. Evaluation Matrix

Key Questions	Data Sources	Data Collection Methods/ Instruments*	Performance Indicators/Success Standards	Methods for Data Analysis
RQ1	Educator Survey	Surveyed participating ARRA educators (S10, F10, S11)	Increase in tech. availability; Increased % of teachers using tech. with students; Increase in the *types* of tech. being used; Improved comfort level with tech.; Improved perceived value of classroom tech.	• Descriptive statistics/ Frequencies • Open-ended coding • Crosstabulations on demographic/ key variables • Measurement of outcomes across data points; Inferential statistics to find statistically significant changes
	NH District Technology Survey	Surveyed participating ARRA technology director/ coordinator (S10, S11)	Increased quantity, range and quality of tech. provisions in relation to budgetary and support measures	
	NH School Technology Access Survey	Surveyed participating ARRA technology director/ coordinator (S10, S11)		
	NH School ICT Literacy and Professional Development Survey	Surveyed participating ARRA technology director/ coordinator (S10, S11)	Increases in staff dedicated to ICT initiatives; Increased capacity to incorporate ICT instruction across grades; Increased breadth of internet safety instruction across grades	
	Teacher Focus Groups	Surveyed participating ARRA educators (S10, S11)	Increased reports of successful tech. implementation, solutions to challenges, detailed tech. and collaboration plans, and improved comfort with tech.	
	Administrator Focus Groups	Surveyed participating ARRA administrators (S10, S11)	Increased reports of successful tech. implementation, solutions to challenges, detailed tech. and collaboration plans, and improved comfort with tech.	
	NH Case Study Report	Surveyed participating ARRA Project Manager (F10, S11)	Increased teacher involvement; reported solutions to planning and implementation challenges; increased breadth of project priorities	
RQ2	Educator Survey	Surveyed participating ARRA educators (S10, F10, S11)	Increase in frequency and complexity of student learning using tech.	
	NH School ICT Literacy and Professional Development	Surveyed participating ARRA technology director/	Increase in number of 8th graders that meet the ICT competency requirements; other noted improvements in assessing ICT skills	

Key Questions	Data Sources	Data Collection Methods/ Instruments*	Performance Indicators/Success Standards	Methods for Data Analysis
	Survey	coordinator (S10, S11)		
	Teacher Focus Groups	Surveyed participating ARRA educators (S10, S11)	Increased reports of perceived and observed student impact, and of improved commitment to student achievement via tech. use	
	Administrator Focus Groups	Surveyed participating ARRA administrators (S10, S11)	Increased reports of perceived and observed student impact, and of improved commitment to student achievement via tech. use	
	NH Case Study Report	Surveyed participating ARRA Project Manager (F10, S11)	Reports of improved student impact and gains in achievement	
RQ3	Educator Survey	Surveyed participating ARRA educators (S10, F10, S11)	Increased opportunities for collaboration and kinetic learning using tech.	
	NH School ICT Literacy and Professional Development Survey	Surveyed participating ARRA technology director/ coordinator (S10, S11)	Increase in number of 8th graders that meet the *communication & collaboration* component of ICT literacy standards	
	Teacher Focus Groups	Surveyed participating ARRA educators (S10, S11)	Increased reports of using tech. to provide opportunities for collaboration and kinetic learning	
	Administrator Focus Groups	Surveyed participating ARRA administrators (S10, S11)	Increased reports of using tech. to provide opportunities for collaboration and kinetic learning	
	NH Case Study Report	Surveyed participating ARRA Project Manager (F10, S11)	Increased emphasis on/observations of community and collaboration among student tech. use	
RQ4	Educator Survey	Surveyed participating ARRA educators (S10, F10, S11)	Increased capacity to personalize learning activities	
	Teacher Focus Groups	Surveyed participating ARRA educators	Increased reports of using tech. to differentiate learning	

Key Questions	Data Sources	Data Collection Methods/ Instruments*	Performance Indicators/Success Standards	Methods for Data Analysis
		(S10, S11)		
	Administrator Focus Groups	Surveyed participating ARRA administrators (S10, S11)	Increased reports of using tech. to differentiate learning	
	NH Case Study Report	Surveyed participating ARRA Project Manager (F10, S11)	Increased reports of emphasizing tech. literacy for *all* students; reports of improved approaches for differentiation	
RQ5	Educator Survey	Surveyed participating ARRA educators (S10, F10, S11)	Improvements in perceived efficacy of professional development; Increased frequency of professional development activities	
	NH School ICT Literacy and Professional Development Survey	Surveyed participating ARRA technology director/ coordinator (S10, S11)	Increased % of staff participating in professional development activities; improved availability for/access to professional development	
	Teacher Focus Groups	Surveyed participating ARRA educators (S10, S11)	Improved frequency of/satisfaction with training	
	Administrator Focus Groups	Surveyed participating ARRA administrators (S10, S11)	Improved frequency of/satisfaction with training	
	NH Case Study Report	Surveyed participating ARRA Project Manager (F10, S11)	Increased priority and breadth of professional development	

*S=Spring; F=Fall

Limitations

There are three known limitations that impacted data collection and analysis. The first limitation is that while the Educator Survey contained two variables for teachers to identify themselves as 1) a participant in the ARRA/Title II-D grant, and 2) a treatment or control teacher within the ARRA/Title II-D grant, the data from the Spring 2010 survey clearly showed that teachers were frequently unsure of how to answer these two questions. As these questions are critical for the evaluation team to identify participating teachers (and the basis for the analysis), the resulting Educator Survey sample was much smaller than it could have been. Also, missing responses or individuals who selected "I don't know" were not able to be re-categorized as identities could not be traced to participating schools because anonymity was guaranteed to respondents. To minimize this issue in future surveys, Hezel Associates and the NHDOE communicated to Project Managers the importance of providing teachers with the necessary details about the grant and their roles.

Second, data from one school were not included in the Educator Survey analysis due to the evaluation team being notified of their participation in the ARRA/Title II-D grant too late for their Educator Survey data to be included in this report. However, this school is represented in all other school-level analyses that appear within this report as the evaluation team was able to incorporate the information within the reporting timeframe. All data corresponding to this school for the 2010-11 school year will be included in the Final Evaluation Report, submitted at the conclusion of the grant period.

Third, overall participation in the evaluation data collection instruments for the 2009-10 school year was low, primarily because instruments were finalized and distributed close to the end of the school year. To minimize this issue in the future, the instruments will be distributed in early Spring 2011 for the second round of data collection.

V. Results

A. Findings By Research Question

This section provides an aggregate analysis of the data collected during the 2009-10 school year for all ARRA 21st Century Classrooms grants, with the primary focus being on those classrooms receiving and implementing the new technology received from the grant (the treatment group). The findings for each data source are presented by research question and comparisons are made to classrooms that did not receive the new technology (the control group) when applicable. Individual district-level data are also reviewed for each grant recipient in section V.B in an effort to identify innovative projects that have positively impacted teacher instruction and student learning as well as those projects that could easily be replicated by others.

Rates of Return

In total, 19 sites in NH received ARRA/Title II-D funding. These sites span 23 districts and consist of 40 individual schools. Seven instruments were used to gather evaluation data during the 2009-10 school year.

Four instruments had 100.0 percent rates of return. An administrator from each of the 40 individual schools participating in the ARRA/Title II-D grant completed the NH School ICT Literacy and Professional Development Survey, and the NH School Technology Access Survey. One administrator from each of the 23 districts completed the required NH District Technology Survey. The NH STaR Chart was completed by site administrators (n=19).

In spring 2010, Hezel evaluators conducted administrator and educator focus groups at 18 out of the 19 sites participating in the ARRA/Title II-D grant. No focus groups were conducted at Northumberland School District, as their participation in the ARRA/Title II-D grant began after the focus groups had been conducted.[10] Overall, educator focus group sizes ranged from four to 16, with an average of eight participants per group. Administrator focus group sizes ranged from one to nine, with an average of four participants per group.

The Educator Survey was distributed to 225 teachers across the forty schools. The response rate was 37.8 percent. The 85 respondents came from 24 of the 40 schools and 14 of the 19 sites in the program.

Data Analysis

The quantitative data from the surveys were analyzed using descriptive statistics, including frequencies and crosstabulations, for a more in-depth understanding of implementation from the perspective of educators and administrators. The focus groups were transcribed non-verbatim, though key quotes from individuals were manually recorded. Qualitative analysis of open-ended survey questions and focus group summaries and quotes were performed by coding and grouping responses into commonly occurring themes. Evaluators relied on multiple data checks

[10] Northumberland district administrators and educators will participate in the Spring 2011 focus groups.

throughout the analysis and reporting process to ensure data accuracy, including follow-up communications with project participants regarding all unclear data.

Baseline findings below are cultivated from Spring 2010 data collection efforts and are organized by research question. Unless otherwise indicated, findings represent feedback from ARRA/Title II-D grant recipients and educators in the treatment group.

1. RQ1: How well are school staff members turning classrooms into technology-rich learning environments, fully equipped with hardware, software, and rich digital resources for learning?

At this early stage in project implementation, technology integration is growing among ARRA-participating districts and schools, despite the variety of technical provisions, solutions and capabilities among the sites. While these variations have implications for differing degrees of challenges and successes throughout the life of the project, participants appear universally dedicated to cultivating a sustainable culture of meaningful technology use in their schools. There are prominent differences in technology usage emerging between the teachers with access to the grant resources and those in the control group, with treatment teachers demonstrating increased frequencies of use across a variety of technologies, increased confidence in their technological abilities, and increased use of pedagogical applications. These reported pedagogical developments may be a result of educators' increased confidence in using technology in the classroom which has grown substantially more than the confidence of the control group.

Lastly, early technological provisions and infrastructure were examined across schools and districts. Gauging a school's support system is crucial to measuring the extent to which new technology can have the intended impact, particularly at a more widespread (among-school) level. While these provisions are currently varied, evaluators will be tracking the technology in place throughout the life of the grant to assess not only their impact on classroom implementation, but also the potential impact on school-wide infrastructure and practices.

District-Level Support and Infrastructure

Technical Access at the District Level

There appears to be a variety of technical provisions, solutions and infrastructure capabilities across ARRA districts, as indicated by respondents to the NH District Technology survey.

Respondents reported using a variety of Internet service providers, and several reported using more than one in their district. *Comcast* (38.1%) and *Metrocast* (28.6%) were the most popular providers. Bandwidth committed to districts was roughly evenly split between Integrated Services Digital Network (ISDN) Digital Subscriber Line (DSL) broadband/cable or fractional T1 (43.5%) and full T1 ATM or greater (56.5%); no one reported using dial-up or having no connection.

There is no single predominant Internet filter used by the districts, as their "market share" is evenly distributed across *Sonic Wall* (26.1%), *iPrism (St. Bernard)* (21.7%) and *WebSense* (21.7%). The greatest proportion of districts (39.1%) only retain their filtering log files for a

maximum of seven days while 26.1 percent keep the logs for up to 90 days. Respondents generally indicated (78.2%) spending eight hours or less each month on filter maintenance and block/unblock requests. One-third of districts rely on *Sonic Wall* for their firewall solution while a handful use *Juniper/Netscreen* or *Cisco ASA*. For their library automation systems, districts prominently use *Sagebrush Spectrum (Winnebago)* (31.8%) or *Follett* (27.3%). While more than half of the districts (52.2%) have no curriculum mapping software, the remainder primarily uses *TechPaths* (21.7%) or *CurriculumMapper* (13.0%).

The majority of districts (73.9%) reported that they expect teachers to use their school or district email addresses as a primary school communication tool; however, the same percentage do not have a policy requiring this. Districts use a variety of email solutions, with the most common being *MS Outlook* and *Novell Groupwise*. Nearly half of the respondents (47.8%) reported that fewer than five hours are spent each month on email maintenance while another 26.1 percent spend between five and eight hours. In the case of an Internet outage at one of the district's schools, information will usually be disseminated by school staff/users (68.4%), though some districts will notify its staff through an electronic notification system (36.8%).

Regarding service and support, districts were split between having one part-time or full-time IT staff at the district level (39.1%) or two full-time staff (34.8%); 21.7 percent have five or more full-time IT staff members. Technical support services provided by the district (e.g., hardware, applications, curriculum integration) are typically less differentiated among IT staff members in districts with fewer IT staff in comparison to districts with larger IT staff. In districts that have only one or two IT staff members, the majority of these support services are provided by these same individuals (77.8%). For support in hardware maintenance, applications software, and 21st century learning powered with technology, over half of districts use their district tech coordinator/staff (56.5%-69.6%) or a full-time district-level technology staff member to serve multiple buildings (56.5%-65.2%). The remainder of districts (30.4%-47.8%) pay an external provider (an IT company, individual, or local education support center) on either a full year or per diem basis to provide this support.

Budgets allocated to district technology spending (hardware, software, connectivity, and support) appear to be rather stable over time, though schools with initially low budgets ($50K or less) are planning to increase their expenditures. Further, actual amounts are increasing slightly over time, as mean expenditures have been rising since the 2008-09 school year (see Table 6).

Table 6. Locally budgeted amounts for district technology

School year	N (districts)	Min	Max	Mean
2008-09	23	$5,000	$1,364,438	$274,446
2009-10	23	$6,000	$1,467,047	$291,565
2010-11	21	$30,000	$1,687,374	$315,432

Perceptions of Grant Provisions at the District Level

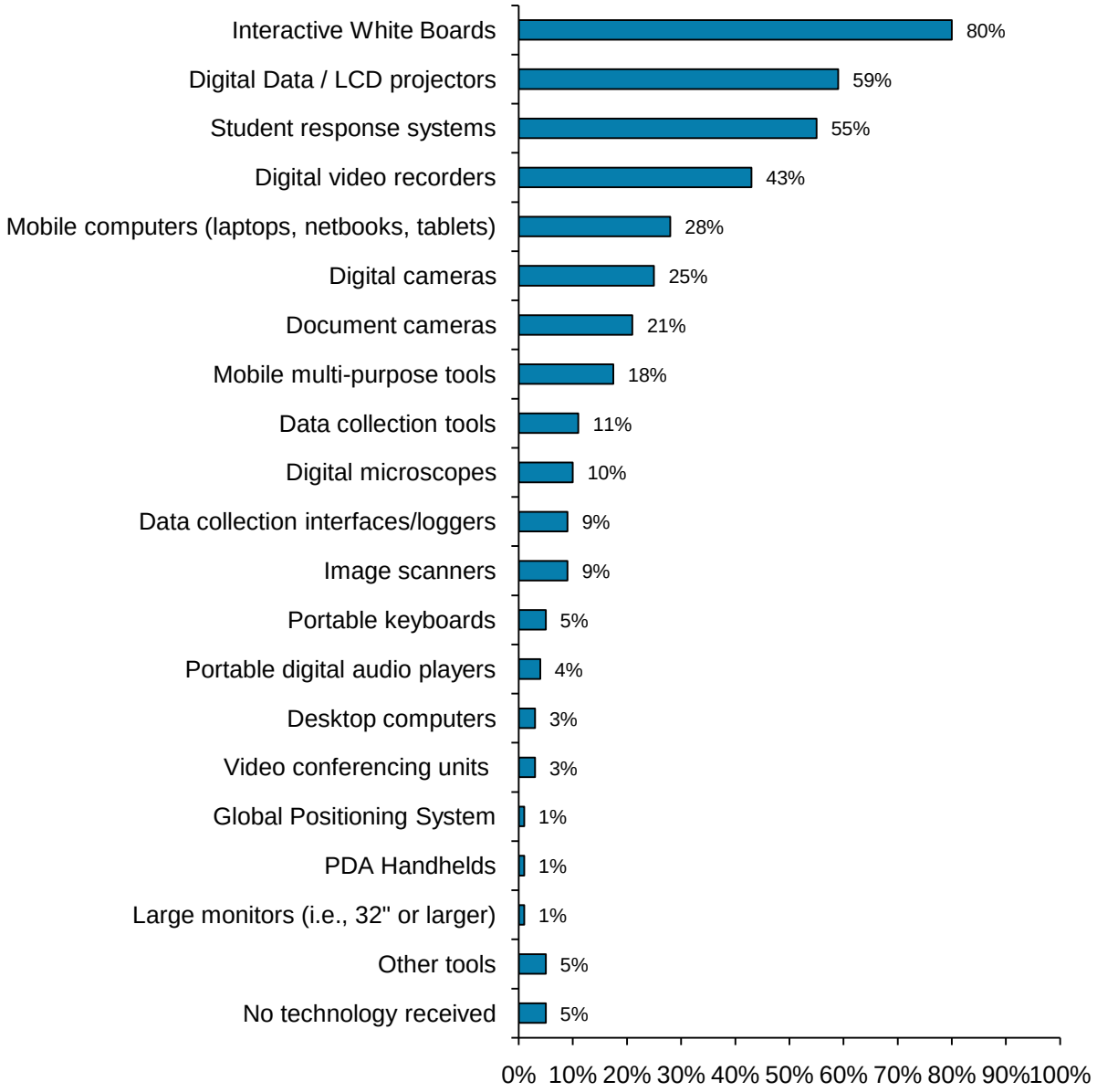
Prior to the ARRA/Title II-D grant, sites had varying levels of technology access for teachers which, in turn, impacted their level of use. Information obtained through focus groups indicated that some teachers had moderate to large amounts of equipment in their own classrooms, while others described the need to borrow shared equipment or did without those resources altogether. Prior to grant implementation, some teachers had only used basic or outdated technologies (e.g.,

computers, overhead projectors and televisions), while others had used more advanced tools (e.g., interactive white boards, digital projectors, document readers, and digital cameras). Frequency of use had also varied before the grant award, as did the content areas for which technology was used – though several resources cited by participants revolved around math, science and language arts.

Educators responding to the Educator Survey in Spring 2010 generally reported that they had received the technology funded by the ARRA/Title II-D grant – 44.7 percent had attained all of it and another 43.5 percent had received at least some of the appropriated technology. Of those educators who had received resources, almost all (91.0%) had begun using them with their students. Information obtained during the focus groups conducted at the ARRA/Title II-D sites verified this information, and also revealed that variation existed regarding the turn-around time to receive ARRA Ed Tech grant funds, thus impacting the receipt of the purchased technology. In several cases, teachers were presently using the technology in their classrooms, as indicated in the survey responses above; however, some groups considered September 2010 a more reasonable start date for project implementation. A number of sites planned to use the summer to install, configure, and test-run new hardware and software.

The types of technology purchased with grant funds to meet project needs predominantly include interactive white boards, followed by digital data/LCD projectors and student response systems (see Figure 1).

Figure 1. Technology hardware purchased with ARRA funds for classroom use as reported by educators (treatment; n=80)



Note: the graph above represents the percentage of educators who reported that their school/district purchased the technology hardware listed for use in their classroom. For example, 80 percent of educators reported that their district/school purchased interactive whiteboards with ARRA grant funds for use in their classroom.

School-Level Support and Infrastructure

The NH School Technology Access Survey was completed at 40 schools, typically by tech directors/coordinators and other specialists, but occasionally by principals or other school-level officials. As at the district level, school technology provisions are considerably varied. Schools typically had more PCs than Mac equipment. Half the responding school representatives reported no Mac computers, while the remaining institutions indicated ranges from one to 200

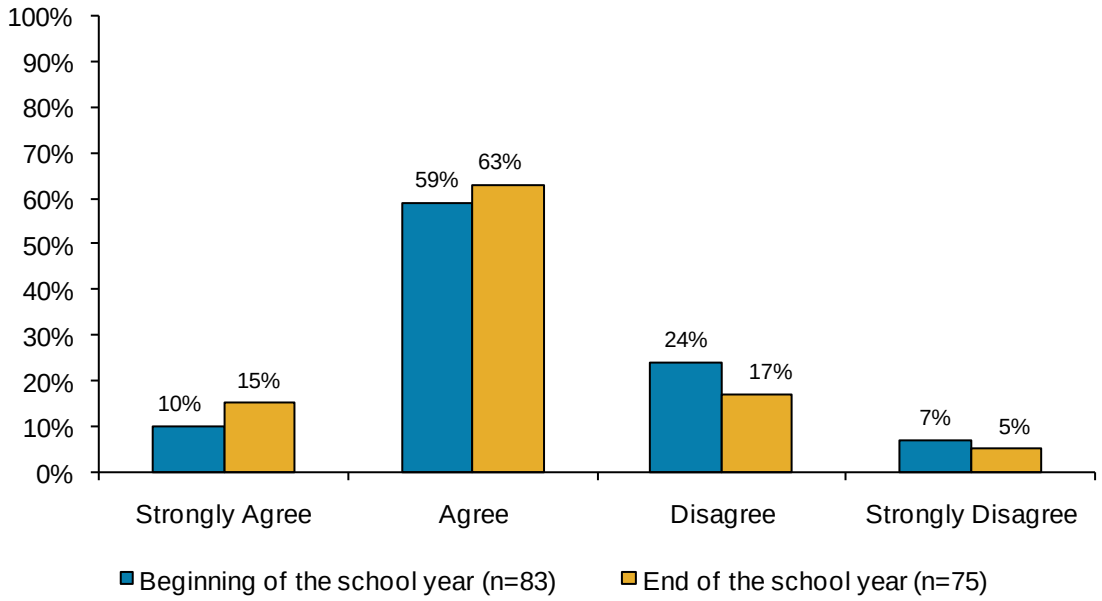
Macs (M=36.3). Meanwhile, almost all schools have PCs and more than half (55.6%) reported PC computer counts in the hundreds. Several schools have considerable numbers of thin client and netbook computers; more than half of the respondents reported having 50 or more of these computers. Only five schools reported not having this type of equipment.

All schools have fewer than 10 mobile computer labs, with an average of 3.2 mobile computer labs per school (15.0% of schools have no dedicated mobile computer labs). On average, there are 32.3 instructional rooms per school building. These mobile computer labs are typically shared among several classrooms (M=20.9) and nearly half (47.4%) the schools share these labs among 20 or more classrooms. Most schools provide at least some of their teachers with computers, though desktops are more commonly distributed for professional use (M=22.5 teachers per school have a desktop computer) than laptops or netbooks (M=15.4). Several kinds of digital presentation tools are also available in schools, with classrooms wired for cable television (M=26.8 classrooms per school; 70.3% of instructional classrooms have access), digital/LCD projectors (M=14.0; 50.4% of classrooms have access), and interactive whiteboards (M=9.4; 37.1% of classrooms have access) being most common. Widely available digital handheld tools include graphing calculators (M=17.8 per school; average school student enrollment is 430.0), digital cameras/camcorders (M=15.1 per school), and portable keyboards (M=11.8 per school), and are likely rotated among classrooms for use by individual students or pairs of students. Most reporting schools (81.8%) have also adopted Google Docs for staff use, but fewer than half (45.5%) have adopted Google SketchUp.

In examining connectivity, school representatives overwhelmingly reported that all teachers have accounts set up on the network (92.5%), email accounts are provided to them (97.5%), and teachers can access their accounts outside of the school network (97.5%). However, teachers from only 40.0 percent of the schools are permitted to access their school files outside of school. Further, only 35.0 percent of schools have a policy or expectation for teachers to maintain a class website for communications with parents and students.

Over half of surveyed teachers reported that computer labs were generally available when needed for their students, at both the beginning (59.8%) and the end (60.0%) of the school year. Teachers also widely believed that their schools' technology functioned properly and more felt that this was the case at the end of the year than they did at the beginning (77.3% vs. 68.7%; see Figure 2); by comparison, just over half of control teachers (57.2%) reported that their technology functioned properly at the year's end.

Figure 2. The technology at my school is functioning properly (treatment)



Further, educators increasingly found they receive sufficient support for successfully using technology with their students. At the beginning of the 2009-10 school year, just over half (59.1%) of grant teachers felt this support was adequate. This rate increased to 72.7 percent near the end of the year (and only 58.6% of control group teachers were satisfied with this support at the same time). Likewise, ARRA teachers predominantly cited substantial *curriculum* support for integrating technology with their students (77.4% agreed/strongly agreed) by the end of the school year, compared with 58.3 percent of educators at the start of the year (and compared with just half of control group educators throughout the year).

As reported by 31 school technology specialists and administrators on the NH School Technology Access Survey, *hardware maintenance* is provided predominantly by paid full time (48.4%) *or* part time staff (41.9%) dedicated to this service; this is also the case for *software support* (out of 33 respondents: 42.9% full time; 37.1% part time), though nearly one-third of respondents indicate this support is also provided by school staff who are reimbursed with stipends for their services (31.4%). Support for *curriculum integration* is also provided but to a lesser extent (as reported by only 26 schools) by full time dedicated staff (42.3%), part time staff (42.3%), and reimbursed school staff (42.3%). Few schools rely on staff or students for these supports without offering compensation.

In focus groups at implementation sites, teachers and administrators mentioned several barriers or difficulties that could potentially impact technology usage, including:

- equipment functionality (not having troubleshooting knowledge or sufficient access to a technology support person);
- Internet connectivity, speed and infrastructure (e.g., network, server);
- monitoring of students for on-task and appropriate use;
- variances in students' ability to electronically complete homework or practice at home (e.g., lack of internet access, no printer ink, product control issues); and

- building infrastructure limitations, particularly in older schools (e.g., number of outlets, power limits, classroom size).

However, participant also identified a number of *helpful* factors impacting implementation, such as:

- time being provided for learning, practicing, planning, sharing with other teachers, and implementing;
- training that not only covers the "how-to's," but also provides suggestions for curriculum integration;
- patience by teachers, students, and administrators; and
- recognition of first-year start-up dynamics, such as the presence of a learning curve and potentially low implementation levels.

Teacher Practice

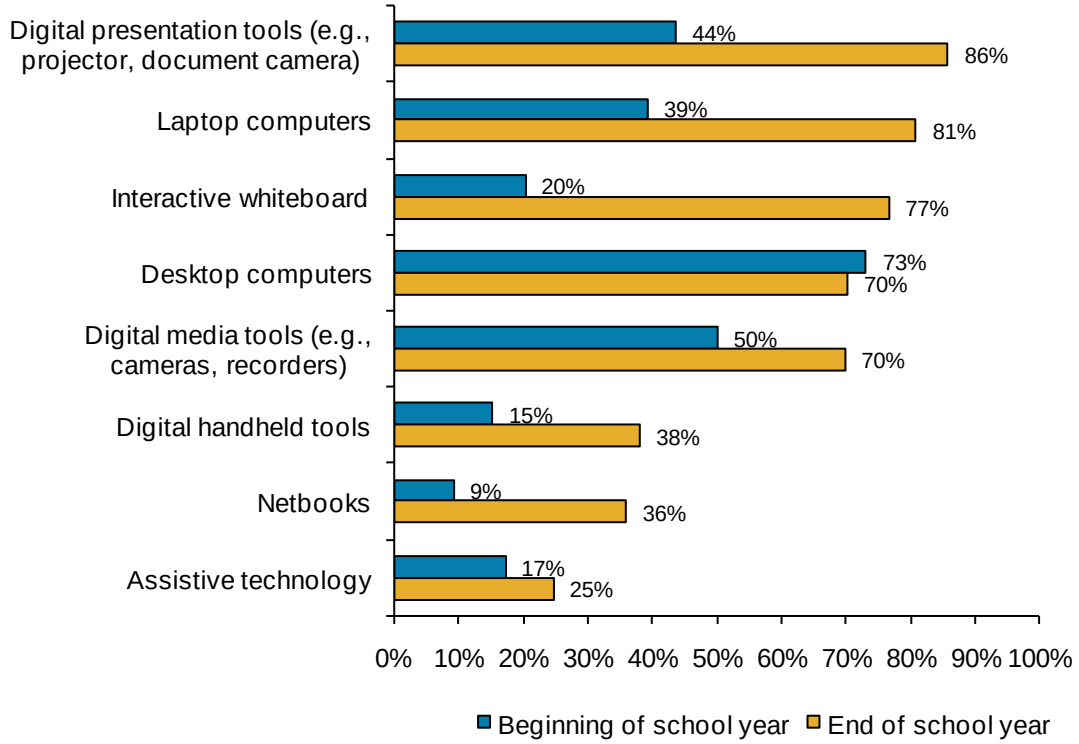
Nearly half of all educators surveyed (46.5%) indicated they plan to devote more than half their class time to student technology use.

Examining frequency of use on a more granular level, there was a substantial reported increase among educators who used technology with students on a *daily* basis, from 17.9 percent before ARRA/Title II-D project implementation to 53.2 percent at the year's end (compared to 24.9% of control teachers by the same point). Furthermore, 80.5 percent of teachers used the resources in their instruction at least two times each week at the end of the year (up from 41.7% initially).

While approximately half of the educators are implementing a one-to-one intervention with regular individual student access to the technology, the other half of the teachers are either not incorporating the resources in this way (21.7%) or are unsure how implementation will ultimately look (26.5%).

While desktop computers remained a popular instructional tool specifically for teacher use throughout the year, several other technology resources saw sharp increases in reported instructional use by teachers. By the end of the year, use of laptops, interactive whiteboards and digital presentation tools surpassed that of the desktop, followed closely by digital media tools (see Figure 3).

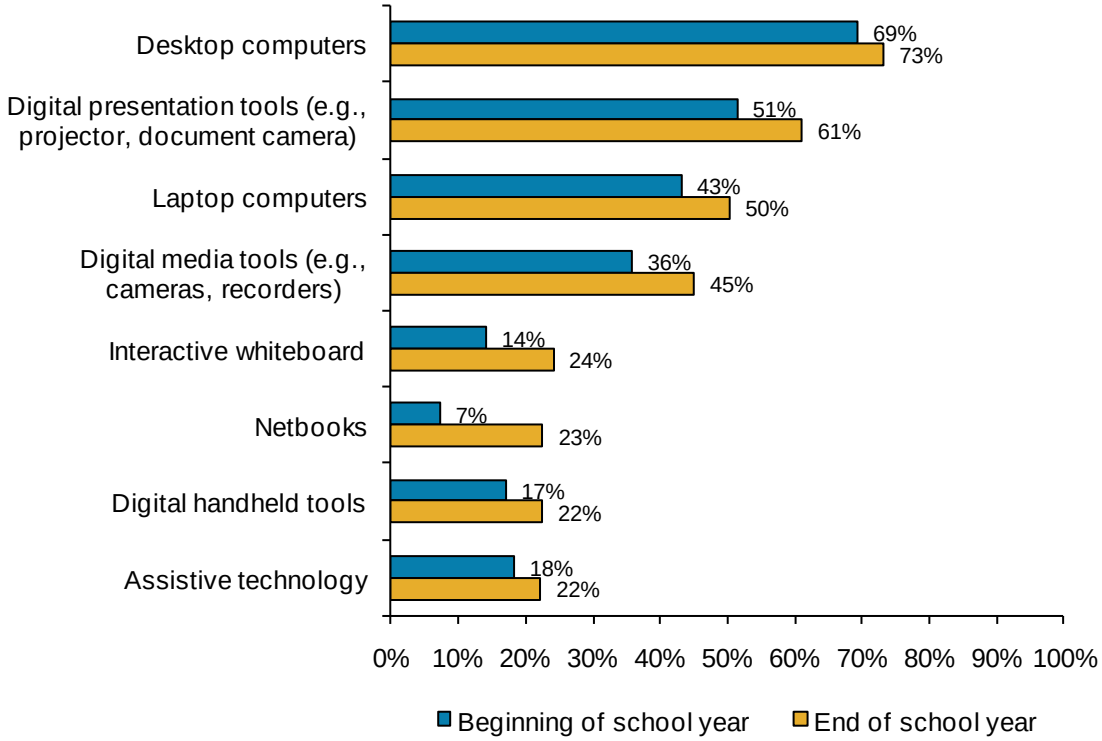
Figure 3. I design instruction that requires the use of these technologies by the teacher (treatment).*



*The number of respondents ranged from 64 to 81 due to missing data.

At the beginning of the year, teachers in both the control group and the treatment group had used these various technologies in their instruction in approximately the same numbers (see Figure 4). However, as seen in the above figure, usage among treatment teachers increased notably throughout the latter part of the school year when the technology was being implemented. In contrast, control teachers saw only very minor increases in incorporating these tools (with the exception of netbook usage, jumping from 7.3% of control teachers to 22.6% later in the year).

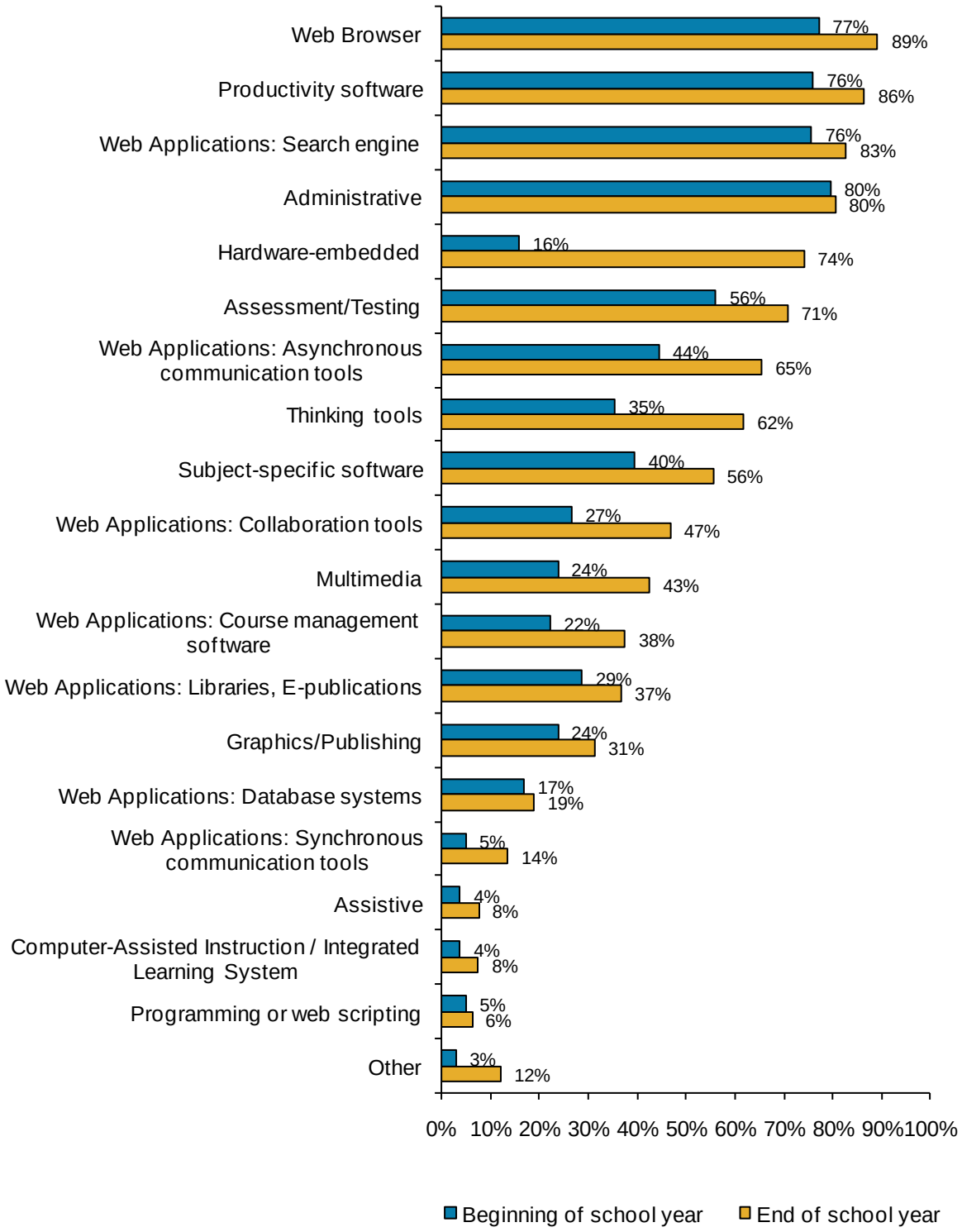
Figure 4. I design instruction that requires the use of these technologies by the teacher (control).*



*The number of respondents ranged from 164 to 195 due to missing data.

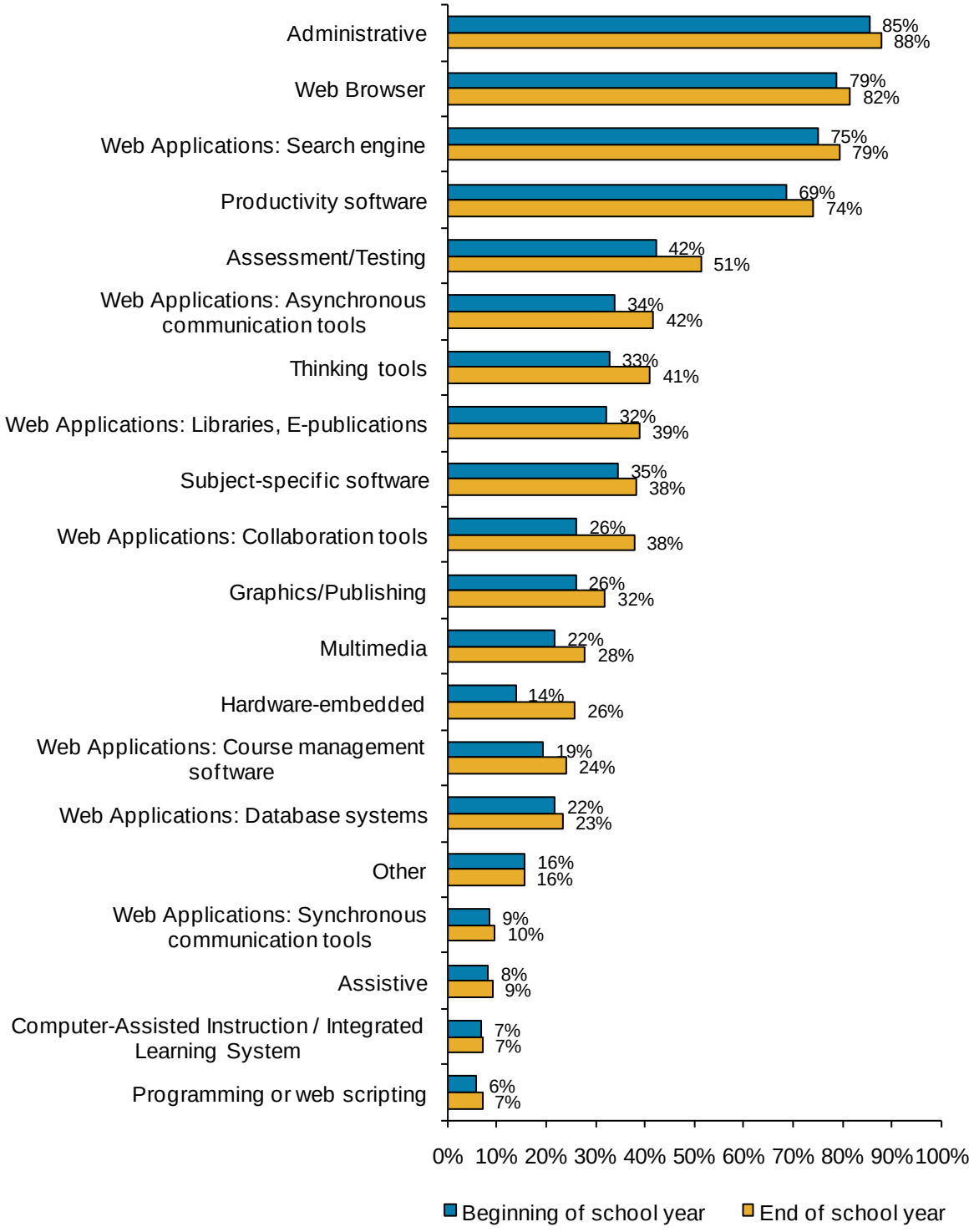
Administrative applications, productivity software, search engines and web browsers remained popular computer applications among ARRA teachers, typically being administered in student instruction by greater than three-quarters of educators. However, other applications saw climbs in usage throughout the school year – particularly hardware-embedded resources (e.g., interactive whiteboard, GPS/GIS), which were used by 71.4 percent of educators post-implementation (up from 15.9% earlier in the year). Thinking tools (e.g., simulation, visual organizer) and asynchronous communication resources (e.g., blogs, discussion boards) also saw an increase in usage to greater than 60 percent of educators by the end of the year, while use of collaboration tools (e.g., Google Apps) and subject-specific software increased to approximately half of participants. In general, use among numerous relevant computer applications climbed as grant implementation progressed. Comparisons to the control group underscore the effect of the grant program as the baseline usage of the above applications by control group teachers was comparable to that of grant teachers but did not notably increase throughout the year (see Figure 5 and 6).

Figure 5. What computer applications did/do you use in your instruction with students? (treatment).*



*The number of respondents ranged from 33 to 83 due to missing data.

Figure 6. What computer applications did/do you use in your instruction with students? (control).*



*The number of respondents ranged from 102 to 199 due to missing data.

More educators reported that they were able to design lessons using digital tools that meet instructional objectives after implementation (88.2%) than at the start of the year (66.3%). By comparison, 59.3 percent of control teachers reported being able to do so at the start of the year, and this percentage did not change greatly by the school year's end (64.0%). Furthermore, there was a 23.6 percent increase among ARRA teachers who *strongly* agreed with this statement. Likewise, a greater proportion of educators purposefully adapted lessons to include digital tools post-implementation (86.5%) than prior to the grant (59.0%). Grant participants who *strongly* agreed this was the case increased substantially by 31.5 percent. Further, while just over half (51.2%) of educators used digital tools to personalize learning activities for individual student needs prior to implementation, those who were able to do so by the end of the year increased to 82.5 percent (compared to 54.3% of control group teachers).

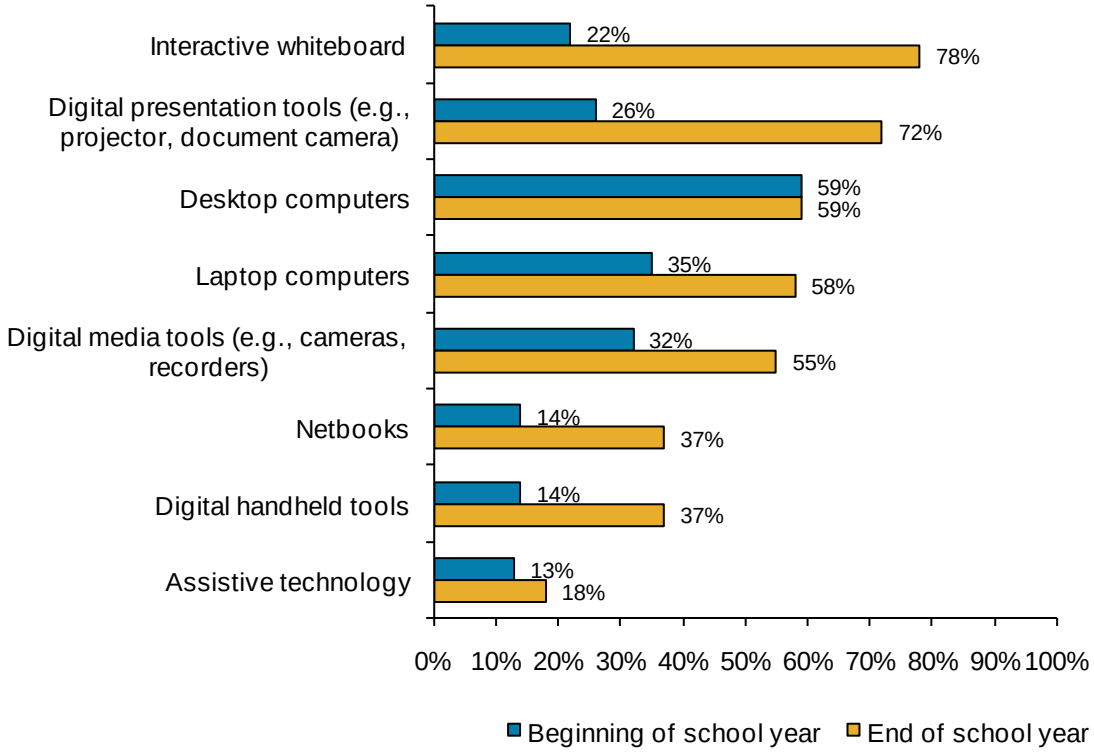
These reported pedagogical developments may be a result of educators' increased confidence in using technology in the classroom. Over 85 percent of the teachers agreed or strongly agreed with the statement that they felt comfortable with using instructional technology after implementation (up from 71.4% pre-grant and compared to 72.5% of the control group). Likewise, 67.1 percent of educators felt proficient at using technology in their instruction by the year's end compared with just over half (56.6%) prior to receiving the resources. Teachers who participated in the focus groups indicated that their comfort level with using technology was often dependent upon past experience with hardware and software, and that for some, comfort level would decrease when introduced to newer equipment or a technology-related malfunction occurred.

In addition to observing an increase in teachers' comfort level in using technology in the classroom, educators also are ubiquitously modeling safe and ethical technology use for their students. The percentage of educators who agreed or strongly agreed to this statement grew from an initial 85.7 percent to a nearly unanimous 97.3 percent following ARRA/Title II-D project implementation.

Student Practice

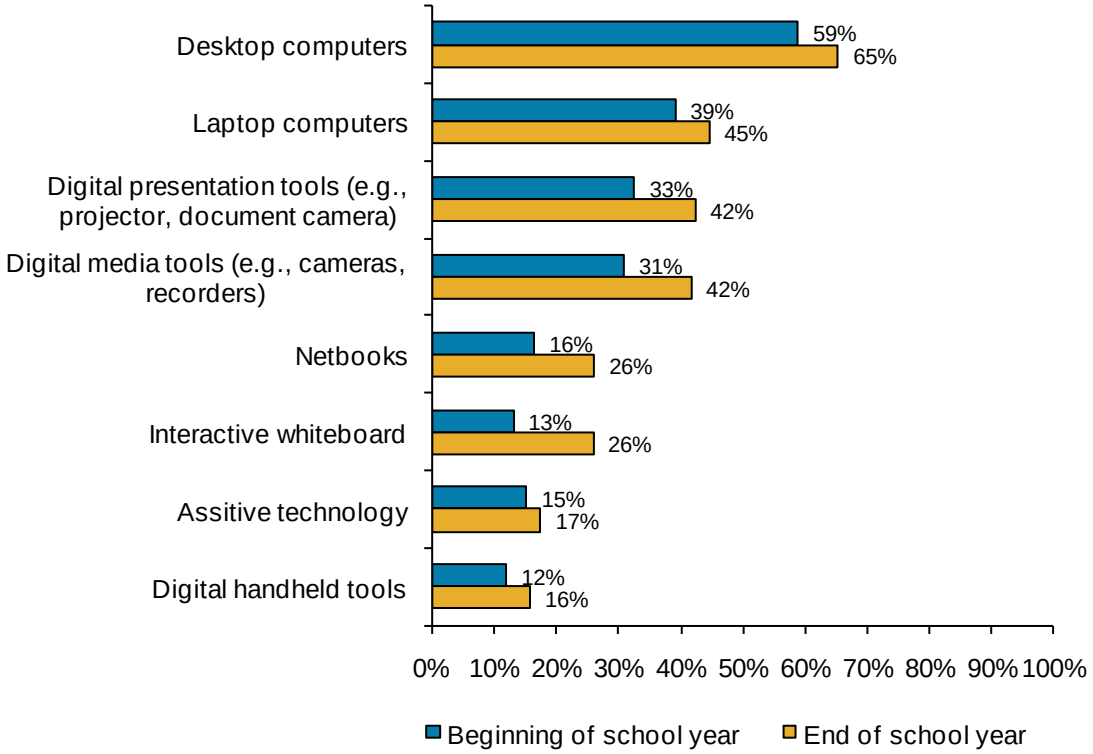
Similar to technology use by teachers, a consistent percentage (58.7%-59.0%) of students used desktop computers throughout the year. However, several other technologies were increasingly present in lessons and available for student use as the year progressed. By year's end, the use of interactive whiteboard and digital presentations tools surpassed that of desktop computers in classrooms that received grant support (see Figure 7). This trend is to be expected due to the high numbers of interactive whiteboards and digital data/LCD projectors purchased with ARRA Ed Tech funds (see Figure 1 above). While proportions of student use were similar at the beginning of the year for both treatment and control group teachers for most technologies, usage within the control group was generally unchanged while students of treatment teachers saw increases for all technologies (see Figure 8). There were slight increases over the school year in the use of interactive whiteboards (from 13.1% to 25.9%) and digital media tools (from 30.9% to 41.6%) in control classrooms but these increases were smaller than the corresponding changes in treatment classrooms.

Figure 7. I design instruction that requires the use of these technologies by the student (treatment)



*The number of respondents ranged from 68 to 80 due to missing data.

Figure 8. I design instruction that requires the use of these technologies by the student (control)



*The number of respondents ranged from 164 to 194 due to missing data.

In addition, focus group participants reported that students' access to and use of technology equipment prior to the ARRA/Title II-D grant varied. In many buildings, there are one to four computers for student use in each classroom; mobile computer carts, the computer lab, and library resources supplement student access to computers. School technology specialists and administrators generally report on the school tech access survey that Grades K-8 have student accounts, though few can access these accounts at home or are permitted to regularly send and receive emails. However, most schools (62.5%) reported that their students are allowed unlimited storage space on their servers.

Seventy one percent of teachers in ARRA classrooms reported in the Educator survey that students use the above technologies specifically for learning at least two times a week at the end of the year, which is up substantially from 24.7 percent of grant teachers prior to the award. The end of year figure is also nearly double the percentage of control classrooms (36.7%) doing so in the spring.

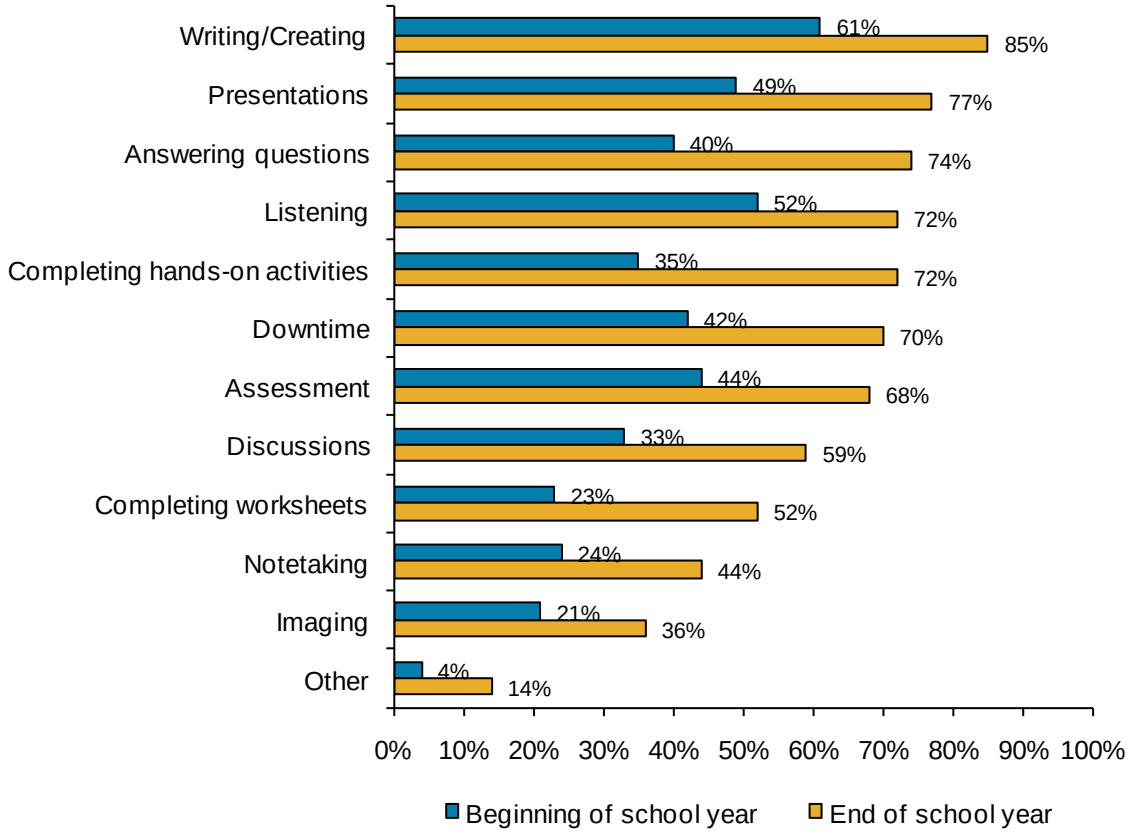
As reported by school technology and administrative staff on the NH School Technology Access Survey, schools provided students with a myriad of online content/provisions:

- Internet-based distance learning content as a supplement to classroom learning: predominantly *Nettrekker* (42.9%), *Enchanted Learning* (25.7%) and *Grolier Online* (25.7%)

- Course management system for students to access work online: predominantly *Moodle* (40.5%) and *Sakai* (21.6%)
- Digital portfolio solutions: predominantly *Sakai OSP* (21.1%), *Mahara* (15.8%), *Adobe Acrobat Pro* (15.8%), and general file storage (19.4%).

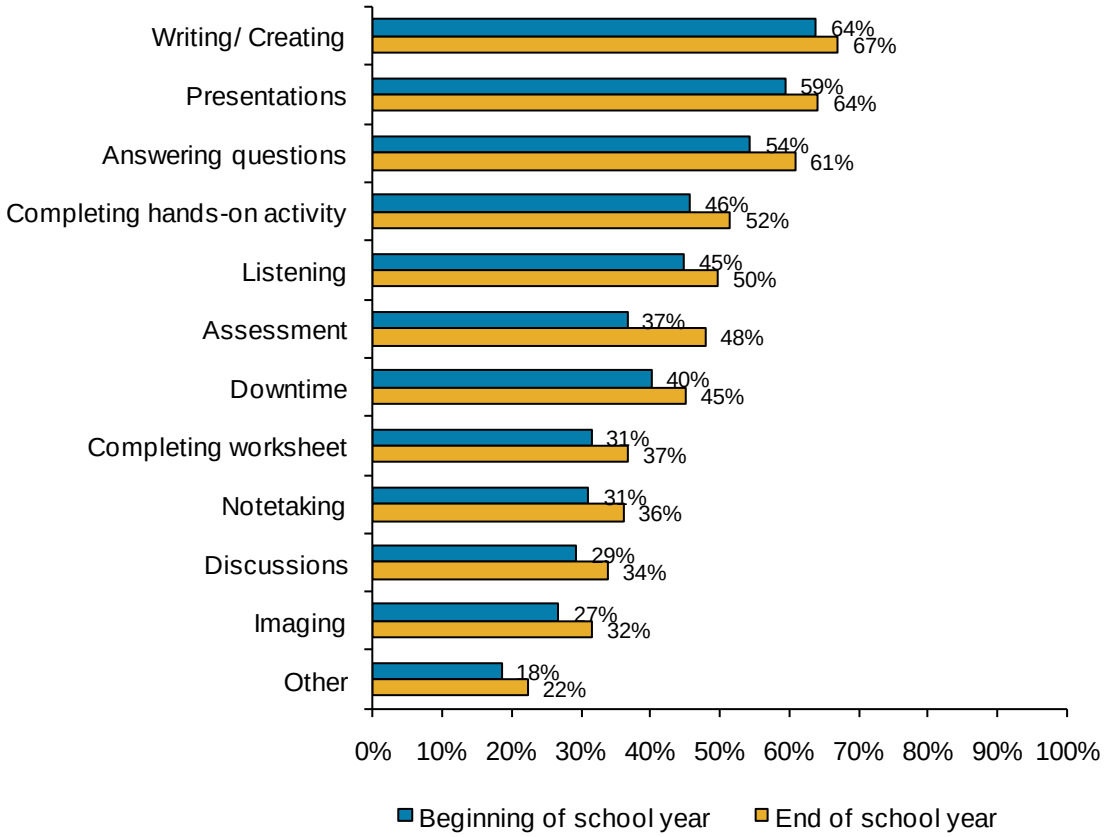
While teachers reported that students initially used technology most often to facilitate writing/creating, listening activities, and presentations, students not only used tech resources for these activities to a much greater extent following grant implementation but also grew to use technology substantially for several other learning activities. These included answering questions, completing hands-on activities, assessments, and participating in discussions (see Figure 9). More educators also prompted their students to use technology during their downtime, contributing to a classroom culture in which technology is more securely embedded into all facets – formal and informal – of instructional practices. Student use of technology during these learning activities did not increase in the same way for control group classrooms (see Figure 10); however, more than half of the control group teachers consistently incorporated technology for writing/creating, presenting, and answering questions throughout the year.

Figure 9. For what activities did/do your students use technology? (treatment)



*The number of respondents ranged from 26 to 83 due to missing data.

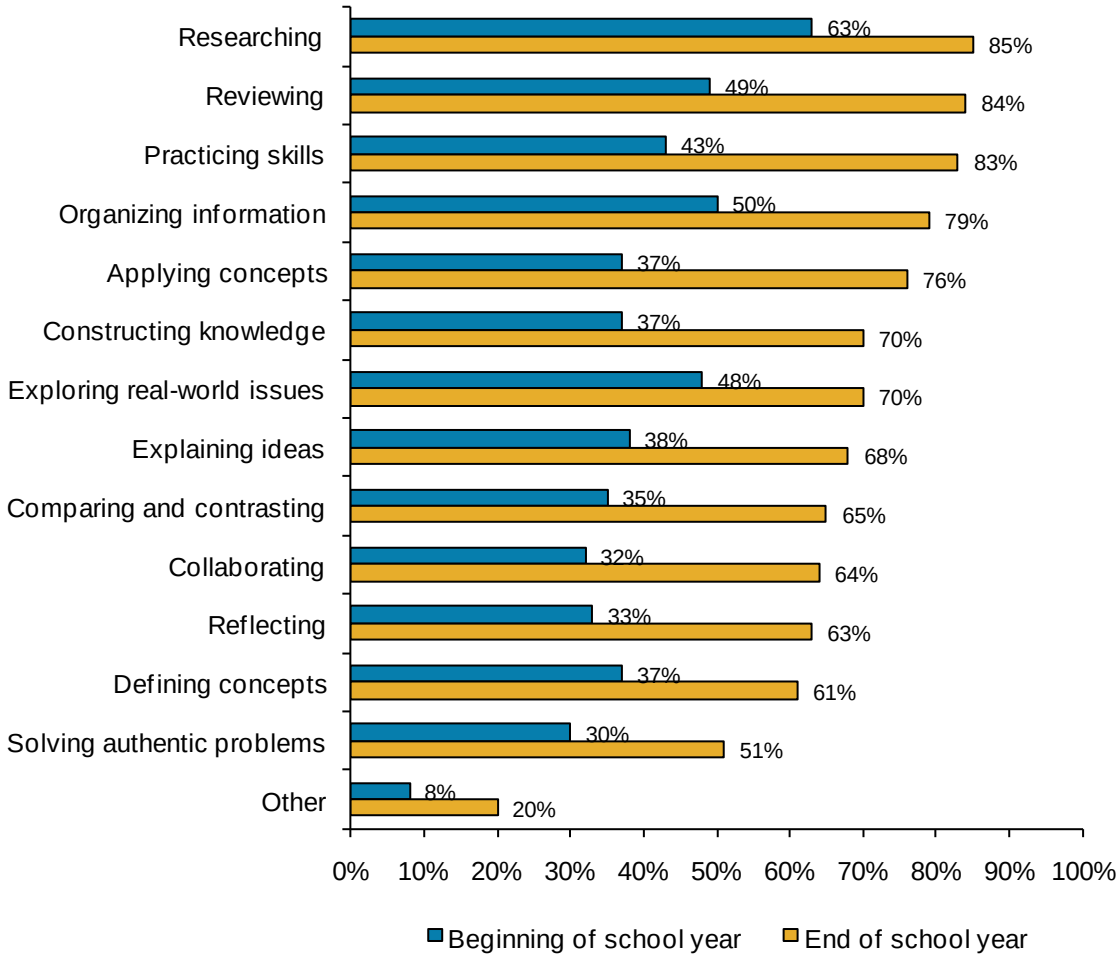
Figure 10. For what activities did/do your students use technology? (control)



*The number of respondents ranged from 92 to 199 due to missing data.

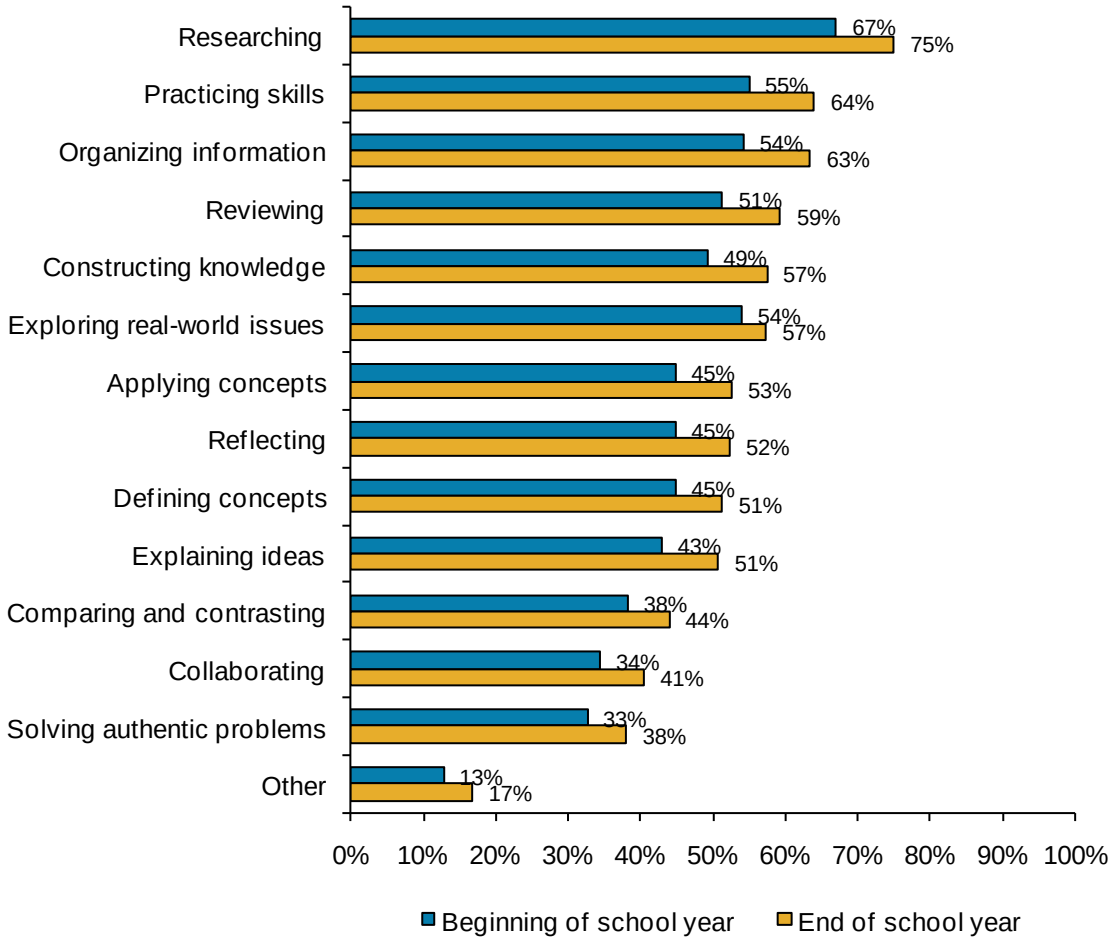
Figure 12 shows that educators reported that their students used technology for a wide variety of instructional purposes, such as researching, reviewing, and practicing skills. Of the potential purposes for using technology listed in the survey, between 29.6 and 50.0 percent of teachers reported their students using technology for most of the purposes the start of the year (the one exception was researching at 63.4%). By the end of the year, the range was from 61.0 to 84.8 percent for all items, with the one exception of "solving authentic problems" at 51.2 percent. Another way of looking at the data in Figure 11 is that students use of technology for every purpose on the list increased between 21.4 and 39.5 percentage points. In comparison, there was little notable growth in student use among control group classrooms (see Figure 12).

Figure 11. For what purposes did/do your students use technology? (treatment)



*The number of respondents ranged from 25 to 82 due to missing data.

Figure 12. For what purposes did/do your students use technology? (control)



*The number of respondents ranged from 78 to 197 due to missing data.

These student practices are corroborated by focus group results, as participants cited students using technology for independent practice, reading, Internet research, writing reports, taking notes, completing projects or assignments, and taking tests. A few sites also described such advanced practices as making videos, creating podcasts, and blogging.

School Culture & Attitudes

Despite the increases in technology use reported above, nearly 70 percent of surveyed educators consistently found planning lessons that use technology more time consuming than planning lessons without those tools. However, it is important to note that the majority (74.4% pre-implementation; 82.1% post-) did not generally believe at any point that classroom management is more difficult when technology is involved. Ultimately, nearly all educators believe instructional technology improves learning throughout the year, and those who *strongly* agree with this claim increased from 39.3 percent of teachers to 55.4 percent post-implementation. Likewise, participants overwhelmingly found using technology increases their instructional effectiveness and the percentage of educators who strongly agreed with this climbed from 29.8 percent of participants to 48.0 percent over the course of the year.

The administration's role in the technology rollout was perceived positively by surveyed ARRA educators, as more than 90 percent believe that both school and district administrators are interested in the degree to which they use technology effectively with students (compared to approximately 80% of control group teachers). While school- and district-level support was prevalently cited among focus group participants, reactions were slightly more mixed; informants at one site explained that, due to the configuration of multiple districts and schools participating, there is a lot of variation in support structures among the autonomous districts with their own school boards and integration plans. Another site, however, reported that school-level and district-wide workshop days and meetings allowed teachers to regularly share their technology concerns, expectations, and goals.

Administrators showed ample enthusiasm in their suggestions for effective integration and willingness to share ideas within the school community and beyond. Administrators provided a wealth of insightful recommendations in their focus groups, most of which addressed the importance of providing teachers with a variety of worthwhile professional development opportunities. One administrator stated, "Teachers need to know that they are in a 'safe environment' – that they understand each person is at different starting points with technology use and mistakes during the early stages of implementation are okay." Additionally, they repeatedly expressed the importance of teacher motivation and staff buy-in, in addition to the benefits of collaboration among the teachers, between schools and within the community. An administrator explained the benefits of "collaborating with other school districts to provide many and varied professional develop opportunities, rather than duplicating efforts." Administrators plan to disseminate project impact information within the school district, with parents and throughout the local community. Several cited using technology such as classroom blogs, websites, and NING to share information while some mentioned more traditional methods of dissemination including newspapers, meetings, newsletters and presentations.[11]

Collegial support among teachers appears to be increasingly embedded in school tech culture; post-implementation, 87.0 percent of educators reported assisting one another in developing their technology skills (up from 75.0% earlier in the year and greater than the 65.9% of control group teachers who did so). In addition, the frequency of sharing ideas for using technology to enhance learning among colleagues climbed notably; those who purposefully share their ideas at least twice a week increased from 14.2 percent of educators at the beginning of the year to 43.6 percent post-implementation and nearly 72 percent of educators now do so at least once a week (compared to fewer than half previously).

According to focus group participants, current mechanisms in place for teachers to share ideas about technology are typically in-person meetings, workshops or conferences, email, and informal exchanges. Some sites noted having additional vehicles for teacher communications, such as an online exchange (e.g., discussion boards, *Moodle*, wikis, shared folders on the server) and a technology committee. While these interaction mechanisms are in place at several institutions, a few sites reported no or minimal opportunities to specifically discuss technology supported activities and experiences. However, some sites described enhancements for teacher-

[11] NING is a free online service to create, customize, and share a social network.

sharing modalities for the 2010-11 school year, such as an increased focus on technology or additional meetings.

2. RQ2: To what degree are these technology-rich settings encouraging mediating outcomes for students, including interactive learning, higher-level thinking skills, and student engagement?

Overall, attitudes of administrators and teachers regarding the ability of instructional technology to improve student achievement are generally positive, though teachers tend to be more optimistic than administrators. Both administrators and teachers cited numerous benefits to using technology for instructional purposes – such as increased student engagement and motivation, and improved student and teacher access to educational information – and several are seeing these positive outcomes as a result of school participation in the ARRA/Title II-D grant. While there is still room for growth, students are increasingly using the grant resources to support dynamic learning applications and activities. However, there continue to be multiple potential barriers to achieving student outcomes that are commonly reported across the participating sites. The barriers include equipment delays (in receiving or installing), lack of infrastructure, insufficient IT staff, and issues with providing proper professional development for teachers. The evaluation team will continue to track these challenges and recommend strategies for overcoming them as schools and educators continue with the grant implementation.

Impact of Technology on Student Engagement

In Spring 2010 focus groups, the majority of interviewed administrators felt it was still too early to measure student outcomes since districts and schools were in the beginning phases of their project implementation. However, anecdotal data suggests that the new instructional technology will have a positive impact on student engagement.

One administrator stated during the focus groups that "there has been a significant level of teacher and student excitement about – and engagement with – the increased access to the technology tools in the classroom." Another administrator reported, "We have seen student engagement increase from 80 percent to 99 percent [as measured] by [the] walkthrough observation tools. We have also seen student and teacher technology use increase based on [data provided by] walkthrough observations."

In order to gain a better understanding of the impact the ARRA/Title II-D grant program is having on student engagement, educators working directly with students were surveyed on their perceptions of the impact of technology on student engagement and other mediating outcomes. Educators were asked to reflect on two time periods: prior to project implementation (beginning of the 2009-10 school year) and after six months of project implementation (end of the 2009-10 school year). Comparing the start of the year to the end of the year, educators reported observing an increase in students' motivation to complete tasks, the extent to which students are able to stay on-task, and students' overall engagement in technology. Figures 13 through 15 show that for each statement about student engagement, the percentage of educators strongly agreeing increased by 20 percentage points or more between the start of the year and the end of the year.

Figure 13. Students are motivated to complete tasks when using technology (treatment)

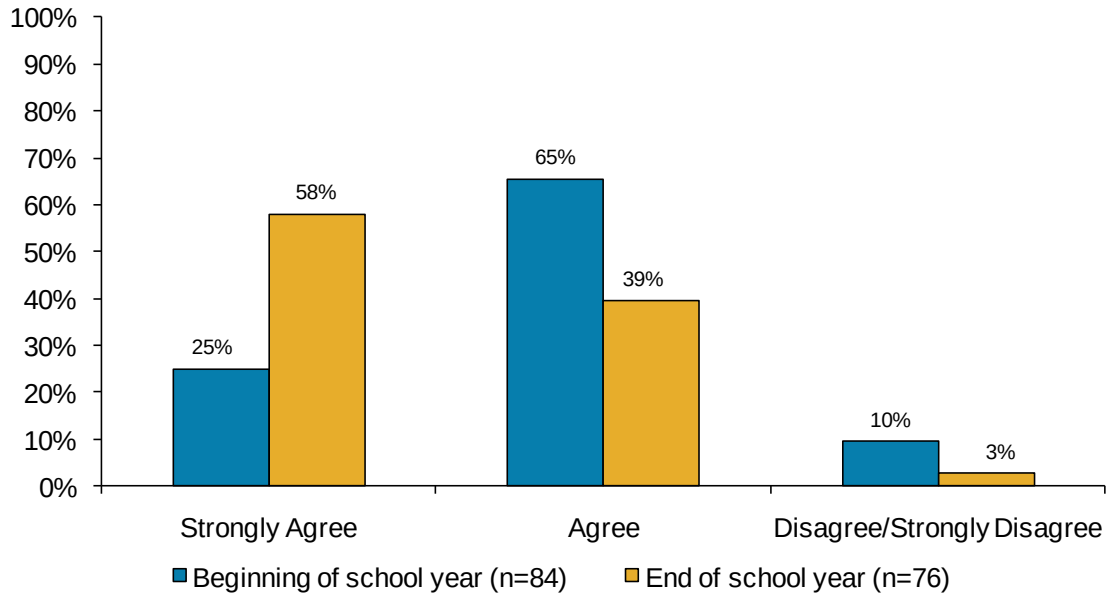


Figure 14. Students are on-task when using technology (treatment)

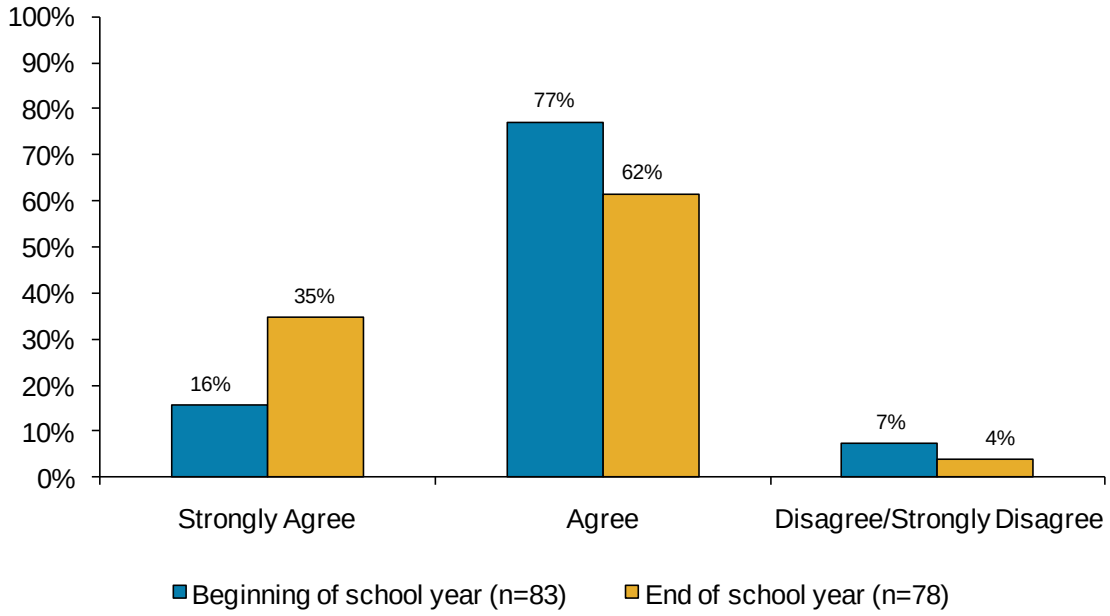
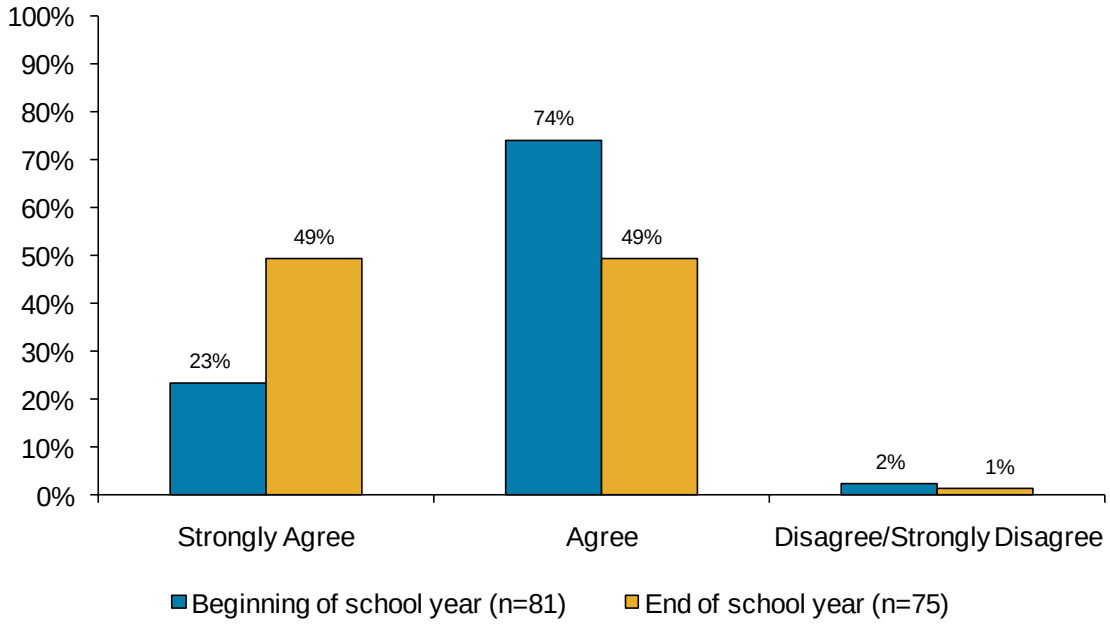


Figure 15. Students are engaged when using technology (treatment)



Furthermore, both the control and treatment groups responded similarly to these questions at the beginning of the school year, indicating that the groups were relatively equal prior to implementation (see Figures 16 through 18). However, the treatment group showed substantial positive increases at the end of the school year, while no notable change was evident in the control group. This suggests, assuming all other factors are equal, that the implementation of technology in classroom settings and teachers' integration of technology into their instruction are having a positive impact on teachers' perceptions of student engagement and motivation.

Because data regarding the situation prior to implementation were collected retrospectively, it is possible that teachers receiving the grant resources may have a greater predisposition to note positive change over time than their colleagues in the control group. Therefore, caution should be taken in reviewing these trends but they are nevertheless promising.

Figure 16. Students are motivated to complete tasks when using technology (control)

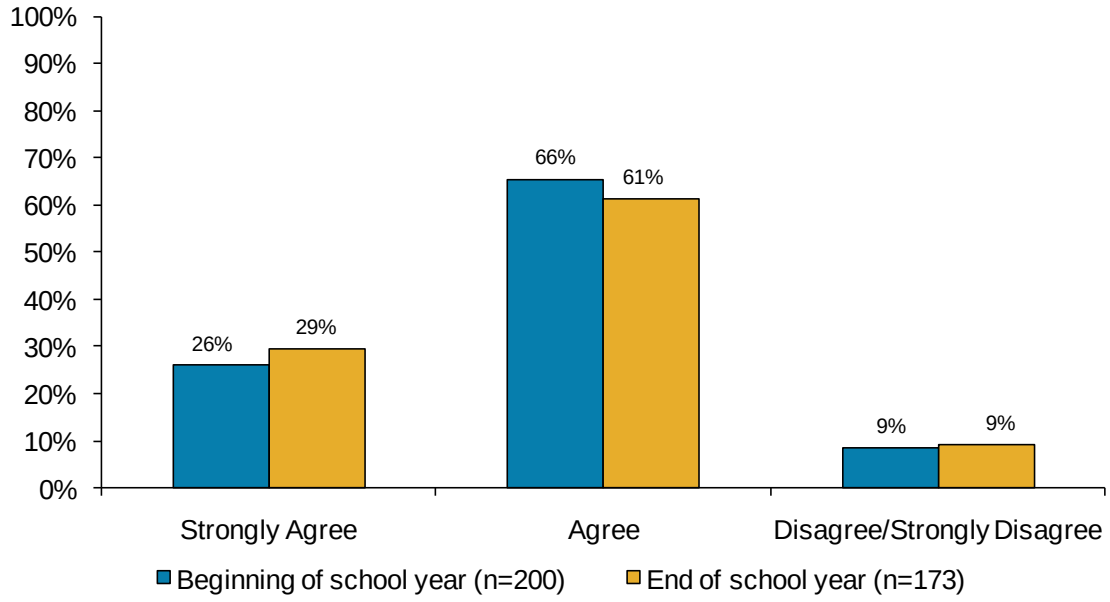


Figure 17. Students are on-task when using technology (control)

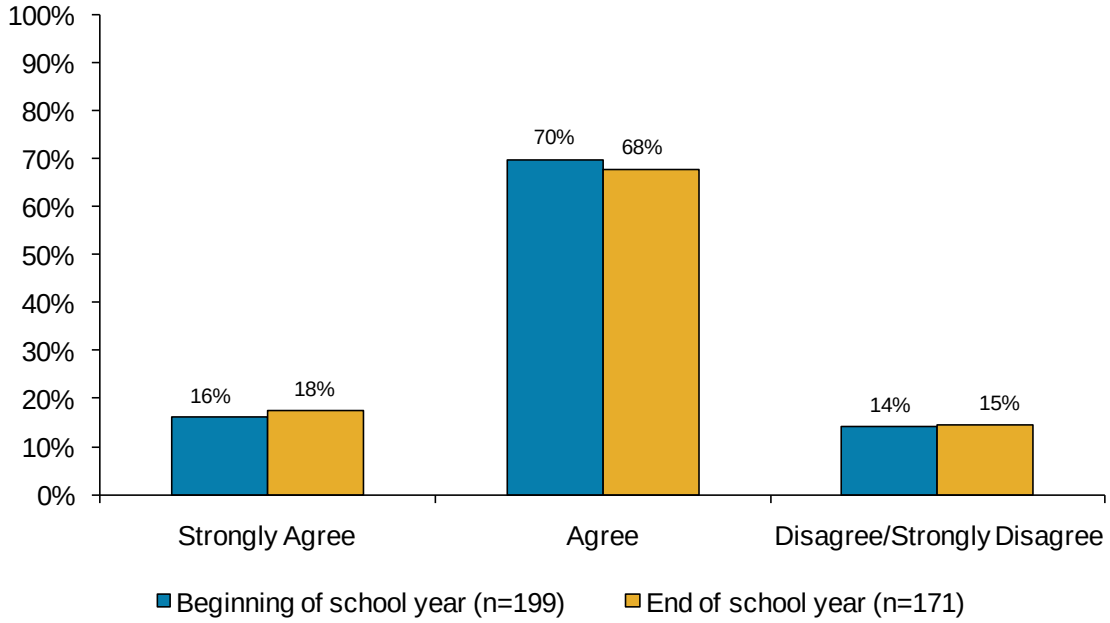
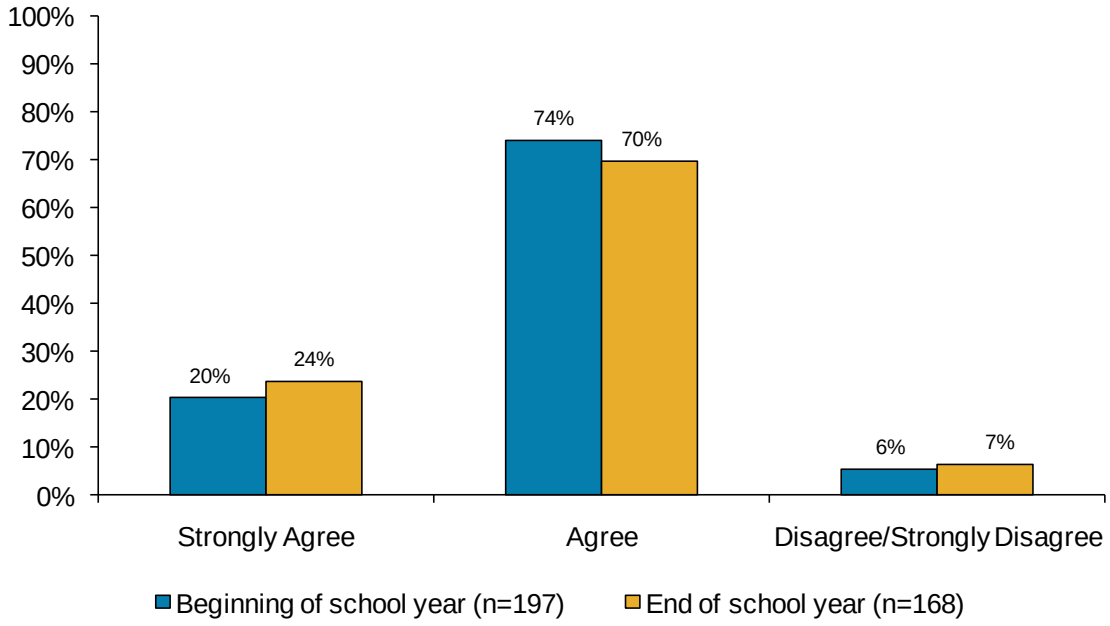


Figure 18. Students are engaged when using technology (control)



Impact of Technology on Interactive Learning and Higher-Level Thinking Skills

A second set of survey questions asked teachers to evaluate the impact of technology on interactive learning and higher-level thinking skills. As was the case with the engagement questions, most teachers agreed with the statements and the major differences between the pre-implementation and post-implementation ratings were in the percentage strongly agreeing. Figure 19 shows that 16 percent more teachers felt that they strongly agreed with the statement that technology improves learning at the end of the year than they felt they did at the beginning of the year. Both control and treatment groups responded similarly at the beginning of the year (see Figure 20); however, after implementation, the treatment group showed substantial positive increases (toward strongly agreeing), while no substantial change was evident in the control group, suggesting that the implementation of technology and integration into classrooms is positively impacting teachers' perception of the ways technology in instruction improves learning. Treatment teachers are also beginning to report anecdotal improvements in student academic achievement as a result of using the resources (though this has not been verified in any student outcomes), while educators – both administrators and teachers – were generally interested in viewing assessment outcomes throughout grant participation. Teachers at one site, however, were wary of placing considerable emphasis on the impacts of technology when examining student assessment scores, particularly because of fluctuations in student enrollment.

Figure 19. I believe using technology in instruction improves learning (treatment)

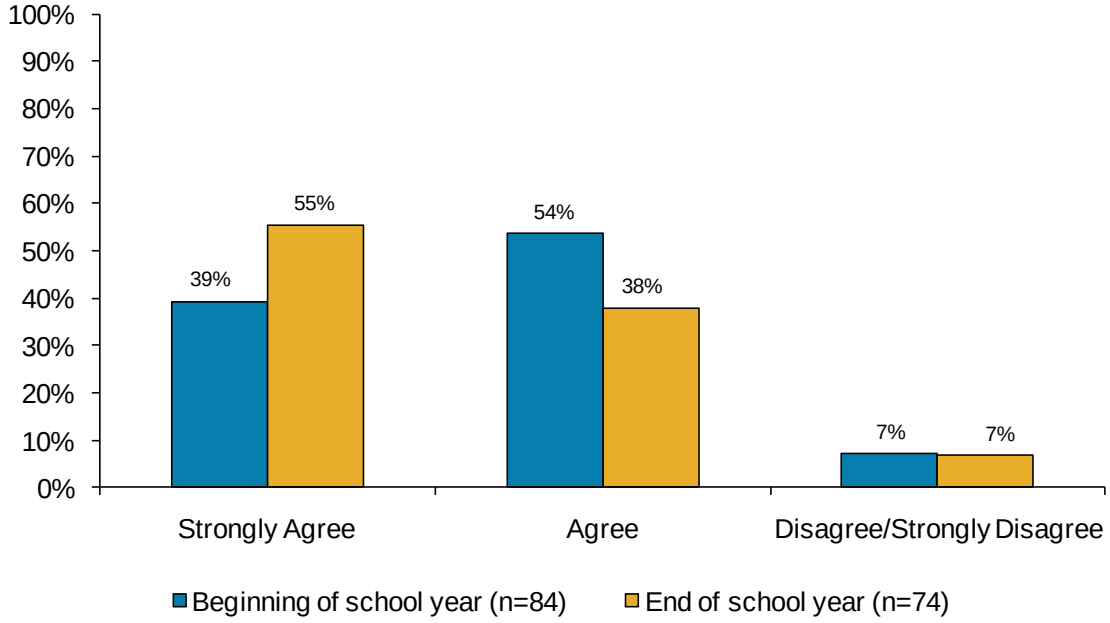
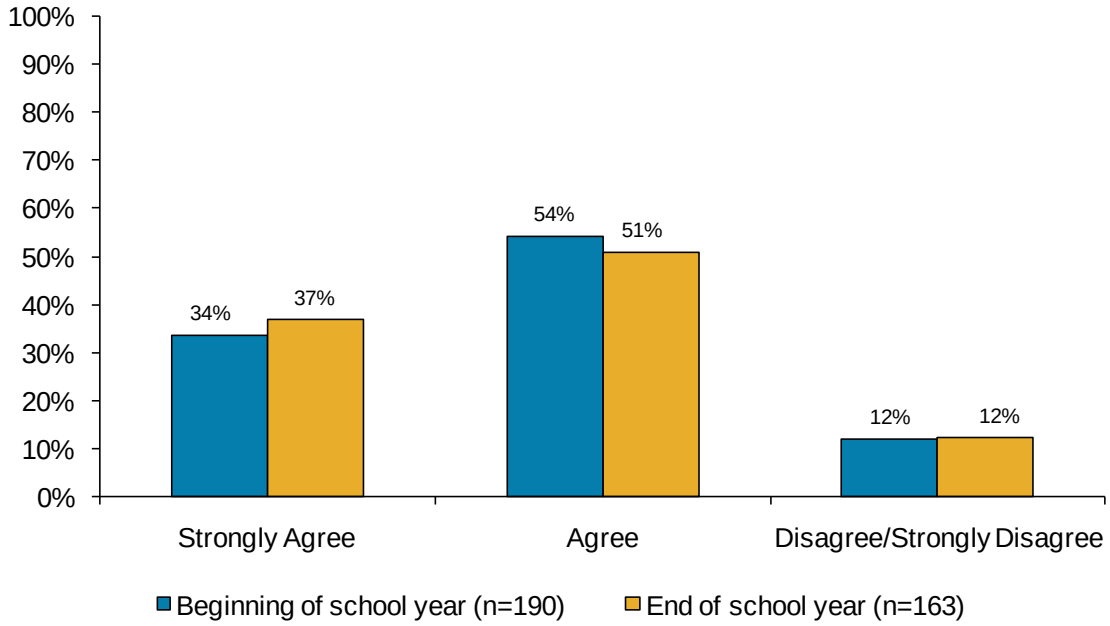


Figure 20. I believe using technology in instruction improves learning (control)

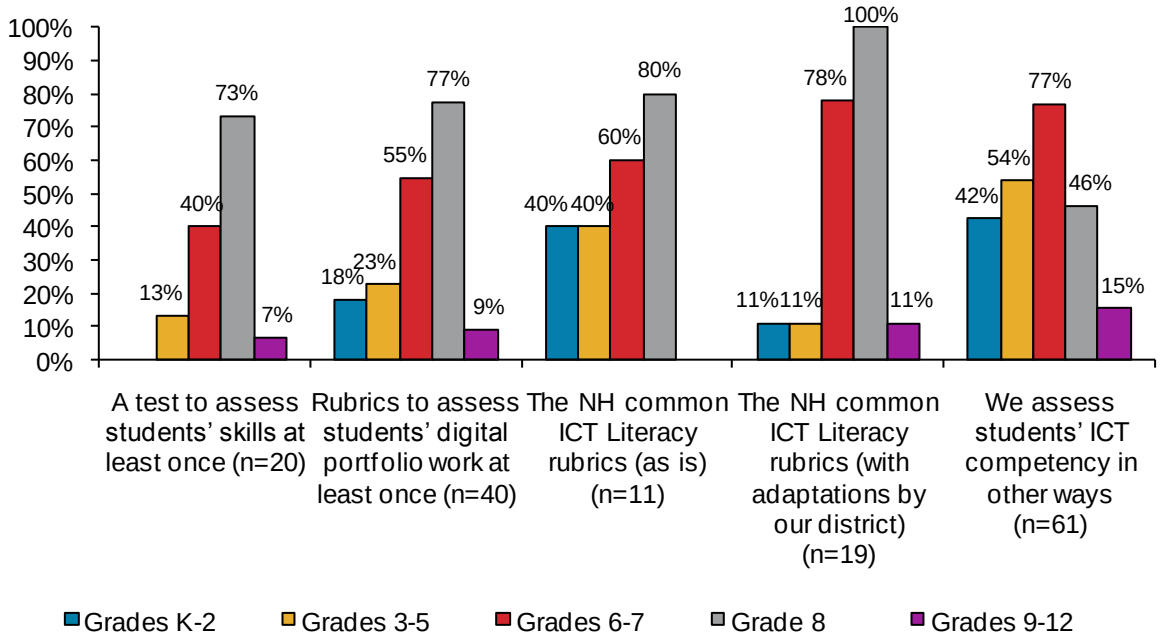


As previously reported under RQ 1, educators indicated more frequent student use of technology for completing a number of interactive classroom activities as a result of their ARRA/Title II-D project implementation. The most notable increases in activities that incorporate technology included: completing hands on activities (37.4% increase), answering questions (34.2% increase), completing worksheets (28.4% increase) and presenting (28.3% increase) (see Figure 10; section V.A.1). Similarly, educators reported increases in student technology use for several learning purposes from the beginning to the end of the school year. However, these most notable

increases of technology use were often in less complex areas of student learning/thinking (e.g., practicing skills and reviewing) while more intricate thinking applications (e.g., comparing/contrasting, explaining ideas, reflecting, solving authentic problems) saw less substantial increases. This suggests that there is more room for growth in higher-order learning applications as teachers become more comfortable with the technology and more confident in using the resources in more complex ways.

While the above outcomes are based on teacher perception through observation, administrators at ARRA schools were also asked to identify how their school assesses ICT literacy skills, standards adopted from ISTE NET-S to ensure that students learn 21st century skills. Overall, students are assessed most often in Grades 6-7 and in Grade 8. While administrators reported a variety of means for assessing students' ICT competency, eighth graders are predominantly evaluated on their digital portfolio work (see Figure 21).

Figure 21. Ways ARRA schools are assessing students' ICT literacy skills by grade level (treatment)



In the 2009-10 school year, administrators from ARRA/Title II-D schools reported that most students met the six ICT competency requirements at the end of eighth grade, with the smallest percentage of students meeting the requirement for *communication & collaboration/communication tools* (82.1%) and the highest percentage of students meeting the requirement for *research & information fluency/research tools* (89.0%; Table 7). However, as these data refer to all students enrolled in ARRA schools and not just those students participating in grant-supported classrooms, caution should be taken in associating these results with grant activities. Nevertheless, it is anticipated that the ARRA/Title II-D program's impact will be disseminated school-wide as teachers become trained and in turn train their colleagues, and future analyses will be conducted to see if the percentages of students meeting these competency requirements change over the duration of the grant period.

Table 7. 2009-2010 eighth grade ICT competency requirements (treatment)

ICT competency requirement	n	8th Grade Enrollments 2009-2010 (Mean)	# of 8th Graders Meeting competency Requirements (Mean)	% of 8th Graders Meeting Competency Requirements (Mean)
Research & information fluency/research tools	23	125.7	112.9	89.0%
Technology operations and concepts	23	125.7	113.5	87.7%
Creativity & innovation/productivity tools	22	125.7	106.6	86.5%
Digital citizenship/social, ethical, human issues	23	125.7	111.3	85.4%
Critical thinking, problem solving, & decision making	22	125.7	105.3	85.0%
Communication & collaboration/communication tools	22	125.7	104.5	82.1%

Note: Percentages represent averages derived from calculations at the individual school level and would not, therefore, align exactly with percentages derived from the mean numbers of 8th graders provided in the table.

Potential barriers to achieving mediating student outcomes

Many administrators admit they underestimated the length of time it would take to get technology up and running. Four out of 18 case study administrators reported that the equipment took a long time to arrive and there were often delays in installation. As mentioned in RQ 1, multiple districts experienced problems with technology integration due to poor technology infrastructure and two administrators indicated a lack of IT Department staff. As a result of these delays in implementation, effects on student outcomes may also be delayed. These technology problems, as noted by some participants, may lead to student frustration with the technology, potentially dampening the impact of the implementation.

Other administrators indicated trouble scheduling professional development for teachers. As one administrator wrote, "The biggest challenge was providing a way to integrate technology and professional development in a district with several other initiatives going on." Many administrators felt teachers were not comfortable with technology. "It was difficult to bring teachers to a baseline skill level in the use of the technology tools," one administrator noted. Issues with professional development could lead to a variety of barriers in achieving student outcomes down the road. Teachers with lower baseline skill level and those overwhelmed by or uncomfortable with the new technology may not integrate it into their instruction as readily as other teachers, leaving some students with less exposure to the technology.

3. RQ3: To what degree does the provision of technology tools translate into real opportunities for students to collaborate and connect with new content?

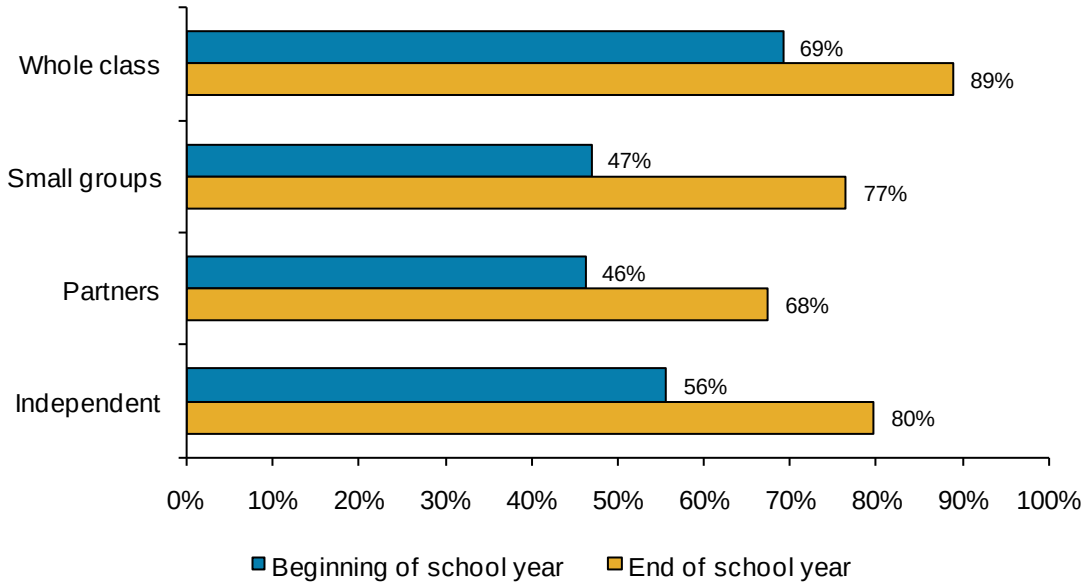
While preliminary student outcomes show room for growth in communication and collaboration, educators who report using technology to facilitate student collaboration are on the rise. Opportunities for collaboration among students are likely to increase as students become exposed to, and have the opportunity to connect to, new content made available through the technology purchased with ARRA Ed Tech funding. In addition, there is the potential for growth in the ICT

literacy standards which demonstrated the lowest proportion of eighth grade students meeting competency requirements for the *communication and collaboration* criterion (82.1%).

Technology use among student groupings

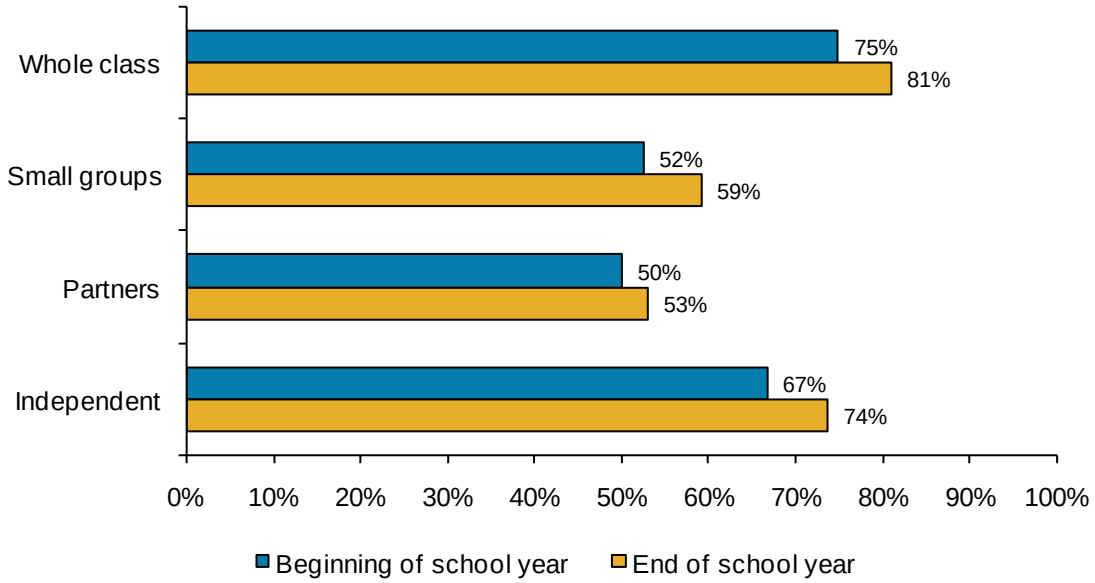
Educators were asked to indicate the student groupings present when using technology throughout the year. Technology was used more frequently at the end of the year than the beginning of the year with all types of groups, with the percentage increases ranging from 19.8 to 29.6 percent (Figure 22). While the increase in independent work may be an indicator of less collaboration, it is important to recognize that the other three types of work (whole class, small group, and partners) increased, as well. In addition, both the control and treatment groups responded similarly at the beginning of the school year, indicating that the types of groups formed during technology use were relatively equal prior to project implementation (see Figure 23). At the end of the school year, the treatment group showed substantial positive increases while no substantial change was evident in the control group. This suggests that the implementation of technology in classroom settings is positively impacting the ways teachers are engaging students in their classrooms, in both collaborative *and* independent work.

Figure 22. Student groupings present when using technology (treatment)*



*The number of respondents ranged from 79 to 81 due to missing data.

Figure 23. Student groupings present when using technology (control)*

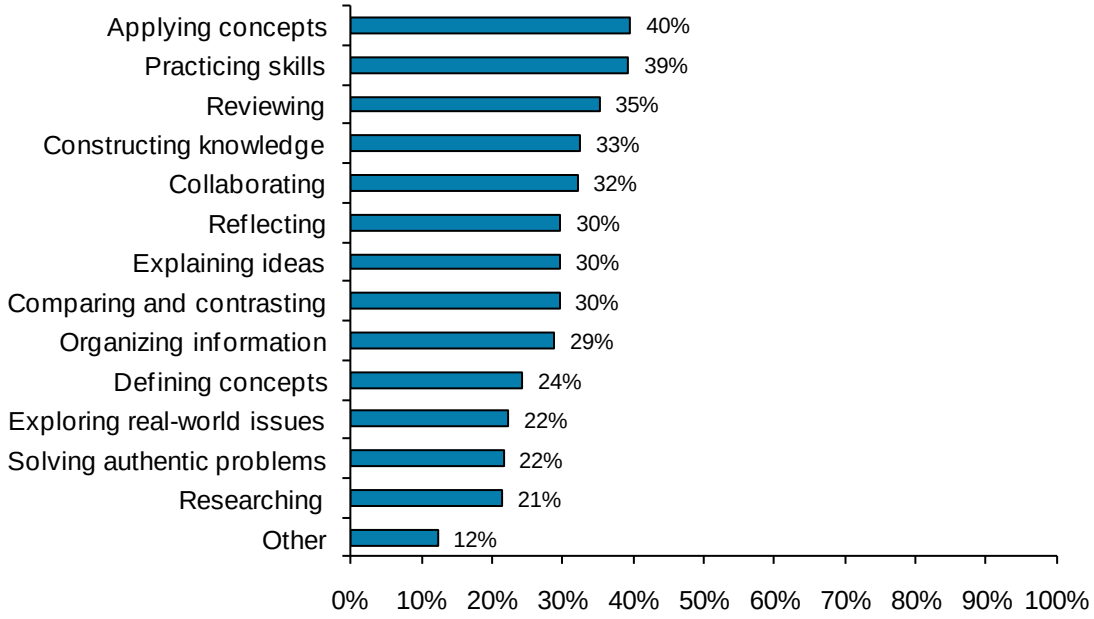


*The number of respondents ranged from 181 to 195 due to missing data.

Tech applications promoting collaboration and connections to new content

Educators reported their students using technology for a variety of purposes in their classrooms, all of which increased from before project implementation to six months after receiving the resources. Of particular interest is the fact that the proportion of students using technology for collaboration increased by 32.1 percentage points. In addition to the increased use of technology for collaboration, the use of technology for other purposes that provide students with ways to connect to new content (e.g., researching, solving authentic problems, and explaining ideas) have also increased (see Figure 24). As students begin to interact with technology in more complex ways, they may also increase their ability to connect with new content. Student data that will be reported in the Final Evaluation Report will allow us to further explore these connections.

Figure 24. Change in teachers' reported use of technology purposes by students (from beginning of school year to end of school year; treatment)*



*The number of respondents ranged from 25 ("Other" category) to 82 due to missing data.

Focus group participants were asked to discuss how they envision the technology will impact students and some discussed opportunities for collaboration and curricular connections through the interactive resources. According to teachers at one school, using a computer instead of pencil and paper will help students write and revise their work. They also anticipate that the students' writing will deepen as technology enables them to access additional resources. Interactive learning was discussed by a teacher at another school who indicated that the students "were glued to the Smart Board, and of course, everyone wanted to come up and do it. It sunk in better for them and they were more excited." Teachers elsewhere indicated that the interactive technology will assist students' connection to and learning of complex or abstract concepts, such as science and math, by using interactive games and videos rather than simply listening to a lecture.

Educators also anticipate the technology will provide access to information in ways that will allow them to better reach different types of learners. Both teachers and administrators indicated the technology will show connections between classroom lessons and the real world to students and administrators expect to see an increase in students' inquiry skills due to the increased access to information.

Progress toward collaboration and connections to new content

As reported in RQ2, the proportion of eighth grade students who met the ICT competency requirement by the end of eighth grade was lowest for the communication and collaboration criterion (82.1%). Other requirements that are tangentially related to collaboration and content, such as *research & information fluency/research tools* and *technology operations and concepts*, were met by slightly more students. There is room for growth in these ICT literacy rates and the

ARRA grant provides opportunities for collaboration and connections to new content to be developed.

In the meantime, all ARRA grantees are focusing on creating 21st century classrooms, which, according to The Partnership for 21st Century Skills, focuses on the "three Rs and four Cs (critical thinking and problem solving, communication, *collaboration*, and creativity and innovation)."[12] While collaboration and connection to new content will be more fully assessed at the conclusion of the ARRA grant, educators report increased use of technology to promote student collaboration, suggesting that the implementation of technology in classrooms is leading to increased collaborative activities and potentially increased connection to new content and other dynamic learning opportunities for students.

4. RQ4: How are new technologies and resources serving students of various groups, including those with the highest need?

To examine the impact the new technologies and resources derived from the ARRA/Title II-D grant are having on student groups, schools participating in the grant were separated into two groups: schools in need of improvement (SINI) and schools not in need of improvement.[13] Of the 40 schools involved in the ARRA/Title II-D grant, 26 are SINI (see Table 8). The Educator Survey was completed by 65 educators from SINI and 20 educators from schools not in need of improvement. While the 65 SINI educators who completed the survey were fairly evenly distributed among 16 schools, 14 of the 20 survey responses from not in need schools were from a single school. We therefore caution against close reading of the non-SINI data.

[12] From The Partnership for 21st Century Skills website: http://www.p21.org/ (italics not in original).
[13] "School in Need of Improvement" — this is the term *No Child Left Behind* uses to refer to schools receiving Title I funds that have not met state reading and math goals (AYP) for at least two years. Schools labeled "school in need of improvement" receive extra assistance to improve and students have the option to transfer to another public school, including a public charter school.

Table 8. ARRA School Classification (treatment)

SINI Schools (n=26)	Non-SINI Schools (n=14)
Allenstown Elementary School	Alton Central School
Armand R. DuPont School*	Epsom Central School
Chester Academy*	Groveton Middle/High School
Deerfield Community School*	Jefferson Elementary School
Groveton Elementary	Josiah Bartlett Elementary School*
Henry J. McLaughlin Middle School*	Lafayette Regional School
Hillside Middle School	Mast Way Elementary School*
Lamprey River Elementary*	Moharimet Elementary School
Lancaster Elementary School	Nute Junior High School
Maple Avenue Elementary*	Oyster River High School*
Middle School at Parkside*	Pembroke Hill School *
Milton Elementary School	Pembroke Village School*
New Searles Elementary School	Profile Junior/Senior High School*
Nute High School*	White Mountains Regional High School
Oyster River Middle School	
Pembroke Academy	
Pittsfield Elementary School*	
Pittsfield Middle/High School*	
Portsmouth Middle School	
Somersworth Middle School*	
Southside Middle School*	
Three Rivers School*	
Timberlane Regional Middle*	
Unity Elementary School*	
Whitefield Elementary School	
Woodland Heights School*	

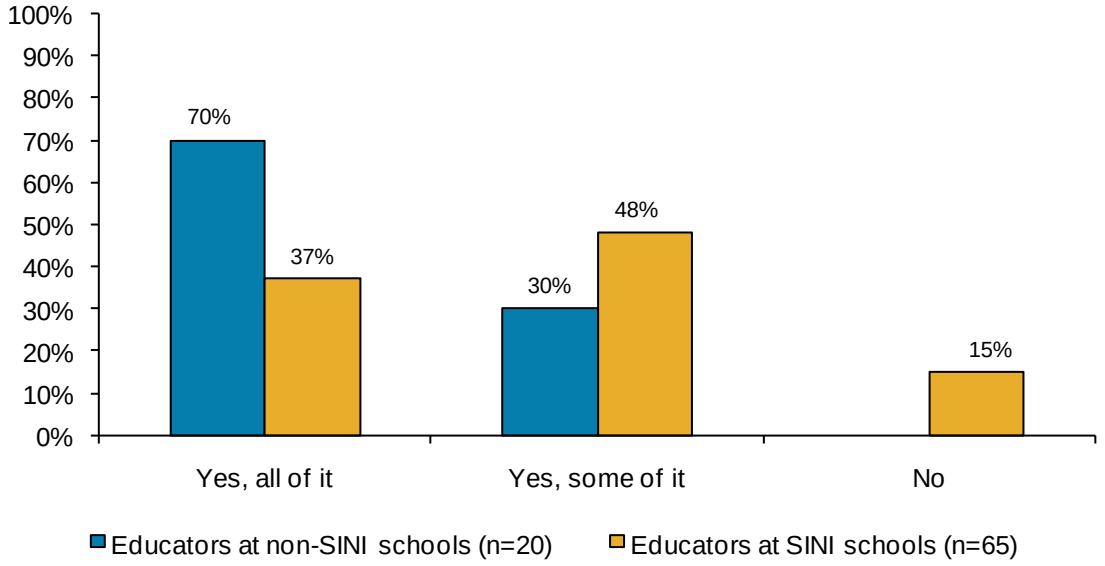
*School participated in the Educator Survey

Overall, more SINI are involved in the ARRA Ed tech grant than schools not in need of improvement; however, this is not unexpected, as ARRA funds were intended to be distributed to districts in need. By the end of the school year, fewer educators from SINI received all of their grant-funded technology, and also reported fewer instances of having implemented technology in the classroom in comparison to schools not in need of improvement. In addition, at the beginning of the school year, data indicated a gap between SINI educators and non-SINI educators regarding ability to personalize learning and meet individual student needs using technology, as SINI educators appeared to be less comfortable using digital tools for these ends. However, the gap between these two groups disappeared by the end of the school year, with the majority of educators from both groups agreeing they are able to use digital tools to meet individual student needs and personalize learning. A more detailed discussion can be found below.

Technology availability and classroom implementation

The graphs below show that 70.0 percent of non-SINI teachers received all of their ARRA/Title II-D grant-funded technology by Spring 2010. In contrast, only 36.9 percent of SINI teachers received all of their grant-funded resources at the same point in time, and 15.4 percent had not received any technology at all (see Figure 25).

Figure 25. Have you received the technology that the ARRA/Title II-D grant funded? (treatment)



Among those who have received the grant technology, 87.9 percent of SINI educators began to implement it with students and all (100.0%) non-SINI teachers began to use the grant-funded resources.

In total, while all non-SINI teachers received at least some of their technology and began implementing it with students, more than one-quarter (26.1%) of SINI educators have either not yet begun to implement the technology with students or have not received sufficient resources to begin project implementation. These findings suggest slightly disproportionate distribution and access to the grant resources by the classification of school need.

Utilizing digital tools to meet individual student needs

Seventy percent of non-SINI educators reported that they were able to use digital tools to personalize learning activities and meet individual student needs at the start of the school year.[14] In contrast, less than half of SINI educators (45.5%) were able to use digital tools to that effect. However, SINI teachers reported becoming much more able to do so over the course of the school year and the gap between SINI and non-SINI teachers lessened at the end of the school year. Over eighty percent of both groups (80.7% SINI; 88.2% non-SINI) reported that they are able to use the appropriate digital tools to address individualized learning at the school year end (see Figures 26 and 27). No differences were observed between treatment teachers and control group teachers in regards to their ability to use digital tools to personalize learning activities at the beginning of the school year, but differences emerged at the school year's conclusion. Treatment teachers from SINI schools were able to use digital tools to personalize learning activities and meet individual student needs in a greater capacity than control teachers (80.7% vs. 50.0%). In contrast, treatment teachers from non-SINI schools reported similar capacities to use

[14] Indicated "agree" or "strongly agree"

digital tools for this purpose as control teachers (88.3% vs. 85.7%), however, the percentage of treatment teachers *strongly agreeing* to this statement was much greater for treatment teachers than control teachers (47.1% vs. 9.5%). These findings would suggest that SINI schools may demonstrate larger gains in areas related to technology integration as there may be a lack of resources (or the presence of contributing factors tied to SINI classification) in these schools prior to grant involvement, which become lessoned over time with ARRA/Title II-D project implementation (see Figure 26 through Figure 29).

Figure 26. I am able to use digital tools to personalize learning activities to meet individual student needs (non-SINI schools; treatment)

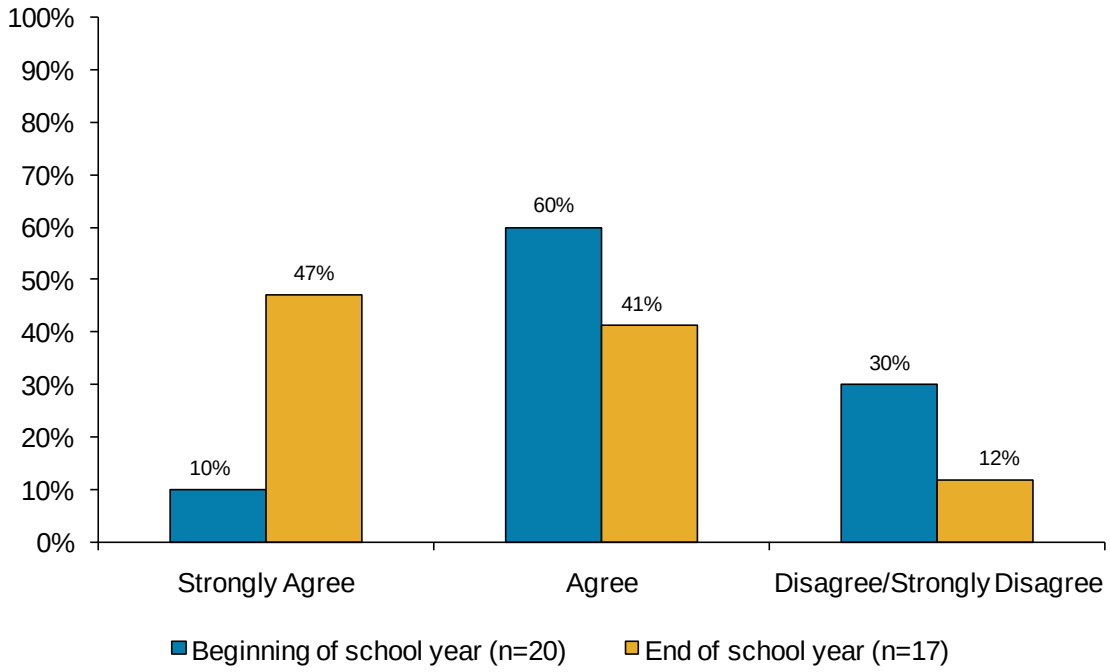


Figure 27. I am able to use digital tools to personalize learning activities to meet individual student needs (SINI schools; treatment)

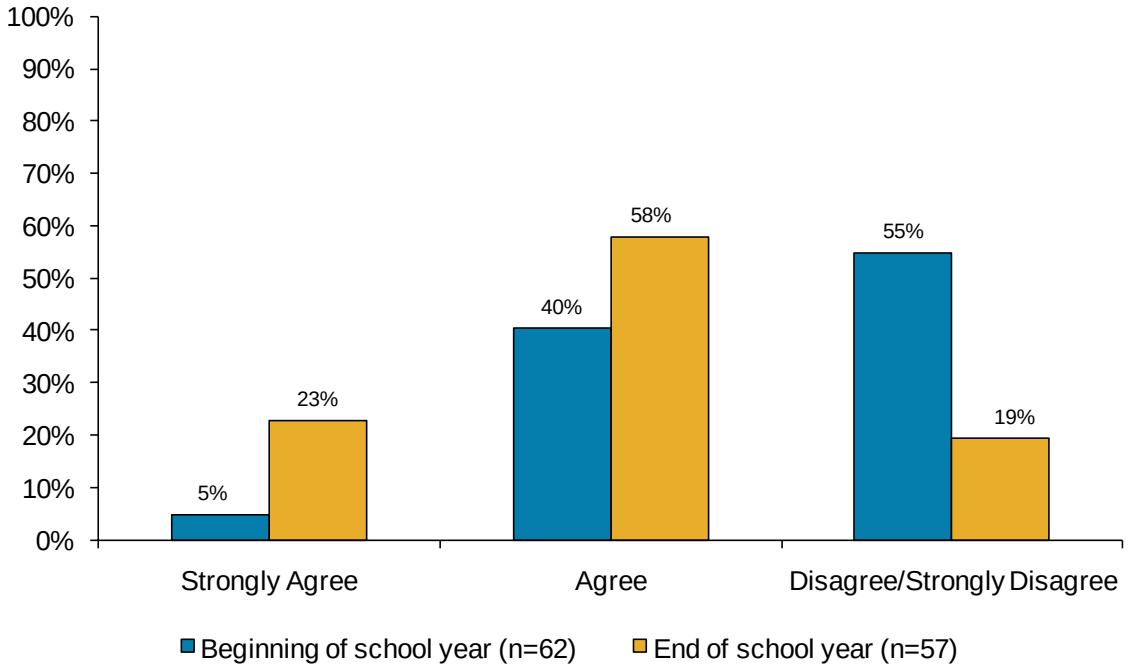


Figure 28. I am able to use digital tools to personalize learning activities to meet individual student needs (non-SINI schools; *end of year* responses comparing treatment and control)

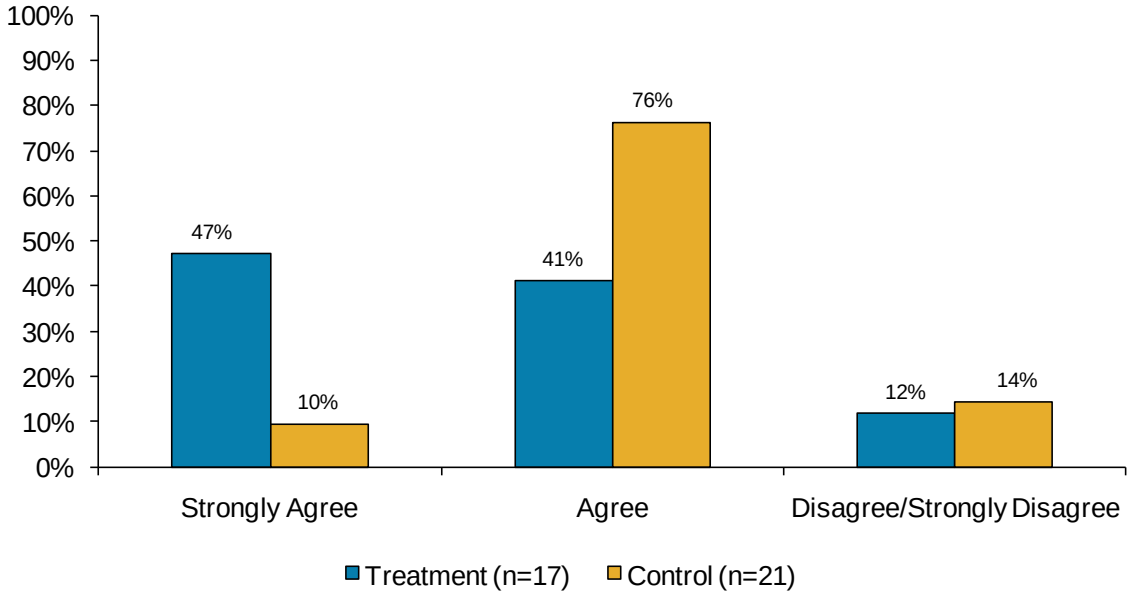
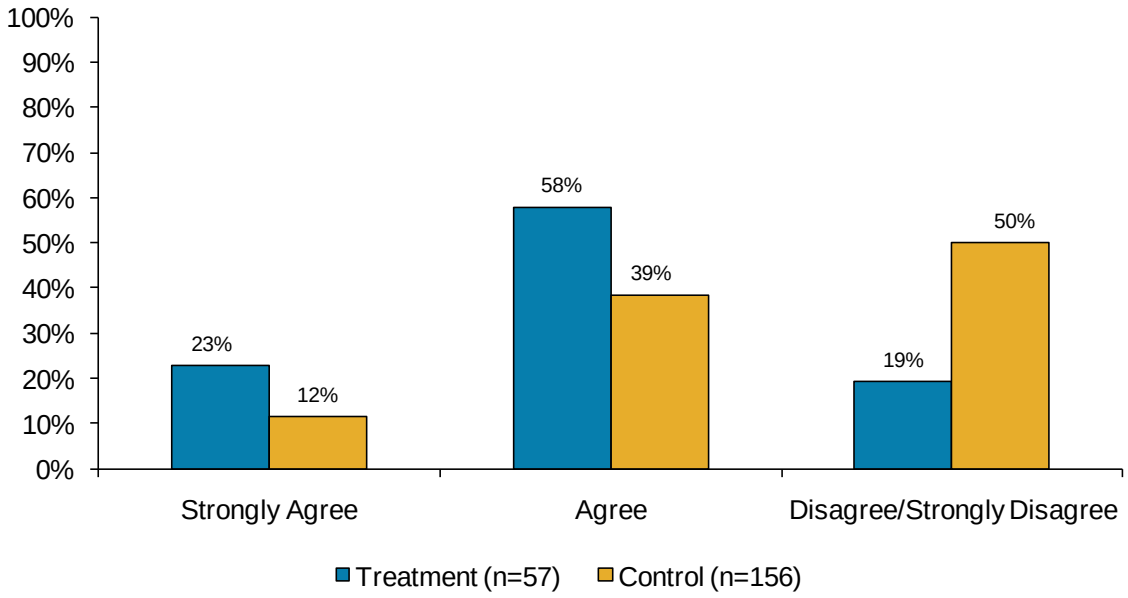


Figure 29. I am able to use digital tools to personalize learning activities to meet individual student needs (SINI schools; *end of year* responses comparing treatment and control)



Of the 18 ARRA/Title II-D sites that participated in focus groups, five are districts in need of improvement. Both in need and not in need sites reported similar implementation successes and challenges. Both groups also cited numerous advantages of using the grant resources to differentiate instruction, including increased ease of using technology for differentiation, better access to information, and more opportunities to cater to various learning styles. One administrator echoed the universal enthusiasm regarding the technology's capacity to help students who "have not been reached with traditional teaching."

5. RQ5: How are grantees doing in terms of training teachers not only how to use technology but also how to translate their new skills into practice in their teaching?

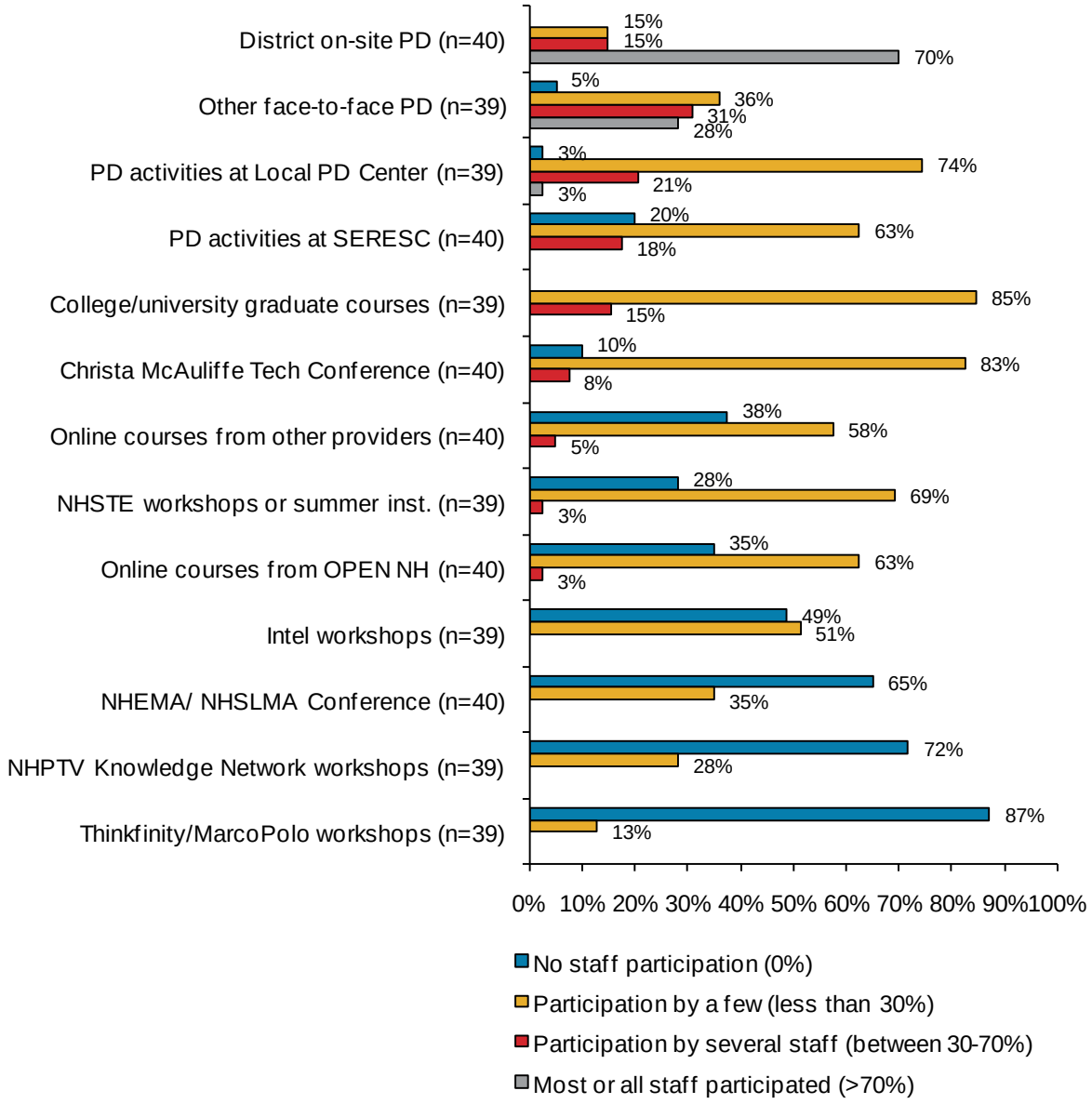
Professional development plays a critical role in the ARRA/Title II-D grant, and all districts receiving ARRA Ed Tech funds must set aside 25.0 percent of their total grant funds for professional development. As of March 2010, most sites had either conducted training or had training planned for the coming months and throughout grant implementation. Administrators and teachers generally believe that more professional development and time to learn, practice and integrate the new technology will further facilitate meaningful implementation. Most administrators indicated that their school provides teachers with time during regular school hours for professional development, though teachers generally believe more time is needed to learn, practice and integrate the new equipment. According to the teachers, hands-on practice is particular is lacking. Further, variations among sites in pre-existing skills/provisions and in receiving, inventorying, and installing technology are affecting the timing and content of professional development.

Participation in Training Activities

In order to gain a better understanding of the impact the ARRA/Title II-D grant program is having on teacher training, educators and administrators provided survey feedback on the training they have participated in to date, as well as what they perceived to be additional professional development needs. By Spring 2010, most sites had either conducted training or had training planned for the near future and throughout the life of the project. However, teachers at some sites still did not know what equipment they would receive and had not heard of any relevant training sessions.

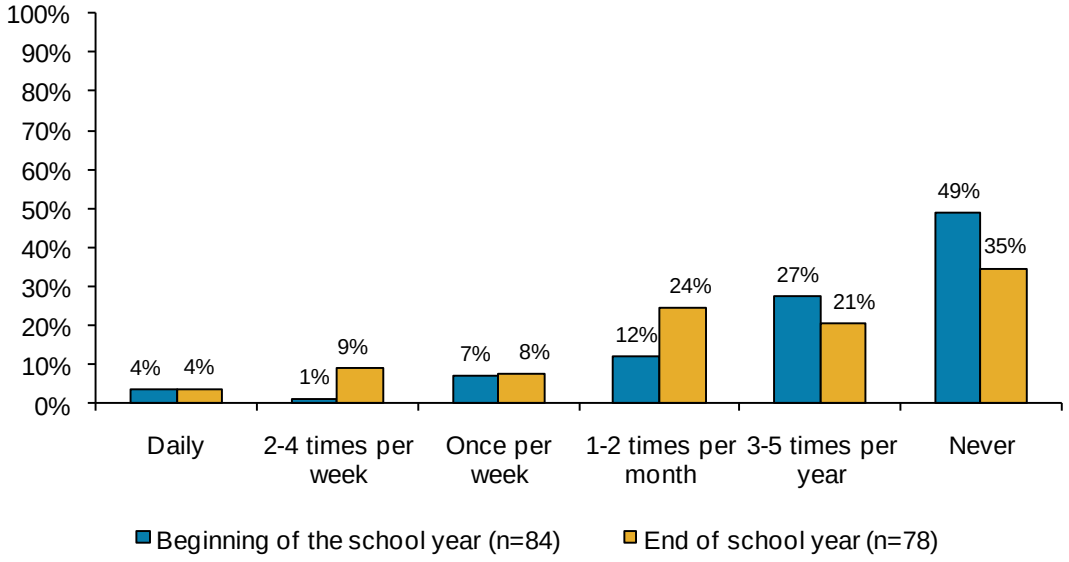
Most sites indicated their training would use a combination of external trainers and in-house staff, according to teacher and administrator focus groups. Seventy percent of administrators from ARRA/Title II-D participating schools reported that most or all staff in their school participated in district on-site professional development. Many administrators also reported that a small portion of their staff (<30%) in their school participated in college/university graduate courses (84.6%) and the Christa McAuliffe Tech Conference (82.5%), an annual meeting readily attended by ARRA/Title II-D grant recipients. It is important to note that the activities listed in Figure 31 represent school-wide participation in professional development, and not just those professional development activities specific to ARRA participation. As professional development or training outside of the district is often cost prohibitive and may include time outside of teachers' normal schedules, on-site professional development will continue to benefit the largest number of teachers (see Figure 30).

Figure 30. Staff participation in professional development or training (treatment)



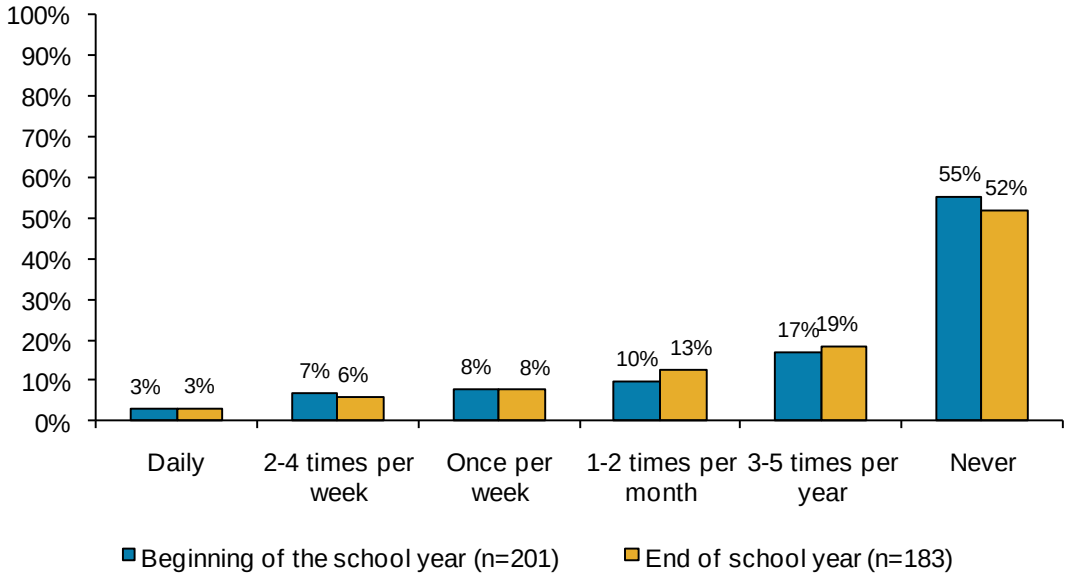
Teachers were asked in the Educator Survey to reflect on their participation in online learning communities for professional development, both prior to and six months after implementation. Frequency of participation increased in general between the two points in time, as the percentage of teachers who reported never engaging in online learning communities decreased from 48.8 percent to 34.6 percent (see Figure 31 for details).

Figure 31. Frequency of teacher participation in online learning communities for professional development (treatment)



While the treatment group saw a steep movement away from "never" participating in these communities, the control group saw only a very small decrease in those who never participate (3.3%). In general, the control group's frequencies stayed relatively the same from beginning to the end of the school year, while the treatment group saw a greater change (see Figure 32).

Figure 32. Frequency of teacher participation in online learning communities for professional development (control)



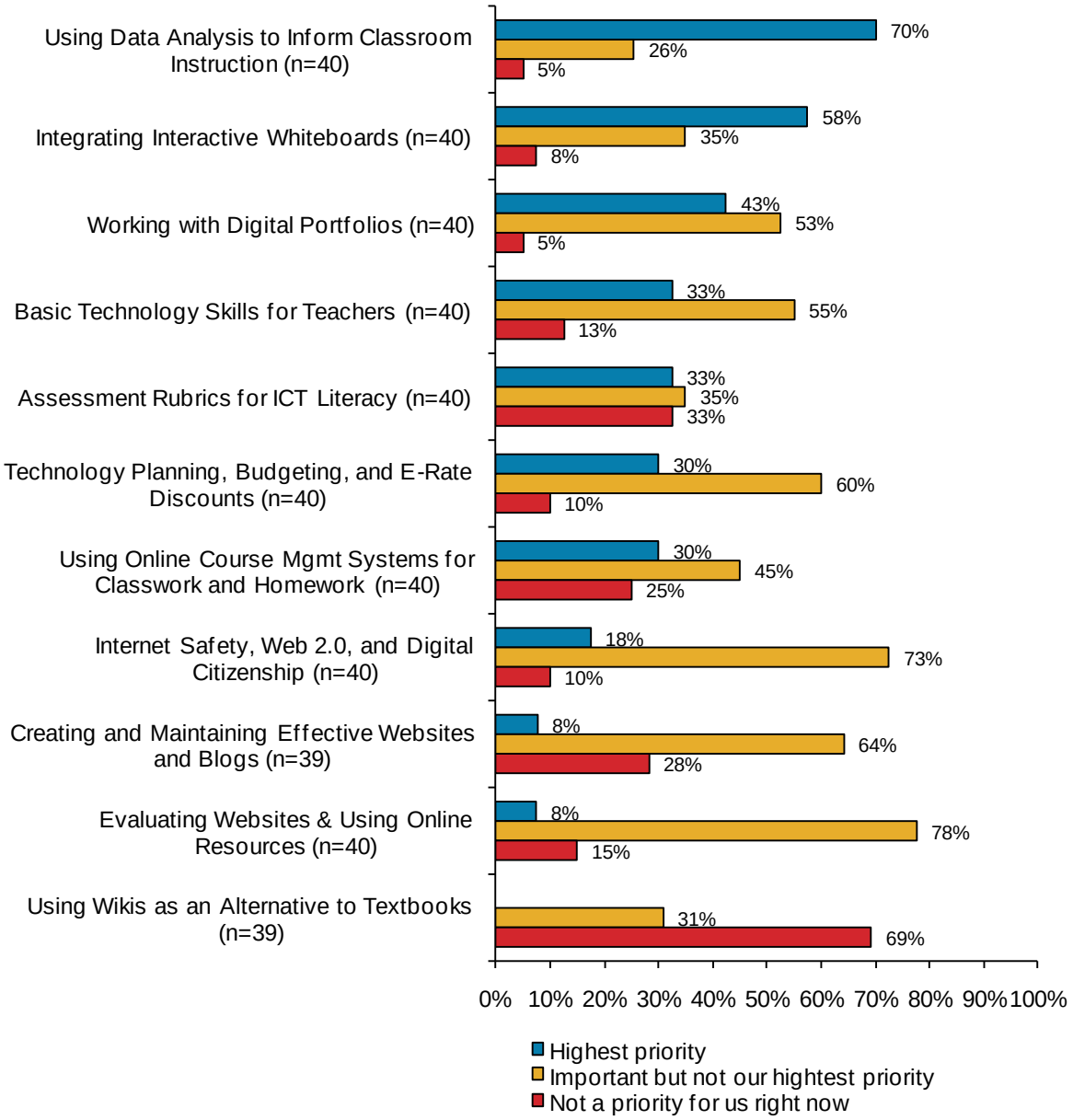
Professional Development Content and Teachers' Training Needs

Some sites indicated their training was relevant to the new technology, while other sites indicated their training was not specific to the technology being purchased with ARRA funds. This variation may be attributed to sites receiving their funding and the corresponding technology at different times. Another factor that appears to have influenced the type of professional development offered is that some sites that were already being familiar with the technology instead focused their professional development on curricular integration.

When asked to rate the importance of various technology professional development topics for their school, the highest rated item was "using data analysis to inform classroom instruction," which was rated "highest priority" by 70.0 percent of the administrator respondents. The second highest rated topic was integrating interactive whiteboards, which received a "highest priority" rating from 57.9 percent of respondents. Most of the other items on the list (see Figure 33) received middle range ratings of importance. The only items that received a majority rating of "not a priority" (69.2%) were using wikis as an alternative to textbooks.

Most of the topics administrators rated highly on the list involved direct implementation and effective use of the technology (e.g., using data analysis to inform classroom instruction, integrating interactive whiteboards, basic technology skills for teachers). In contrast, most topics that received mid-range or low overall priority ratings involved longer-term integration or novelty applications (e.g., using wikis, creating and maintaining websites and blogs, using online course management systems).

Figure 33. Teachers' need for professional development of technology topics (treatment)

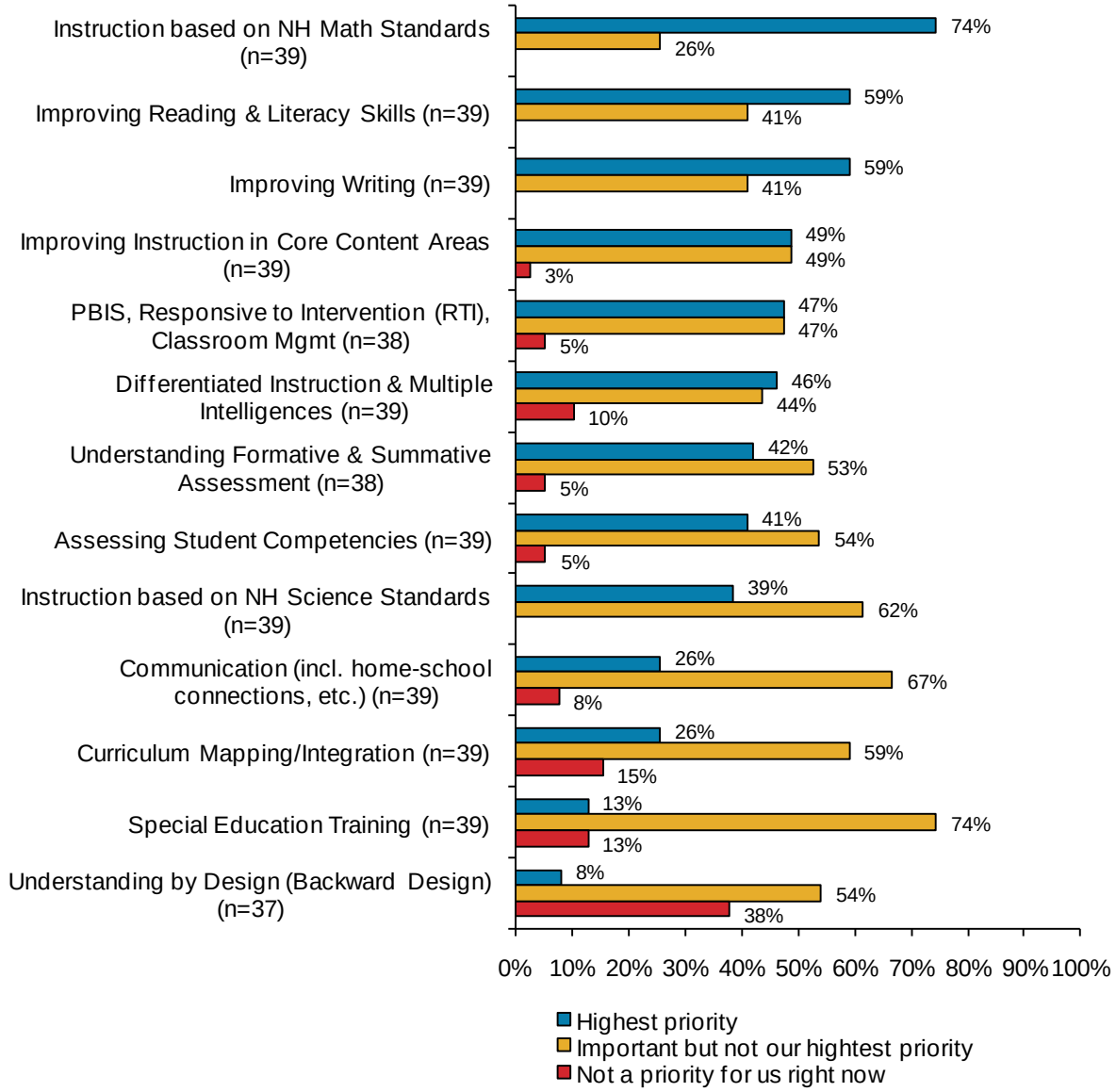


In considering professional development topics outside of technology, nearly three-quarters of administrators (74.4%) rated "instruction based on NH Math Standards" as highest priority, which was followed in the ratings by improving reading and literacy skills and improving writing, which were both rated highest priority by 59.0 percent of the respondents. No items were rated as "not a priority" by a majority of teachers, but Understanding by Design had the most respondents give it the lowest rating (38.0%).

Figure 34 shows that most of the topics that administrators rated as highest priority include content-based training (e.g., improving reading and literacy, improving writing, improving instruction in core content areas). Curriculum- or assessment-based training items (e.g.,

assessing student competencies, understanding formative and summative assessment, curriculum mapping/integration, and understanding by design) were generally rated lower. Overall, the data suggest that while administrators feel curriculum- or assessment-based training is important, their priority is on the direct needs to improve student reading, writing, and mathematics skills.

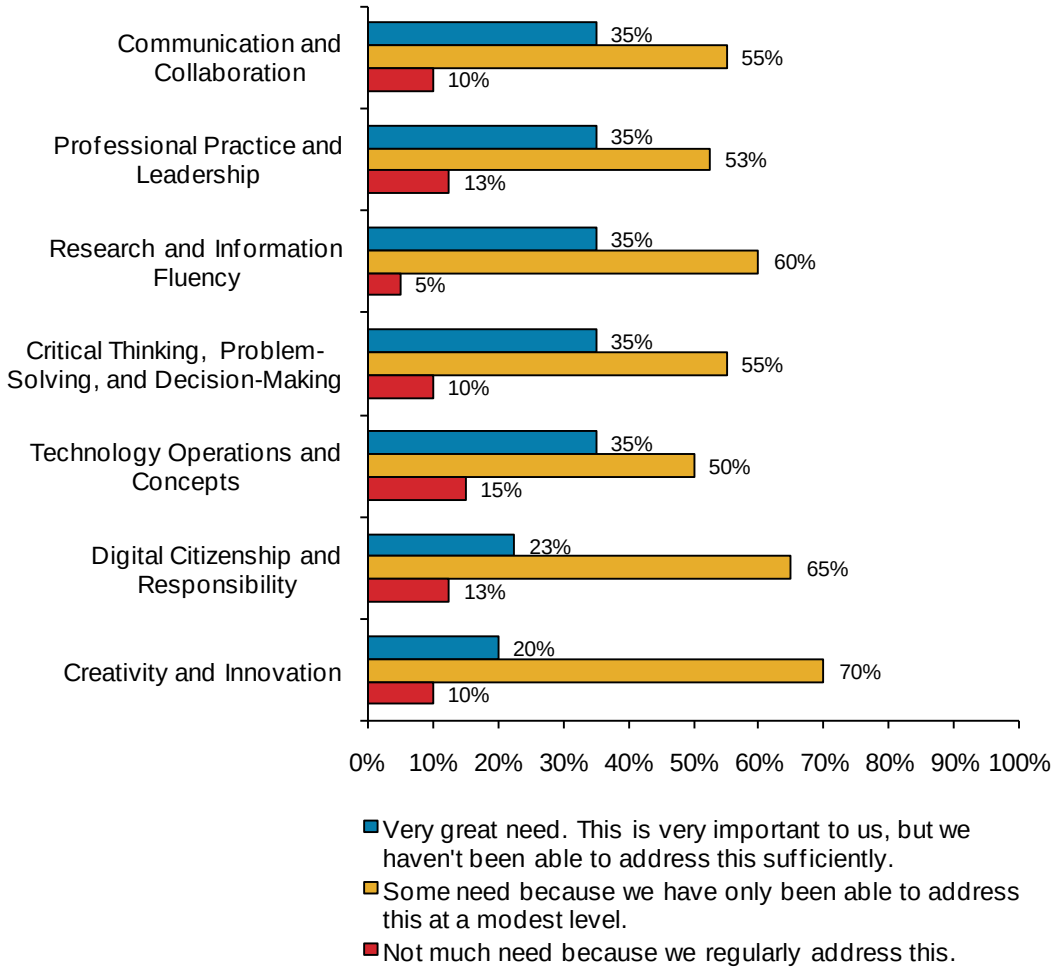
Figure 34. Teachers' need for professional development of non-technology topics (treatment)



Administrators from ARRA/Title II-D schools were also asked to indicate their level of training need within each ISTE NETS-T content area. These areas are communication and collaboration; professional practice and leadership; research and information fluency; critical thinking, problem-solving, and decision-making; technology operations and concepts; digital citizenship and responsibility; and creativity and innovation.

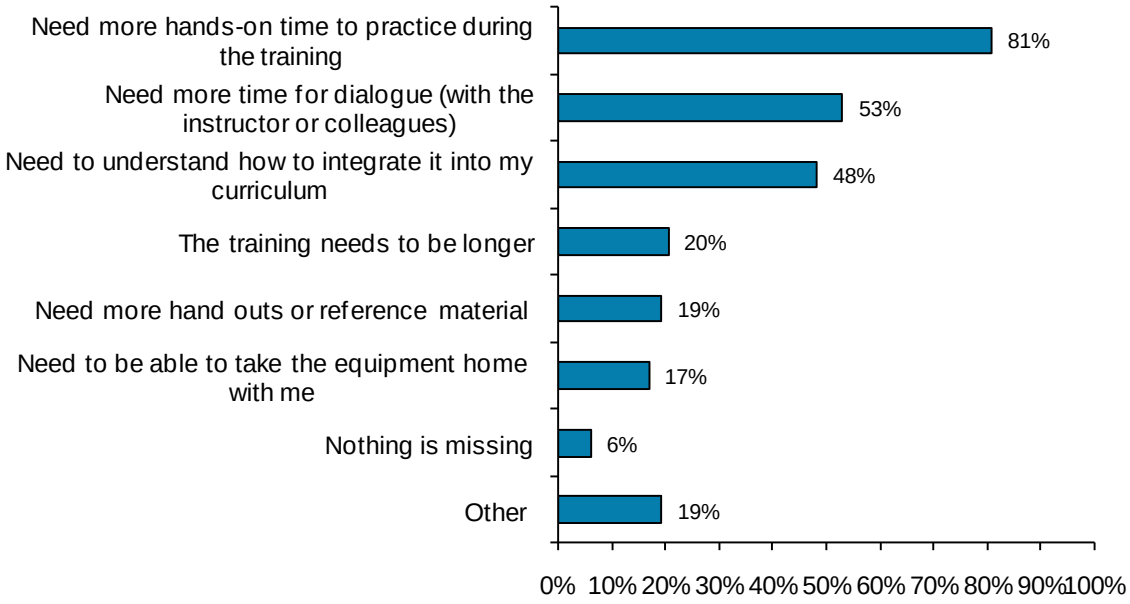
The ratings across the seven topics were remarkably similar. Between 20.0 and 35.0 percent of respondents reported a *very great need* for each category, while the range of respondents reporting no need ranged from just 5.0 to 15.0 percent across the list (Figure 35). For all items, a small to moderate majority reported that their schools have been able to provide the professional development in the content area at a modest level but would like to receive more training.

Figure 35. Teachers' need for professional development in NETS-T content areas (treatment; n=40)



When asked what aspects of training are missing from the current professional development opportunities being offered through the ARRA/Title II-D grant, the most common response by far was the need for more hands-on time to practice during training (80.7%). Approximately half of the respondents also identified more time for dialogue with the instructor or colleagues (53.0%), and understanding how to integrate the training into curriculum (48.2%) as shortcomings (Figure 36).

Figure 36. What aspects of training do you feel are missing from current trainings? (n=83)



Training Challenges

Variations across sites in the receipt, inventory, and installation of technology appear to have affected the timing of professional development and implementation. At the time of the focus groups (March 2010), some teachers had not yet received new equipment and were unaware of when they would be receiving relevant trainings while others already had equipment installed and training completed. For those who had not yet received equipment but did receive professional development as of March 2010, teachers expressed concerns about forgetting what they learned as they have not been able to practice with the equipment.

Among the potential barriers identified by teachers and administrators in focus groups, time constraints were a common theme. More specifically, time constraints in learning, practicing, and integrating the equipment, as well as attending professional development were commonly cited. Some teachers elaborated further on this issue, indicating they feel pressure to use their own time to learn the new technologies. As one teacher indicated, this brings about a "disconnect between expectations and reality." However, it is also important to recognize that 87.5 percent of administrator respondents to the School ICT Literacy/Professional Development survey reported that their school provides teachers with time during regular school hours for learning and professional development growth opportunities. This indicates that while schools are providing teachers with time for professional development and training, teachers need more time to accommodate the drastic changes in their classrooms that are occurring as a result of the new technology. Finally, some sites discussed student challenges and frustrations associated with the new technology as a potential barrier to proper implementation.

B. Preliminary Discussion of Exemplary Sites

Data from the Educator Survey and Case Study Form were examined in order to identify potential "exemplar sites" whose descriptions and data indicate strong promise of success. In identifying these projects, several characteristics, based on the research on instructional technology implementation, were used to determine which projects exhibit great potential to have positive effects on technology integration and student learning. While other sites may have similar promising projects, information available on those projects may have been more limited – as these determinations were made from data and descriptions provided by schools, and not from direct observations in schools – possibly resulting in unidentified projects despite their potential for success. Due to the preliminary nature of these findings, district names have been omitted from this report and replaced with a letter code below.

The characteristics used to identify the "exemplar sites" included the following:

- presence of a clear, concise project description that suggested school staff have a concrete plan for achieving their stated goals
- evidence of addressing common barriers to technology use such as access, technical support, and teacher efficacy with respect to technology
- evidence of the presence of effective professional development including provisions for gaining necessary technical skills and support (i.e., coaching or modeling)

District A

Survey data from District A teachers notes many preliminary successes as a result of this project. At the end of the year, respondents could design learning experiences that require students to use netbooks, digital presentations tools, interactive whiteboards, and digital handheld tools (like probes), in addition to using these lessons to meet instructional objectives – both of which they were not able to do at the beginning of the year.

Teachers now adapt lessons to use digital tools, and are using technology to individualize instruction. Everyone who responded to the survey feels proficient in using technology in the classroom. Additionally, most of the District A teachers report collaborating with other teachers regarding their use of technology in the classroom at least once per week.

District B

Survey data from District B teachers indicates promising early impacts resulting from this project. At the end of the school year, teachers indicated their ability to design learning experiences that require students to use netbooks and digital presentation tools had improved, and they were better able to adapt lessons to use digital tools and could use them to personalize learning for individual students. Technology use in classrooms increased as well, with the majority of teachers indicating they use technology with students at least twice a week, and a substantial number of teachers indicating they used technology daily in learning activities.

Site-level data from these districts as well as others will continue to be reviewed during the 2010-11 school year, and those sites determined to be exemplary will be presented in the Final Evaluation Report, along with supporting data.

C. CONCLUSIONS

The section that follows presents conclusions based upon the interpretation of findings across the five research questions.

1. RQ1: How well are school staff members turning classrooms into *technology-rich learning environments*, fully equipped with hardware, software, and rich digital resources for learning?

There are a variety of technical provisions, solutions and infrastructure capabilities across ARRA-participating districts and schools. This has implications for varying degrees of challenges and barriers for technology use throughout the life of the grant, in addition to offering a variety of potential solutions for incorporating the resources.

Notable differences in technology usage are emerging between the teachers with access to the grant resources and those in the control group. In particular, frequency of use across a variety of technologies and pedagogical applications are on the rise for treatment teachers while levels of usage remain lower and unchanging among the control group. Technological abilities among treatment participants also appear to be improving while those among control group teachers remain as they had at the beginning of the year. These reported pedagogical developments may be a result of educators' increased confidence in using technology in the classroom which started strong and nevertheless grew even further during the first year of the grant.

A stronger, more entrenched technology culture among all levels of stakeholders – administrators, teachers and students – appears to be taking hold in ARRA schools, despite the widely noted barriers and areas for improvement. Nearly all educators believe that instructional technology improves learning and report that using technology increases their instructional effectiveness. The percentage of teachers who *strongly* agreed with these statements increased notably over the year. Administrative support appears to be substantial and collegial support is reportedly on the rise. More educators have prompted their students to use technology during their downtime, contributing to a classroom culture in which technology is more securely embedded into all facets – formal and informal – of instructional practices.

2. RQ2: To what degree are these settings encouraging mediating outcomes for students including interactive learning, higher-level thinking skills, and student engagement?

Educators reported that students appear increasingly engaged in the technology, and exhibit increases in motivation and capacity to stay on-task. These increases were noted among several survey variables that compared the period prior to implementation to six months after the grant's launch. These changes were notably more substantial than the changes in the observations of the control group teachers.

Students are increasingly using technology to support dynamic learning activities, though there is still room for growth. Educators reported prominent increases in using technology to address all areas of students' interactive learning and higher-level thinking skills. However, these most notable increases of technology use were often in less complex areas of student learning/thinking

– i.e., practicing skills and reviewing – while more intricate thinking applications saw less substantial increases. This suggests that more growth is possible in higher-order learning applications if teachers can become more comfortable with the technology and more confident in using the resources in more complex ways.

While students in ARRA/Title II-D schools exhibited strong competency in ICT literacies, there is still ample room for growth in these areas. Across the six ICT competency requirements, between 82.1 and 89.0 percent of eighth grade students met the requirements at the end of the 2009-10 academic year. However, *critical thinking, problem solving & decision making* and *communication & collaboration* were among the competencies met by the smallest proportion of eighth graders, again demonstrating particular room for growth in these higher-order thinking, innovative applications of technology.

There continue to be multiple potential barriers to achieving student outcomes that are commonly reported across the participating sites, including: equipment delays (in receiving or installing), lacking infrastructures, few IT staff, and issues with providing proper professional development for teachers. Researchers will continue to assess continued challenges and strategies for overcoming these barriers as schools and educators continue with grant implementation.

3. RQ3: To what degree does the provision of technology tools translate into real opportunities for students to collaborate and connect with new content?

The percentage of educators who report using technology to facilitate student collaboration is on the rise, but preliminary student outcomes indicate that this as an area for further improvement. Educators reported an increase in technology use among all types of student groups (independent, small groups, partner, and whole class), indicating the grant resources are positively impacting all ways of engaging students, in both collaborative *and* independent work. Nevertheless, the average number of eighth grade students in 2009-10 who met the ICT competency requirement by the end of the year was lowest for the *communication and collaboration* portion, indicating room for potential growth as teachers gain more confidence in using technology with students in collaborative settings.

Students are likely to be exposed to the proper outlets to meaningfully connect with new content using technology as a result of the grant implementation. Several ICT competency requirements gauged in 2009-10 among eighth graders – particularly, *technology operations and concepts* and *research & information fluency/research tools* – were met by larger proportions of students, which may be potential gateways to connecting with new content via technology as the grant period progresses. Further, several related, purposeful learning activities facilitated by educators (e.g., researching, constructing new knowledge) were increasingly addressed with technology, providing potential outlets for students to connect with new subject matter.

4. RQ4: How are new technologies and resources serving students of various groups, including those with the highest need?

Educator data suggest a slightly disproportionate distribution of and access to the grant resources by school need. As of Spring 2010, more than one in four educators from SINI buildings had

either not yet begun to implement the technology with students or not received sufficient resources to begin; in comparison, all non-SINI teachers had received at least some of their technology and had begun implementing resources with students. Further, 70.0 percent of non-SINI teachers received all of their ARRA/Title II-D grant-funded technology, compared to only 36.9 percent of SINI teachers (15.4% of SINI had not received any resources to date, compared to 0.0% of non-SINI).

Despite being less likely to have received all of their grant-appropriated resources and to have used them with their students, SINIs have been successful in increasing educators' ability to personalize learning activities and meet student needs using these tools. At the beginning of the school year, fewer than half of SINI educators felt they were able to use digital tools to personalize learning activities and meet individual student needs, compared to three-quarters of non-SINI teachers. By the spring, the gap between SINI and non-SINI teachers had disappeared, as roughly 80 percent of both groups reported being able to use the appropriate tools to facilitate individualized learning.

5. RQ5: How are grantees doing in terms of training teachers not only how to use technology but also how to translate their new skills into practice in their teaching?

As of March 2010, most sites had either conducted training or had training planned for the coming months and throughout grant implementation. Further, participation in professional learning communities is on the rise. Both teachers and administrators generally believe that more professional development and time to learn, practice, and integrate the new technology will further facilitate meaningful implementation.

Over 80 percent of teachers indicated that most of the relevant professional development or training topics are a priority for them. However, topics teachers rated as either most highly generally involve direct implementation and effective use of the new technology while more novelty or long-term integration needs were rated lower.

More educators participate in district on-site professional development than other forms of training or professional development. As externally-provided professional development or training is often cost prohibitive and may include time outside of teachers' normal schedules, on-site professional development appears to benefit the largest number of teachers. Most educators indicated that their school provides them with time during regular school hours for professional development but they believe more time is needed to learn, practice, and integrate new equipment, as hands-on practice in particular appears to be missing from these opportunities.

Variations among sites in receiving, inventorying, and installing technology affect timing of professional development. Some teachers who had not yet received new equipment were unaware of when they would be receiving relevant trainings. Among those who had not yet received equipment but did receive professional development, teachers expressed concern over potentially forgetting what they had learned before putting those skills to use.

VI. Recommendations and Lessons Learned

As the 2009-2010 school year represents only the first year of project implementation for the ARRA/Title II-D grant recipients, the recommendations presented here are based on limited data. Some preliminary recommendations are presented below; these recommendations will be revisited and augmented in the Final Evaluation Report. This interim report does not include a section on lessons learned, as the ARRA/Title II-D projects have not yet reached a level of implementation where meaningful reflection can be engaged to develop a list of lessons learned.

With these limitations in mind, we present the following interim recommendations based on the data collected to date:

Continue to reach out to schools with limited technology support staff. Several administrators from ARRA schools reported having just one part-time or full-time IT staff member at the district level. In the majority of these districts, support services were typically provided by this single person who often also served in other positions/roles and was responsible for multiple school buildings. Personnel are potentially being stretched beyond their capacities which could have consequences for maximizing ARRA resource integration down the road. Therefore, districts would likely benefit from the state providing additional strategies and best practices for having individuals fill a variety of tech roles across multiple buildings. Variation in technical support available to teachers was also a concern among focus groups. Both teachers and administrators cited insufficient technical support staff as a potential barrier – especially regarding equipment functionality and troubleshooting knowledge – and as an area of need in discussions of additional school or district support.

Encourage more discussions among educators about the benefits of allowing students to access the school network from home. ARRA Schools generally report that students in Grades K-8 have student accounts on their networks, though few of the students can access these accounts at home or are permitted to regularly send and receive emails. Further, several teachers were frustrated by the fact that not all students are able to electronically complete homework or practice at home. While many of these barriers are difficult for the school to ameliorate, maximizing the extent to which students can work on a collaborative space on the school's network, regardless of time or location, should provide some help to this situation. Expanded access to school-supported work spaces could open up new dynamics for student learning that are not limited to school walls and hours and provides a direct line of learning from the classroom to the home (and other out of school spaces). One way more teachers can provide this collaborative out-of-school teaching and learning space is by creating and maintaining class websites for communications with parents and students. Only one-third of ARRA schools require their teachers to provide a class website for communications.

Encourage educators to continue to provide students with new opportunities to interact with the technology and to use the resources to connect to new content and collaborate with one another. Educators report notable improvements in student engagement when using the technology provided by the grant. Furthermore, they have reported increased instances of using technology for student collaboration and accessing/constructing knowledge around new content during the grant period. As the technology continues to be integrated into the classroom,

educators should receive support for developing new ways to help students continue their growth in these areas.

Provide additional assistance to schools in need of improvement for obtaining their full allocation of resources and identifying strategies for putting the resources to use. Schools in need of improvement were less likely to have received the full amount of their grant-allocated resources and less likely to have used the technology with their students six months into project implementation. As these schools are at greatest risk of not meeting Adequate Yearly Progress (AYP) goals, they stand to benefit the most from potential improved learning outcomes that are expected to result from ARRA participation. It is therefore vital that NHDOE ensure that these schools get their allocated resources as soon as possible and receive the necessary support for installing the equipment and training teachers to use it.

Continue to provide teachers with high-quality, relevant, focused professional development opportunities. Training is not yet consistently provided upon receiving the technology, as some schools still report struggles in providing targeted professional development for teachers and working around varying schedules of technology access/distribution. Some educators report needs in applying technology for specific learning activities (e.g., improving student writing), while others still need more experience using the technology itself (e.g., troubleshooting; hands-on practice) and finding ways to integrate the tools into their classrooms and curriculum.

To the extent possible, offer opportunities for staff members to participate in district on-site professional development or training during regular school hours. Teachers expressed a preference for ARRA-related professional development to take place on site and during school hours. Should the district or school find other forms of professional development or training more advantageous, providing incentives to encourage more teachers to participate ought to be considered.

Appendices

Appendix 1:
List of Acronyms and Abbreviations

List of Acronyms and Abbreviations

ARRA	American Reinvestment and Recovery Act
AYP	Adequate Yearly Progress
CACES	Capital Area Center for Educational Support
DINI	District In Need of Improvement
DSL	Digital Subscriber Line
ED	U.S. Department of Education
EETT	Enhancing Education Through Technology
ESEA	Elementary and Secondary Education Act
ICT	Information and Communication Technologies
ISDN	Integrated Services Digital Network
ISTE	International Society for Technology in Education
LESCN	Local Education Support Center Network
LoTi	Levels of Teaching Innovations
McREL	Mid-continent Research for Education and Learning
NCES	National Center for Educational Statistics
NCLB	No Child Left Behind Act
NECAP	New England Common Assessment Program
NETS-S	National Education Technology Standards for Students
NETS-T	National Education Technology Standards for Teachers
NH	New Hampshire
NHDOE	New Hampshire Department of Education
NWEA	Northwest Evaluation Association
OPEN NH	Online Professional Education Network New Hampshire
SAT	Scholastic Aptitude Test
SINI	School In Need of Improvement
STaR	School Technology and Readiness
Tech/Tech.	Technology
TLC	Tech Leader Cohort
TLCF	Technology Literacy Challenge Fund

Appendix 2:
Evaluation Timetable

Table 9. ARRA 21st Century Classrooms Timetable

ARRA	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
	School Year 2009-2010						School Year 2010-2011									
Evaluation Contract Signed	■															
Spring 2010 Instrument Development	■	■	■													
Spring 2010 Instrument Implementation	■	■		■												
Spring 2010 Data Analysis & Site-Level Reporting					■	■										
USDOE Reporting for School Year 2009-2010							■	■	■							
Fall 2010 Instrument Development					■	■										
Fall 2010 Instrument Implementation							■	■								
Fall 2010 Data Analysis & Site-Level Reporting										■	■					
Spring 2011 Instrument Implementation													■	■	■	
Spring 2011 Data Analysis & Site-Level Reporting																■
USDOE Reporting for School Year 2010-2011																■

Table 10. TLC Program/Classroom Technology Mini-Grants Timetable

TLC/Mini-Grants	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
	School Year 2009-2010						School Year 2010-2011									
Evaluation Contract Signed	■															
Fall 2010 Instrument Development (includes retrospective pre-test and post-test)							■									
Fall 2010 Instrument Implementation								■	■							
USDOE Reporting for School Year 2010-2011																■

Appendix 3:
Bibliography of References

Bibliography

Borgers, N., de Leeuw, E., & Hox, J. (2000, April). Children as respondents in survey research: Cognitive development and Response quality. *Bulletin de Methodologie Sociologique*, *66*, 60-75.

NHDOE RFP: http://www.nheon.org/oet/nclb/2009-10/TitleIID-Round8-RFP2009-10.htm

Partnership for 21st Century Skills website: http://www.p21.org/.

Appendix 4:
Evaluation Instruments

NH School Technology and Readiness (STaR) Chart

How to use this chart:
Assess your district levels for each row/item and fill in the appropriate level numbers in the last column of the chart.

About this chart
The NH STaR Chart was derived from the Massachusetts and Texas charts of the same name.

A strong district technology plan should reflect the elements in the chart. We recommend that local technology plan benchmarks be defined by the Proficient Tech level (3) of the following columns:

Teaching & Learning:	T&L2 - Patterns of Teacher Use
Teaching & Learning:	T&L5 - Patterns of Student Use
Professional Development:	PD2 - Capabilities of Educators
Administration & Support:	A&S2 - Technical Support
Administration & Support:	A&S3 - Curriculum Integration Staffing
Administration & Support:	A&S5 - Budget Allocated for Technology
Infrastructure for Technology:	IN2 - Students per Instructional Computer
Infrastructure for Technology:	IN3 - Internet Access
Infrastructure for Technology:	IN4 - E-Learning Environments
Infrastructure for Technology:	IN5 - LAN/WAN

This NH STaR chart is also used to provide guidance to the New Hampshire Department of Education about grant distribution by offering a common set of goals. There are several assumptions built into this work:

- That technology should be integrated into teaching and learning so that its use extends opportunities and potential for all students.
- That the effective use of technology involves the many elements specified in the chart by the 23 columns. Technology in education, used appropriately and effectively, is a complex set of interactions of people, materials, infrastructure and continuous support. It is not a single investment at one time.
- That the chart is reviewed and updated annually.
- The chart is "forward looking" because technology constantly changes and educators need to consider how these changes impact teaching and learning.
- The chart strikes a balance between what is reasonable in schools given the current funding and what is desirable given our goals for student learning and the communities' expectations.

Focus Areas / Levels of Progress		Early Tech	Developing Tech	Proficient Tech	Advanced Tech	Our District Levels
		1	2	3	4	
T&L 1	Impact of Technology on Teacher Role	Mostly teacher-centered lectures. Minimal student use of technology in instruction.	Mostly teacher directed learning. Students use technology to work on individual projects	Mostly teacher facilitated learning. Students use technology for cooperative projects in their own classroom.	Mostly student-centered learning, teacher as mentor/facilitator. Students use technology to communicate and collaborate outside the classroom.	
T&L 2	Patterns of Teacher Use	85% of teachers use technology as a productivity tool (e.g. e-mail, grades) and/or as a classroom supplement (e.g. drill and practice).	85% of teachers explore using technology to support curriculum goals (e.g. research, lesson planning)	85% of teachers use technology for research, lesson planning, multimedia and graphical presentations and simulations, and share technology uses with colleagues.	85% of teachers integrate evolving technologies that transform the teaching process by allowing for greater levels of access, interest, inquiry, analysis, collaboration, creativity, and content production.	
T&L 3	Design of Instructional Setting	Mostly computer labs or libraries; scheduled use only.	Labs, libraries, many classrooms; flexible scheduling.	Lab, libraries, all classrooms, and portable technology (e.g. wireless laptops or handheld electronic devices); flexible scheduling.	Seamlessly integrated throughout classes and all content areas. Technology is available anytime both in school and within the community.	
T&L 4	Curriculum Areas	Limited to teaching technology skills at different grade levels.	Use of technology is minimal in a few curricular areas across grade levels.	Integrated into most Framework curricular areas and activities at all grade levels.	Integral to all curricular areas at all grade levels.	
T&L 5	Patterns of Student Use	85% of students are developing some of the ICT literacy skills and artifacts as described in Ed 306.42.	85% of students show proficiency in some of the ICT literacy skills and artifacts as described in Ed 306.42.	85% of students show proficiency in all of the ICT literacy skills as described in Ed 306.42 and demonstrated within their digital portfolios.	All students show proficiency in all of the ICT literacy skills as described in Ed 306.42 and demonstrated within their digital portfolios.	
PD 1	Content of Training	Technology skills (email, word processing, internet browser use, etc.) for teachers' professional use.	Training encompasses more complex professional uses (district applications such as attendance and report cards, scanners, cameras) and curriculum integration strategies.	Training directly ties technology to its use in content areas and how to effectively manage it in the classroom.	Training focuses on modeling, mentoring and adopting new technologies as well as the integration of Universal Design and access considerations for all students.	
PD 2	Capabilities of Educators	10% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.	30% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.	60% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.	90% meet ISTE and/or local district teacher technology competencies and implement them into the school environment.	

Focus Areas / Levels of Progress		Early Tech	Developing Tech	Proficient Tech	Advanced Tech	Our District Levels
		1	2	3	4	
PD 3	**Leadership and Capabilities of Building Principals and District Administrators**	Recognizes benefits of technology in instruction to improve learning outcomes for all students. Minimal personal use (email, word processing, internet browser use, etc.). Awareness of national standards for administrators.	Supports use of technology in instruction. Uses technology in daily work. Approaching proficiency of national standards for administrators.	Recognizes and identifies exemplary use of technology in instruction. Uses technology skills in daily work such as research and communication and models appropriately with staff. Provides constructive feedback to teachers on their technology use.	Promotes exemplary use of technology in instruction. Models and uses in daily work in communication, presentations, on-line collaborative projects, and management tasks. Develops a school culture that expects all teachers to use technology. Advocates in the community for the integration of technology in instruction. Expects all teachers to use technology well.	
PD 4	**Models of Professional Development**	Whole group, skill based training with minimal follow-up.	Whole group curriculum-based training with follow-up to facilitate classroom implementation.	Coaching, modeling best practices, district-based mentoring. Involvement in a development / improvement process. Study groups.	Creates a culture of inquiry, sharing and knowledge building. Anytime learning available through a variety of delivery systems (e.g. Just in time support, mentoring, peer observation).	
PD 5	**Levels of Understanding**	Most at entry or adoption stage (Students learning to use technology; teachers use technology to support traditional instruction).	Most at adaptation stage (technology used to enrich curriculum). Most beginning to use with students.	Most at appropriation stage (technology is integrated, used for its unique capabilities).	Most at invention stage (teachers discover and accept new uses for technology).	
PD 6	**Universal Access: Integration of Universal Design and Assistive Technology**	Emerging awareness of universal design and assistive technologies (hardware/software) limited to special educators; few examples across the district of universal design strategies or assistive technology used to promote access to the general curriculum.	Awareness of universal design and assistive technologies (hardware/software) by special educators & some general educators; universal design strategies or assistive technology used to promote access to the general curriculum demonstrated across all grade levels.	Awareness of universal design and assistive technologies (hardware/software) by special educators & most general educators; universal design strategies or assistive technology used to promote access to the general curriculum demonstrated across all grade levels; staff are designated to provide AT assessment, procurement, support (training) and maintenance.	Systemic adoption of universal design curriculum development strategies and the seamless integration of assistive technology to promote access to the general curriculum for all students; staff are designated to provide AT assessment, procurement, support (training), and maintenance.	

Focus Areas / Levels of Progress		Early Tech	Developing Tech	Proficient Tech	Advanced Tech	Our District Levels
		1	2	3	4	
A&S 1	**Vision and Planning**	Minimal technology plan; technology used mainly for administrative tasks such as word processing, budgeting, attendance, grade book.	The technology plan is approved by the School Board & supported by the Superintendent. The plan is collaboratively developed by key stakeholders (e.g., teachers, parents, community members, local business & individuals w/disabilities), guiding policy & practice. Addresses local district teaching & learning standards.	The technology plan is integrated into the district professional development and school improvement plans; used for internal planning, budgeting, applying for external funding and discounts. Teachers / administrators have a vision for technology use in support of student learning, teacher professionalism, and data management.	The technology plan & vision are focused on improving the success of all students based on needs, research, proven teaching and learning principles and is actively supported by the School Board and Superintendent. The plan is collaboratively developed, guiding policy & practice; updated at least annually.	
A&S 2	**Technical Support (hardware, operating system, network)**	Technical support call-in; response time greater than 24 hours. Problems cause major disruptions to curriculum delivery using technology.	At least one technical staff per 350 computers. Same-day technical support for infrastructure problems by call-in. Problems sometimes cause major disruptions to curriculum delivery using technology. Network Administrator.	At least one technical staff per 200 computers. Same-day in-classroom technical support available. Problems infrequently cause major disruptions to curriculum delivery using technology. Network administrator.	At least one technical staff per 150 computers for just-in-time support. Technical support is readily available on-site for both infrastructure and application problems. Problems do not cause major disruptions to curriculum delivery using technology. Network administrator.	
A&S 3	**Technology Integration Specialist**	No district level Technology Director. Local instructional technology support is inconsistent.	District level Technology Director. One-half instructional technology specialist per 60-120 staff.	District level Technology Director. Dedicated instructional technology specialist - one half person per 30-60 staff. Dedicated staff at district level for data management and assessment.	District Technology Director. Dedicated instructional technology specialist - one half person per 30-60 staff. Dedicated staff at district level for data management and assessment and to help produce integrated curriculum content.	
A&S 4	**Budget Levels**	Budget for hardware and software purchases and professional development.	Budget for hardware and software purchases (new and replacement) and professional development, minimal staffing support, and some ongoing costs.	Budget for purchases, professional development, adequate staffing support, and ongoing costs. Other state, federal, and local programs directed to support technology funding. Business partnerships, donations, and other local funding designated for technology.	Budget for purchases, incentives for professional development, sufficient staffing support, and ongoing costs. Appropriate budget to support district technology plan.	
A&S 5	**Budget Allocated for Technology (Total Cost of Ownership)**	Less than $175 per student.	Between $175- $300 per student.	Between $300 - $425 per student	$425 or more per student	

Focus Areas / Levels of Progress		Early Tech	Developing Tech	Proficient Tech	Advanced Tech	Our District Levels
		1	2	3	4	
IN 1	**Universal Design and Accessible Technology Considerations (e.g. Section 508)**	Considerations for universal design and accessible technologies are limited to the Individual Education Program (IEP) process for students with disabilities. Procurement policies for information and instructional technologies do not ensure usability, equivalent access, or interoperability.	Considerations for universal design and accessible technologies are established in areas of high student use (e.g., libraries, computer labs); inconsistent implementation of procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability.	Considerations for universal design and accessible technologies are established in areas of high student use (e.g., libraries, computer labs), some classrooms and administrative offices; routine implementation of procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability.	Universal design and accessible technologies considerations are established throughout the district; procurement policies for information and instructional technologies that ensure usability, equivalent access, and interoperability in accordance to the guidelines established by Section 508.	
IN 2	**Students Per Instructional Computer**	10 or more students per modern computer; no firm computer replacement policy established by district. [Modern is defined by the most recent NH annual tech survey computer levels.]	Less than 10 students per modern computer; replacement policy established; one computer per teacher.	Less than 5 students per modern computer; replacement cycle established for 6 years or less; one computer per teacher - possibly a laptop for homework. Most students have access to handheld electronics (e.g., PDA's, graphing calculators, Alpha Smarts). Maintains a list of places students can use technology outside of school.	One student per modern computer or other electronic device. Replacement cycle established for 5-6 years or less; one computer per teacher - possibly a laptop for homework. 75% of computers meet modern standards. School works with community to provide equitable access to technology for students and community members after school hours.	
IN 3	**Internet Access Connectivity/Speed**	Dial-up connectivity to the Internet available only on a few computers. District wide acceptable use policy in place.	Direct connectivity to the Internet available at each school and in most rooms. Adequate bandwidth to the school to avoid most delays.	Direct connectivity to the Internet available in all rooms in all schools. Adequate bandwidth to each classroom over the LAN (10/100mb) to avoid most delays. Easy access for students and teachers including some wireless.	Direct connectivity to the Internet available in all rooms in all schools. Adequate bandwidth to each classroom over the LAN (10/100mb). Easy access for students and teachers including most wireless connectivity to enable interactive presentations and video.	
IN 4	**E-Learning Environments**	Limited web- and/or satellite-based interactive learning opportunities delivered synchronously, or asynchronously, on a scheduled or unscheduled basis, primarily for professional development and limited exploration of web 2.0 technologies.	Expanded interactive learning opportunities with the possible addition of asynchronous video streaming or synchronous videoconferencing; addition of courses for teachers and student courses at the high school and college level (K-16); some use of web 2.0 technologies.	Improved access to web-based and/or interactive IP-based video learning on the local, state, regional, national, and international level; applications include courses, cultural projects, virtual field trips, etc.; expanded use of web 2.0 technologies by both teachers and students.	Seamless IP-based infrastructure expanded to K-16 to allow development of high-quality web- and video-based content. Content distribution available for all students and teachers. Archives allow for content review asynchronously and sharing/distribution of these resources. Extensive use of web 2.0 technologies.	

Focus Areas / Levels of Progress		Early Tech	Developing Tech	Proficient Tech	Advanced Tech	Our District Levels
		1	2	3	4	
IN 5	**LAN/WAN**	Limited print/file sharing network at each school for lab, administration, and some classrooms. Some shared resources and providing some secure storage space.	Most rooms connected to Internet via LAN/WAN and wireless connectivity where possible at each school with student access. Minimum 10/100 mb Cat 5 hubbed network. Basic servers for sharing some resources at each school.	All rooms connected to Internet via LAN/WAN with significant wireless connectivity at each school with sufficient bandwidth for effective student access. Minimum 10/100 mb Cat 5 switched network. Servers for providing secure storage, backups, schedule, e-mail, web. Students, teachers and parents have easy access to educational resources from home and school (e.g., web portal).	All rooms connected to Internet via LAN/WAN with significant wireless connectivity at each school with sufficient bandwidth for effective student access. All schools connected to the WAN (100 mb/gb switched network) have sufficient servers and bandwidth for content delivery through resources such as video streaming and conferencing. Students, teachers and parents have easy access to educational resources from home and school (e.g., web portal).	
IN 6	**Other Technologies**	Shared teacher use of resources such as telephone, TVs, VCRs, DVDs, and classroom sets of programmable calculators.	Shared use of resources such as telephone, TVs, VCRs, DVDs, classroom sets of programmable calculators, digital cameras, and scanners. Computer/Video projectors available.	Dedicated and assigned use of common technologies such as telephone, TVs and VCRs and DVDs. Programmable calculators assigned to each student as needed. In each school there is shared use of specialized technologies, digital cameras, scanners, handheld electronic devices, and computer/video projectors.	Fully equipped classrooms with computer/video projectors and technology that will enhance student instruction readily available as above as well as using new and emerging technologies (i.e., interactive whiteboards, student response systems, netbooks, etc.)	
IN 7	**Security**	Backup and restoration procedures and virus protection to guard individual computers.	Basic firewall protection and diligent upgrading of network vulnerabilities added to protect against external threats.	Adequate server and availability protection added to above for expanded capabilities and to ensure dependable access.	Usage authentication added to above for mobile computer and home/external access requirements.	

Educator Survey

Hezel Associates, a research company located in Syracuse, NY is working with the New Hampshire Department of Education to conduct an external, state-wide evaluation of the ARRA/Title II-D grant program. As part of the evaluation, we would like to ask you some questions about your experiences and views regarding the use of technology in the classroom (or other educational setting). Your individual responses are confidential and will not be shared with anyone outside of Hezel Associates. We will be summarizing your responses to appear in reports to your project manager and the New Hampshire Department of Education, however this information will be reported in aggregate, and no identifying information (such as your name) will be included. We only ask for your name on this survey so that we can track who has responded, as well as match up your responses from subsequent surveys you complete. This survey should take approximately 15 minutes to complete. Thank you for providing this baseline data, and making this evaluation a success.

Note: In order for your response to be included in the analysis, you will need to complete the consent form found at http://www.hezel.com/cgi-bin/rws5.pl?FORM=NHConsentForm

If you have any questions about this survey or the evaluation, please contact Naomi Smoke-Zur at naomi@hezel.com.

Teacher Profile

Your Name (for Hezel Associates' internal use only):

1. Type of NH Title II-D project(s) in which you are participating (check all that apply):
   - ARRA/Title II-D
   - Mini-grant
   - TLC (Technology Leadership Cohort)
   - Not applicable
   - I don't know

2. School Name (all schools appearing in the list are organized alphabetically by district):
   - Districts A-G
   - Districts H-M
   - Districts N-Z

3. Your title/role (check all that apply):
   - Classroom teacher
   - Special Education teacher
   - Title I teacher
   - Paraprofessional/Aide
   - ELL specialist
   - Technology Integrator
   - School librarian

- Department chair
- Other

4. Grade level(s) you taught during the 2009-10 school year (check all that apply):
- Kindergarten
- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- Grade 9
- Grade 10
- Grade 11
- Grade 12

5. As of today, how many years have you been teaching?

6. Subject area(s) you taught during the 2009-10 school year (check all that apply):
- English/Language Arts
- Science
- Math
- Social Studies
- Art
- Music
- Physical Education
- Computer Technology
- World Languages
- Other (please specify)

Teacher Profile

7. What role is your classroom playing in Title II-D grant activities, if applicable for your grant?
- Participant/experimental group
- Comparison/control group
- Not applicable - No separate groups in our grant
- I don't know

8. Have you received the technology that the ARRA/Title II-D grant funded?
- Yes, all of it
- Yes, some of it
- No

8a. If Yes, have you begun implementing any of the technology received from your ARRA/Title II-D grant funds with your students?

- Yes
- No

9. Will you be using ARRA grant funds to implement a 1 to 1 intervention with your students?

- No
- Yes - it's a 1 to 1 intervention with students having access to the technology 24/7 (technology can leave the school)
- Yes - it's a 1 to 1 intervention with students having access to the technology during the school day (technology remains at the school)
- I don't know

10. What technology hardware has your district/school purchased with ARRA funds for you to use in your classroom?

- Digital data / LCD projectors
- Video conferencing units
- Large monitors (i.e., 32" or larger)
- Interactive White Boards
- Student response systems (i.e., clickers)
- Digital cameras (still images)
- Digital Video recorders (e.g., Flip)
- Image scanners
- Portable digital audio players (e.g., MP3)
- PDA Handhelds (e.g., Palm)
- Mobile multi-purpose tools (i.e., iPod Touch, iPhone, Nintendo DS)
- Portable keyboards (e.g., AlphaSmarts but not laptop computers)
- Global Positioning System (GPS Units)
- Robotics kits (e.g., Lego, Vex)
- Digital microscopes
- Graphing calculators
- Calculator Based Labs (CBLs) for use with graphing calculators
- Data collection tools (e.g., sensors and probes)
- Data collection interfaces/loggers (e.g., Vernier LabPros, Hobo Loggers)
- Other _____

11. Of the 180 school days (this year), how many of those days will your students use the new technology for learning purposes? _____

12. On the days that students will use the new technology, approximately what percentage of class time will your students use the technology?_____

Domain 1: Planning and Preparation

For the questions that follow, we ask you to reflect upon two different periods of time, the beginning of the school year and currently/end of the school year. Please use the columns provided to mark your responses.

*13. I design instruction that requires the use of these technologies by the **teacher.**[15]

- Desktop computers
- Laptop computers
- Netbooks
- Digital presentation tools (e.g., projector, document camera)
- Interactive whiteboard
- Digital media tools (e.g., cameras, recorders)
- Digital handheld tools
- Assistive technology

*14. I design learning experiences that require the use of these technologies by the students.

- Desktop computers
- Laptop computers
- Netbooks
- Digital presentation tools (e.g., projector, document camera)
- Interactive whiteboard
- Digital media tools (e.g., cameras, recorders)
- Digital handheld tools
- Assistive technology

*15. Please indicate whether you agree or disagree with the following statements. ***Scale:*** *Strongly agree, agree, disagree, and strongly disagree*

a. Computer labs are available when I need them to use with my students.
b. The technology at my school is functioning properly.
c. I am able to design lessons using digital tools that meet instructional objectives
d. I have adapted lessons in order to include digital tools.
e. I am able to use digital tools to personalize learning activities to meet individual student needs.
f. Planning lessons that use technology is more time consuming than planning lessons that do not use technology

[15] All questions marked with an * asked participants to reflect upon two different periods of time: the beginning of the school year and currently/end of school year.

Domain 2: The Classroom Environment

*16. Please indicate whether you agree or disagree with the following statements. ***Scale:*** *Strongly agree, agree, disagree, and strongly disagree*

a. Students are motivated to complete tasks when using technology
b. Students are on-task when using technology
c. Students are engaged when using technology
d. Classroom management is difficult when students are using technology
e. I receive enough technical support to be successful in using technology with students
f. I model safe and ethical use of technology tools (ex. Protecting personal information, citing sources, following copyright laws) for my students.

Domain 3: Instruction

*17. On average, how often did/do you use technology in your instruction with students? ***Scale:*** *daily, 2-4 times per week, once per week, 1-2 times per month, 3-5 times per year, Never*

*18. On average, how often did/do your *students* use technology for learning purposes during your classtime? ***Scale:*** *daily, 2-4 times per week, once per week, 1-2 times per month, 3-5 times per year, Never*

*19. What computer applications did/do you use in your instruction with students?

- Administrative (e.g., grading, record-keeping)
- Assessment/Testing
- Assistive (e.g., screen reader)
- Computer-Assisted Instruction/ Integrated Learning System e.g. PLATO, Odysseyware, Waterford Reading
- Thinking tools (e.g., visual organizer, simulation, modeling, problem-solving)
- Hardware-embedded (e.g. whiteboard, PGS/GIS, digital interactive response system)
- Multimedia (e.g., digital video editing)
- Productivity software (e.g., database, presentation, spreadsheet, word processing)
- Programming or web scripting (e.g., Javascript, PHP, Visual Basic)
- Graphics/Publishing (e.g., page layout, drawing/painting, CAD, photo editing, web publishing)
- Subject-specific software
- Web Browser (e.g.,
- Web Applications: Course management software (Moodle, Sakai, etc.)
- Web Applications: Database systems
- Web Applications: Libraries, E-publications
- Web Applications: Search engine
- Web Applications: Collaboration tools (e.g., Google Apps)
- Web Applications: Synchronous communication tools (e.g., Video, voice, or real-time text conference)

- Web Applications: Asynchronous communication tools (e.g., blogs, Wiki, discussion board, email)
- Other _____

Domain 3: Instruction

*20. For what activities did/do your *students* use technology?
- Listening
- Completing worksheet
- Notetaking
- Answering questions
- Discussions
- Presentations
- Writing/Creating
- Completing hands-on activity
- Imaging
- Assessment
- Downtime
- Other _____

*21. For what purposes did/do your students use technology?
- Practicing skills
- Defining concepts
- Reviewing
- Researching
- Explaining ideas
- Applying concepts
- Comparing and contrasting
- Reflection
- Collaborating
- Constructing knowledge
- Organizing information
- Solving authentic problems
- Exploring real-world issues
- Other _____

*22. Which student groupings were present when you were using the technology?
- Whole class
- Small groups
- Partners
- Independent

*23. Please indicate whether you agree or disagree with the following statements. ***Scale:*** *Strongly agree, agree, disagree, and strongly disagree.*

a. I teach safe and ethical uses (ex. Protecting personal information, citing sources, following copyright laws) of technology tools for my students.
b. I have received enough curriculum support to successfully integrate technology into my teaching.
c. I feel comfortable using technology with my classroom.
d. I am proficient at using technology in instruction.
e. I believe using technology in instruction improves learning.
f. Using technology increase my instructional effectiveness.

Domain 4: Professional Responsibilities

*24. Please indicate whether you agree or disagree with the following statements. ***Scale:*** *Strongly agree, agree, disagree, and strongly disagree.*

a. My school administrators are interested in my using technology effectively with students.
b. My district administrators are interested in my using technology effectively with students.
c. I assist my colleagues to develop their technology skills.

*25. Please indicate how often you do the following: ***Scale:*** *Daily, 2-4 times per week, Once per week, 102 times per month, 3-5 times per year, Never*

a. I share my ideas for using technology to enhance learning with my colleagues:
b. I participate in online learning communities for professional development:

26. What aspects of a training do you feel are missing from current trainings? (Check all that apply)

- Nothing is missing
- Need more hand outs or reference material
- The training needs to be longer
- Need more hands-on time to practice during the training
- Need more time for dialogue (with the instruction or colleagues)
- Need to understand how to integrate it into my curriculum
- Need to be able to take the equipment home with me
- Other (please describe)

*Thank you for participating in this survey. When you have finished, please click "**Submit**" below to record your response.*

NH District Technology Survey

This survey is available in MS-Word format for download at www.nheon.org/oet/survey

Questions?
For inquiries relating to specific survey questions or their content, please contact Cathy Higgins at chiggins@ed.state.nh.us.

For inquiries relating to survey technical support, please contact Naomi Smoke-Zur at naomi@hezel.com.

IMPORTANT NOTES ABOUT THIS SURVEY

Designed as a comprehensive assessment of the overall technology environment within NH schools, this survey data can assist technology decision makers at both the local and state level. There is a companion survey for each school in the district with DIFFERENT questions. (*Note: If your district is composed of a single school, you should complete both the district and the school surveys because the* ***questions are different.****)*

The New Hampshire Department of Education (NHDOE) relies on this survey data to evaluate the extent to which the state and its schools are effectively implementing technology plans and programs. Survey data also helps verify compliance with federal and state technology requirements. **Districts receiving Title II-D grants are REQUIRED to complete this survey as part of their grant evaluation reporting**.

For your convenience in gathering data for this survey, it is available in MS-Word format. We strongly encourage you to download the Word version and save your responses in Word format for future reference. Go to NHEON.org/oet/survey to access both the Word and the online versions of this district survey, as well as the school tech survey.

Please be sure to consult with other staff in your school to provide the most informed answers possible.

DATA COLLECTION: We strongly suggest that you gather your data using the Word Version of the survey and then go back and enter your responses in the survey system.

MAKING CHANGES: You will not be able to make any changes to your survey once it has been submitted.

NUMERIC RESPONSES: For all questions that require numeric responses, you may only include decimal points. Please do not input any other characters or symbols ($,%).

This SURVEY will CLOSE on June 15, 2010.

General

1. District Name: _____

2. Contact (person completing this survey): _____

3. Your position:
- Principal, Assistant Principal, Other Administrator
- Tech Director/Coordinator
- Ed Tech Integrator
- Library Media Specialist/Director
- Classroom Teacher
- Other

4. Your email address:_____

5. District website address: _____

6. Number of schools in your district:_____

Technology Access: Software

7. Which Internet filtering mechanism(s) do you use in your district?
- None. Our district decided not to use filtering software.
- Dan's Guardian (open source)
- iPrism (St Bernard)
- Microsoft Proxy
- Sonic Wall
- WebSense
- Other (please specify):_____

8. How many days do you retain your Internet **filtering log files**?
- None because we do not filter.
- 0-7 days
- 8-30 days
- 31-90 days
- 91-365 days
- More than 365 days

9. How much time (in hours) is spend each month on filter maintenance and block/unblock requests?
- Less than 5 hrs
- 5-8 hrs
- 9-16 hrs
- 17-24 hrs
- 25-32 hrs
- 33 or more hours

10. What is the name of the firewall solution being used in your district? _____

11. Which **library automation system(s)** do you use in your district?
- None
- Follett
- Sagebrush Spectrum (Winnebago)
- Horizon
- Koha Automated Libraries
- Other (please specify):_____

12. Please indicate which, if any, **curriculum-mapping** software is used by any school in your district.
- None
- TechPaths
- CurriculumMapper
- Locally developed using Access, Filemaker Pro, etc.
- Other (please specify):_____

Technology Access: Connectivity and Networks

Teacher/Staff Access

13. Is there a **district** policy or expectation for teachers to use their school/district email address as a primary school communication tool?
- Yes, this is a policy.
- There is an expectation but not a policy about this.
- No, we have neither.

Connectivity

14. What is the name of your districts' **Internet Service Provider** (check all that apply)
- Adelphia
- Comcast
- Destek
- G4 Communications
- Lightship/CTC/One Communications
- Metrocast
- NCIA
- NHVT.net
- Paetec
- TDS Telecom
- TimeWarner
- Worldpath
- Other (please specify):_____

15. What is the total committed, currently purchased **bandwidth** to your district?
- No connection
- Dial-up or 56K access
- ISDN, DSL, broadband/cable, or fractional T1
- Full T1, ATM, or greater

16. What is the current LAN, WAN, and WLAN age and speed for the majority of schools in your district? (NOTE: If any school in your district has a slower connection, please add a comment in the last question of this survey.)

	10 Mbps	100 Mbps	1000 Mbps
LAN	O	O	O
WAN	O	O	O
WLAN (if applicable)	O	O	O

17. What is the current age (in years) of the following elements of your network?
LAN:_____
WAN:_____
Internet:_____

18. If you are a multi-school district, how do you receive notification of an Internet outage at one of your schools?
- Electronic notification system
- Vendor
- School staff/users
- Other, please specify:_____

19. Has your district budgeted for the replacement and/or upgrade cycles for the following?

	Upgrade Budgeted in 2010-11		**Upgrade Budgeted for 2011-12?**	
	Yes	*No*	*Yes*	*No*
• LAN				
• WAN				
• Internet				

20. Does your district plan to have Voice over IP (VOIP) within the next 1-2 years?
- Yes
- No
- Already have

21. What is your current email solution?

	Hosted in District?		**Managed Service Used?**	
	Yes	*No*	*Yes*	*No*

First Class
Gaggle
Google Gmail
Novell Groupwise
MS Outlook
Other, please specify:_____

22. How much time (in hours) is spend each month on email maintenance?

- Less than 5 hrs
- 5-8 hrs
- 9-16 hrs
- 17-24 hrs
- 25-32 hrs
- 33 or more hours

Technology Access: Service and Support

Since the following questions cover the range of large and small districts, please email chiggins@ed.state.nh.us if you need clarification before completing the questions in this section.
23. How many **full time district IT** staff members do you have?
(NOTE: If you have 2 half time staff, count them as 1 full time staff member.)

- 1 part time person for district
- 1 full time person for district
- 2 full time staff for district
- 3 full time staff for district
- 4 full time staff for district
- 5 or more full time staff for district

24. If you have only one or two IT staff, are the majority of support services in the district (i.e., hardware, applications, and curriculum integration) provided by the **same person(s)?**

- Yes
- No

25. If you have only one technology staff position for the district and that person is serving the district in other capacities, what are those other positions?

- Administrative Assistant
- Assistant Principal
- Computer or Tech Ed Teacher
- Curriculum Director
- Library Media Specialist or Assistant

- Principal
- Educational Technology Integrator
- Career and Technical Education Director
- Other (please specify):_____

*Please help us understand your district tech support model for **hardware maintenance**.*

26. How does your district handle hardware maintenance support? (Check all that apply.)
    - We pay an IT company or individual (**either full year or a number of days/hours**) for tech support.
    - We have a **full time district level** technology director/coordinator providing hardware maintenance as part of his/her duties.
    - Our district tech coordinator and/or staff **serve multiple school buildings** for hardware maintenance.

*Please help us understand your district tech support model for **applications software**.*

27. How does your district handle **applications software** support? (Check all that apply.)
    - We pay an IT company or individual **(either full year or a number of days/hours)** for applications support.
    - We have a **full time district level** technology staff position providing applications software support as part of his/her duties.
    - Our district tech coordinator and/or staff **serve multiple school buildings** for applications software.

*Please help us understand your district professional development support model for **21st century learning powered with technology** (i.e., curriculum integration).*

28. How does your district handle support for **21st century learning powered with technology**? (Check all that apply.)
    - We pay/sponsor a Local Educational Support Center (**full year subscription, number of days, or number of integration**
    - **sessions**) to provide our teachers with 21st century learning support.
    - We pay an IT company or individual (**either full year or a number of days/hours**) to provide 21st century learning support.
    - We have a **full time district level** technology staff position providing 21st century learning support as part of his/her duties.
    - Our district tech coordinator and/or staff **serve multiple school buildings** for 21st century learning support.

Technology Access: Budget

The following questions are intended to provide a general picture of the extent to which technology is funded at the local level. Please provide your best estimates based on available budget figures.

NOTE 1: Count only local dollars. Do not include federal grant funds, eRate, or other grants.

NOTE 2: Please include SAU expenses where appropriate, but take care not to double count amounts if yours is a multi-district SAU.

NOTE 3: Be sure to include tech support staff dollars in your calculations. These would be any staff providing support referenced in your answers to questions 26 - 28 above

29. During 2008-09, what was the approximate total amount of **local funds** spend for the hardware, software, connectivity, and tech support staff provided in your district?

_____

30. For the current year 2009-10, what is the district's **locally** budgeted amount for hardware, software, connectivity, and tech support staff?

_____

31. For the upcoming 2010-11 year, what is the districts projected **locally** budgeted amount for hardware, software, connectivity, and tech support staff?

_____

32. Has there been any discussion between the district and the town offices regarding cooperation on a not-for-retail intranet, allowing town and school officials to be in communication with one another?

- Yes
- No
- If yes, briefly summarize the status of these discussions:_____
  _____

Technology Access: E-Rate

The following questions refer to E-Rate applications submitted last year for funding in 2009-10.

33. Did your district **apply for** 2009-10 **plain old telephone services (POTS) discounts** through the federal E-Rate program?

- Yes
- No

34. Did your district apply for the following discounts thorugh the federal E-Rate program for the 2009-10 or 2011-11 academic year?

Response options include*: Yes, via direct reimbursement (BEAR Form 472)—Yes, via discounted bills from provider (SPIF Form 474)—No, we did not receive this discount.*

- Priority 1 discounts on Internet access (2009-10 academic year)

- Priority 2 discounts on internal networking (2009-10 academic year)
- Priority 1 discounts on Internet access (2010-11 academic year)
- Priority 2 discounts on internal networking (2010-11 academic year)

35. If your district did not apply to receive discounts through the federal E-Rate program for the current funding year 2009-10, what were the main reasons?

- We were unaware of the program.
- We were aware of the program but did not have sufficiently trained staff to dedicate to completing the application process.
- We were aware of the program and chose not to apply for programmatic reasons, such as our school and district discount levels or other reason.
- We were aware of the program but are not eligible due to multi-year contracts signed outside of E-Rate program filing schedules (i.e., never filed Form 470 or signed contract before Form 471 filing window opened).

36. Please tell us any additional information about school technology, which you believe, is important for the NH Department of Education to know:_____

*Thank you for participating in this survey. When you have finished, please click "**Submit**" below to record your responses.*

NH School Technology Access Survey

Technology Access

This survey is available in MS-Word format for download at www.nheon.org/oet/survey

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The New Hampshire Department of Education (NHDOE) relies on this survey data to evaluate the extent to which the state and its schools are effectively implementing technology plans and programs. Survey data also helps verify compliance with federal and state technology requirements. **Districts receiving Title II-D grants are REQUIRED to complete this survey as part of their grant evaluation reporting.**

The school survey is divided into TWO parts:
(1) Technology Access (hardware, connectivity to online resources, service & support)
(2) ICT Literacy and Professional Development

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This SURVEY will CLOSE on June 15, 2010.

General

1. School Name (all schools appearing in the list are organized alphabetically by district):
   - Districts A-G
   - Districts H-M
   - Districts N-Z

2. Contact (person completing this survey):_____

3. Your position:
   - Principal, Assistant Principal, Other Administrator
   - Tech Director/ Coordinator
   - Ed Tech Integrator / Tech Integration Specialist
   - School Library Media Specialist
   - Classroom Teacher
   - Other:

4. Your email address:_____

Technology Access: Hardware

Computers All Levels - PLEASE NOTE UPDATED LEVEL DEFINITIONS THIS YEAR

Please indicate below the number of multimedia computers of each type in use in your school building for INSTRUCTIONAL purposes. Computers that are older than Level A should be indicated as "level 0" per question #5. Count the number of school computers located in labs, media centers, classrooms, special education, vocational centers, and on mobile lab carts available for student use.

Please note that while the Mac levels will be easy to identify, the PC levels may require some approximation on your part, since actual processor speeds can vary according to PC brand and features.

DO NOT include computers used largely for ADMINISTRATIVE purposes.

5. **Level 0** - How many computers (Mac or PC) are still used but too old to count according to Level A,B,C descriptions? (Note: **do not** include these numbers in any other questions.)_____

6. How may **Apple Mac** computers do you have for instruction at each level?
Level A –Mac G4:_____
Level B –Mac G5:_____
Level C –Mac Intel:_____
Total Macs:_____

7. How many **PC** computers do you have for instruction at each level (including desktops and regular laptops but not netbooks)?
Level A –1 GHz or less processor speed:_____
Level B –Better than 1 GHz up to 2GHz processor speed:_____
Level C –Better than 2 GHz processor speed:_____
Total PCs:_____

8. How many **Thin Client** computers (running Citrix Windows, Linux, or some similar configuration to create thin clients) do you have for instruction?_____

9. How many **Netbook** computers do you have for instruction? (do not include regular laptops here) _____

Total (Thin Client + Netbook):_____

10. Please identity the **approximate percentage** of computers running each operating system.

- Mac OS9:_____
- Mac OSX:_____
- Windows 98/2000:_____
- Windows XP:_____
- Windows Vista:_____
- Windows 7:_____
- Ubuntu/Edubuntu:_____
- Fedora Core:_____
- Other Linux:_____

Totals should equal 100%

Instructional Rooms and Locations of Instructional Computers

11. How many **instructional rooms** are in your building?
(Please include classrooms, library, computer labs, and other rooms used for group instruction.)

12. How many **MOBILE LABS** with computers are in your building, if any?
(NOTE: Please count each lab cart or set, but not individual computers.)

13. How many **classrooms** regularly share access to the number of MOBILE LABS indicated in the question above?

14. Please indicate the **total** number of computers (combine all Levels A,B,C, thin client, netbook) located in each instructional area listed below, available for student use:

- Laptop computers (all sizes) on mobile lab carts (don't double-count below)_____
- Computers stationed in labs and/or classrooms_____
- Computers stationed in media centers_____
- Computers dedicated to students with special needs_____
- Computers dedicated to a regional career & technical center_____

Computers for Teachers' Professional Use

15. How many teachers in your school have been provided with their own computer for their professional use (i.e., to prepare classroom materials and engage in professional development)?__ _____

Number of teachers with desktop computers:_____

Number of teachers with laptop or netbook computers:_____

16. How many of each type of **digital presentation tool** is available for use in your school?

- Digital data / LCD projectors
- Dedicated video conferencing units (e.g., Tandberg).
- Large monitors (i.e., 32" or larger)
- Classrooms with access to cable TV
- Interactive White Boards - InterWrite bran
- Interactive White Boards - Mimeo brand
- Interactive White Boards - PolyVision brand
- Interactive White Boards - Promethean brand
- Interactive White Boards - SmartBoard brand

17. How many of each type of ***digital handheld tool*** is available for use *by students* in your school?

- Classroom set of student response systems (i.e., clickers) (don't count individually, just entire sets)
- Classroom set of iPod Touch (don't count individually, just entire sets)
- Number of iPod Touch units per classroom set
- Digital cameras (still images, may have limited video capacity)
- Digital Video cameras
- Image scanners
- Portable digital audio players (i.e., MP3)
- PDA Handhelds (e.g., Palm, Handspring)
- Handheld game units (i.e., Nintendo DS)
- Portable keyboards (e.g., Neo, AlphaSmarts but not laptop computers)
- Global Positioning System (GPS Units)
- Robotics kits (e.g., Lego, Vex)
- Digital microscopes
- Graphing calculators
- Calculator Based Labs (CBLs) for use with graphing calculators (see
- www.vernier.com/mbl/cbl2.html)
- Data collection tools (e.g., sensors and probes)
- Data collection interfaces/loggers (e.g., Vernier LabPros, Hobo Loggers)
- Other digital tools not listed above

Technology Access: Software

For most software questions, see the district level tech survey (i.e., student information systems, data warehousing, library automation, Internet filtering, adaptive assessment, and curriculum mapping software).

18. With the loss of the State Library purchase of online databases for schools, will your school be able to reallocate funds in order to cover purchase of these databases for 2010-11?

- Yes
- No

19. What other resources or services do you anticipate having to cut in order to fund these databases (check all that apply)?

- Books
- Periodicals
- Audiovisual materials
- Equipment
- Supplies
- Personnel

20. Have you consulted with library personnel to answer questions 17 & 18?

- Yes
- No

21. Does your school have a subscription for one or more classrooms to use any of the following web 2.0 types of resources (check all that apply)

- VoiceThread
- Edublogs
- Ning
- Other:

Technology Access: Connectivity to Online Resources

Wireless access

22. How many wireless access points to the Internet do you have in your school?

Open access (no network key or password required):_____
Protected access (requires network key or access:_____

Student access

23. Please tell us about your student profiles/account setup on your school or district network (i.e., students have access to storage of files over the network). Please check all that apply to your **SCHOOL** not your district.

- We do not have any student accounts setup.
- Grades K-2 have student accounts.
- Grades 3-5 have student accounts.
- Grades 6-7 have student accounts.
- Grade 8 has student accounts.
- Grades 9-12 have student accounts.
- Our students can access their accounts outside of the school building.
- Our school allows students to regularly send or receive emails through the school network using either school supplied or web based email accounts.
- Our school has conducted surveys to determine the percentage of students with Internet access at home.

24. If you have conducted surveys regarding home Internet access, what is the percentage of students that have Internet access at home?

- Less than 50%
- Between 50-74%
- Between 75-89%
- More than 90%

25. How much storage space do you allow each student? (This is a per student amount, not the total space available on your server)

- Less than 10MB perstudent
- Between 10MB - 99MB per student
- Between 100MB - 499MB per student
- Between 500MB - 1GB per student
- More than 1GB per student
- Unlimited storage per student

26. Has your school adopted Google Apps as standard practice for any of the following?

- Staff email
- Student email
- Google Sites for school website
- Google Sites for classroom websites
- Google Docs for staff use
- Google Sketchup or Sketchup Pro

Teacher/staff access

27. Please tell us about your teacher/staff access to file storage, email accounts, and editable web pages on your school or district network. Please check all that apply to your **SCHOOL** not your district.

- We do not have any teacher accounts setup on our network.
- All teachers have accounts setup on our network (i.e., teachers have access to file storage on the network).
- Our staff can access their files outside of school via web access.
- Our school provides email accounts for all staff.
- All staff can access their email accounts outside of school via web access.
- We have a policy or expectation for teachers to use their school **email address** as a primary school communication tool.
- We have a policy or expectation for teachers to **maintain a class web page** for access by parents and students to homework assignments and other information.

Comments:_____

28. Do teachers in your school indicate that Internet connection speed is adequate for their teaching needs? (NOTE: If you have it, use locally gathered data to respond to this question. Otherwise, please respond based on general discussions with teachers over the past year.)

- Most teachers are satisfied with the current Internet connection speed for planning regular classroom activities that use the Internet.
- About half of our teachers are satisfied with the current Internet connection speed for planning regular classroom activities that use the Internet.
- Few of our teachers are satisfied with the current Internet connection speed for planning regular classroom activities that use the Internet.

Online Content for Students

Please consult with the school guidance counselor(s) to answer the following questions.

29. Does your school currently purchase Internet based distance learning **content for students as supplementary material** to classroom learning? Please check all that apply.

- None
- Enchanted Learning
- Grolier Online
- Nettrekker
- OdysseyWare
- PLATO Learning
- Other (please specify):_____

30. Does your school currently use a **course management system** for posting class materials, homework assignments, or other course work? Check all that apply

- None
- Angel
- Blackboard
- Moodle
- Sakai
- Other (please specify):_____

31. Does your school currently use a **digital portfolio solution** for creating, viewing, and assessing student portfolios? Check all that apply.

- None
- Adobe Acrobat Pro
- Mahara
- Moodle
- Richer Picture
- Sakai OSP
- Other (please specify):_____

32. Does your school currently purchase Internet based distance learning courses for students as alternatives to face to face **courses**? Please check all that apply.

- None
- Virtual High School (GoVHS)
- Virtual Learning Academy Charter School (Free to NH students. See www.vlacs.org)
- Other (please specify):_____

33. Does your school currently use **two-way, real time video conferencing** for distance learning for students? Please check all that apply.

- None
- Adobe Breeze
- Elluminate
- Granite State Distance Learning Network (GSDLN)
- Dimdim
- GoToMeeting
- Skype
- Other (please specify):_____

Online Content for Teachers

34. Does your school currently use **two-way, real time video conferencing** for distance learning for students? Please check all that apply.

- None
- Adobe Breeze
- Elluminate
- Granite State Distance Learning Network (GSDLN)

- Dimdim
- GoToMeeting
- Skype
- Other (please specify):

Technology Access: Service & Support

Please help us understand your school's tech support model.

35. Please help us understand your in-school tech support model by checking each box if it applies to your school:

(***Response Options include*** *Hardware Maintenance, Software Support and, Curriculum Integration)*

- We have one or more paid full time staff dedicated to this at our school.
- We have one or more paid part time staff dedicated to this at our school.
- We provide stipends to one or more school staff as a building technology expert to handle these issues.
- We have a student program to provide support for this (i.e., GenYes or other).
- We have IT support from staff and/or students **without** specific compensation.

36. Are the majority of support services in your school (i.e., hardware, applications, and curriculum integration) provided by the same person(s)?

- Yes
- No

37. If the tech coordinator for your school also serves in other capacities, what are those other positions (i.e., principal, teacher, library media specialist, etc.)?_____

38. Please use this space to add any general comments you wish to make._____

Thank you for participating in this survey. When you have finished, please click "Submit" below to record your responses.

NH School ICT Literacy and Professional Development Survey

ICT Literacy and Professional Development

This survey is available in MS-Word format for download at www.nheon.org/oet/survey.

Questions?
For inquiries related to specific survey questions or their content, please contact Cathy Higgins at chiggins@ed.state.nh.us.

For inquiries relating to survey technical support, please contact Naomi Smoke-Zur at naomi@hezel.com.

IMPORTANT NOTES ABOUT THIS SURVEY

Designed as a comprehensive assessment of the overall technology environment within NH schools, this survey data can assist technology decision makers at both the local and state level. There is a companion survey for the district level with DIFFERENT questions. (*Note: If your district is composed of a single school, you should complete both the district and the school surveys because the* ***questions are different***.)

The New Hampshire Department of Education (NHDOE) relies on this survey data to evaluate the extent to which the state and its schools are effectively implementing technology plans and programs. Survey data also helps verify compliance with federal and state technology requirements.

Districts receiving Title II-D grants are REQUIRED to complete this survey as part of their grant evaluation reporting.

The school survey is divided into TWO parts:
(1) Technology Access (hardware, connectivity to online resources, service & support)
(2) ICT Literacy and Professional Development

For your convenience in gathering data for this survey, it is available in MS-Word format. We strongly encourage you to download the Word version and save your responses in Word format for future reference. Go to www.NHEON.org/oet/survey to access both the Word and the online versions of this survey and the district survey.

Please be sure to consult with other staff in your school to provide the most informed answers possible.

DATA COLLECTION: We strongly suggest that you gather your data using the Word Version of the survey and then go back and enter your responses in the survey system.

MAKING CHANGES: You will not be able to make any changes to your survey once it has been submitted.

NUMERIC RESPONSES: For all questions that require numeric responses, you may only include decimal points. Please do not input any other characters or symbols ($,%).

This SURVEY will CLOSE on June 15, 2010.

General

1. School Name (all schools appearing in the list are organized alphabetically by district):
   - Districts A-G
   - Districts H-M
   - Districts N-Z

2. Contact (person completing survey):

3. Your position:
   - Principal, Assistant Principal, Other Administrator
   - Tech Director/ Coordinator
   - Ed Tech Integrator / Tech Integration Specialist
   - Library Media Specialist / School Librarian
   - Classroom Teacher
   - Other:

4. Your email address:

Technology / ICT Literacy

On 7/1/05, New Hampshire adopted a revised set of School Minimum Standards, including standards for Information and Communication Technologies (ICT) Literacy (Ed 306.42). Since that time, schools have been updating their instructional programs to meet the new standards. Please tell us how your school currently addresses technology literacy (i.e., ICT Literacy) instruction and assessment, so we can plan future technical assistance. Please answer as accurately as possible on behalf of your SCHOOL (not the whole district). You can find more information about these standards at: www.nheon.org/ictliteracy.

NOTE: When there are choices of several grades, please check ONLY those that apply to your school.

5. Please indicate which staff positions and to what extent each staff is involved in the following:

a. The process of updating your instructional program to address these ICT Literacy standards.
Scale: *A lot, Some, A little, not at all*
   - Principal / Assistant Pr.
   - Library Media Specialist
   - Technology Coordinator / Director
   - Computer Teacher and/or Ed Tech Integrator
   - Content Area Teachers

- Special Ed Staff
- Other

b. Projects which support learning powered with technology, such as Digital Tools grants, Classroom Tech Minigrants, Tech Leader Cohort, or other ed tech projects. ***Scale:*** *A lot, Some, A little, not at all*

- Principal / Assistant Pr.
- Library Media Specialist
- Technology Coordinator / Director
- Computer Teacher and/or Ed Tech Integrator
- Content Area Teachers
- Special Ed Staff
- Other

6. Please describe briefly (in a few sentences) how your school is implementing these standards, such as what grade levels are involved, what you have done, who has been involved, any areas you are emphasizing, etc._____

7. Please indicate how **your school** (not the whole district) currently provides instruction in ICT literacy. *Check all that apply to indicate what activity occurs and in which grade.*

- Our students take a separate ICT Literacy class, Computer Literacy class, or something similar.
- We embed ICT literacy instruction into our curriculum in various content areas.
- We engage students in project based learning using digital tools (ICT tools).
- We assist our students to create digital portfolios of their work.
- ICT literacy instruction is part of our library media and/or media literacy program.
- We use the resources available at www.newmedialiteracies.org as part of our program materials.
- We use the resources available at www.commonsensemedia.org as part of our program materials

8. Please tell us how your school addresses **Internet safety** instruction.
(Grades K-Grades 3-Grades 6-7 Grade Grades 9-12)

- We have no formal Internet safety program.
- Our instruction is varied, with teachers selecting or creating their own materials
- We have created and are using **our own** customized Internet safety curriculum.
- We use the **Common Sense Media** curriculum.
- We use the **iSafe** curriculum.
- We use the **CyberSmart** curriculum.
- We use **NetSmartz** materials.

Comments or other materials used: _____

Technology / ICT Literacy

9. Please tell us how students at your school work with digital files. Check to indicate in which grade the activity is occurring. (Grades K-Grades 3-Grades 6-7 Grade Grades 9-12)

- Our students are now regularly storing their digital files to a folder on the server.
- Our students have been taught to use a standard file naming protocol when saving files to the server so that they can more easily locate specific assignments later.
- Our students have spent some time reviewing and reflecting on their digital work.
- Our students have spent some time organizing and assembling collections of their work into actual digital portfolios.

Comments:_____

10. Please identify the digital portfolio solution in use at your school. (Grades K-Grades 3-Grades 6-7 Grade Grades 9-12)

- Simple file storage in folders on our server
- Adobe Acrobat Pro
- Richer Picture
- Moodle
- Moodle with Mahara
- Sakai OSP

Comments:_____

11. Please indicate how **your school** (not the whole district) currently **assesses** students' ICT literacy skills. *Check to indicate in which grade the activity is occurring.* (Grades K-Grades 3-Grades 6-7 Grade Grades 9-12)

- We use a test to assess students' skills at least once in these grades.
- We use rubrics to assess students' digital portfolio work at least once in these grades.
- We assess students' ICT competency in other ways in these grades.
- We use the NH common ICT Literacy rubrics available at www.nheon.org/ictliteracy (as is).
- We use the NH common ICT Literacy rubrics (with adaptations by our district).

If other ways, please describe how you assess:_____

12. How many 8th grade students were enrolled in your school in 2008-09 as of 10/1/08?

_____

13. How many 8th grade students were enrolled in your school in 2009-10 as of 10/1/09?

_____

14. In 2009-10, how many 8th grade students met the following ICT competency requirements by the end of 8th grade? (If your school does not include 8th grade, skip this question.)

- Technology operations and concepts
- Digital citizenship / social, ethical, human issues
- Creativity & innovation / productivity tools
- Communication & collaboration / communication tools

- Research & information fluency / research tools
- Critical thinking, problem solving, & decision making
- TOTAL NUMBER OF STUDENTS HAVING MET ALL REQUIREMENTS (Please be careful not to double count them. This number should not exceed your answer to question 13.):

Professional Development

Please consult with your principal and staff development coordinator to answer the following questions.

15. Based on the goals of your District Professional Development Master Plan, most recent curriculum development efforts, and your school's state assessment results, please rate the following professional development topics to indicate those that are most needed at your school.
PART A

***Scale** includes not a priority for us right now, Important but not our highest priority, Highest priority.*

- Basic Technology Skills for Teachers (includes various topics to integrate digital tools)
- Evaluating Websites & Using Online Resources
- Creating and Maintaining Effective Websites and Blogs
- Using Wikis as an Alternative to Textbooks
- Using Online Course Mgmt Systems for Classwork and Homework (i.e., Moodle, Sakai, etc.)
- Internet Safety, Web 2.0, and Digital Citizenship
- Assessment Rubrics for ICT Literacy
- Working with Digital Portfolios
- Integrating Interactive Whiteboards
- Using Data Analysis to Inform Classroom Instruction (i.e., NWEA, Perf. Pathways,
- Data Teams, EasyIEP)
- Technology Planning, Budgeting, and E-Rate Discounts
- Our tops needs are not listed, they are as follows:_____

16. Based on the goals of your District Professional Development Master Plan, most recent curriculum development efforts, and your school's state assessment results, please rate the following professional development topics to indicate those that are most needed at your school.

PART B

***Scale** includes not a priority for us right now, Important but not our highest priority, Highest priority.*

- Understanding Formative & Summative Assessment
- Assessing Student Competencies

- Communication (incl. home-school connections, etc.)
- Curriculum Mapping/Integration
- Differentiated Instruction & Multiple Intelligences
- Improving Instruction in Core Content Areas
- Improving Writing
- Improving Reading & Literacy Skills
- Instruction based on NH Math Standards
- Instruction based on NH Science Standards
- Special Education Training
- PBIS, Responsive to Intervention (RTI), Classroom Mgmt
- Understanding by Design (Backward Design)
- Our tops needs are not listed, they are as follows:_____

17. Does your school provide teachers with time during regular school hours for learning and professional development growth opportunities including the integration of technology?

- Yes
- No

18. Do you currently provide Internet safety training to staff?

- Yes
- No

Professional Development

Please help us understand the types and frequency of district-provided technology related professional development your teachers
participated in during the previous academic year. (You might consider posting these questions in the teachers' lounge to gather more accurate data directly from them.)

* For your reference, there are Local Educational Support Centers in Penacook (Capital Area Center for Educational Support), Manchester (Greater Manchester Professional Development Center), Gorham (North Country Professional Development Center), Exeter (Seacoast Professional Development Center), Keene (Southwestern NH Educational Support Center), and Claremont (Sugar River Professional Development Center).

19. Over the past year, about how many teachers in your school participated in training with each provider type?

Options include: *No staff participation (0%)-Participation by a few (less than 30%)-Participation by several staff (between about 30%-70%)-Most or all of staff participated (>70%)*

- District on-site PD
- PD activities at Local PD Center*
- PD activities at SERESC
- Online courses from OPEN NH

- Online courses from other providers
- College/university graduate courses
- Thinkfinity/MarcoPolo workshops
- Intel workshops
- NHSTE workshops or summer inst.
- Christa McAuliffe Tech Conference
- NHEMA/ NHSLMA Conference
- NHPTV Knowledge Network workshops
- Other face to face PD

20. The following topics originate from the National Educational Technology Standards for Teachers (NETS-T) (revised 2008 draft). Please indicate the extent of need for professional development among teachers in your school related to each topic.

Options include: *1. Not much needed because we regularly address this— 2. Somewhat need because we have only been able to address this at a modest level— 3. Very great need. This is very important to us, but we have not been able to address this sufficiently—*

- **Creativity and Innovation**: Teachers demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
- **Communication and Collaboration**: Teachers use digital media and environments to communicate and work collaboratively, including at a distance, to promote and support the learning of both students and colleagues.
- **Research and Information Fluency**: Teachers model and facilitate the effective use of current and emerging digital tools to gather, evaluate, and use digital information resources to support learning and assessment in both formal and informal learning environments.
- **Critical Thinking, Problem-Solving, and Decision-Making**: Teachers use critical thinking skills to plan strategies, solve problems and make informed decisions related to teaching and learning using digital tools and resources.
- **Digital Citizenship and Responsibility**: Teachers understand the cultural, human, legal, and societal issues associated with technology and exhibit legal and ethical behavior in their professional practices.
- **Technology Operations and Concepts**: Teachers demonstrate and model for students a sound understanding of technology concepts, systems, and operations.
- **Professional Practice and Leadership**: Teachers continually improve their professional practice and exhibit leadership skills representative of an innovative professional in a global, digital society.

21. Please tell us any additional information about school technology, which you believe, is important for the NH Department of Education to know. This might include new uses of tools that seem to be having an impact on student learning, such as iPods, science probes, or laptops used for specific content areas, how used, frequency of use, grade level, etc.

*Thank you for participating in this survey. When you have finished, please click "**Submit**" below to record your responses.*

Focus Group Protocols

Protocol for E2T2 **Administrator** Focus Groups

Prior to the start of the group, each participant must complete the Sign In Sheet and sign a Consent form. Those who do not complete the Consent form cannot participate.

Hello, I'm _____ from Hezel Associates. We are working on the statewide evaluation of New Hampshire's E2T2 program. I would like to ask you some questions about your experiences and views regarding the use of technology in the classroom and the upcoming implementation of your E2T2 technology. Your responses are confidential and will not be shared with anyone outside of Hezel Associates. We will be summarizing your responses to appear in reports to NHDOE, however responses will be reported in aggregate and no identifying information will be included. I will be audio taping this conversation to enhance my notes. I'll also be taking written notes during the interview, so don't be concerned if I pause once in a while.

Begin the recording with the name of the school/district and the type of group (teacher/administrator).

1. How was technology being used in your school prior to your schools involvement with the Title IID/E2T2 program? *(probe for what and how frequent)*
    - What are some of the most effective ways in which teachers have used technology with students in the past?

2. In general, what do you perceive to be the comfort level of your teachers in using technology as an instructional tool in the classroom?

3. Do you believe that the use of learning technologies will impact academic achievement for your students?
    - If so, what impact do you expect to see (*probe for evidence demonstrating impact).*

4. As a result of the E2T2 grants, your school will be implementing some new technology.
    - What factors do you feel might help teachers and students use the new technology?
    - What factors do you feel might make the use of the new technology more difficult?

5. Does your school or district currently have or plan to have any mechanisms to allow teachers to regularly share ideas about the ways they plan to use technology with their colleagues?

6. How committed is your district to improving student achievement through the use of technology?
    - (if committed): Would you then consider this to be a priority for the district?

- What else could your district do to support you or your school in improving student achievement through the use of technology?

7. Do you foresee any challenges that may impact the implementation of the new technology or the attainment of the project goals identified on the grant application?

8. Have you or your teachers received any professional development or training on the new technology your school will be receiving?

    - If so, how satisfied were you with that training?
        - In what ways did the training help you or your teachers? (*Probe for subject area knowledge, standards, pedagogy*)?
    - If not, who will train you and your teachers in the software and hardware?
        - Will the training be ongoing?
        - Do you think the planned training activities will meet the immediate needs of your school?
        - Why/why not?

9. Is there anything else you would like to share at this time?

(Sources: California Department of Education, "California Math Science Program (CaMSP) 2005 Report"; SETDA/Metiri Group, "Observation Tools for School Observers"; Zucker, Andrew A. et al., "A Study of One-to-One Computer Use in Mathematics and Science Instruction at the Secondary Level in Henrico County Public Schools")

Protocol for E2T2 **Teacher** Focus Groups

Prior to the start of the group, have each participant complete the Sign In Sheet and sign a Consent form. Those who do not complete the Consent form cannot participate.

Hello, I'm _____ from Hezel Associates. We are working on the statewide evaluation of New Hampshire's E2T2 program. I would like to ask you some questions about your experiences and views regarding the use of technology in the classroom and the upcoming implementation of your E2T2 technology. Your responses are confidential and will not be shared with anyone outside of Hezel Associates. We will be summarizing your responses to appear in reports to NHDOE; however responses will be reported in aggregate and no identifying information will be included. I will be audio taping this conversation to enhance my notes. I'll also be taking written notes during the interview, so don't be concerned if I pause once in a while.

Begin recording session with the name of the school/district and the type of group (teacher/administrator).

1. Prior to your involvement with Title IID/E2T2 program, did you use technology in your classroom? *(probe for what and how frequent)*
    - If so, what were some of the most effective ways in which you've used technology with your students?

2. What is your comfort level using technology both for yourself and as an instructional tool in the classroom?

3. Do you believe that the use of learning technologies will impact academic achievement for your students?
    - If so, what impact do you expect to see (*probe for evidence demonstrating impact*)?

4. As a result of the E2T2 grants, your school will be implementing some new technology.
    - What factors do you feel might help teachers and students use the new technology?
    - What factors do you feel might make the use of the new technology more difficult?

5. Does your school or district currently have or plan to have any mechanisms to allow teachers to regularly share ideas about the ways they plan to use technology with their colleagues?

6. How committed is your **school** to improving student achievement through the use of technology?
    - (if committed): Would you then consider this to be a priority for the school?
    - What else could your school do to support you in improving student achievement through the use of technology?

7. How committed is your **district** to improving student achievement through the use of technology?
    - (if committed): Would you then consider this to be a priority for the district?
    - What else could your **district** do to support you or your school in improving student achievement through the use of technology?

8. Do you foresee any challenges that may impact the implementation of the new technology or the attainment of the project goals identified on the grant application?

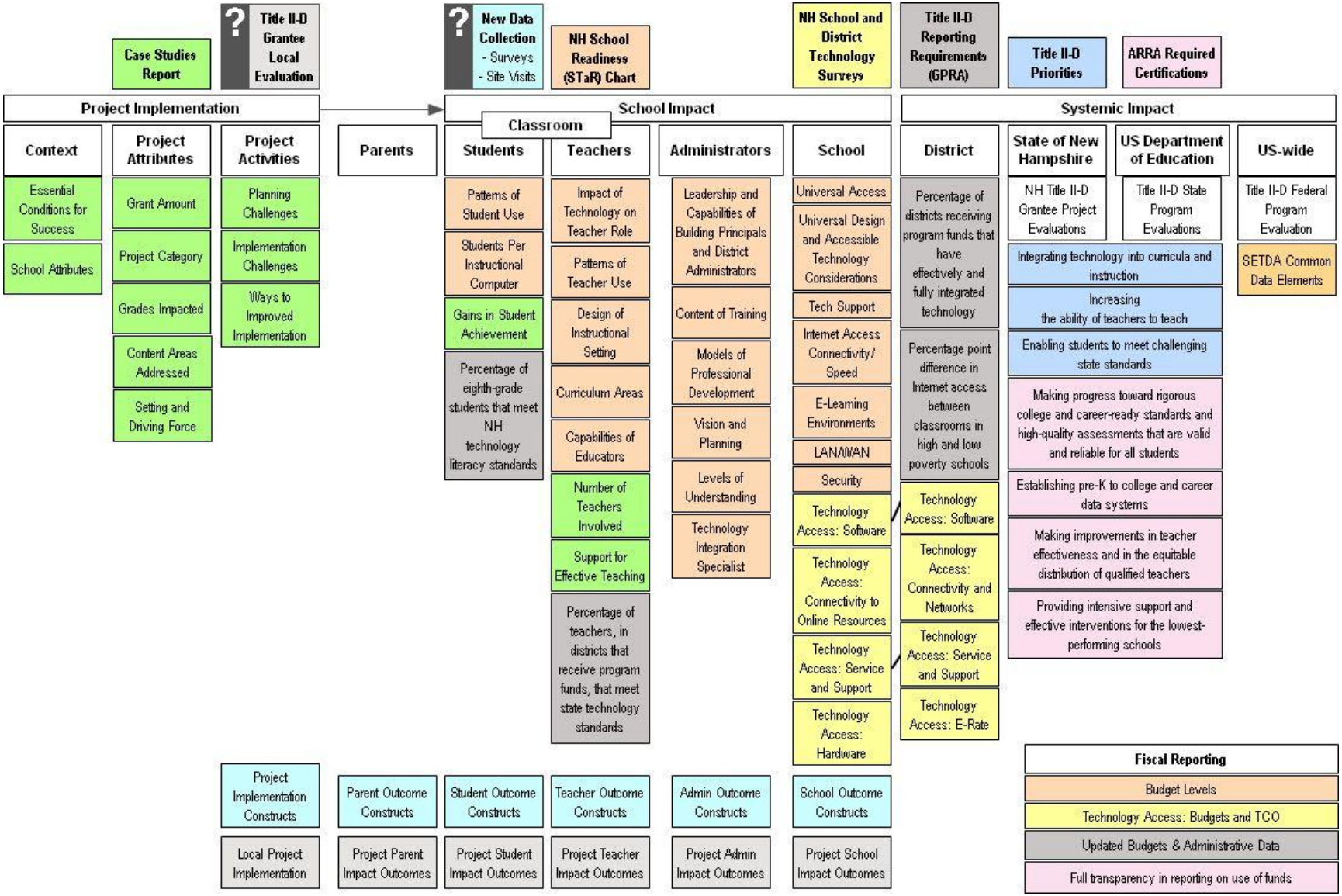
9. Have you received any professional development or training on the new technologies you will be receiving?
    - If so, how satisfied were you with that training?
        - In what ways did the training help you (*probe for subject area knowledge, standards, pedagogy*)?
    - If not, who will train you in the software and hardware?
        - Will the training be ongoing?
        - Do you think the planned training activities will meet your immediate needs?
        - Why/why not?

10. Is there anything else you would like to share at this time?

(Sources: California Department of Education, "California Math Science Program (CaMSP) 2005 Report"; SETDA/Metiri Group, "Observation Tools for School Observers"; Zucker, Andrew A. et al., "A Study of One-to-One Computer Use in Mathematics and Science Instruction at the Secondary Level in Henrico County Public Schools")

Appendix 5:
NH Title II-D Logic Model

Figure 37. NH Title II-D Logic Model



Appendix 6:
Tables of Findings

Table 11. Districts Participating in the TLC Program

Tech Leader Consortium Awards Lead District *# of schools and positions represented ->*	# School Teams	# Teachers	# Principals	# NML Early Adopters	Intel Principal Leaders
Exeter Regional School District / Seacoast Professional Development Center	15	27	16	3	1
Keene School District / Southwestern NH Educational Support Center	8	16	6	0	0
Merrimack Valley School District / Capital Area Center for Education Support	10	17	9	4	5
Milan School District / North Country Education Services	11	23	12	0	0
TOTALS	***54***	***83***	***43***	***7***	***6***

Table 12. Districts Participating in the Classroom Technology Mini-Grant Program

Alton	Epping	Litchfield	Prospect Mountain
Amherst	Fall Mountain	Littleton	Raymond
Ashland	Farmington	Merrimack Valley	Rollinsford
Barrington	Hampstead	Milan	Shaker Regional
Bartlett	Interlakes	Northumberland	Somersworth
Chester	Jaffrey Rindge	Oyster River	White Mountain Regional
Concord	Keene	Pittsfield	Winnacunnet
Derry	Laconia	Portsmouth	Winnisquam
Dover	Lebanon	Profile	