

Talbot County Public Schools One-to-One Laptop Initiative External Evaluation

Submitted by:
Johns Hopkins University (JHU)
Center for Technology in Education (CTE)
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TABLE OF CONTENTS

Executive Summary.....	3
Background Information.....	4
Evaluation Perspective.....	4
Evaluation Components and Methodologies.....	5
Findings	
Key Topic Area 1: Competency and Training.....	7
Key Topic Area 2: Student Learning and Classroom Environment.....	10
Key Topic Area 3: Classroom Management and Student Behavior.....	16
Key Topic Area 4: Use of Laptops in Classrooms.....	18
Key Topic Area 5: Implementation and Support.....	23
Key Topic Area 6: Attitudes toward the Initiative.....	26
Conclusions & Recommendations.....	30
Appendix A.....	31
Appendix B.....	32

EXECUTIVE SUMMARY

Talbot County Public Schools (TCPS) has embarked on an initiative to transform instruction by using technology as a tool to enhance teaching and learning. As an external evaluator, the Johns Hopkins University Center for Technology in Education has undertaken the ongoing evaluation of the initiative. This Mid-Year Evaluation Report compiles findings from a mixed-method evaluation approach using a variety of evaluation strategies, and reflects the current understandings, opinions, and views of administrators, teachers, parents, and students.

To keep pace with today's students who reside comfortably in our new digital world, teachers were provided intensive training on the use of technology in the classroom, laptop equipment, and application software prior to the beginning of the 2005-06 school year. The findings of this evaluation indicate that teachers have indeed "risen to the occasion" as more than 90 percent of teachers view themselves as having a high level of confidence in using technology and many reported they were able to apply the technology in new contexts.

Most teachers share the perception that laptops enhance student learning and bring benefits to teaching practices. Curriculum integration, according to administrators surveyed and based on direct classroom observations, has proceeded to levels beyond expectation given that TCPS is just six months into this initiative.

Students have responded exceedingly well to using laptops regularly in their core classes; they report frequent use of laptops to take notes, to research, and to organize materials. Reports from teachers indicate that students with disabilities have benefited to a great extent from the laptops, which have provided new and effective ways for students to learn and to accommodate for their disabilities.

Classroom management issues seem relegated to the challenge of monitoring students to ensure they are on the appropriate site or screen for a specific lesson. Alternatively, teachers report-- and classroom observations substantiate-- that when students are using the laptops to complete an assignment, they are extremely focused and engaged. As a result, day-to-day classroom disruptions have been reduced substantially.

Even though occasional problems with hardware reliability have been noted, administrators and teachers remain very enthusiastic and positive and regard the initiative as being important.

BACKGROUND INFORMATION

The Talbot County Public Schools (TCPS) One-to-One Laptop Initiative is a pioneering attempt to align instruction with the demands of the digital age. Through this initiative, laptop computers were provided to each ninth grade student at the beginning of the 2005-06 school year. To spearhead the launch of the program, teachers were provided extensive training on the computer equipment and on instructional software before the beginning of school year; in addition, follow-up training and staff development has been periodically delivered.

The initiative is based on the assumption that instruction needs to address the characteristics of today's students— the, so-called, “digital kids”. In addition, the initiative addresses the requirement that teachers develop expertise in new skill areas, such as differentiating instruction, using a wide-range of instructional and assistive technology applications, organizing optimal learning opportunities, and linking multi-media and online resources to state content standards.

EVALUATION PERSPECTIVE

To measure the impact of the One-to-One Laptop Initiative on learning and teaching, TCPS contracted with the Johns Hopkins University Center for Technology in Education (JHU CTE) to conduct an independent, external evaluation. JHU CTE began a comprehensive evaluation concurrent with the launch of the One-to-One Initiative in September. Two types of evaluation procedures are being employed: 1) formative evaluation activities, which concentrate on ways of improving the project while it's in progress and 2) summative evaluation procedures, which assess the overall effectiveness of the program. Relevant information is being collected from those sources most impacted by this initiative: school administrators, students, parents, and teachers. Gathered from multiple sources, data is being triangulated from surveys, classroom observations, and interviews for the evaluation of this project.

This mid-year report reflects the time period from September 2005 to February 2006. The report includes data regarding early indicators of success and reflects the understandings and views of stakeholders. As a critical part of this formative evaluation process, the data will be used to monitor changes in attitudes, measure progress toward the program's goals, uncover unexpected benefits or difficulties in design or implementation of the program, and produce data to make informed decisions for future programming.

EVALUATION COMPONENTS AND METHODOLOGIES

The multiple data sources used for the evaluation include:

- Administrator Surveys
- Teacher Surveys
- Student Surveys
- Parent Surveys
- Teacher Interviews
- Classroom Observations

Web-based surveys were administered to all ninth grade students, to all ninth grade teachers, and to parents of ninth grade students. In addition to building principals and assistant principals, administrators surveyed included: school managers, the special education facilitator, curriculum specialists, educational technology manager and other support technicians. Respondents accessed the respective survey and submitted it online to JHU CTE. The complete surveys can be viewed on the follow websites:

Survey	Website link
School Administrator	http://128.220.253/ss/wsb/d11/cte.TCPS-Administrator.htm
Teacher	http://128.220.253/ss/wsb/d11/cte.TCPS-Teacher.htm
Student	http://128.220.253/ss/wsb/d11/cte.TCPS-Student.htm
Parent	http://128.220.253/ss/wsb/d11/cte.TCPS-Parents.htm

Teacher interviews were conducted individually with six teachers using a structured interview method. The sample of teachers, representative of the major content areas, was balanced with respect to computer competency levels. The sample included five core content teachers and one special education teacher. The six teachers were selected jointly by the Staff Development Coordinator and the Assistant Superintendent of Instruction at Talbot County Public Schools. This sample comprised nearly 38 percent of the total number of teachers who taught 9th graders for the first semester of the 2005-06 school year. The structured interview questions are included in Appendix A.

Classroom observations were conducted in classes taught by the six teachers who also participated in the individual interviews. Observations were conducted by two trained observers. A rubric, based on the National Educational Technology Standards for Teachers (NETS), was developed to record student participation in classroom activities and the effective use of technology. The rubric, which provided ratings along five dimensions, was constructed to also align with the objectives of the One-to-One Laptop Initiative as defined by Talbot County Public Schools. The rubric and the specifics of each dimension can be viewed in Appendix B.

Inter-rater reliability was established with this rubric as well as with a classroom checklist (Observation Protocol for Technology Integration in the Classroom) developed by Northwest Regional Educational Laboratory. This checklist was used to record the use of specific technologies and software as well as student objectives and goals addressed during the class period.

A total of seven classroom observations were conducted; the total number of students in the seven classes was 155. The duration of each evaluation was 90 minutes, i.e. the entire class time.

Two, 90 minute class periods were observed for two of the teachers in the sample. Because the special education teacher did not have a self contained class, a single class period was observed when the special education teacher was co-teaching with another teacher from the sample.

The number of participants (sample size) for each evaluation component is shown below.

Evaluation Component	n=
Survey: Administrator	15
Survey: Teacher	10
Survey: Student	300
Survey: Parents	152
Teacher Interviews	6
Classrooms Observed	7

The findings for the mid-year evaluations are organized into six (6) key topic areas; the findings for each of these areas are fully detailed in the following sections of this report. The topic areas are:

1. Competency and training
2. Student learning and classroom environment
3. Classroom management and student behavior
4. Use of laptops in classrooms
5. Implementation and support
6. Attitudes toward initiative

Supporting data and findings for each topic will be presented, and concluded with a summary section. Conclusions and recommendations have been placed at the end of the report.

FINDINGS

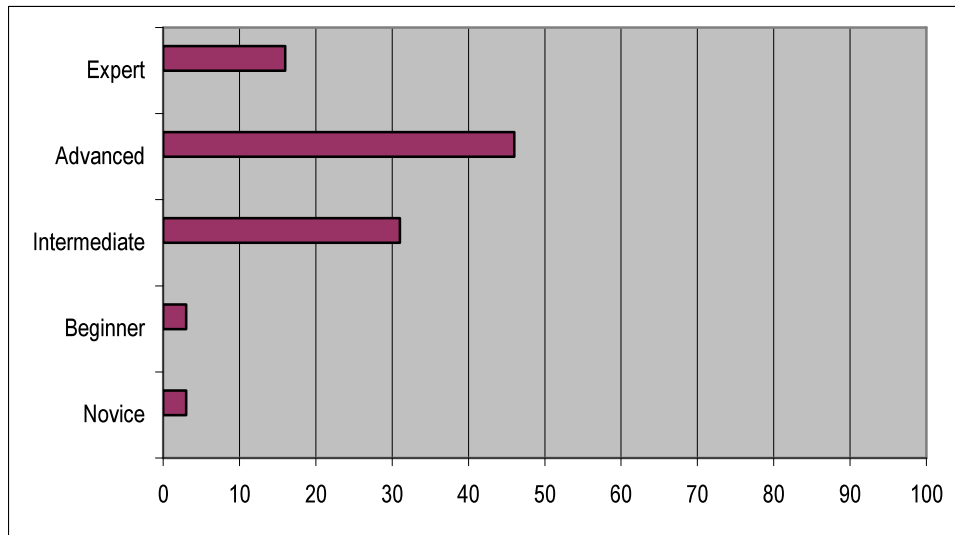
Key Topic Area 1: Competency and Training

This topic area presents findings related to the computer skill levels of students and teachers, and teacher ratings of the professional development they received prior to and during this school year pertaining to the initiative.

While it is acknowledged that many young adults are “wizards” at using a computer, teachers interviewed reported their observation that some students, particularly minority students and students with disabilities, initially expressed genuine reservations about using computers early in the initiative. The interviewed teachers all reported that they have seen a significant “turn around” in this situation and that computer skills have increased for these student groups.

Ninety percent (90%) of ninth graders surveyed rated their overall computer skills at the intermediate level or higher. As can be seen in Figure 1a below, the largest proportion of students (46%) rated their skill level as “advanced”.

Figure 1a: Skill levels self-reported from students surveyed



In the survey, skill levels for students were defined in the survey as follows:

- Novice: I can turn the computer on, but don't really know how to use any programs.
- Beginner: I am able to use basic computer functions such as word processing.
- Intermediate: I am able to use some programs, but don't have much experience with them.
- Advanced: I am able to use many programs and have a great deal of experience with them.
- Expert: I am able to teach others how to use some programs, and I can fix minor problems with my computer when they happen.

Of the parents who completed the survey, 79 percent rated their skill in technology as “intermediate” or “expert”. Skill levels for parents were defined in the survey as follows:

- Beginner: I recently learned to use a computer.
- Intermediate: I am comfortable using a computer.
- Advanced: I am confident of my skills and can teach others.

As measures of the impact of information technology training and of the subsequent use of the technology, teachers surveyed were asked to select the stage that best described their stage of adoption of technology. The stages are described in the table below, which also reports the percentage of teachers rating themselves at the various stages. Re-assessment (as a post test) of teachers in the stages of adoption of technology will be conducted in the end-of-year evaluation as summative data is collected.

Table 1: Stages of Adoption of Technology as reported by teachers surveyed*

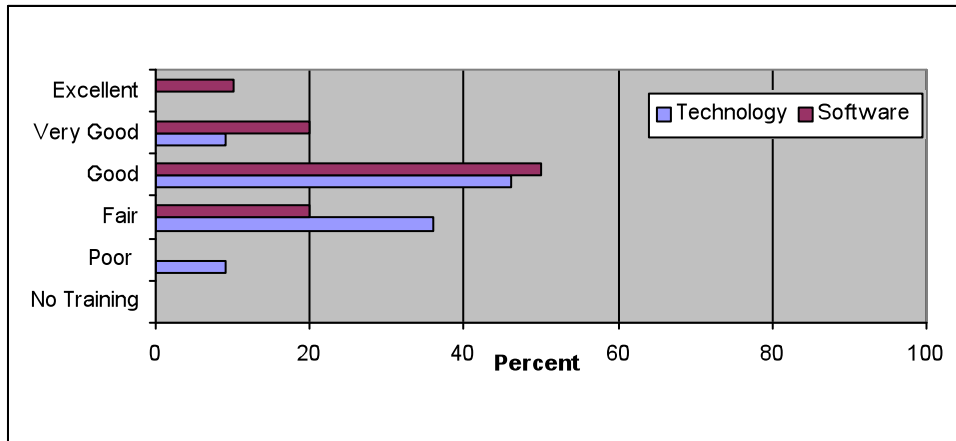
0%	Stage 1	Awareness	I am aware that technology exists but have not used it—perhaps I’m even avoiding it. I am anxious about the prospect of using computers.
0%	Stage 2	Learning the process	I am currently trying to learn the basics. I am sometimes frustrated using computers. I lack confidence when using computers.
9%	Stage 3	Understanding and application of the process	I am beginning to understand the process of using technology and can think of specific tasks in which it might be useful.
45%	Stage 4	Familiarity and confidence	I am gaining a sense of confidence in using the computer for specific tasks. I am starting to feel comfortable using the computer.
28%	Stage 5	Adaptation to other contexts	I think about the computer as a tool to help me and am no longer concerned about it as technology. I can use it in many applications and as an instructional aid.
18%	Stage 6	Creative application to new contexts	I can apply what I know about technology in the classroom. I am able to use it as an instructional tool and integrate it into the curriculum.

* *Christensen & Knezek, 1999*

As a very positive indicator, 91 percent of teachers reported that they were at or beyond the stage of familiarity and confidence. Also significant are the findings that more than 75% of teachers surveyed felt they were ready to apply the technology to new instructional applications and that nearly one fifth of teachers are moving into more creative applications.

The teachers’ reporting of stages of adoptions supports the high approval ratings teachers reported for trainings they have received to date. Teachers surveyed were asked to rate their training on instructional software and their training on laptop technology. The results are shown in Figure 1b.

Figure 1b: Ratings by teachers of technology and software training



More than 90 percent of teachers surveyed expressed the desire for additional training; with 54 percent of this group expressing their need for training on the advanced used of technology in the classroom. It is noteworthy to regard the teachers' opinions regarding additional training, as it is a further indication that teachers are advancing to higher levels of adoption of technology.

Summary findings for Key Topic Area 1 -- Competency and Training

- 90 percent of students rated their skill in technology as “Intermediate” or higher.
- 79 percent of parents rated their skill in technology as ‘Intermediate’ or ‘Expert’
- More 90 percent of teachers reported that they have progressed to and beyond the stage of “familiarity and confidence” in their adoption of technology.
- More than half of teachers reported that training on equipment technology was good to excellent and 80 percent reported that software training was good to excellent.
- More than 90 percent of teachers reported that they desire additional or advanced training.

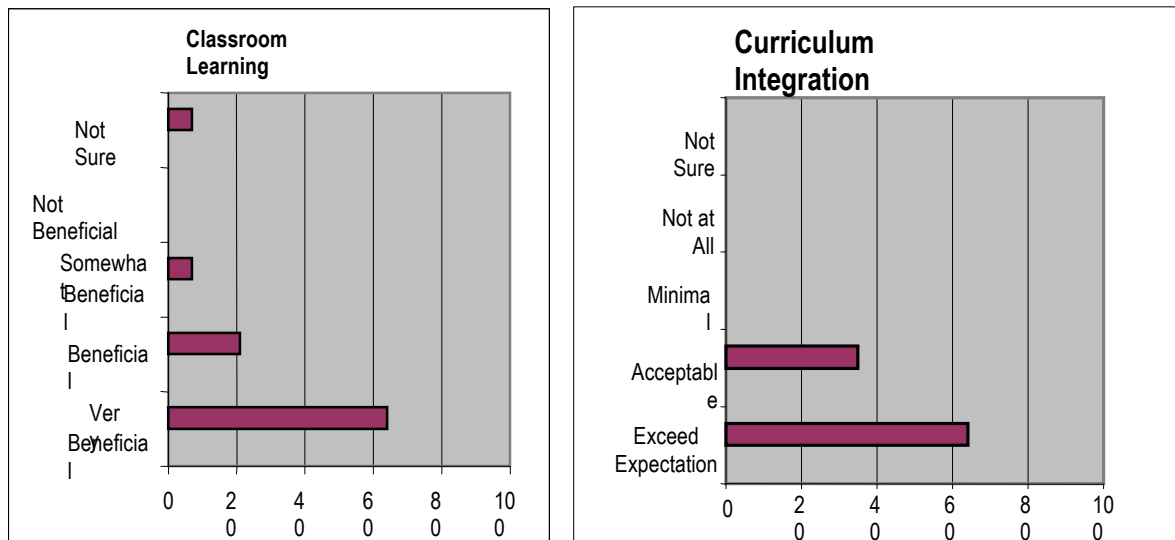
Administrators were not included in the training provided to teachers; therefore, they were not queried on training and competency issues in their survey.

Key Topic Area 2: Student Learning and Classroom Environment

This section of the report investigated: 1. administrators' impressions of the level of integration of technology into the curriculum, 2. teachers' and students' perceptions of laptops on classroom and learning activities, and 3. students' attitudes toward school.

Eighty five percent of administrators surveyed were in strong agreement that the laptops are “beneficial” to “very beneficial” to classroom learning. Based on their further observations, they all agreed that laptops have been integrated into the curriculum to a degree that meets or exceeds expectations. These results are shown in Figure 2a.

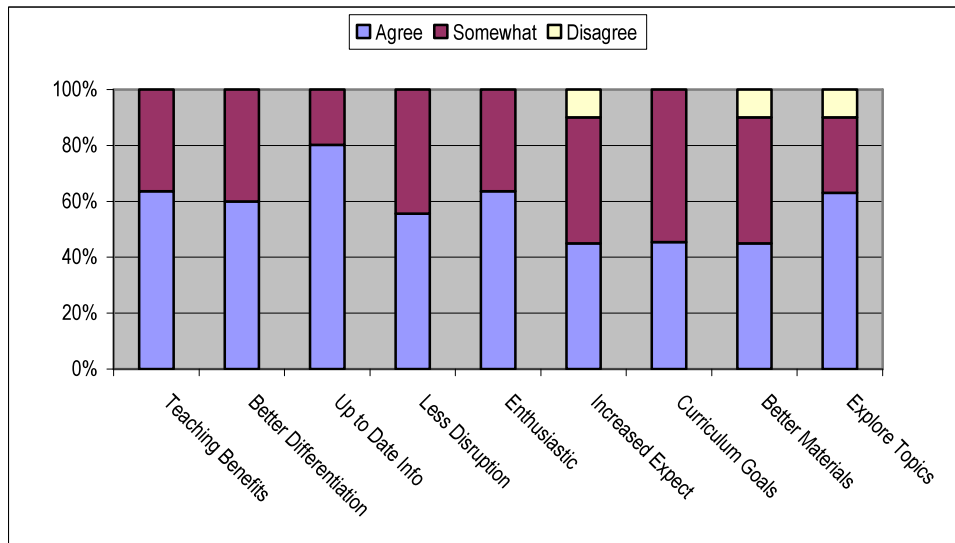
Figure 2a: Administrators' perceptions of impact to learning and curriculum integration



Curriculum integration, a benchmark concept in the use of technology in the classroom, refers to the degree that instruction using technology is aligned with the curriculum. During the classroom observations, one of the five observed dimensions on which each observation was rated included “Integration of Technology”. Teachers were rated from one (1) to three (3) on each dimension using the rubric in Appendix B. The average rating on “Integration of Technology” for the seven observations was 2.7. Figure 4b (page 19) displays the average ratings on all dimensions, which will be further examined later in this report.

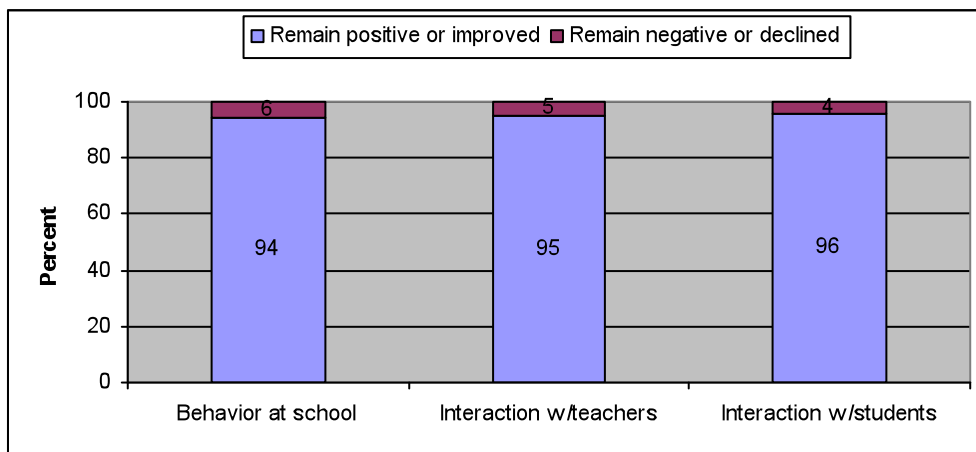
Similar to the perceptions held by administrators, two thirds of teachers surveyed agreed that laptops generally provide benefits to teaching. Regarding the impact of laptops in the classroom, the survey findings show agreement by at least 60 percent of teachers in the following areas: beneficial to teaching, better differentiation of instruction, efficient access to current information, enhanced exploration of topics in greater depth with students, and acknowledgement of their enthusiasm for the initiative. These results are displayed in Figure 2b.

Figure 2b: Teacher perceptions regarding impact of laptops



The parent survey queried parents regarding changes that they had observed in their ninth graders since the laptops were provided. An overwhelming majority of parents reported their students' attitudes toward school as remaining positive or becoming more positive since the initiative began (see Figure 2c).

Figure 2c: Parent opinions regarding impact of laptops on students



As noted by administrators, two thirds of teachers interviewed indicated that the laptops enhanced student learning. All interviewed teachers confirmed that the use of laptops has fostered growth in problem solving and creativity for all students. Perceptive observations from several teachers interviewed indicated that they now anticipate more student self discovery and are prepared to respond to student questions that reflect higher level thinking, such as interpretation, reasoning, and analysis. Expressing a similar view, one interviewed teacher routinely asks students to compare material on a web site with material in the text book to develop comparative reasoning and critical thinking. This teacher takes this approach a bit further in making sure that students understand that not all information found on web sites is real, true, or accurate.

All teachers interviewed praised the positive impacts that the laptops have had on students with disabilities with respect to learning efficiency and motivation. According to teachers, the laptops have helped these students to become more organized and focused as well as provided the benefit of immediate feedback on performance. Repeatedly teachers mentioned that students with disabilities seemed to be more attentive when working on their laptops, particularly students with ADHD.

Teachers interviewed reported that students with disabilities, who need verbal materials read verbatim, can more readily use text reading programs on their own laptop. Although a few interviewed teachers reported some student reticence to use such programs due to peer pressure, others reported that many students with learning disabilities would rather use the text reader than have a teacher or teacher aide read the material to the student. As further stated, the laptops have also made life easier for those students with motor problems affecting their handwriting skills, as they can now complete assignments on the computer using word processing software.

Teachers interviewed have been perceptive in the overall adjustment of students with disabilities to the laptop initiative. They noted that these students respond exceedingly well to the immediate writing assessment feedback from Criterion and to the Cognitive Tutor individual progress charts.

In response to open-ended questions in the survey and in the interviews, teachers were asked to describe significant success experiences with the One-to-One Initiative. Selected responses from both groups of teachers are shown below:

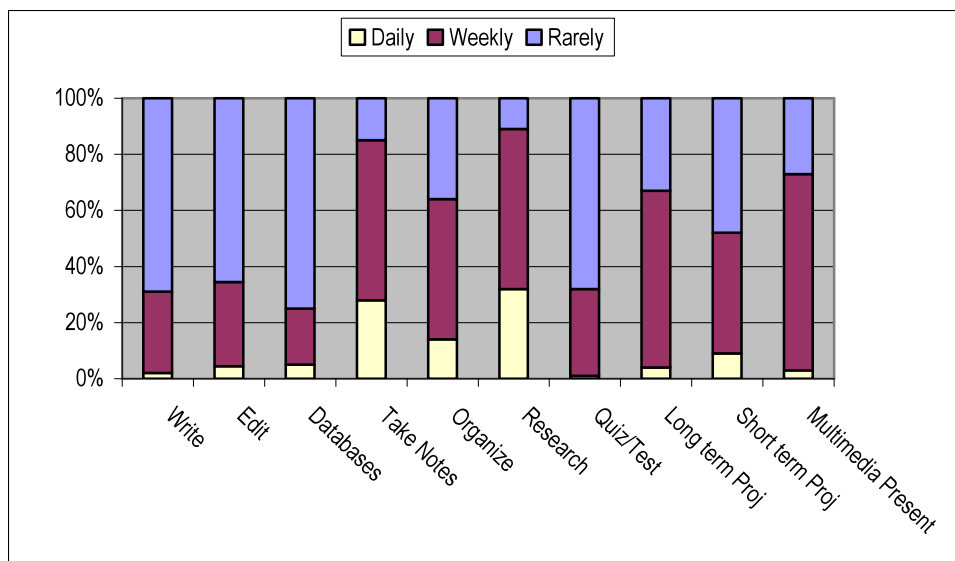
- “Students are able to use the laptops during lab work to collect data, analyze it and come up with a draft lab report base on a matrix that they found on the computer.”
- “Motivation of students has increased.”
- “The creation of multi-media projects, iMovies.”
- “Students, who are struggling, are more apt to do work when using the laptop.”
- “Instead of taking my students from one classroom to another to work on the software component of their curriculum, I can stay in my own classroom. This is great because it's much less disruptive and we lose a lot less instructional time.”
- “Students are better organized.”
- “Students are excited about using the laptops in general. There are certain students who have had much success with programs such as iMovie and who otherwise do not experience much success with traditional academic methods.”
- “Students, who most of time would not be communicative with me, now have new ways to do this— otherwise they wouldn't do this.”
- “I can get day by day diagnostics on how students are doing via individualized software.”
- “Engagement level is amazing --- discipline problems are reduced.”
- “You lecture a lot less. The teacher is not so much a ‘faucet of facts’. I'm more of a guide to information -- they do a lot more of figuring it out on their own.”

Teachers' descriptions of significant challenges that they have experienced with the initiative follow:

- “Different levels of computer competency, students getting off site.”
- “Teaching with the computer has been a challenge because I was uncomfortable with a computer.
- “Keeping students on the assigned website/task.”
- “10th graders in my class without laptops”
- “Learning all the material I need to be able to use the technology successfully.”
- “My biggest challenge is getting the students to follow the rules of when they may use them and when they may not. “
- “It is difficult to be at the front of the room and have them hide behind that computer and not know what is on the screen.”
- “The drop boxes are cumbersome. Use of them triples the amount of time to grade papers.”

As shown in Figure 2d, students indicated that they used their laptops most often to take notes, to research, and to organize materials and information.

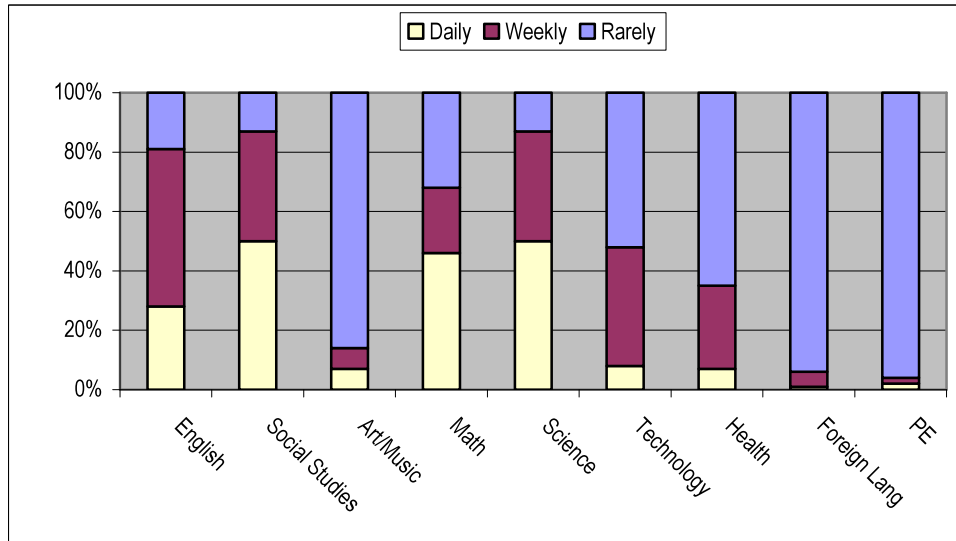
Figure 2d: Student reported use of laptops by function



As shown in Figure 2d, there is a lower frequency of laptop use to write and edit, compared with other classroom activities. This finding is supported by teacher response data presented in Figure 4e. Both students and teachers reported writing and editing done ‘rarely’ or ‘weekly,’ while taking notes, research and organizing were done ‘daily’ or ‘weekly.’

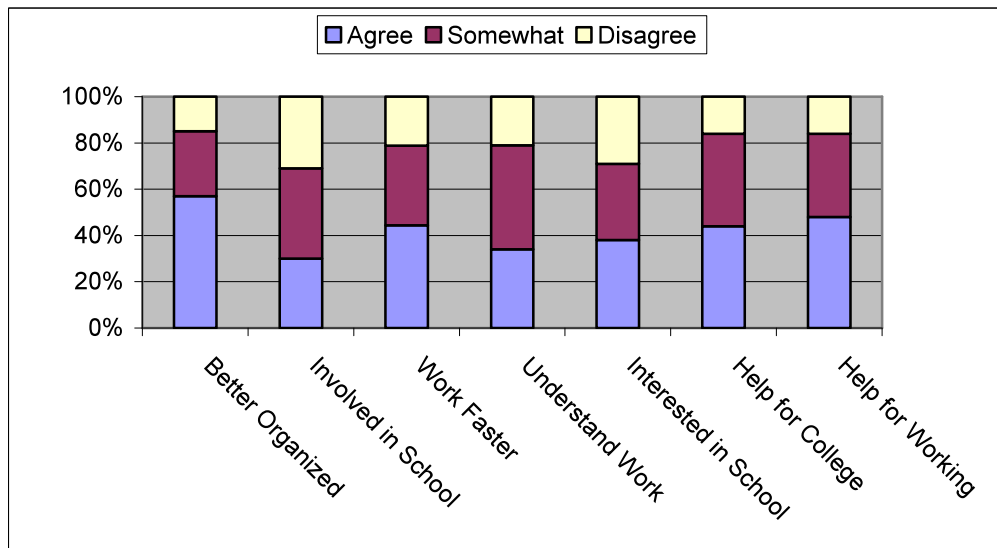
Students reported that they use the laptops most often in the core subject areas as shown in Figure 2e. Consistent with student reports regarding how they use the laptops (Figure 2d), laptops are used in English less frequently as compared to the other core subject areas.

Figure 2e: Student reported use of laptops by specific class



Students surveyed indicated their agreement regarding the benefits of their having individual laptops in the classroom. A majority of students agreed or somewhat agreed that the laptops: helped them to be better organized, enabled them to work more quickly, assist them to understand school work, and had the potential to support their career goals. Responses are displayed in Figure 2f.

Figure 2f: Student reported agreement of benefits of using laptops



Summary findings for Key Topic Area 2 – Student Learning and Classroom Environment

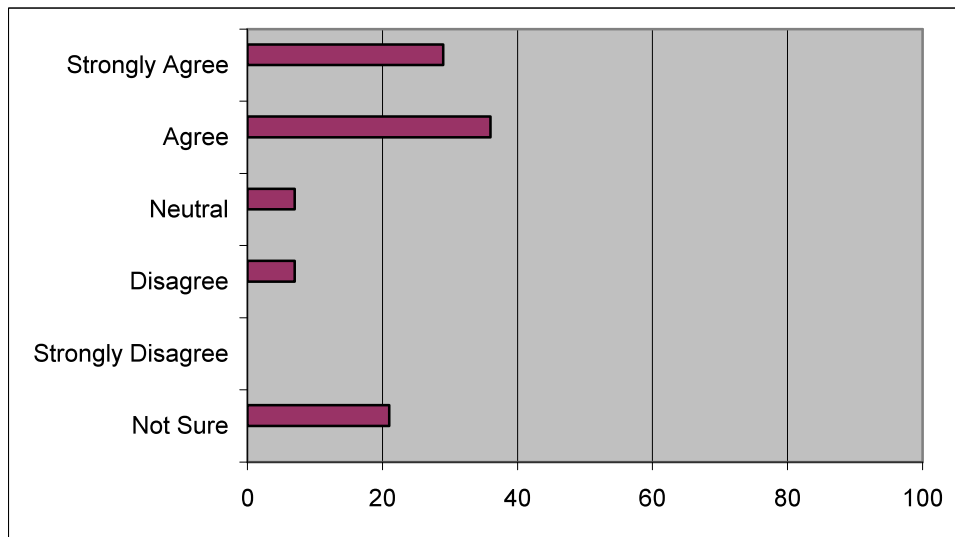
- All administrators reported that laptop integration with the curriculum exceeds expectations, and 85 percent feel that the laptops are beneficial in the classroom.
- Two thirds of teachers interviewed reported that laptops enhanced student learning.
- Most surveyed teachers agreed that laptops provided availability to better teaching materials, allowed for differentiation of instruction, enabled efficient access to current information; and opened classroom exploration of topics to greater depth.
- Students indicated that they use the laptops most frequently to take notes, research, and to organize materials; least frequent uses included writing, editing, and to complete long term assignments.
- Students reported that they use laptops primarily in the four core subject areas, but the laptops are used less frequently in English.
- Students with disabilities have reportedly experienced new ways to learn and to accommodate for learning disabilities.
- Most parents surveyed reported that student motivation for doing schoolwork, and interest in school has remained steady or been more positive since the initiative began.

Key Topic Area 3: Classroom Management and Student Behavior

This section addresses administrators' views and teachers' concerns and experiences regarding student behavior and classroom management.

Research has suggested that laptops provided to each student reduce some negative behaviors in the classroom. When this research finding was posed to administrators in the survey, more than 60 percent were in agreement with nearly 30 percent in strong agreement. Figure 3a displays this finding.

Figure 3a: Administrator views on research findings that suggest that laptops reduce some negative classroom behavior.

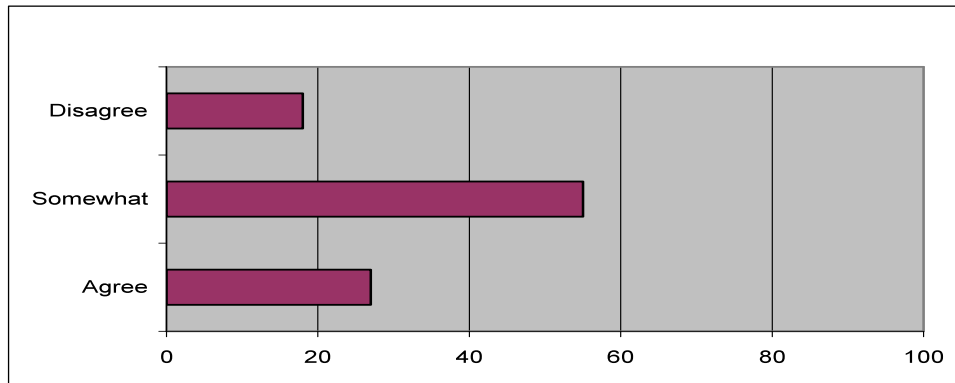


Concerns regarding behavior were explored during the teacher interviews, where only marginal concerns about student behavior were expressed. Most concerns dealt with ensuring that students were on task and not “wandering” to other web sites during instruction. However, all teachers interviewed also expressed a strong caveat that students are generally more focused when using the laptops, which has reduced the day to day minor disruptions and, for this reason, has made teaching more effective. As stated by a teacher, “... I expected worse, but the situation is much better than I anticipated. When students are engaged, there are fewer problems in the classrooms.”

The classroom observations indicated a high level of student engagement. On this dimension of the observation, an average score of 2.7 (out of a maximum of 3) was obtained for the seven classes observed. This is shown in Figure 4b along with the findings for all five dimensions.

Eighty two percent (82%) of teachers surveyed indicated that they agreed or somewhat agreed that they had concerns about classroom management as a result of the initiative (see Figure 3b).

Figure 3b: Teacher response to: “I am concerned about classroom management as a results or the laptop initiative.”



Summary findings for Key Topic Area 3 – Classroom Management & Student Behavior

- All teachers interviewed and most administrators agreed that laptops have substantially reduced most disruptive student behaviors.
- All teachers interviewed reported that students are more focused when working on a lesson using the laptops.
- A high level of student engagement was noted during classroom observations.
- 82 percent of teachers surveyed agreed to some degree that they had concerns regarding classroom management as a result of the laptop initiative.
- Monitoring student activity on the laptops during class and enforcement of consequences were concerns for teachers who were interviewed.

Key Topic Area 4: Use of Laptops in the Classrooms

This area of the report examines the ways in which teachers and students use laptops in the classrooms and the benefits that students may gain from using the laptops. Parents also reported on students' use of laptops outside of the classroom.

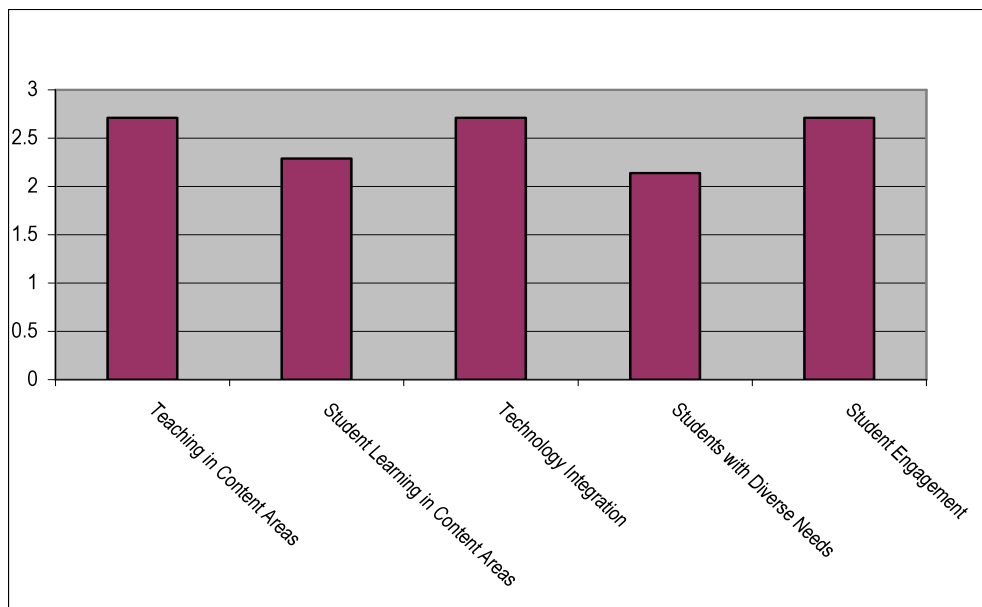
In addition to showing high levels of integration of technology and student engagement, findings which were previously discussed in earlier sections of this report, the classroom observations provided valuable insight as to the day-to-day use of laptops for instruction. The specifics of each dimension used to evaluate the seven classrooms are shown in the Table 4.

Table 4: Evaluated aspects of instruction during classroom observations

1. Teaching in the content areas	Use of student-centered, project-based instruction with multiple information resources.
2. Student learning in the content area	Use of technology to promote student abilities to analyze, reason, summarize, and interpret information.
3. Integration of technology	Use of a variety of technologies appropriately integrated throughout the lesson.
4. Students with diverse needs	Use of a variety of technologies with instructional strategies to address diverse needs of students.
5. Student engagement and participation	Percentage of students involved and fully engaged in the classroom activities.

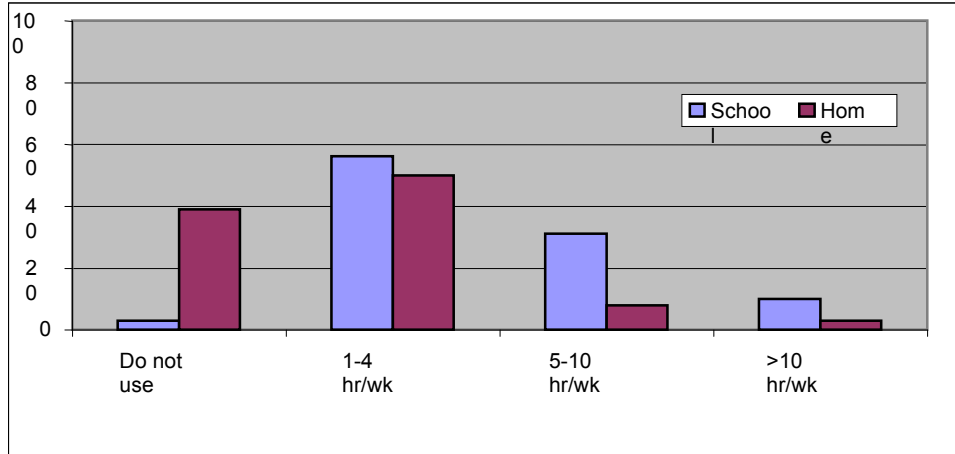
The average ratings from the observations are shown in Figure 4a. Particularly high ratings were received in: teaching in the content area, technology integration, and student engagement, indicating that these areas were observed with high frequency. The results are based on 3 point rubric, with a rating of 2 viewed as appropriate and expected level of performance and 3 as optimal. All categories of rubric ratings were greater than the expected level.

Figure 4a: Average ratings observed in the use of laptops (n=7)



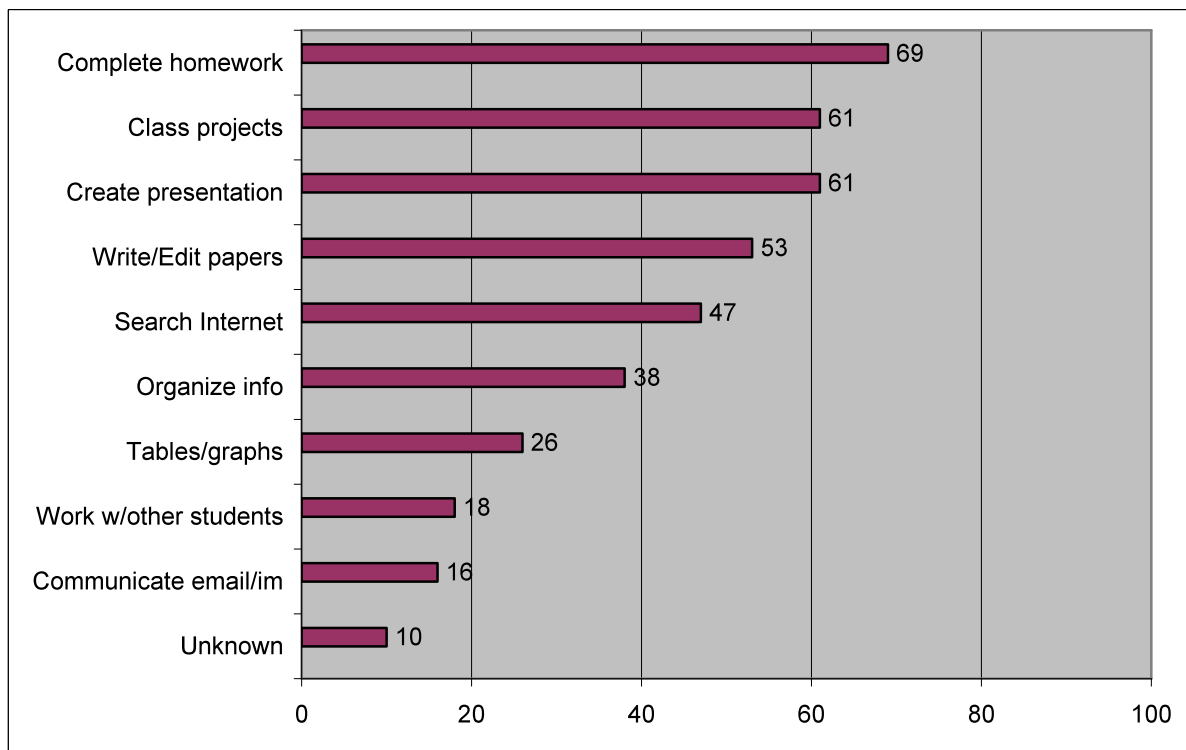
Students surveyed reported that they use the laptops most frequently in school as compared to use at home (Figure 4b). Overall, more than half of students used their laptops 1 – 4 hours per week.

Figure 4b: Student reporting of laptop use



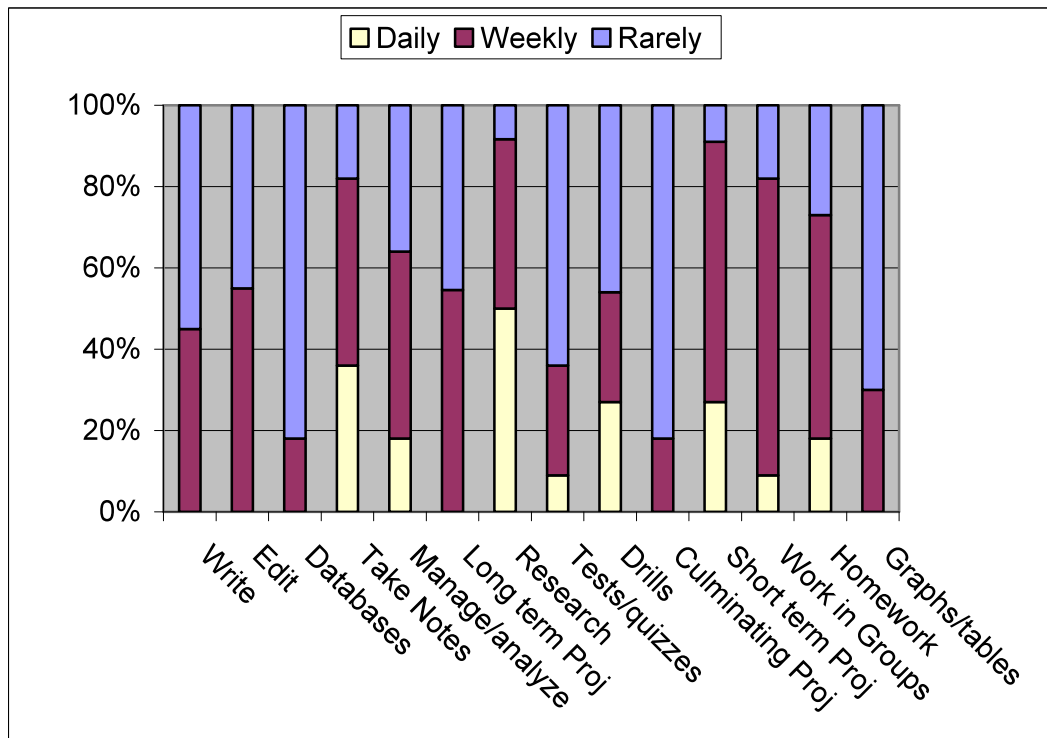
More than 60 percent of the parents who completed the survey reported that students have used the laptops at home to complete homework, work on a class project, or create a presentation. Additional information regarding parent observations of the use of the laptops at home is shown in Figure 4c.

Figure 4c: Student activities using the laptops at home as reported by parents



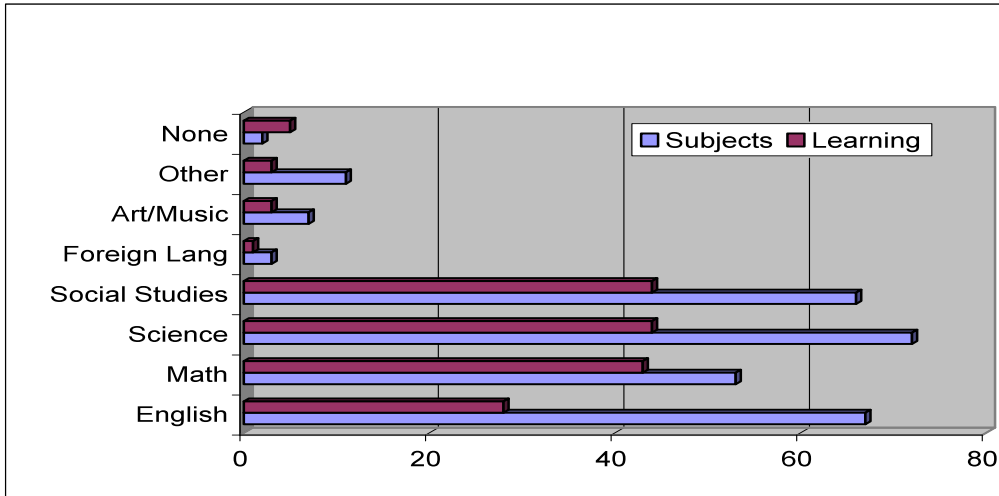
Teachers surveyed were asked their perceptions regarding the use of laptops by students for various activities. The teachers reported that students most frequently use the laptops to take notes, to research, to manage and analyze information, to work on short term projects, and to work on homework. Complete results are shown in Figure 4d. These results, mentioned earlier in this report under Student Learning and Classroom Environment, support student reports of less frequent use of laptops for editing and writing.

Figure 4d: Student use of laptops as reported by teachers



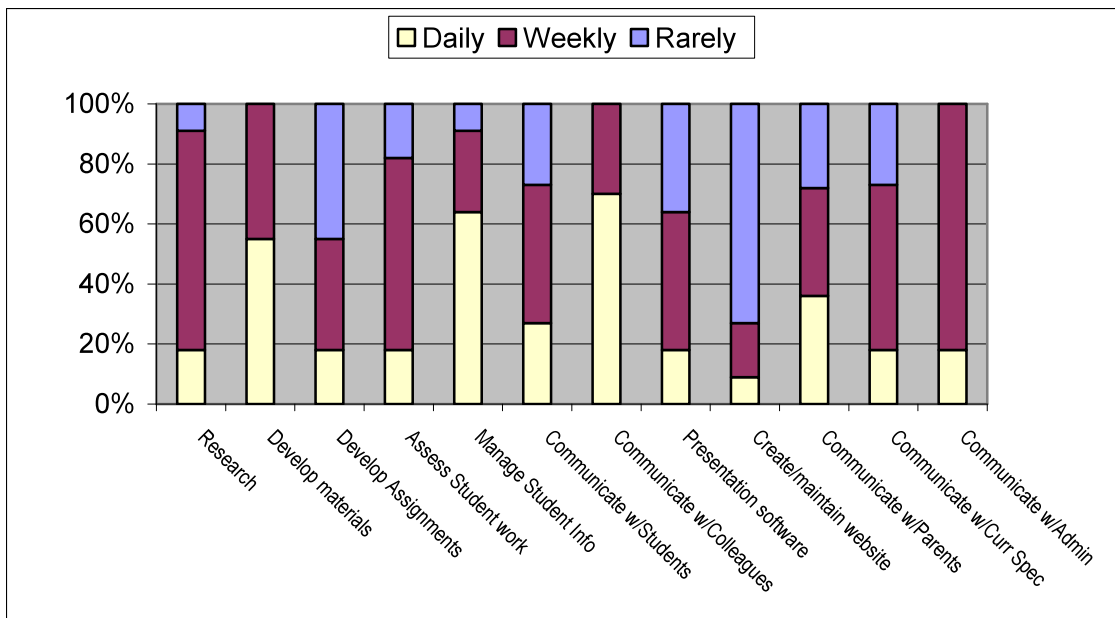
As shown in Figure 4e, students reported using laptops most frequently in the four core subject areas (English, Math, Science, and Social Studies), and found laptops beneficial to learning in Social Studies, Science, and Math. Learning was reported to be only modestly enhanced in English with the laptops.

Figure 4e: Student use of laptops as reported by students



Teachers surveyed regarding their use of laptops indicated that the laptops are used on a daily basis for numerous tasks. Figure 4f shows frequent use of laptops to develop instructional materials, to manage student information, and to communicate with colleagues.

Figure 4f: Teachers' use of laptops as reported by teachers



Summary findings for Key Topic Area 4 – Use of Laptops in Classrooms

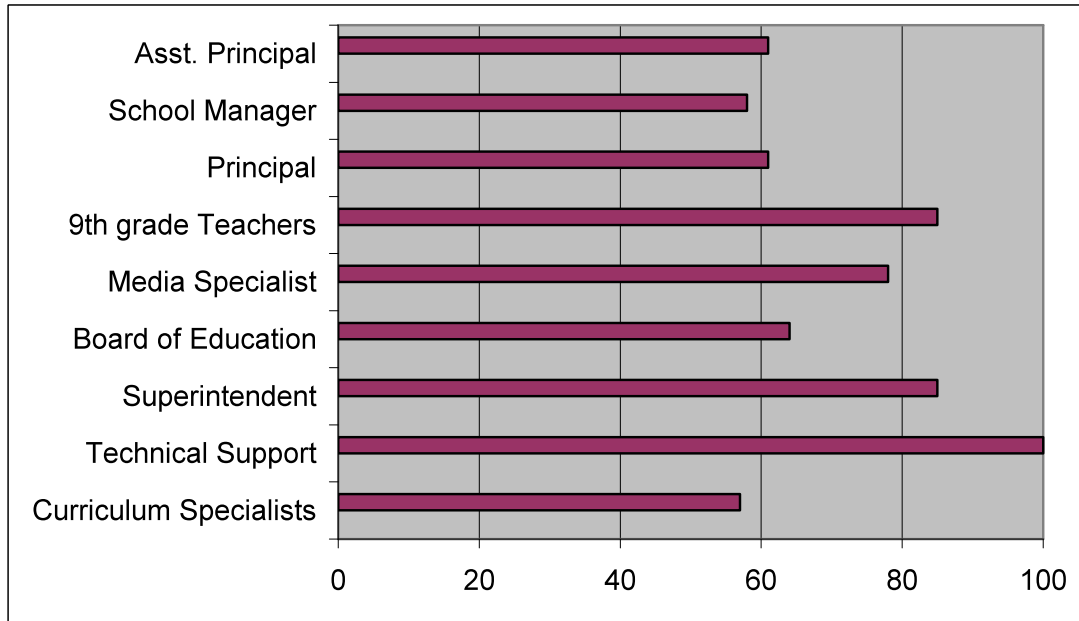
- Classroom observations showed high frequencies of student engagement, teaching in the content areas, and integration of technology.
- Students reported that they use laptops primarily in school, and mainly in the four core curricular areas.
- There is a relatively low incidence of students' using laptops to write and to edit.
- Teachers reported that students use laptops most often for note taking, research, and short term projects; the least frequency of use was for writing and editing.
- Teachers surveyed reported that they use laptops most often to develop instructional materials, manage student information, and to communicate with colleagues.

Key Topic Area 5: Implementation and Support

This area reviews stakeholders' perceived levels of support for the initiative and student responsibility for the laptop equipment.

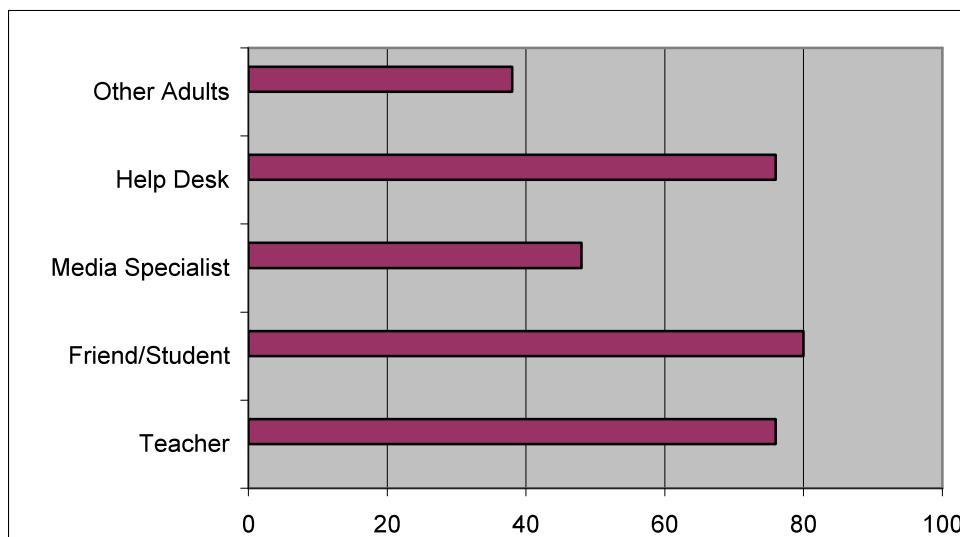
According to administrators surveyed, the initiative has received strong support from various personnel. More than 80 percent of administrators responding noted the high level of support from ninth grade teachers and the Superintendent.

Figure 5a: Support for the initiative as observed and reported by administrators



On the subject of technical support, students surveyed indicated that they readily receive support from a number of resources at school. Teachers interviewed reported that technical support has been responsive and supportive, and that turn around time for laptop repairs has improved.

TableFigure 5b: Availability of technical support as reported by students



The issue of responsible student use of laptops was included only in the administrator survey; although teachers did mention the issue tangentially during teacher interviews. The perceptions from teachers interviewed will be included with the survey findings on this issue.

Administrators surveyed were asked to rate the significance of specific problems as being “very significant” to “not significant”. The problems included: 1. students not having a fully charged laptop at the start of the school day, 2. students not bringing their laptops from home, and 3. students mistreating their laptops. The survey results have been compiled in Table 5.

Table 5: Significance of problem areas as rated by administrators

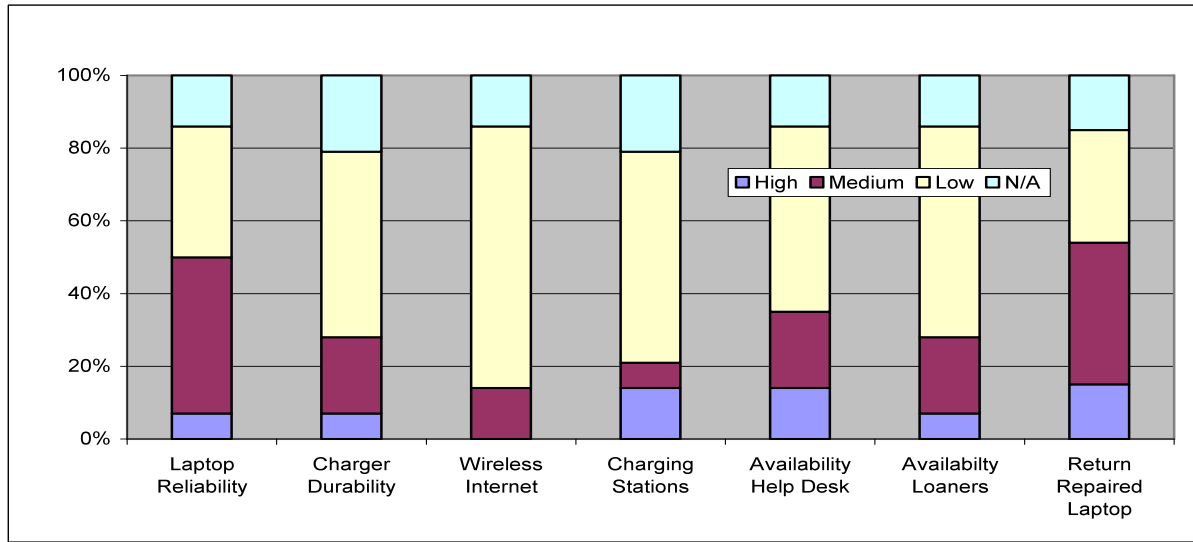
Problem Area	Very significant	Significant	Marginally significant	Not significant	n/a
Students coming to school without a fully charged laptop	0%	7%	35%	29%	29%
Students not bringing their laptop from home	0%	0%	21%	50%	20%
Students mistreating their laptop	0%	0%	43%	21%	36%

It is important to note that none of the problem areas are considered by administrators to be significant. Also, the terminology, “mistreating laptops,” should not be misconstrued to suggest willful destruction or malicious intent to damage property. Laptop mistreatment has been caused by student carelessness and lack of judgment; recent training to increase student awareness regarding preferred ways to handle the laptops has already resulted in reduced incidence of breakage.

Teachers interviews concurred that breakage of equipment has been minimal and that loaners have been available to students to use while their laptop is being repaired.

The administrator survey explored various technical areas; administrators were asked the degree to which specific equipment issues created problems. As shown in Figure 5c most problems are perceived as being at a low level of concern.

Figure 5c: Administrators report the degree that problems are created by each situation



Teachers interviewed reported that wireless modems and the internal network are reliable; however, they reported some problems with overall laptop reliability. From a simple equipment standpoint, teachers interviewed noted, with pleasure, that they don't experience the dislocation and expenditure of time as was the case when they relied on the portable laptop carts or computer labs.

Summary findings for Key Topic Area 5 – Implementation and Support

- The initiative has a high level of support from various personnel.
- Students reported that technical support is readily available through a variety of resources.
- Students have been generally responsible in the use and proper care of the laptops; students are responding to awareness training to reduce laptop breakage.
- Problems with hardware, as noted by administrators and interviewed teachers, have been minimal with higher concerns noted for laptop reliability.

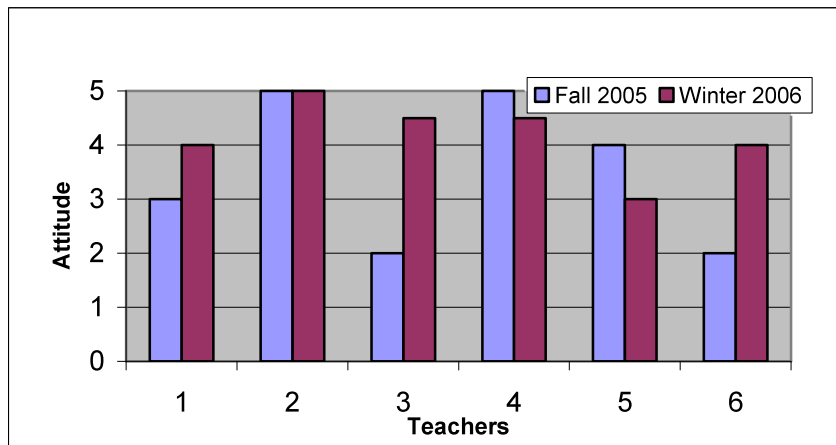
Key Topic Area 6: Attitudes toward the Initiative

Stakeholders' attitudes toward the Initiative were surveyed and reported for this topic area.

As previously reported in Topic Area 2 (TableFigure 2a) more than 60 percent of teachers surveyed agreed that they were enthusiastic regarding the initiative with the remaining 40 percent being somewhat enthusiastic. Teachers interviewed also expressed enthusiasm through a self rating of their attitude.

Teachers were asked, during the interviews, to rate their general attitude (from 1-5) toward the initiative at the beginning of the school year and to rate their attitude at the time of the interview (January). Four of the six teachers indicated that their attitude toward the initiative has moved toward “extremely positive” or has remained at the “extremely positive” level since September. Figure 6a, which shows this finding, delineates the “before” and “after” attitudes for each teacher. A “5” indicates “extremely positive”.

Figure 6a: Attitudes toward the initiative from teachers interviewed

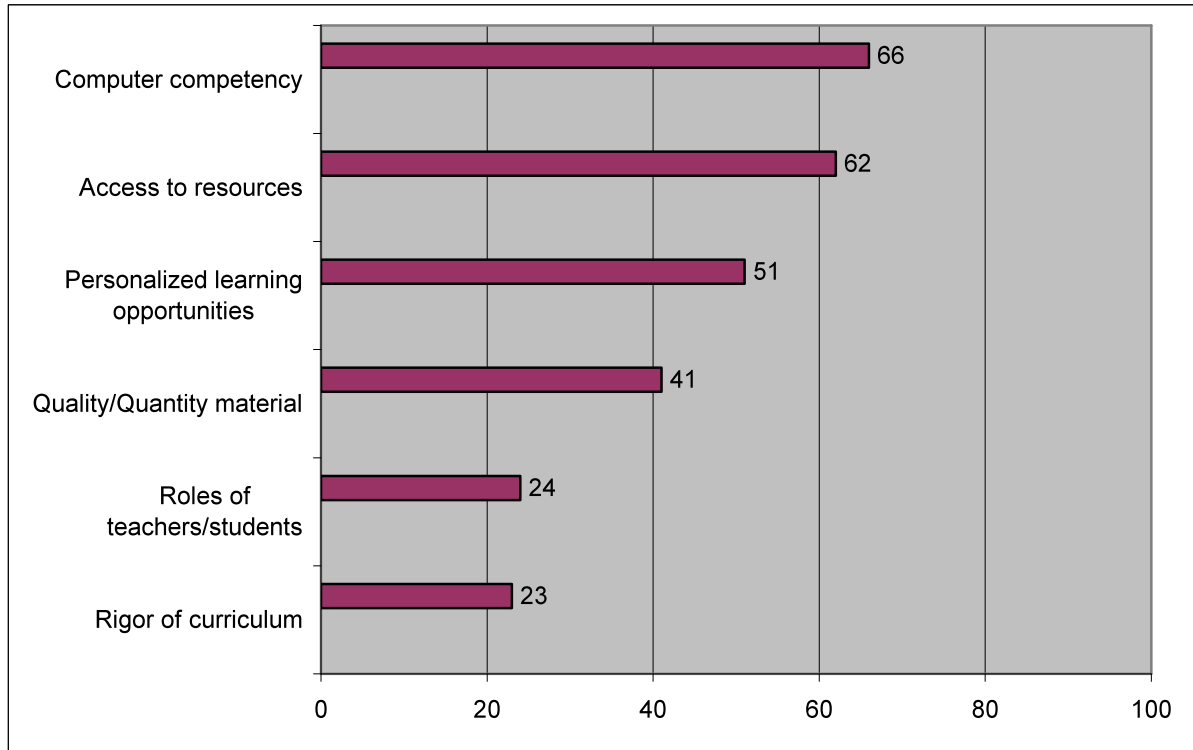


The teachers, whose attitude appears to have declined, shared reasons for the decline during the interviews. Teacher #4 had expected more parent communication via email. In the case of teacher #5, whose rating went from “positive” to “neutral”, specific mention was made to the labor intensive process in using the drop box to collect, grade, and return student work.

The positive attitudes of teachers interviewed seem to have been influenced by student behavior; all teachers interviewed reflected that students are more engaged and are generally less disruptive in class with fewer instances of students calling out or talking in class.

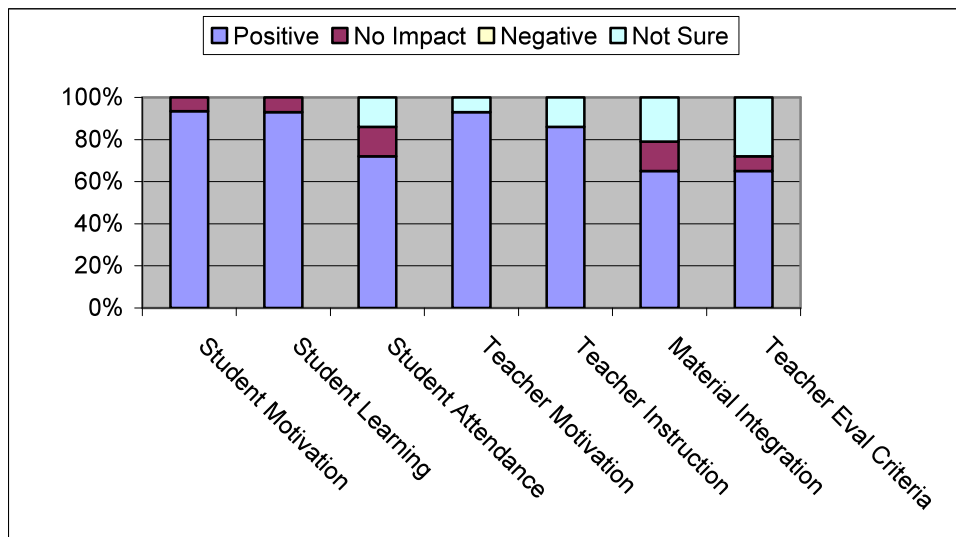
Parents surveyed were asked the areas in which they thought that the Laptop Initiative has had a positive impact on their children. These results are compiled in Figure 6b below.

Figure 6b: Positive impacts of the Laptop Initiative as reported by parents surveyed



Similar to the above question asked of parents, administrators surveyed were asked to rate the impact that laptops have had on a variety of aspects. The results of their responses are shown in Figure 6c, which shows a high percentage of administrators indicate positive impacts for both teachers and students. There were no negative impacts reported.

Figure 6c: Administrator survey ratings on the impact of laptops



Administrators were also asked in the survey to project the level of success that the initiative will have at the end of the year, based on observations to date. More than 90 percent anticipated that the Initiative would be ‘Successful’ or ‘Very Successful’ by the end of this school year. This finding is shown in Figure 6d. In addition, 100 percent of teachers rated the Initiative as important (see Figure 6e). There are strong findings for critical success by the end of the academic year.

Figure 6d: Likelihood of future success of the initiative as reported by administrators

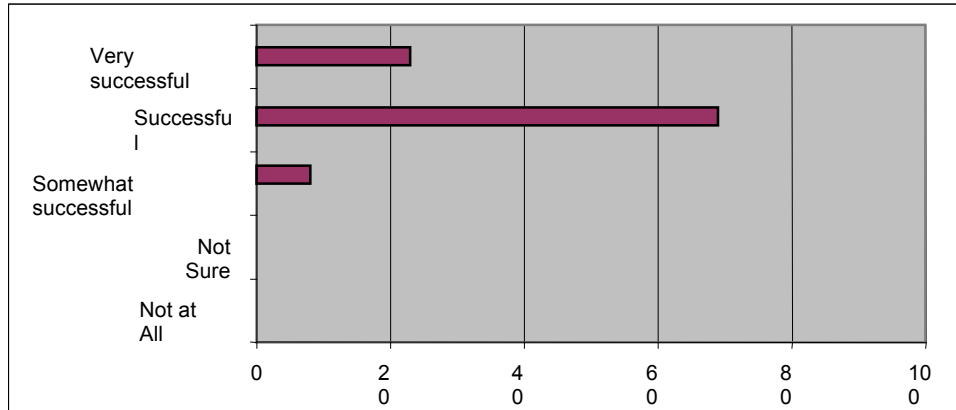
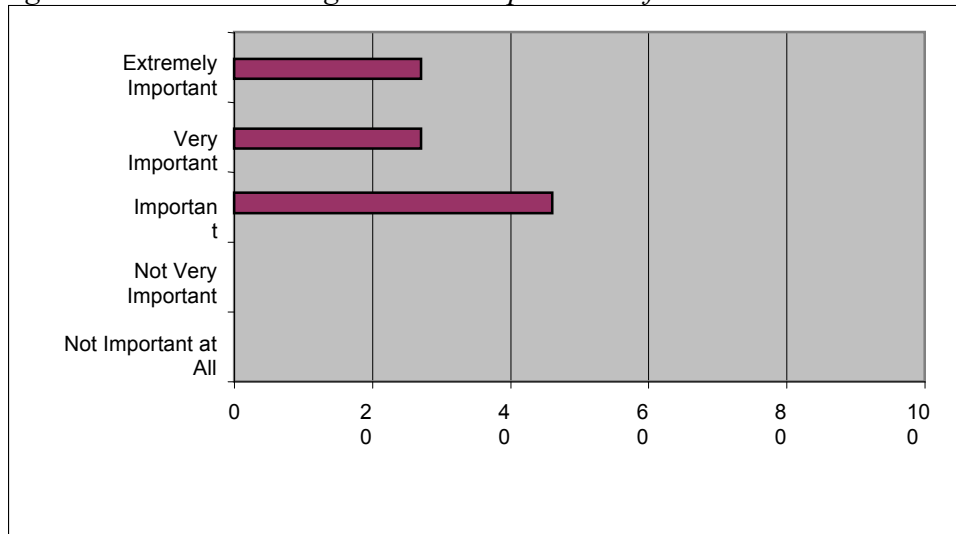


Figure 6e: Teacher ratings as to the importance of the initiative



Summary findings for Key Topic Area 6 – Attitudes toward the Initiative

- Most teachers interviewed indicated a change toward more positive attitudes regarding the initiative.
- Administrators noted that teachers and students have been positively impacted by the initiative in the areas of motivation, student learning, and instruction.
- Teachers' positive attitudes and increased motivation may have been influenced by students' being more engaged in lessons and less disruptive in class.
- More than 60 percent of parents surveyed indicated positive impacts as a result of the initiative in computer competency of students and student access to educational resources.
- All teachers surveyed indicated that the initiative is important, very important, or extremely important.

CONCLUSIONS & RECOMMENDATIONS

The recommendations, which follow, have emerged from the formative evaluation process and reflect the measurements employed across various evaluation methodologies.

1. Continue strong administrative leadership and support—keeping the vision and goals of the project clear for all stakeholders.
2. Involve students in problem solving and policy development regarding the use of laptops. Ensure that consequences for infractions are consistently enforced.
3. Provide remote desktop capability for all teachers to assist with monitoring of student activity and discourage “off task” behavior.
4. Provide professional development and support for English teachers to increase the use of computers for writing assignments and preparation for HSAs.
5. Resolve issues regarding drop boxes, which are perceived by some teachers to be inefficient.
6. Provide a “menu” of training and skill development options for teachers so they are better able to manage their proficiency growth.
7. Enhance parent communication regarding the initiative to increase parent understanding and involvement.
8. Reinforce the importance of using technology resources to help all students, including those who are at risk, acquire content knowledge and meet or exceed benchmark targets in all core content areas.

APPENDIX A

Talbot County Public Schools - One-to-One Laptop Initiative Structured Interview Questions: Teacher Study Sample #2

1. In what ways have the laptops changed student-teacher interactions?
2. What changes have the laptops brought to the classroom environment?
(Are these positive or negative?)
3. As a result of the laptops, describe the changes you've made in the way that you conduct classes and in your daily practices.
4. As a result of the laptops, describe the changes you've made in the way you prepare lesson plans.
5. What new challenges, related to the presence of laptops, do you face this year with respect to behavior management with 9th graders?
6. Using a scale of 1 – 5, 1 being extremely negative and 5 extremely positive, how would you **RATE YOUR ATTITUDE** toward the laptop initiative at the beginning of this school year? _____
7. Would you say that **your attitude** toward the initiative has changed since the initiative program began? Using the same scale, rate your attitude now. In what ways has your attitude changed? _____
8. Using a scale of 1 – 5, 1 being extremely negative and 5 extremely positive, how would you **RATE GENERAL STUDENT ATTITUDE** toward the laptop initiative at the beginning of this school year? _____
Students with disabilities? _____
Minority students? _____
Gifted and Talented students? _____
9. In what ways would you have changed the manner in which the initiative was implemented?
10. Using a same scale of 1 – 5, how would you **RATE GENERAL STUDENT ATTITUDE** toward the laptop initiative **now**. In what ways has this changed since the initiative program began? _____

11. Using a scale of 1 – 5, 1 being adversely affected and 5 extremely enhanced, how would you **RATE STUDENT LEARNING** since the initiative? _____
 Examples.
 Students with disabilities? _____
 Minority students? _____
 Gifted and Talented students? _____
12. Using a scale of 1 – 5, 1 being adversely affected and 5 extremely enhanced, how would you **RATE GENERAL STUDENT CREATIVITY** since the initiative?

 Examples.
 Students with disabilities? _____
 Minority students? _____
 Gifted and Talented students? _____
13. Using a scale of 1 – 5, 1 being adversely affected and 5 extremely enhanced, how would you **RATE GENERAL STUDENT PROBLEM SOLVING** since the initiative? _____
 Examples.
 Students with disabilities? _____
 Minority students? _____
 Gifted and Talented students? _____
14. How would you compare the quality 9th grade student projects/work/reports with those of last year's 9th graders?
15. What would you like to see changed in the laptop initiative program for next year?
16. How has the use of laptops impacted learning strategies for students with disabilities?
17. Are there differences in the use of laptops among students with disabilities? What are they? Do the specific disabilities affect student ability to effectively use the technology? In what way(s)?
18. To what extend has it been necessary to instruct students to use the accessibility features of their laptops?
19. What assistive technologies are being used to assist student to effectively use their laptops?

APPENDIX B

Rubric: Classroom Observation “Look For’s” One-to-One Laptop Initiative

Date:

Teacher:

Observer:

Class:

I. Application of technology to teaching assignments within the content area

	3	2	1
	Student-centered project-based learning with effective use of multiple information resources	Student-centered project-based learning with some information resources.	Student-centered project-based learning with few information resources.

II. Student learning in the content area.

	3	2	1
	Technology is used to promote student abilities in analysis, synthesis, reasoning, interpretation, and creative thinking.	Technology is used to develop student abilities in summarizing and deductive reasoning.	Technology is used only to reinforce factual information.

III. Integration of technology

	3	2	1
	A variety of technologies are integrated appropriately throughout the lesson to effectively enhance student learning	A few technologies are integrated into the learning activities to marginally enhance student learning	Technologies integrated into the learning activities are contrived or limited to extension activities.

IV. Students with diverse needs

	3	2	1
	A variety of technologies are used with instructional strategies to address students with diverse needs	A single technology is used with instructional strategies to address students with diverse needs	Technology is not used with instructional strategies to address students with diverse needs

V. Student engagement and participation

	3	2	1
	90% of students are involved and fully engaged in the classroom activities.	Less than 90% of students are involved and fully engaged in the classroom activities.	Less than 75% of students are involved and fully engaged in the classroom activities.