

# EVALUATION BRIEF

## **Factors Used in Maine Learning Technology Initiative (MLTI) Device Choice**

*Caroline A. Pinkham*

*Maine Education Policy Research Institute*

*December 2014*

## Factors Used in Maine Learning Technology Initiative (MLTI) Device Choice

**Caroline Pinkham**

**Research Associate**

### Background

Across the United States, educational policymakers, business leaders, and school administrators have championed the increased presence of technology in classrooms. Cited as a potential tool to increasing students' access to various learning opportunities, many states and districts have adopted innovative approaches to technological integration into schools, including 1-to-1 device distribution and digital curricula.

In the fall of 2002, the State of Maine implemented the largest 1-to-1 middle school laptop program in the United States, the Maine Learning Technology Initiative (MLTI), which provided each 7th and 8th grade student and teacher with a personal technological device. Since its inception, the MLTI program has grown and changed to meet the emergent needs of schools in Maine. Over the course of the program, there have been two major changes. The first expansion came in 2009 when MLTI established an opt-in program for high schools. In 2013, MLTI experienced a second major change which was to expand the technology device offerings from exclusively Apple laptops to a preferred technology selection. Through a complex process of selection, MLTI offered the following technology devices with their associated software at the following costs to Maine middle and high schools for the 2013-2014 school year.

**Table 1: Selected MLTI Technology Providers**

Technology Providers	Student Device	Teacher Device	Tier 1 Annual Per Seat Price	Network Annual Per Seat Price
Apple, Inc. (Primary Proposal)	iPad 32GB	iPad Mini & MacBook Air	\$217	\$49
Apple, Inc. (Alternate Proposal)	MacBook Air	MacBook Air	\$273	\$46
Hewlett-Packard Company (Primary Proposal)	ProBook 4440	ProBook 4440	\$254.86	\$30.91

The cost of the device and associated network cost is complex and based on other factors such as school size, grades, etc. For more information please go to the following website: <http://www.maine.gov/mlti/rfp/>.

A total of 256 middle and high schools participated in the MLTI program. The Apple iPad (Primary Proposal) was chosen by 140 schools. The Apple MacBook Air (Alternate Proposal) was chosen by 82 schools, and 25 schools selected the Hewlett-Packard (HP) ProBook 4440 (Primary Proposal) device. Table 2 shows the percentage of middle and high schools by their selected device. As may be seen in Table 2, the preferred solution change substantially affected the MLTI landscape by increasing the types of technology devices available to schools participating in the MLTI program.

**Table 2: MLTI Technology Providers Schools**

School	Apple iPad	Apple MacBook	HP ProBook
Middle School	58%	33%	9%
High School	64%	27%	9%
Middle/High School	48%	35%	17%

This **Brief** describes how schools/districts determined their technology device choice. The purpose of the **Brief** is to gain a better understanding of the decision making processes regarding the technology device(s) that was chosen by districts in the summer of 2013 and how satisfied they were with those devices for the 2013 -2014 school year. Surveys were administered to Superintendents in the Summer of June 2014 regarding this purpose. Please see Appendix A. The survey focused on three areas relevant to device selection:

1. What factors were of importance in determining what technology device to use with your middle school grade 7 & 8 students and with your high school grade 9 thru 12 students?
2. How satisfied are you with the technology device selected for your middle school grade 7 & 8 students and with your high school grade 9 thru 12 students?
3. What reasons were provided by superintendents for choosing whether or not to opt into MLTI devices at the high school level.

Information obtained allowed for some comparison between device type and middle and high schools regarding the selection process and outcomes.

**Results**

A total of 130 superintendents were sent electronic invitations to participate in the survey. Fifty superintendents responded to the survey resulting in a 38% response rate. Superintendents were asked what percentage of middle school and high schools had 1:1 student devices. Table 3 shows the percentages of those survey responses.

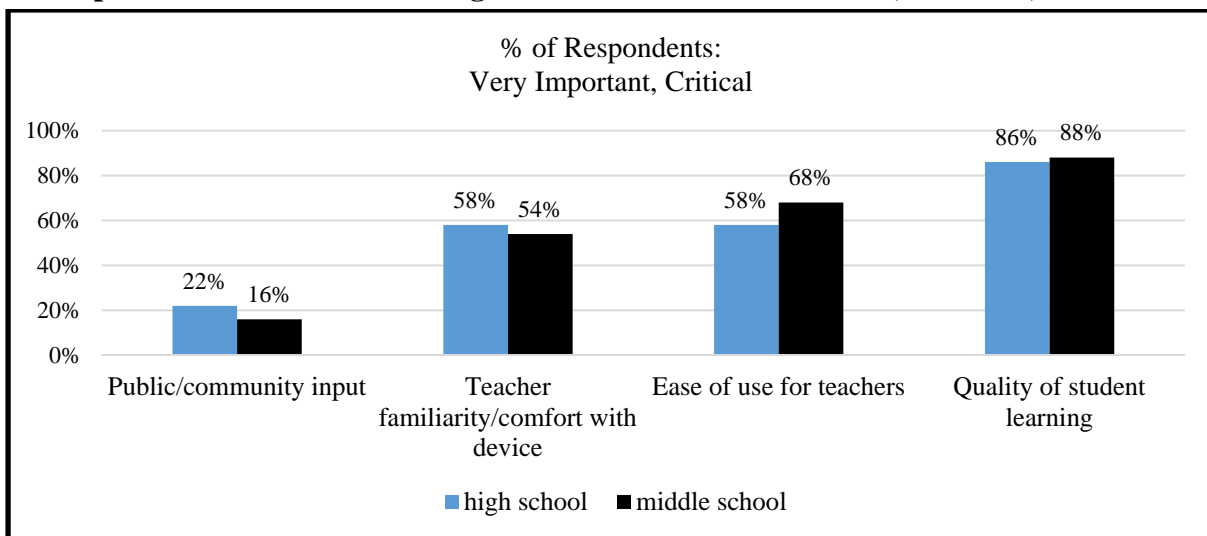
**Table 3: Status of Schools 1:1 device(s)**

	Middle School	High School
Apple iPads	50%	57%
Apple MacBook Airs	40%	43%
HP ProBook 4400	10%	0%

These results are reflective of the technology landscape in schools for the 2013 - 2014 school year with the exception of HP ProBook 4400 high schools which was not represented due to a lack of responses.

Superintendents were asked a series of questions regarding the factors in determining what technology device they chose to use with their middle and high school(s). A Likert scale ranging from Not at all important, Somewhat important, Important, Very important, to Critical was used for reporting purposes. The results of those questions are presented in the graphs 1 - 4. Graphs 1 and 2 present evidence regarding factors related to teachers, students and parents. Graphs 3 and 4 present evidence regarding factors related to the device.

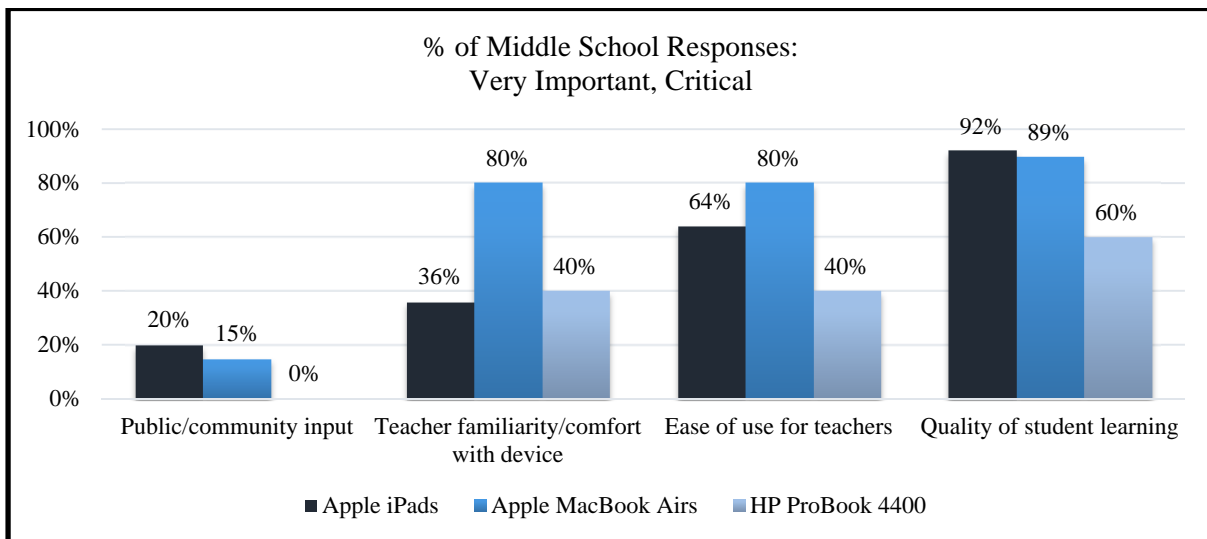
**Graph 1: Middle School and High School Factors for Teachers, Students, & Parents**



Overall, approximately one half or more of high school and middle school superintendents noted that (1) “Teacher familiarity/comfort with the device;” (2) “Ease of use for teachers;” and (3) “quality of student learning,” were *Very Important/Critical* factors in determining their technology selection for their schools/districts. While only 16% and 22% of superintendents noted that “Public/community input” as a *Very Important/Critical* factor. In addition, the question “Ease of use for teachers” was rated more by middle school superintendents as being a *Very Important/Critical* factor than high school superintendents and 86% to 88% of middle and high school superintendents rated “Quality of student learning” as a *Very Important/Critical* factor.

Further analysis by device type was conducted using the middle school respondents’ answers. Due to a lack of available data for HP at the high school level no analysis was done at those grade levels by technology device choice. Results note a significant difference by superintendents based on their selected technology device for their school in Graph 2.

**Graph 2: Factors for Teachers, Students, & Parents by Device Type**

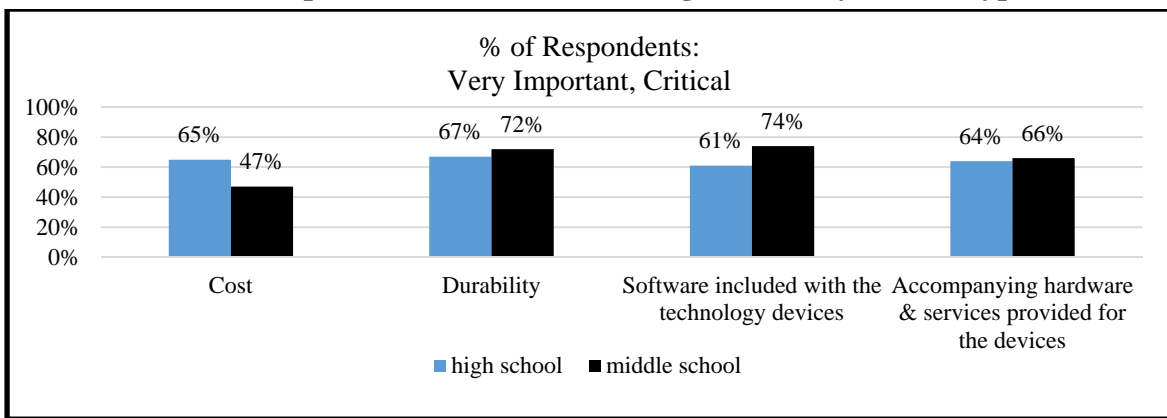


Almost all of the superintendents from schools that selected an Apple iPad or Apple MacBook for their students noted that “Quality of student learning” was a *Very Important, Critical* factor in determine their device choice compared to 60% of superintendents from HP Probook schools. 80% of superintendents from schools that selected an Apple MacBook noted that “Teacher familiarity/comfort with the device” and “Ease of use for teachers” were *Very Important, Critical factors* compared to 64% of superintendents from schools that selected an Apple iPad which noted “Ease of use for teachers” as a *Very Important, Critical factor*. Less

than one half of superintendents from HP schools and Apple iPads schools rated “Teacher familiarity/comfort with the device” as *Very Important, Critical factors* and only 40% of the superintendents that selected HP devices noted “Ease of use for teachers” as *Very Important, Critical factors*. Surprisingly, “public/community input” factor was not rated as a *Very Important, Critical factor* by the superintendents.

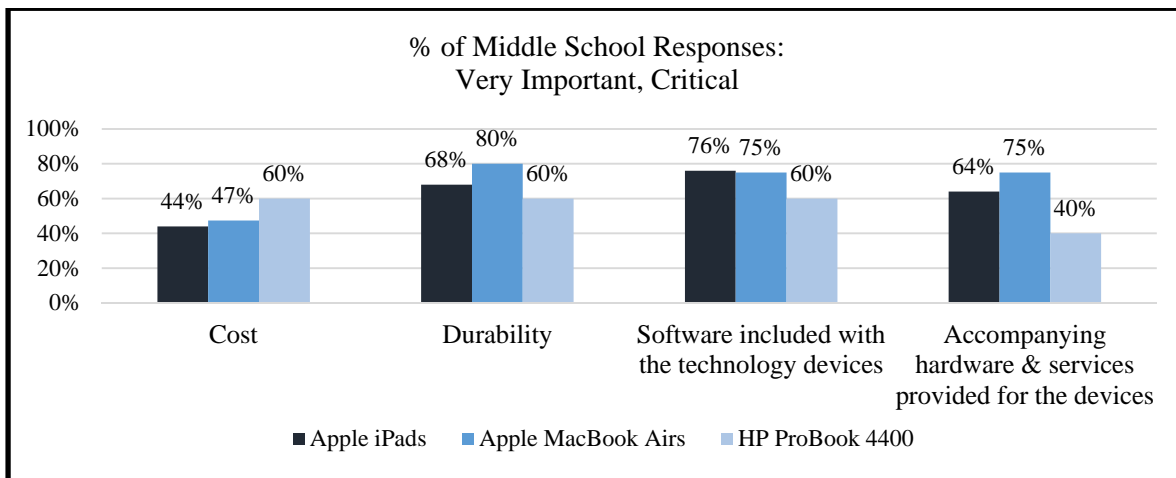
Graph 3 shows that approximately one half or more of high school and middle school superintendents indicated that the following factors were important in their determination of selecting their technology device. The high school superintendents noted at a higher rate that “Cost” was a *Very Important, Critical factor*. Whereas more middle school superintendents noted that “Software included with the technology devices” was a *Very Important, Critical factor*.

**Graph 3: Middle School and High School by Device Type**



When results were broken down by Device type, results remained consistent between groups with some exceptions.

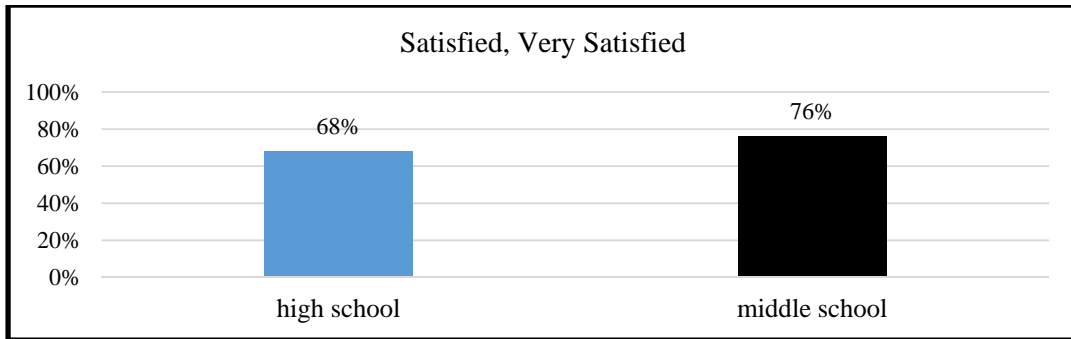
**Graph 4: Device Type Factors by Device**



Overall 68% or more of superintendents noted that “Durability” and “Software included with the technology devices” were *Very Important, Critical* factors in their device choice. This pattern continued for superintendents from schools with an Apple iPad and MacBook for “Accompanying hardware and services provided for the devices” which was higher than superintendents from schools with an HP ProBook at 40%. Additionally, 60% of the superintendents from HP ProBook Schools noted that “Cost” was a *Very Important, Critical* factors in their device choice as compared to 44% and 47% of Apple Superintendents.

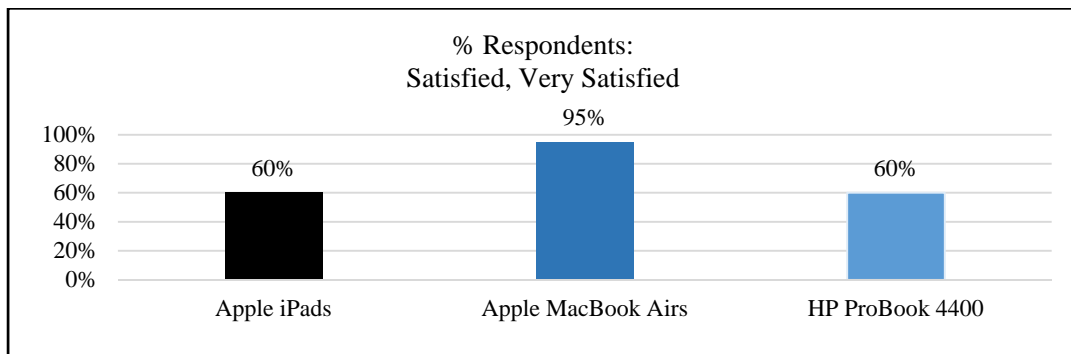
Superintendents were asked “Overall, how satisfied are you with the technology device selected for your middle school grades 7 & 8 and high school grades 9 thru 12?”

**Graph 5: Satisfied with the Device at the Middle School Level**



68% or more of the superintendents reported that they are *Satisfied, Very Satisfied* with their technology device. When looking at superintendent’s responses by their chosen device, there are some notable differences.

**Graph 6: Satisfaction by Device Type**



Almost all superintendents from schools that selected Apple MacBook’s note that they are *Satisfied, Very Satisfied* with their device choice as compare to 60% of superintendents from Apple iPad and HP ProBook schools. Respondents were asked to write in and summarize their reasons as to what aspects of their chosen devices they have been most satisfied with. In

response to this question approximately 25% to 30% of superintendents from schools with an Apple device noted being satisfied with the durability and reliability of their device.

Superintendents from schools with an iPad also noted being satisfied with the ease of use of the device, the software provided, the portability of the device, and engagement by students.

Respondents were asked to write in and summarize their reasons for choosing whether or not to opt into MLTI devices at the high school level. All the Superintendents from HP schools noted cost as a factor as compared to 24% to 30% of superintendents from schools that selected an Apple device. Approximately 30% of Superintendents that chose an Apple device also noted that the continuation of the same technology previously used, equity at the high school level, and supporting students in a technology world as other important reasons to opt into the MLTI program at the high school level.

## **Conclusion**

In review of the results there did appear to be major factors that had an impact on superintendents deciding on what device to implement with their schools and how they viewed that device after a year of use:

1. Results indicate that major factors in the determination of what technology device to use with their schools/districts appeared to center on quality of student learning, teacher familiarity and ease of use, cost, durability, software, and hardware. A difference between middle and high schools was noted with more superintendents reporting ease of use for middle schools, and software being *very important, critical* factors, and at the high school more superintendents reported cost as being a *very important, critical* factors. Finally, device type had an impact on how superintendents determined their technology choice for their school. More superintendent's from schools that selected Apple MacBooks reported teacher familiarity and ease of use, durability, and hardware as being *Very Important, Critical* factors as compared to the superintendents from schools that selected an HP device or apple iPad device. In addition, more superintendents from schools with an HP ProBook device noted "Cost" as a *Very important Critical* factor and 30% identified it as a reason they did or did not opt into the MLTI program.
2. When reviewing how satisfied superintendents are with their respective choices significant differences were reported. 95% of superintendents from schools that selected Apple MacBook's note that they are *Satisfied, Very Satisfied* with their device choice as compare to 60% of superintendents from Apple iPad and HP ProBook schools. There was also a difference between middle and high schools with 76% of superintendents reporting satisfaction of the device at the middle school as compared to 68% at the high school.
3. When asked their reasons for choosing whether or not to opt into MLTI devices at the high school level, superintendents reiterated their reasons, noting cost, and familiarity of the device for teachers, ease of use for teachers, and student involvement as being primary reasons as to whether or not they opted into the program.



## MLTI Spring 2014 Superintendent Survey

This survey is being conducted by a research team from the Maine Education Policy Research Institute (MEPRI) at the University of Southern Maine. As part of the evaluation of the MLTI program we are seeking information on why your district chose your technology device for your middle and high school and your overall satisfaction with those devices. The purpose of this survey is to better understand the decision making processes regarding the technology device(s) that was chosen for your district in the summer of 2013 and how those devices have impacted the schools in your district over the 2013 - 2014 school year. Your information will help inform the State of Maine on how to meet the needs of schools.

All information will be kept confidential and only be provided or disseminated in aggregate. Individual districts will NOT be identified. **It should take less than 10 minutes to complete this survey.**

Please use the buttons labeled "<< Prev" and "Next >>" to navigate the survey. Should you have questions, please send an email to [cepare@usm.maine.edu](mailto:cepare@usm.maine.edu).

Thank you for your participation.

## Selection

**1. Your District: (If you represent more than one district, please choose one and base your responses on that district)**

**2. What 1:1 device(s) did you choose for grade 7 & 8 students?**

- Apple iPads
- Apple MacBook Airs
- HP ProBook 4400
- Other

Other (please specify)

## Middle School

### 3. How important were the following factors in determining what technology device to use with your middle school, grade 7 & 8 students?

	Not important	Somewhat important	Important	Very important	Critically important
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Durability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of use for teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teacher familiarity/comfort with device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of student learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Software included with the technology devices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accompanying hardware & services provided for the devices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public/community input	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

### 4. Overall, how satisfied are you with the technology device selected for your middle school (grades 7 & 8)?

- Very unsatisfied
- Unsatisfied
- Somewhat unsatisfied
- Somewhat satisfied
- Satisfied
- Very satisfied

## High School

**5. Which best describes the 1:1 device status of the HIGH SCHOOL(s) in your district (grades 9-12)? (Non-MLTI devices can include older MLTI MacBook buyouts, netbooks, iPads or other tablets not purchased through MLTI, etc.)**

- My high school does **not** have devices for each student in any grade.
- My high school has MLTI devices for all students in **some** grades 9-12.
- My high school has MLTI devices for all students in **all** grades 9-12.
- My high school has non-MLTI devices for all students in **some** grades 9-12.
- My high school has non-MLTI devices for all students in **all** grades 9-12.
- My district does not have a high school (grades 9-12).
- Other

Other (please specify)

## High School

### 6. How important were the following factors in determining what technology device to use with your high school students?

	Not important	Somewhat important	Important	Very important	Critically important
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Durability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of use for teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teacher familiarity/comfort with device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of student learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Software included with the technology devices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accompanying hardware & services provided for the devices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public/community input	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

### 7. Overall, how satisfied are you with the technology device selected for your high school?

- Very unsatisfied
- Unsatisfied
- Somewhat unsatisfied
- Somewhat satisfied
- Satisfied
- Very satisfied

**8. Please briefly summarize your reasons for choosing whether or not to opt into MLTI devices at the high school level:**

## Satisfaction

**9. Please indicate what other lower grade levels in your district had 1:1 devices in the 2013-2014 school year. (Include grades participating in MLTI as well as those grades with 1:1 devices NOT purchased through MLTI, such as netbooks, older MLTI MacBook buyouts, etc.) Check all that apply.**

- |                                      |                                  |                                  |
|--------------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> Grade Pre-K | <input type="checkbox"/> Grade 2 | <input type="checkbox"/> Grade 5 |
| <input type="checkbox"/> Grade K     | <input type="checkbox"/> Grade 3 | <input type="checkbox"/> Grade 6 |
| <input type="checkbox"/> Grade 1     | <input type="checkbox"/> Grade 4 |                                  |

**10. What aspects of your chosen devices have you been most satisfied with? If applicable, are there any differences between the middle and high school?**

**11. What aspects of your chosen devices have you been least satisfied with? If applicable, are there any differences between the middle and high school?**

**12. In retrospect, what additional information or advice would have been helpful to you in making the technology device choice?**

**13. (Optional) Any additional comments or questions?**