

PROJECT

# THE IMPACT OF THE 1:1 INITIATIVE ON STUDENT ACHIEVEMENT @ MCMANUS MIDDLE SCHOOL - LINDEN, NEW JERSEY

DATE

5/6/2015

CANDIDATE

DAVID M. WALKER, MODEL 2

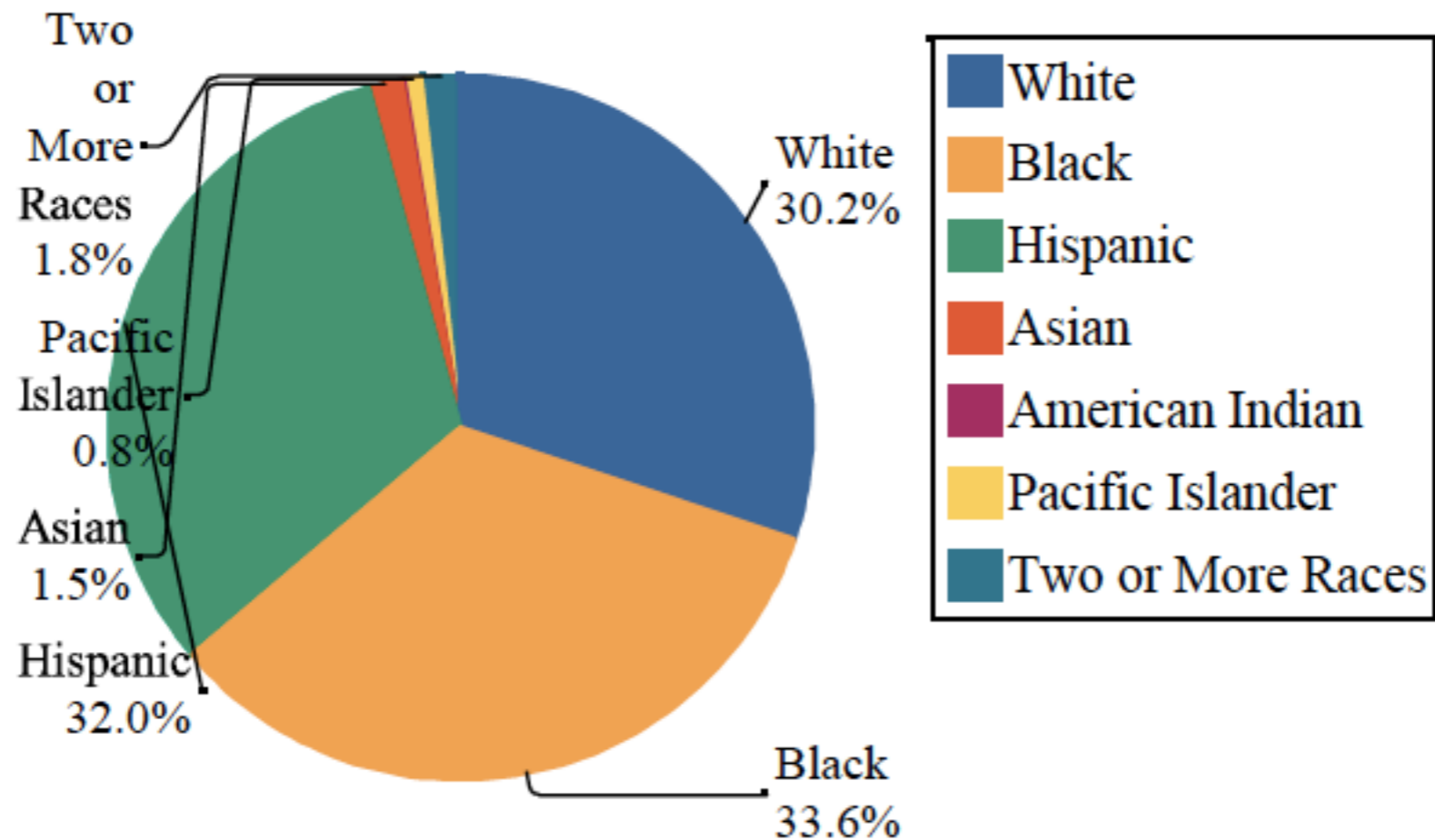
# THE PROBLEM:

The Linden Public Schools has undertaken a 1:1 technology initiative that is both forward thinking and inclusionary. However, there are still some areas where this initiative needs further refinement and improvement, particularly in the goal of increasing student achievement. This action research project will identify these areas, as well as provide suggestions for further implementation.



## Enrollment by Ethnic/Racial Subgroup

This graph presents the percentages of enrollment for each subgroup defined by the No Child Left Behind Act of 2001



**DEMOGRAPHICS OF MCMANUS MIDDLE SCHOOL**



# RELEVANT RESEARCH

“Many studies show increases in student achievement, while others show no effect or negative effects on certain sub-groups of students (Grundmeyer, 2012; Hansen, 2012; Mills, 2010; Sauers, 2012; Zucker and Hug, 2008).”

“Children have become so fluent with technology that educators must use technology in the classroom to benefit all types of learners (Prensky, 2005).”

Rosen (2010) describes today’s generation of students as the “iGeneration,” and that they are immersed with technology in all aspects of their lives. Education is lagging behind and must adapt so as not to alienate students (Rosen, 2010).

Collins and Halverson (2010) list “computers, mobile devices, digital creation and distribution tools, video games, and social networking sites” as tools being used in education to enhance learning (p. 18).

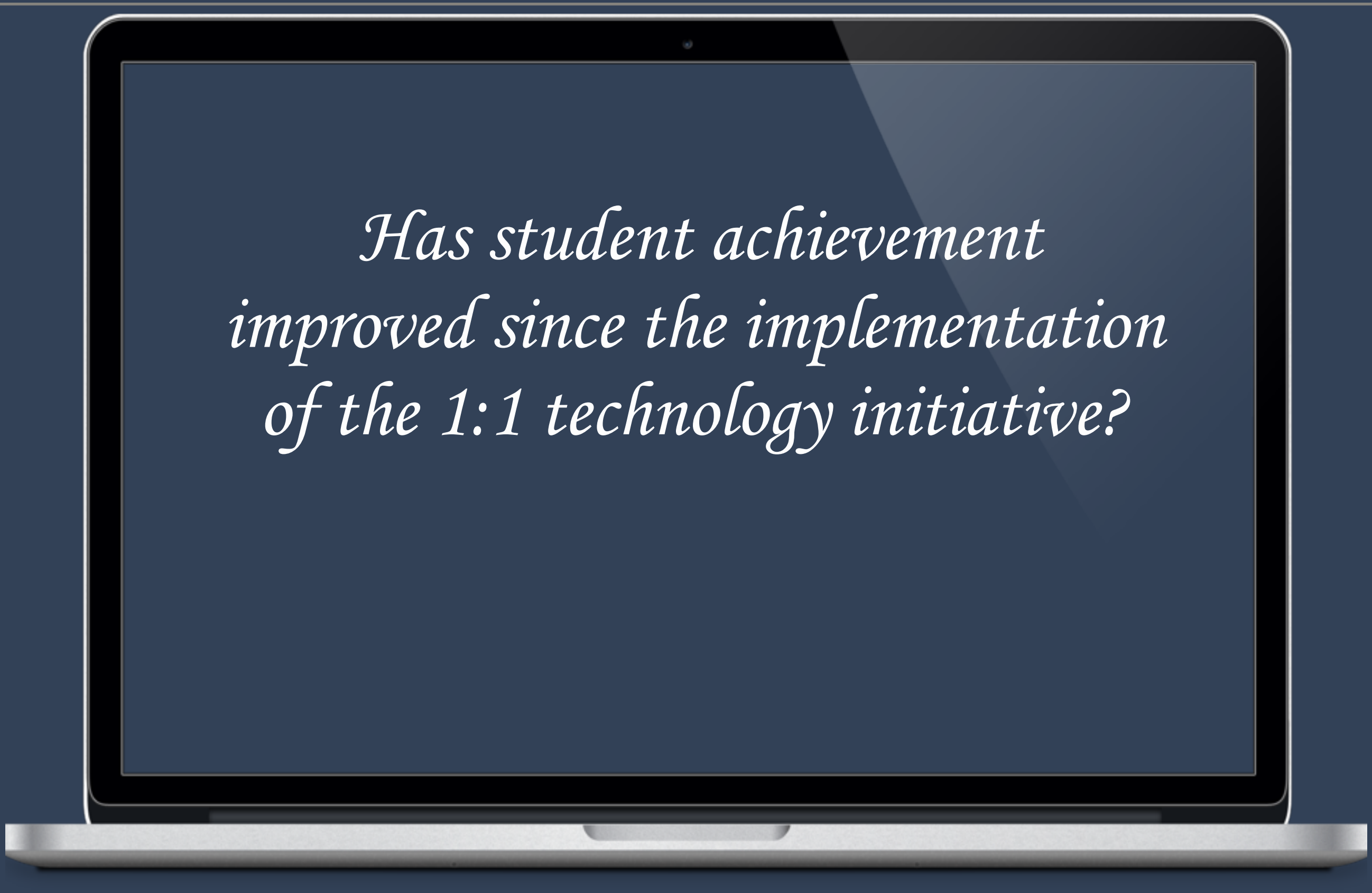
Zucker and Hug (2008) reported 57% of teachers surveyed in the Denver School of Science and Technology described increases in student understanding of curriculum because of the laptops. In the same study, 90% of seniors surveyed described positive impacts in how much they learned and an increase in interest in school due to the laptops (Zucker and Hug, 2008).

Mills (2010) found that the amount of integration by teachers in their classroom had a positive effect on the success of a One to One laptop program.

Teachers must also be part of a technology program that has a detailed plan for implementation and has varied and significant amounts of professional development available for teachers (Staub, 2013).

Teachers play a significant role in the success of a technology program, and the success of teachers is linked to many factors that must be taken into account by school districts (Staub, 2013).

Staub (2013) identifies Professional Development as an important factor in the success of a technology initiative.

A laptop screen is shown, displaying a research question in a white cursive font against a dark blue background. The text is centered on the screen. The laptop itself is silver and is open, with the screen being the primary focus.

*Has student achievement improved since the implementation of the 1:1 technology initiative?*

**RESEARCH QUESTION #1**

## NCLB Progress Targets - Math

This table presents the Progress Targets as uniquely calculated for each subgroup in each school under NJDOE's NCLB waiver. The methodology - as defined by the United States Department of Education - is calculated so that each subgroup will halve the gap between their 2011 proficiency rate and 100% proficiency by 2017.

Subgroups	Total Valid Scores	Pass Rate	Target	Met Target?
Schoolwide	541	57	69.4	NO
White	184	73.3	81.6	NO
Black	169	37.9	57.5	NO
Hispanic	167	58.7	67.2	NO

**STUDENT ACHIEVEMENT DATA**

## NCLB Progress Targets - Language Arts Literacy

This table presents the Progress Targets as uniquely calculated for each subgroup in each school under NJDOE's NCLB waiver. The methodology - as defined by the United States Department of Education - is calculated so that each subgroup will halve the gap between their 2011 proficiency rate and 100% proficiency by 2017.

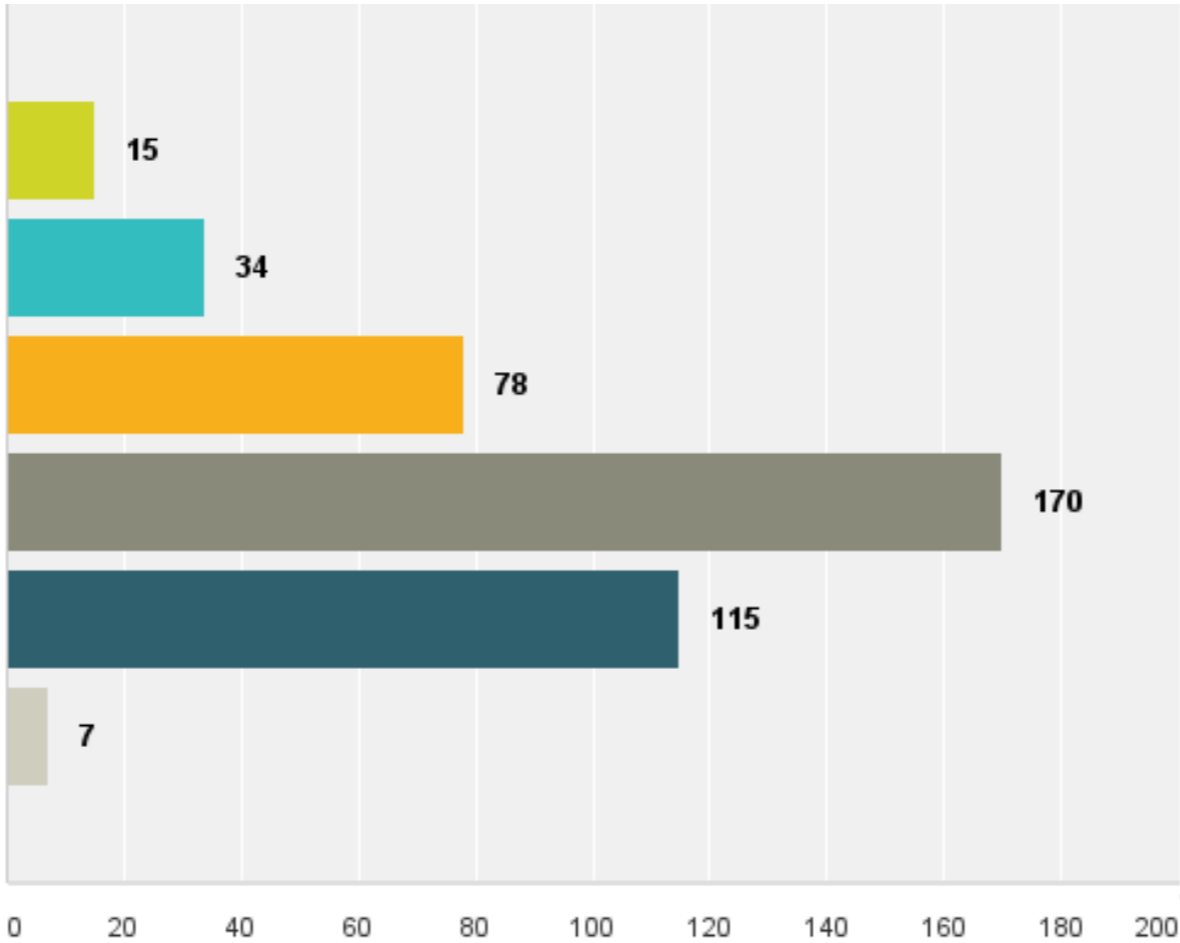
Subgroups	Total Valid Scores	Pass Rate	Target	Met Target?
Schoolwide	540	54.5	64.8	NO
White	184	67.4	74.1	YES*
Black	169	42	56.6	NO
Hispanic	166	54.2	62.6	NO

**STUDENT ACHIEVEMENT DATA**

# STUDENT SURVEY

## Q4: The MacBook Air has improved my classroom performance.

Answered: 419 Skipped: 8

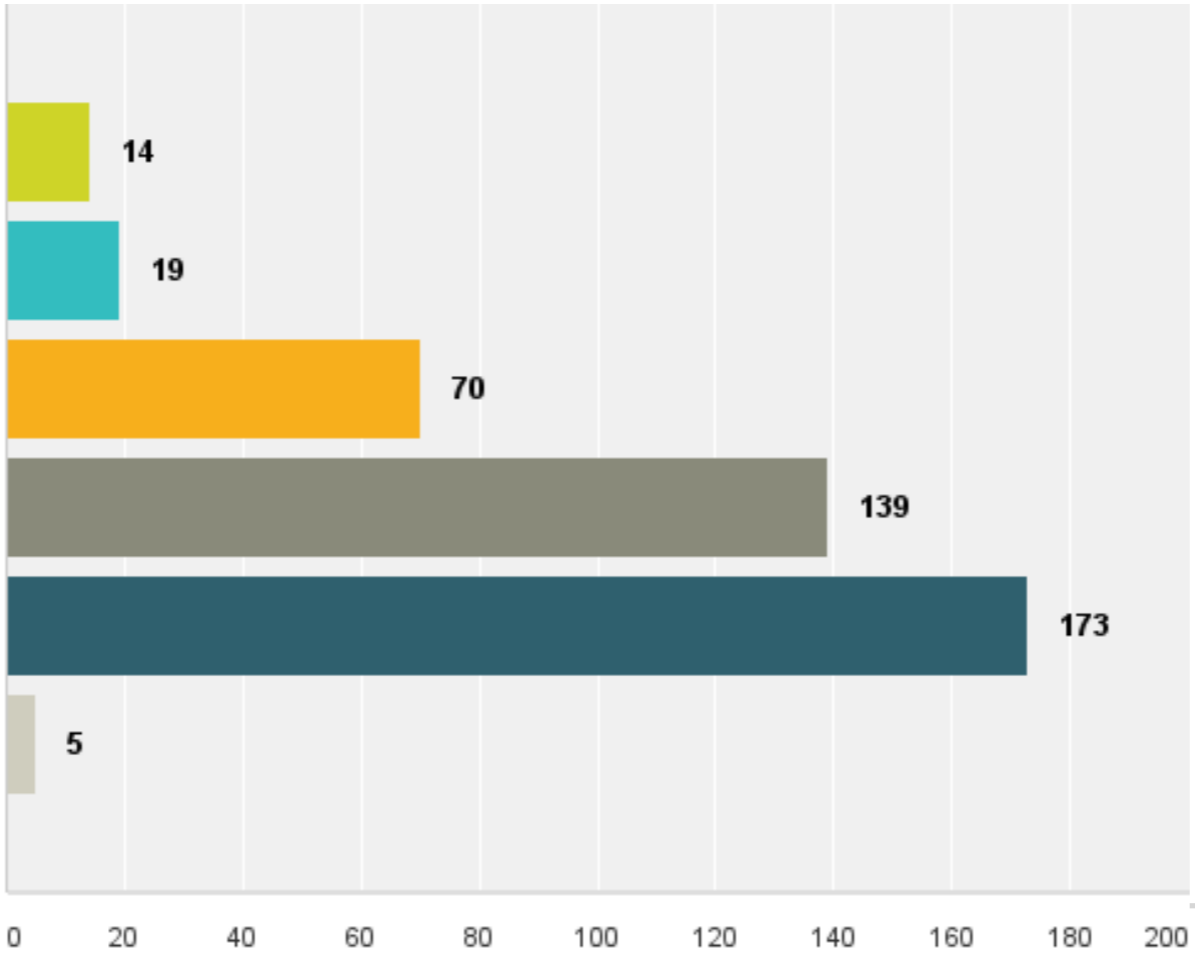




# STUDENT SURVEY

## Q6: The MacBook Air is an important tool in my education.

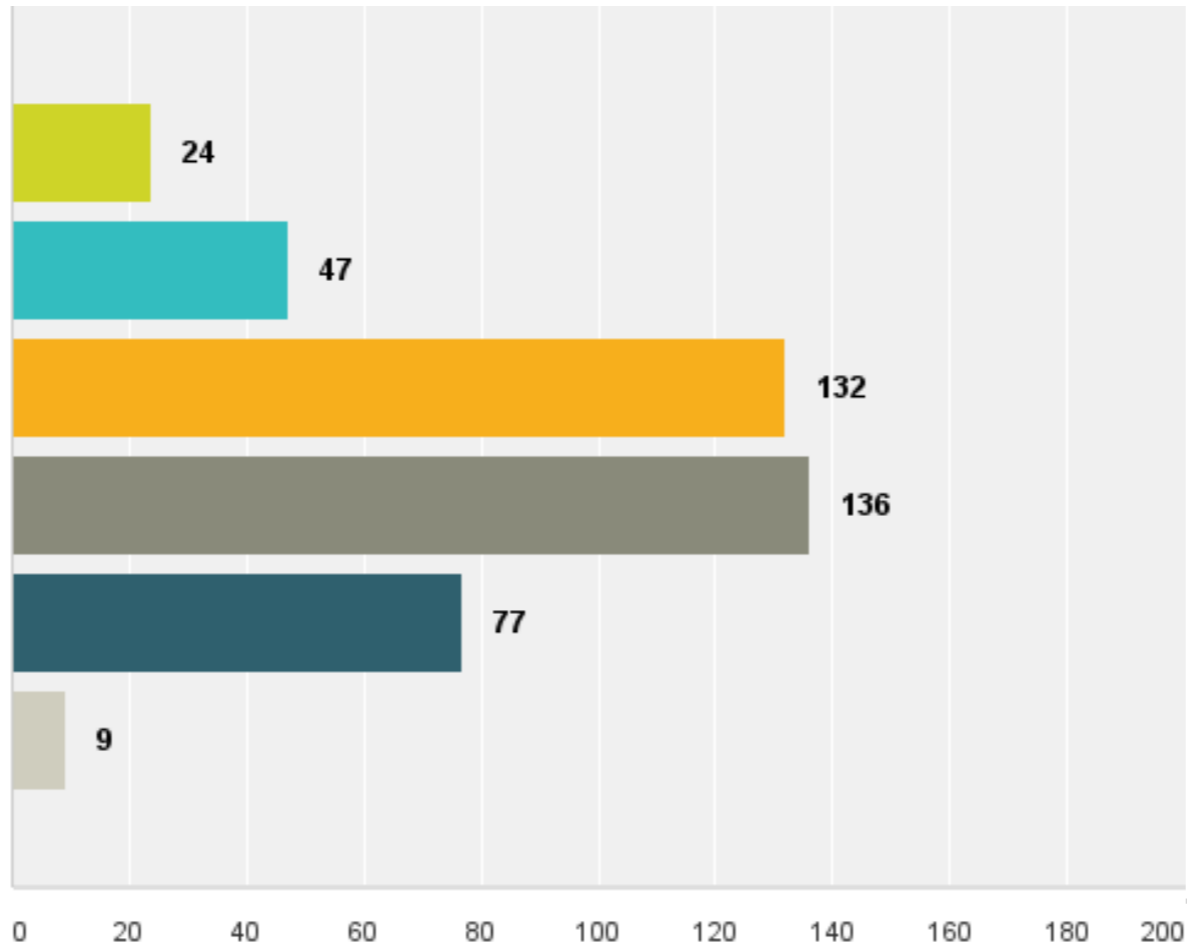
Answered: 420 Skipped: 7



# STUDENT SURVEY

## Q7: The MacBook Air has improved my attitude towards learning.

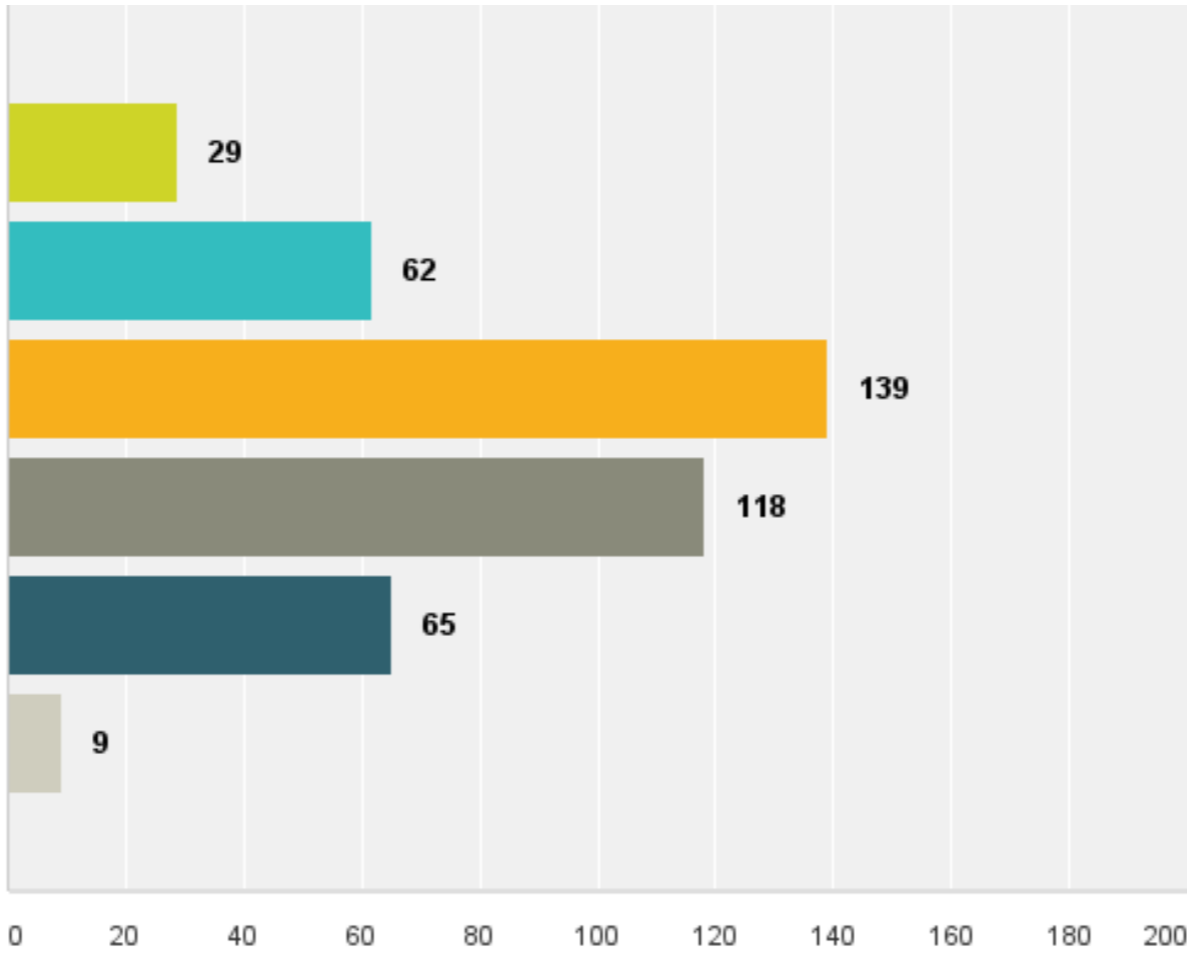
Answered: 425 Skipped: 2



# STUDENT SURVEY

## Q8: School has been made more meaningful as a result of the MacBook Airs.

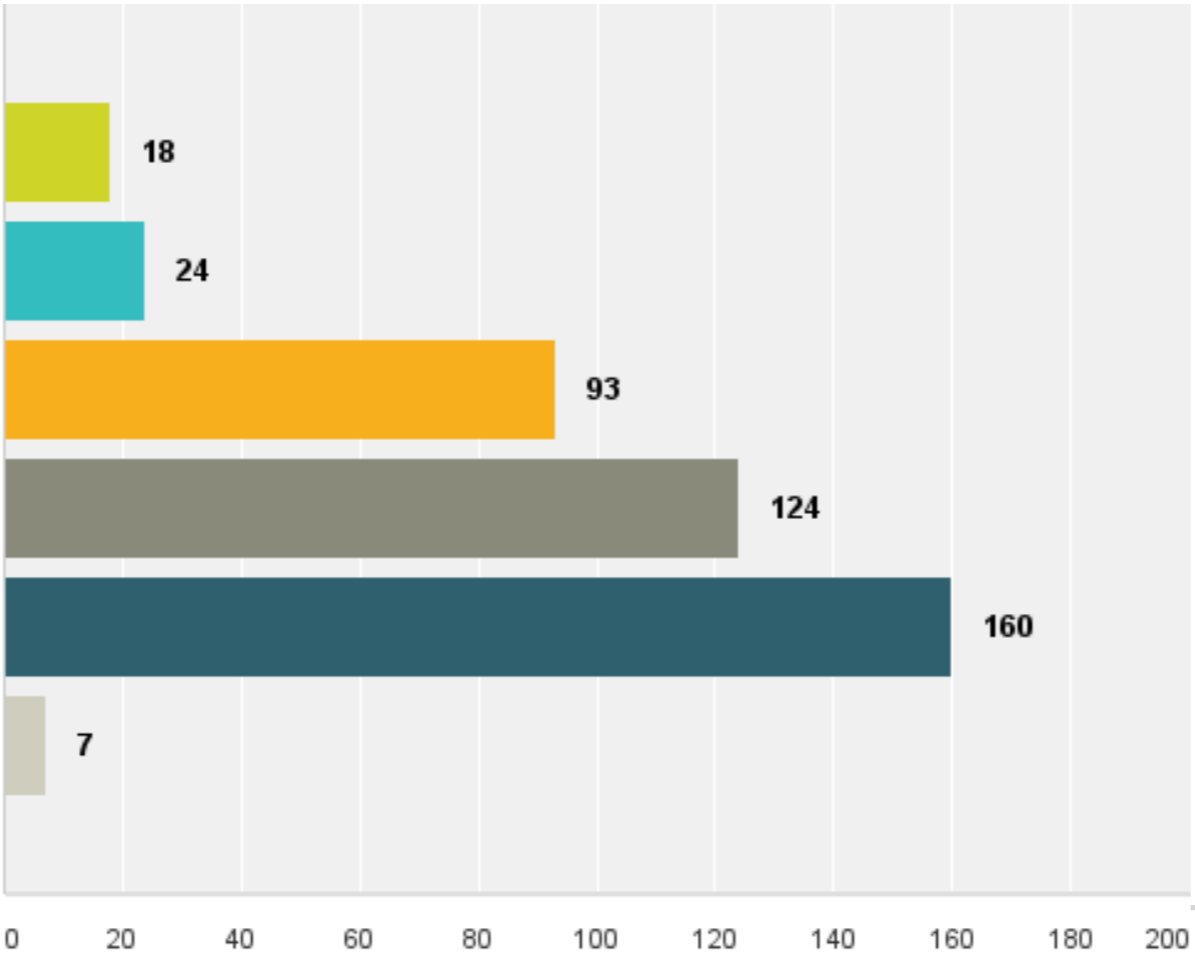
Answered: 422 Skipped: 5



# STUDENT SURVEY

## Q10: The MacBook Air program is a success.

Answered: 426 Skipped: 1





# STUDENT INTERVIEWS

“The MacBooks are a very good tool which allow us to get a better education.”

“Even though MacBooks are a help to those working at Mcmanus J. Miles, and the other Linden Public Schools, it still has some problems. One is when kids grow up they tend to disobey others and do their own thing. This had led them to be playing games or going on websites they are not suppose to be. MacBooks are a great help since teachers and students alike can writes notes quicker and teach lessons even faster. Other thing is that student's work is easily organized in folders or on the desktop. MacBooks are a great help!”

“I like how we get to use the Macs at home as well, because we have Microsoft Applications. On other computers/desktops we have to pay for it or we can't get it. This is a good way to help us with homework. However, the blocking of the websites is a little too strict. ESPN and other websites for sports shouldn't be blocked, or other things. Games; yes, but things we use; no.”

“I love my mac book air never ever take them away. Even studying is a breeze.”

“I strongly disagree that it a success because most of the time in the weekends the internet is completely down and I cannot do my Homework. Not to mention a whole page of things are blocked and categorized as things that should not be blocked. Such as music and sports.”

“I was so confused at first.”

“My computer is constantly broken and never works which really affects my classwork and homework. I am constantly switching from notebook to MacBook and then back to notebook.”

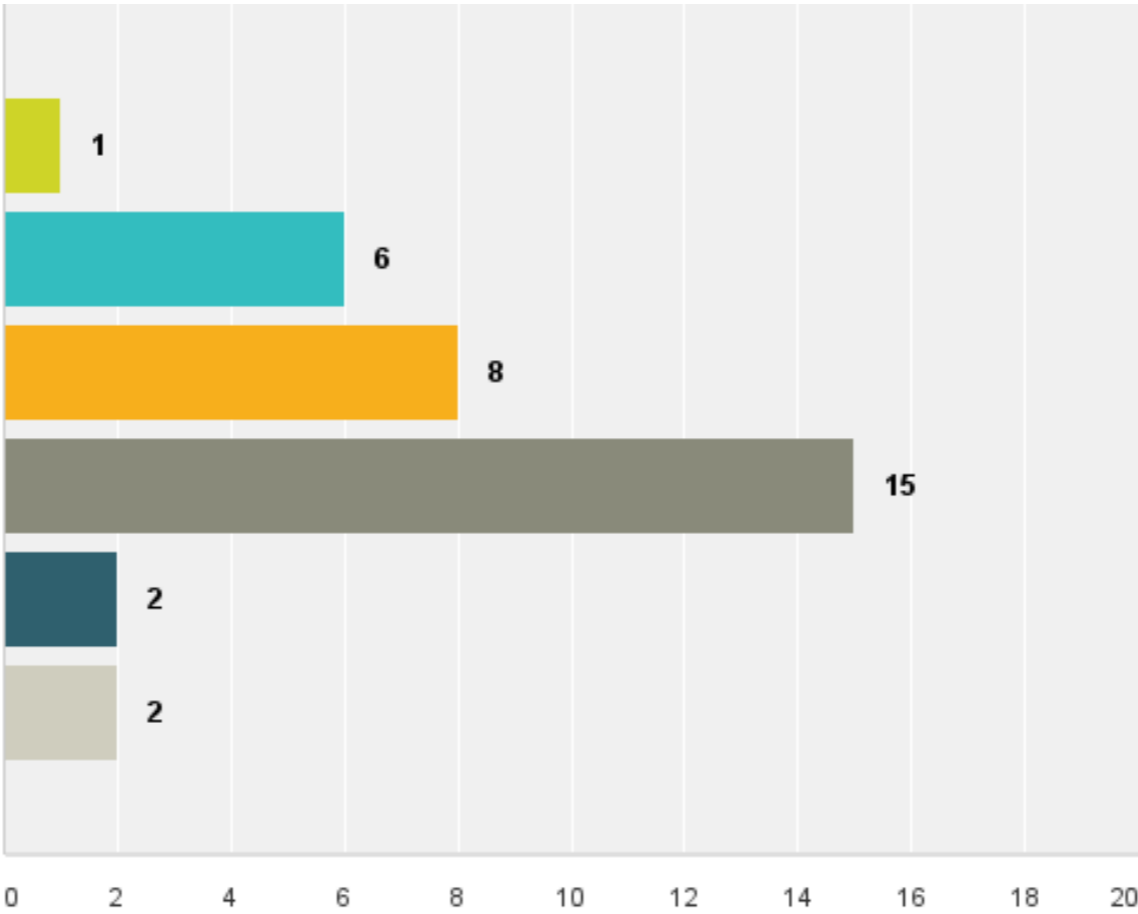
“I like the MacBookAirs we should use them lots more.”

“Sometimes for classes we need to go on websites to be able completely finish the assignment. But almost all of the websites are blocked. I understand about kids playing games and all. But what is the point of having computers if we can not fully use the airs.”

# TEACHER SURVEY

## Q2: Student attitude towards learning has improved as a result of the MacBook Airs.

Answered: 34 Skipped: 0

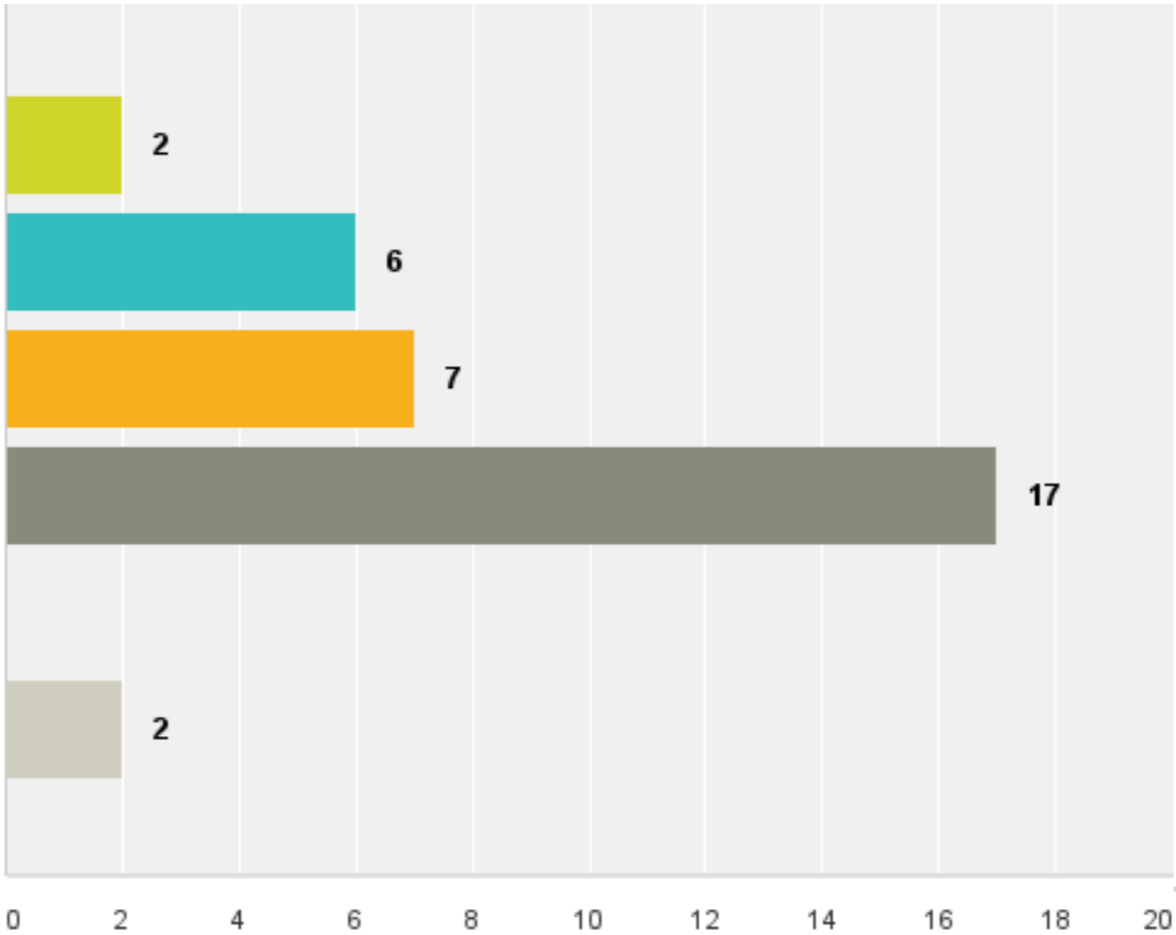


# TEACHER SURVEY

## Q3: Student engagement has improved in your classroom as a result of the MacBook Airs.

Answered: 34 Skipped: 0

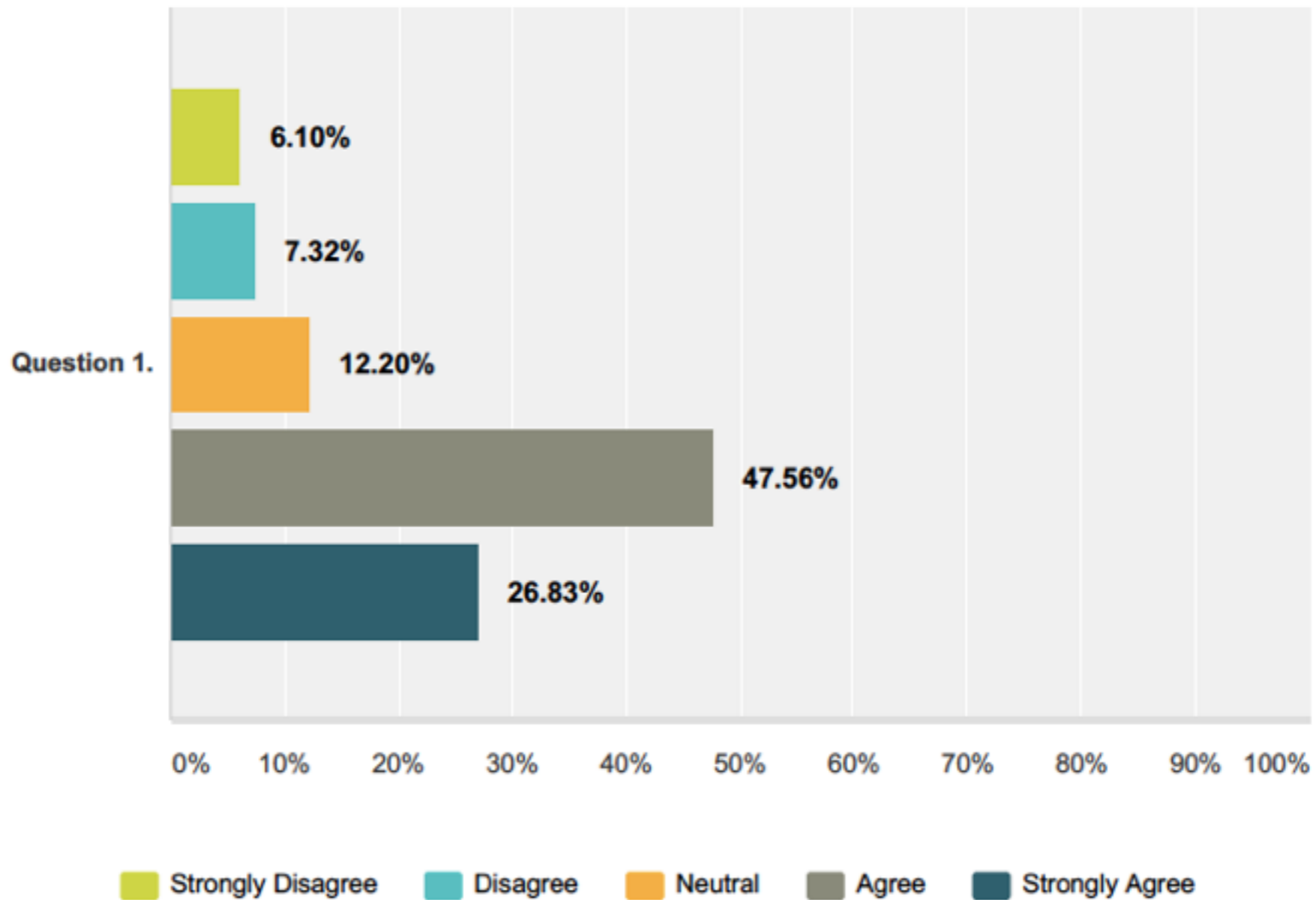
Strongly Disagree Disagree Neutral Agree Strongly Agree  
N/A



# PARENT SURVEY

**Q1 I feel my child is on the MacBook Air primarily working on schoolwork.**

Answered: 82 Skipped: 1

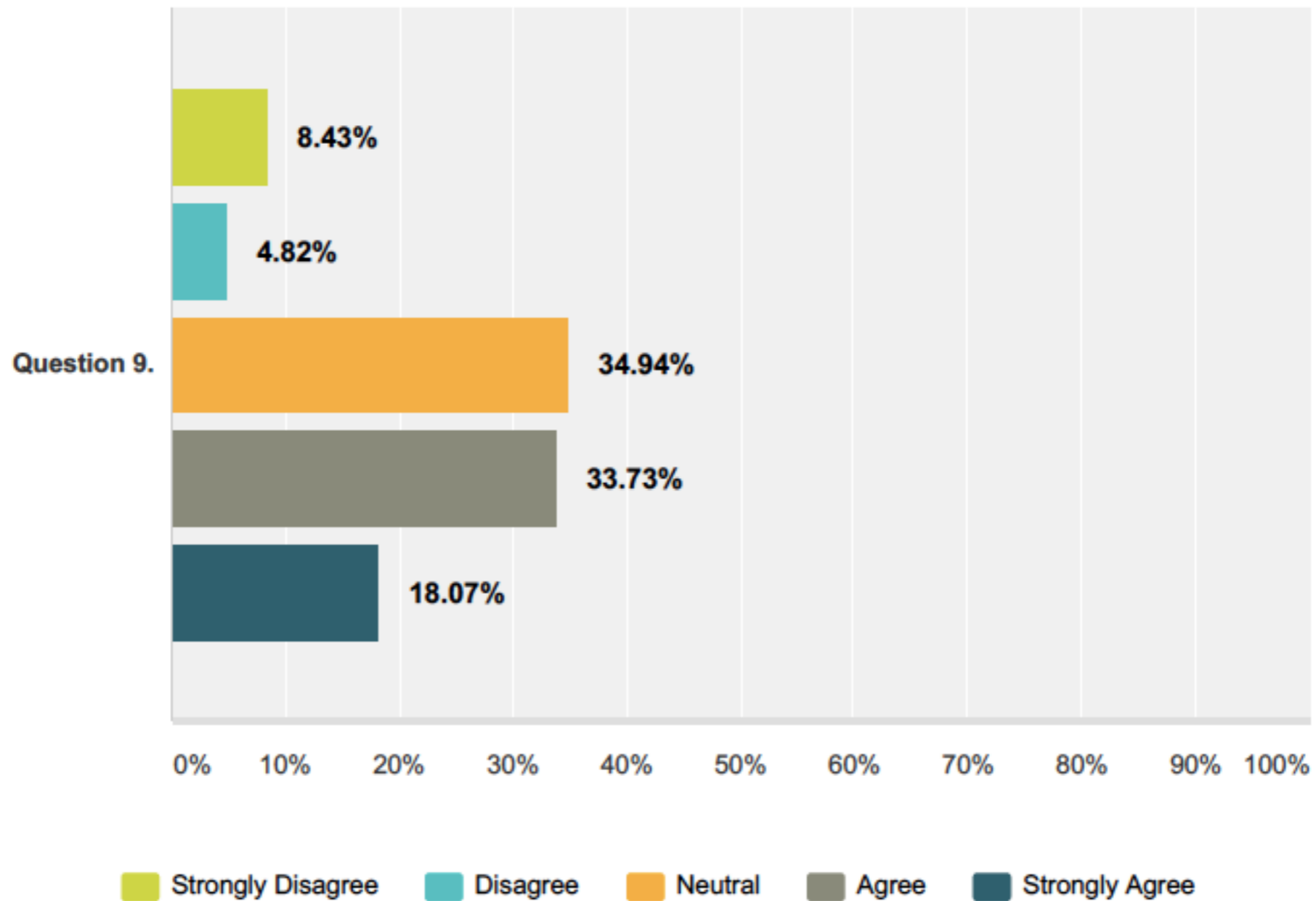


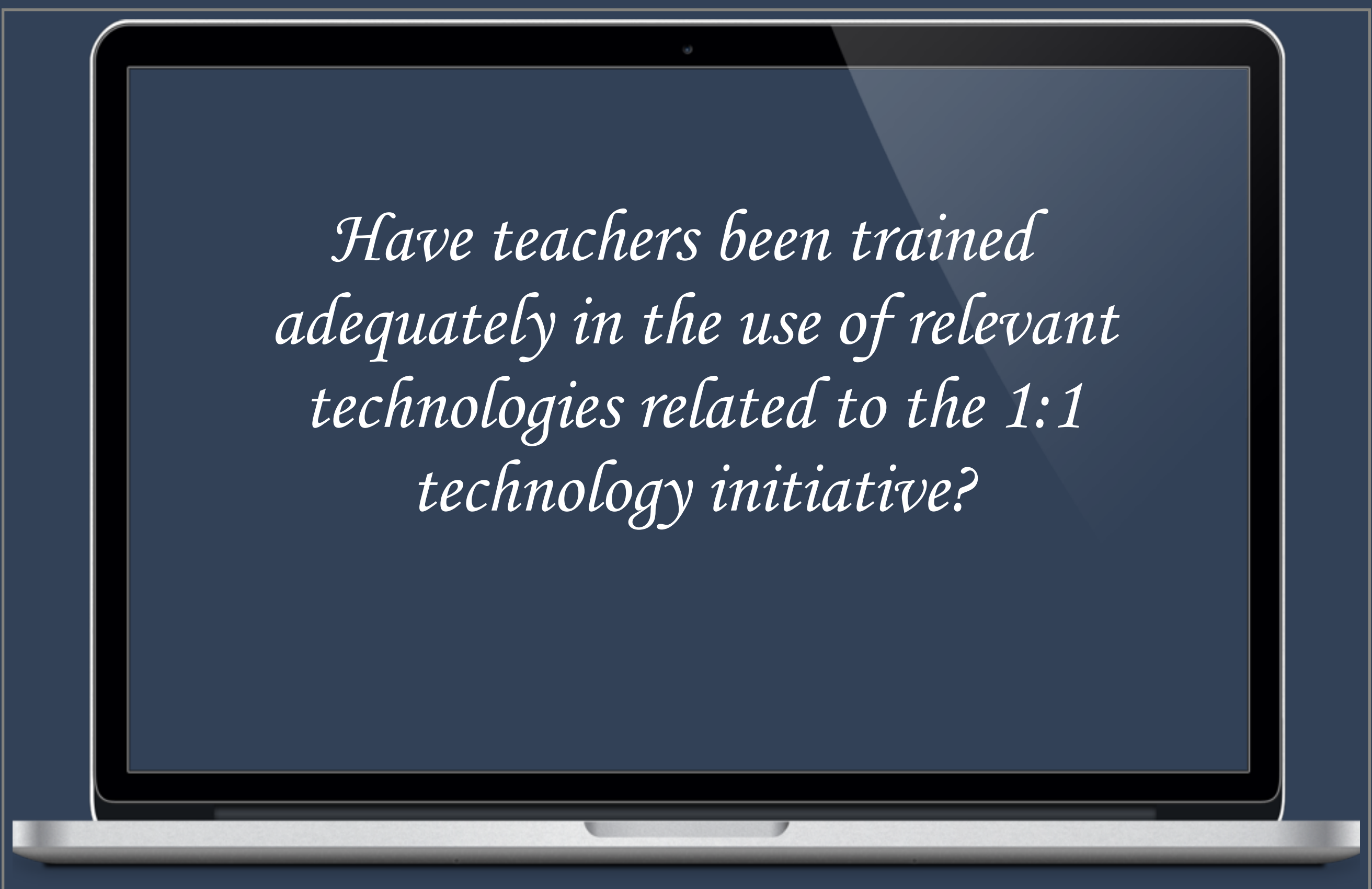


# PARENT SURVEY

**Q8 I feel my child is completing more assignments with the MacBook Air.**

Answered: 83 Skipped: 0





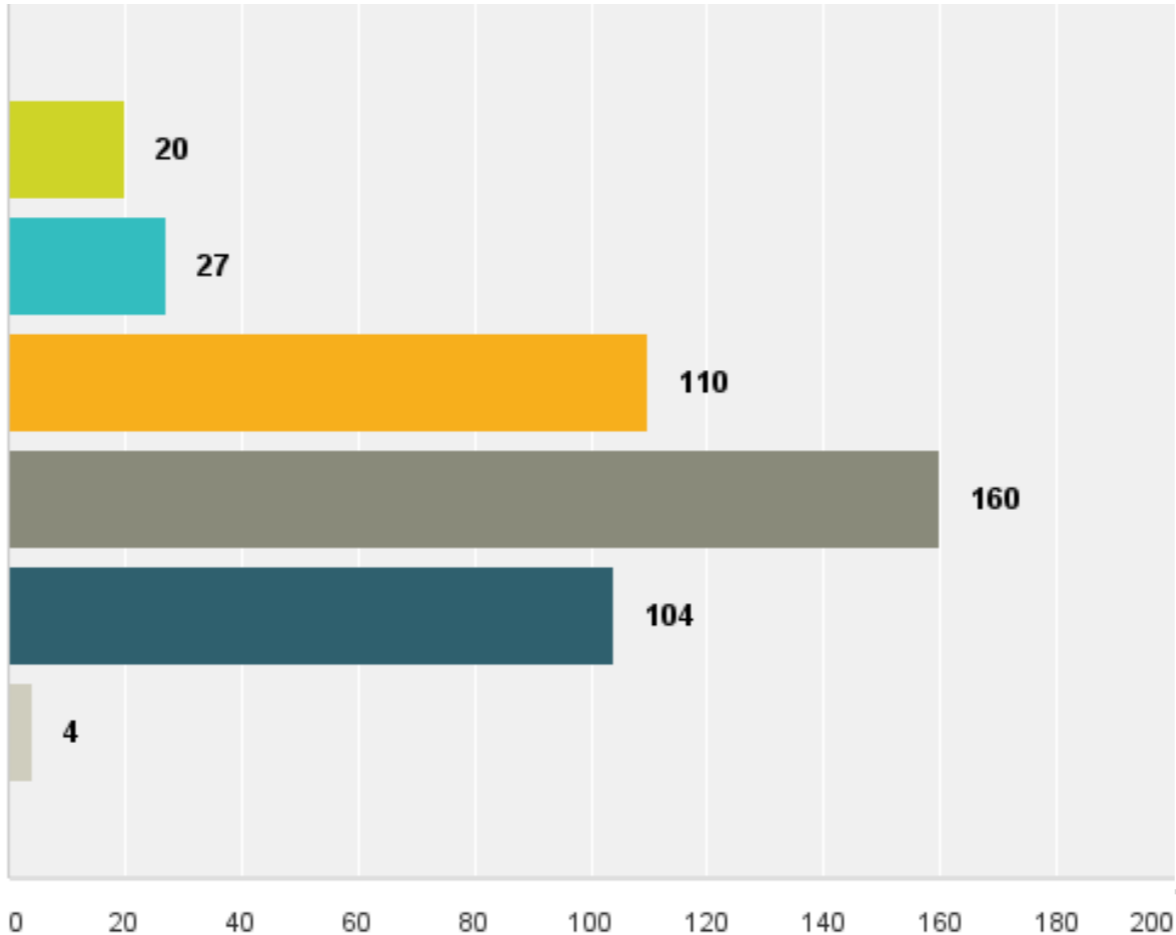
*Have teachers been trained  
adequately in the use of relevant  
technologies related to the 1:1  
technology initiative?*

**RESEARCH QUESTION #2**

# STUDENT SURVEY

## Q9: My teachers effectively use the MacBook Airs in the classroom.

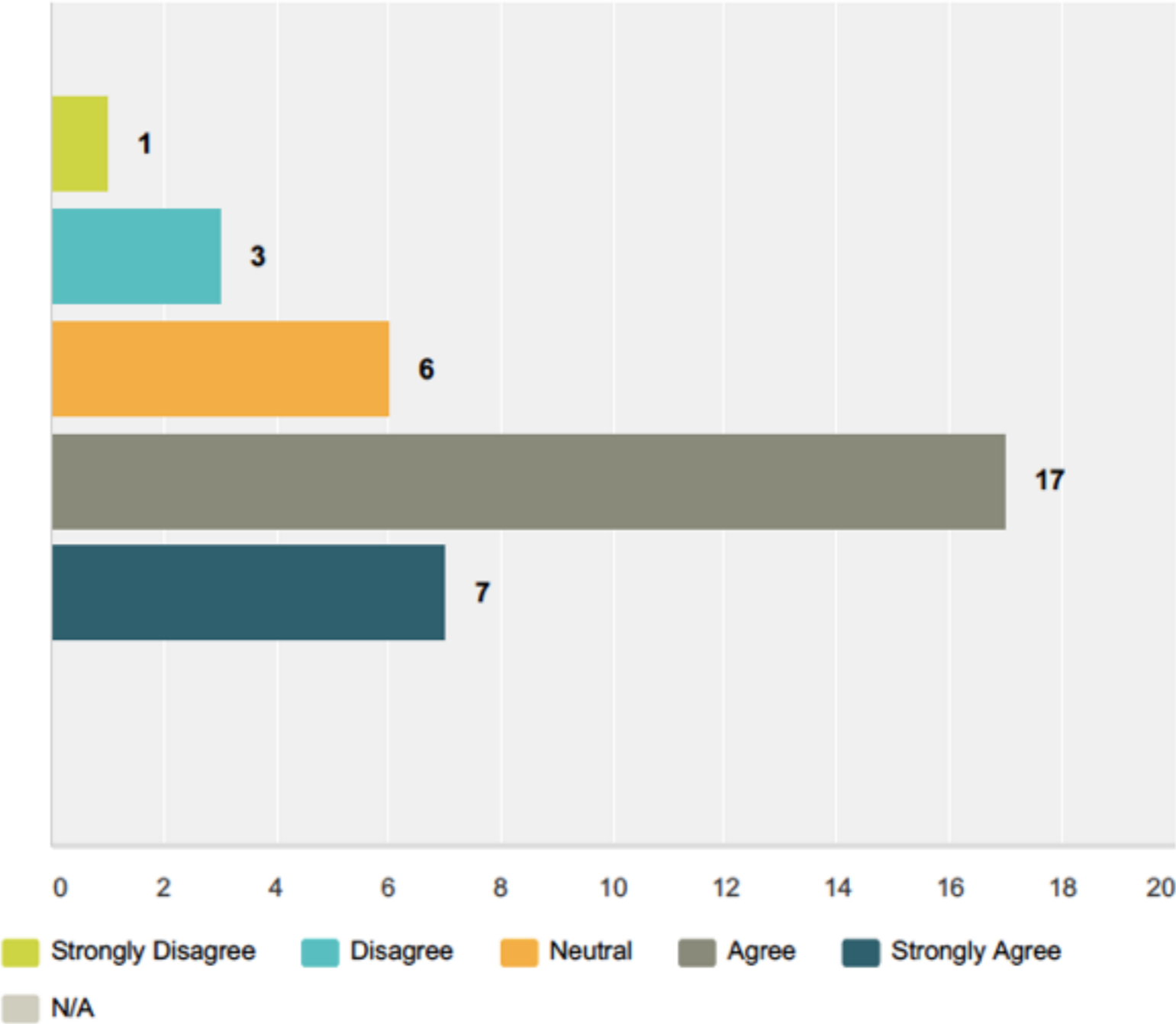
Answered: 425 Skipped: 2



# TEACHER SURVEY

Q4 The MacBook Airs have improved your planning and preparation.

Answered: 34 Skipped: 0





# **P.D. DAYS @ MCMANUS**

**September 2, 2014**

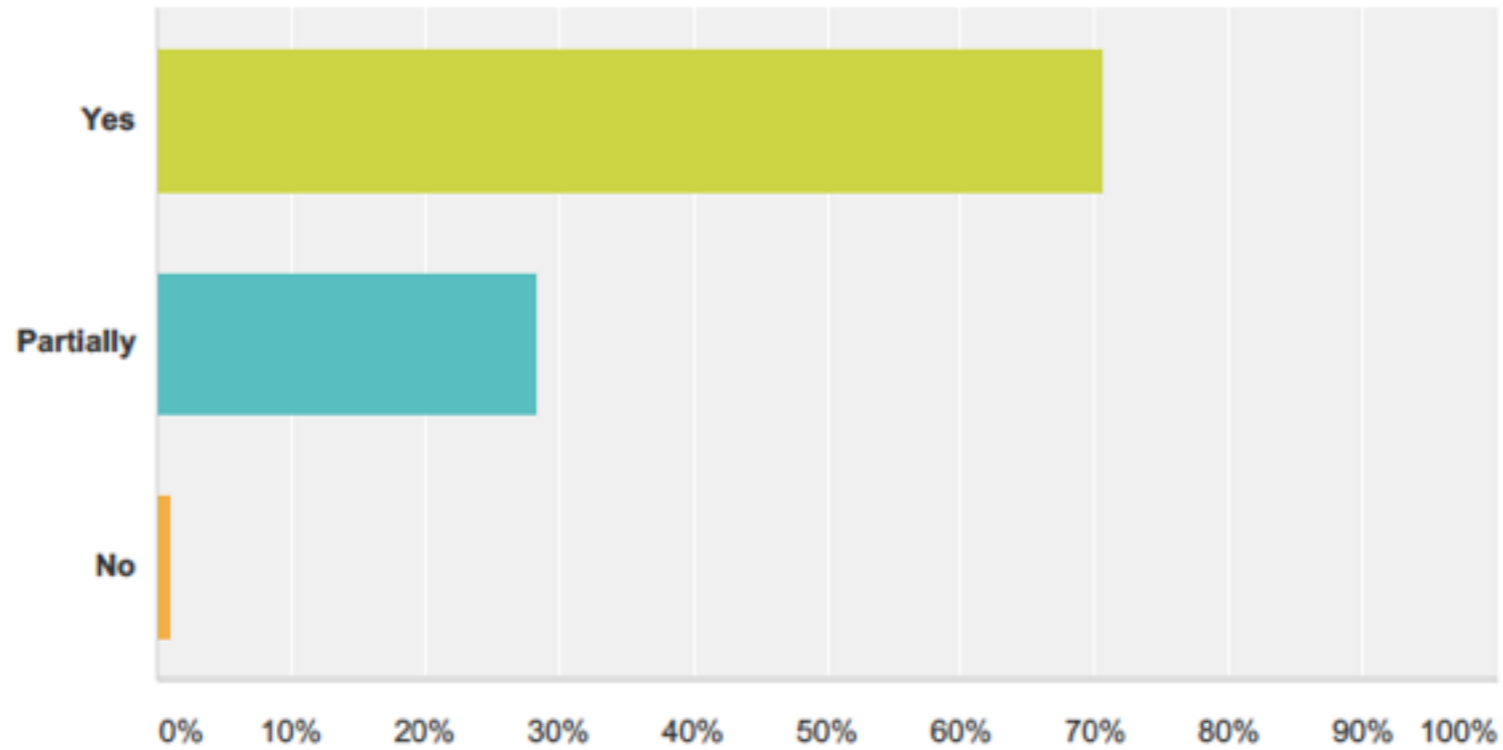
**February 13, 2015**

# TEACHER SURVEY

## From Technology P.D. Day - 2/13/15

### Q2 Were your expectations fulfilled?

Answered: 102 Skipped: 0



Answer Choices	Responses	
Yes	70.59%	72
Partially	28.43%	29
No	0.98%	1
<b>Total</b>		<b>102</b>

# TEACHER INTERVIEWS

“Many kids are too into games and not the academic advantage of the MacBook. It does have many features that help in the classroom, especially with unmotivated students. Math work still needs to be done on paper for the most part. Would like a larger screen, with aging eyes, as they are worsening with the excessive use of the MacBook air. Maybe the teachers can get larger MacBooks. Other teacher friends I know have the larger models. Just my thoughts MacBooks are a very good tool which allow us to get a better education.”

“Such as any resource... students who are high achievers will strive regardless and those who are underachievers will find any excuse not to focus. The computers have only increased student distraction from learning for those who are off task on a regular basis anyway. The incorporation of computers are great for some and terrible for others, those whom they were meant for.”

“There should be a classroom set for each teacher. This was a huge waste of money.”

“Can we get YouTube back?”

“Blocking inappropriate sites needs to be improved.”

“While the MacBooks provide students with more opportunities, students are more interested in playing games, playing with iTunes, etc.”

“Some students are not as responsible with the upkeep of their computers as I would like. A suggestion: Each class has a computer cart w/printer attached to use for each student in class.”

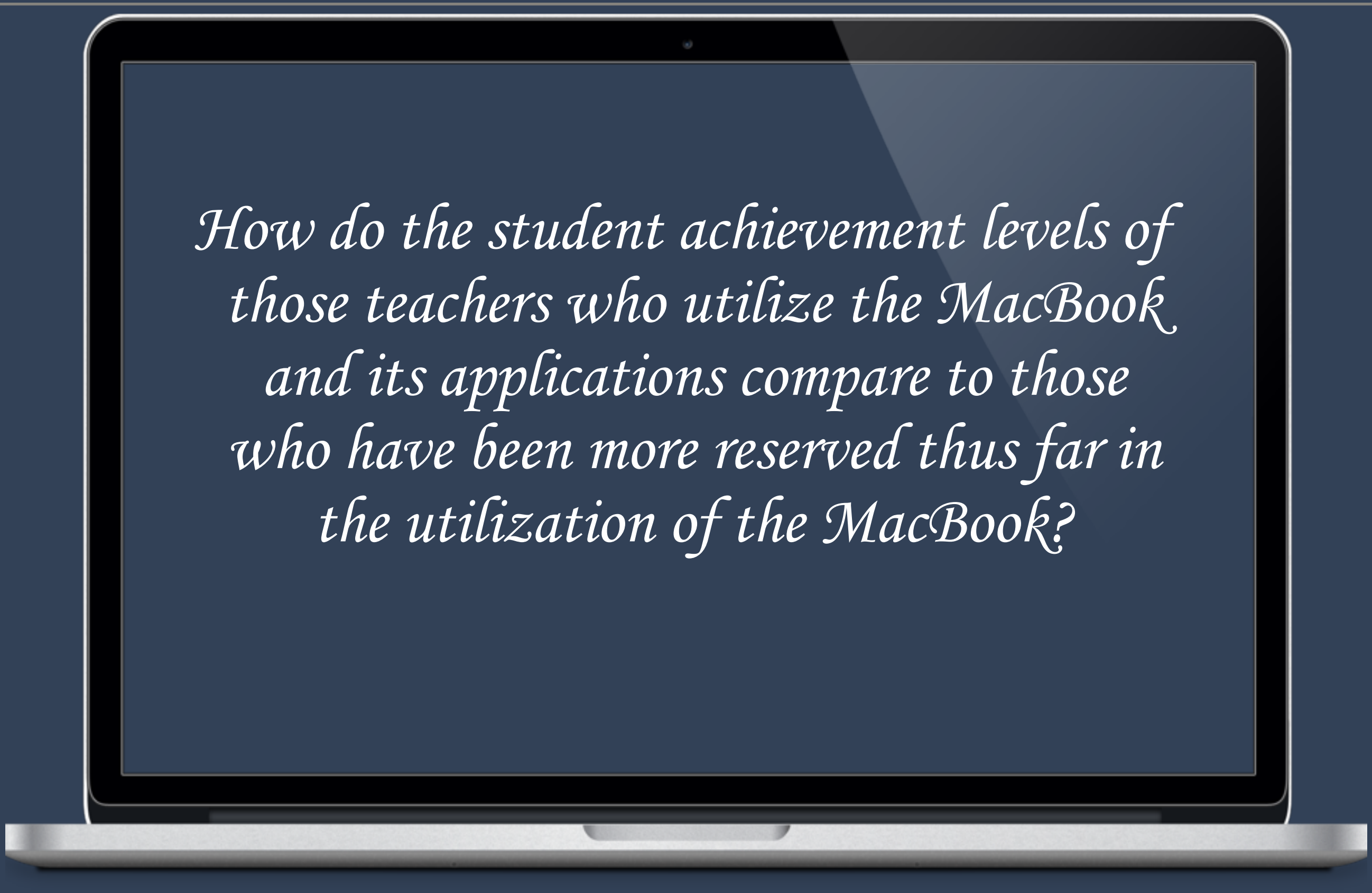
“Students are too distracted by the computers. Each teacher should have a class set for student use. This would cut down on repairs and be a better use of the technology.”

# VANGUARD INTERVIEWS/RECOMMENDATIONS

## *What is it that staff members need to be successful?*

“To be open minded- ready to learn something new. Definition/examples of engagement in the classroom.”

- Finding a way to best help teachers who are struggling integrating MacBook technology--- moving forward.
- Training based on staff comfort level and ability using the MacBook Air.
- Give teachers the option to have a Vanguard teacher give one on one help, visit a classroom or have the teacher observe their classroom to give suggestions.
- Vanguard Duty
- Student Vanguard Team
- Teachers are looking for the next step. Where do we go from here? Remind me how to use that, now that I'm more comfortable. etc.
- We would like to have a specific time and day(s) scheduled for an IT person to be in the building for the quick fixes that we are unable to address but IT can address quickly and easily. This would reduce the “wait time” in resolving issues with MBAs.

A laptop screen is shown, displaying a research question in a white cursive font against a dark blue background. The text is centered and reads: "How do the student achievement levels of those teachers who utilize the MacBook and its applications compare to those who have been more reserved thus far in the utilization of the MacBook?"

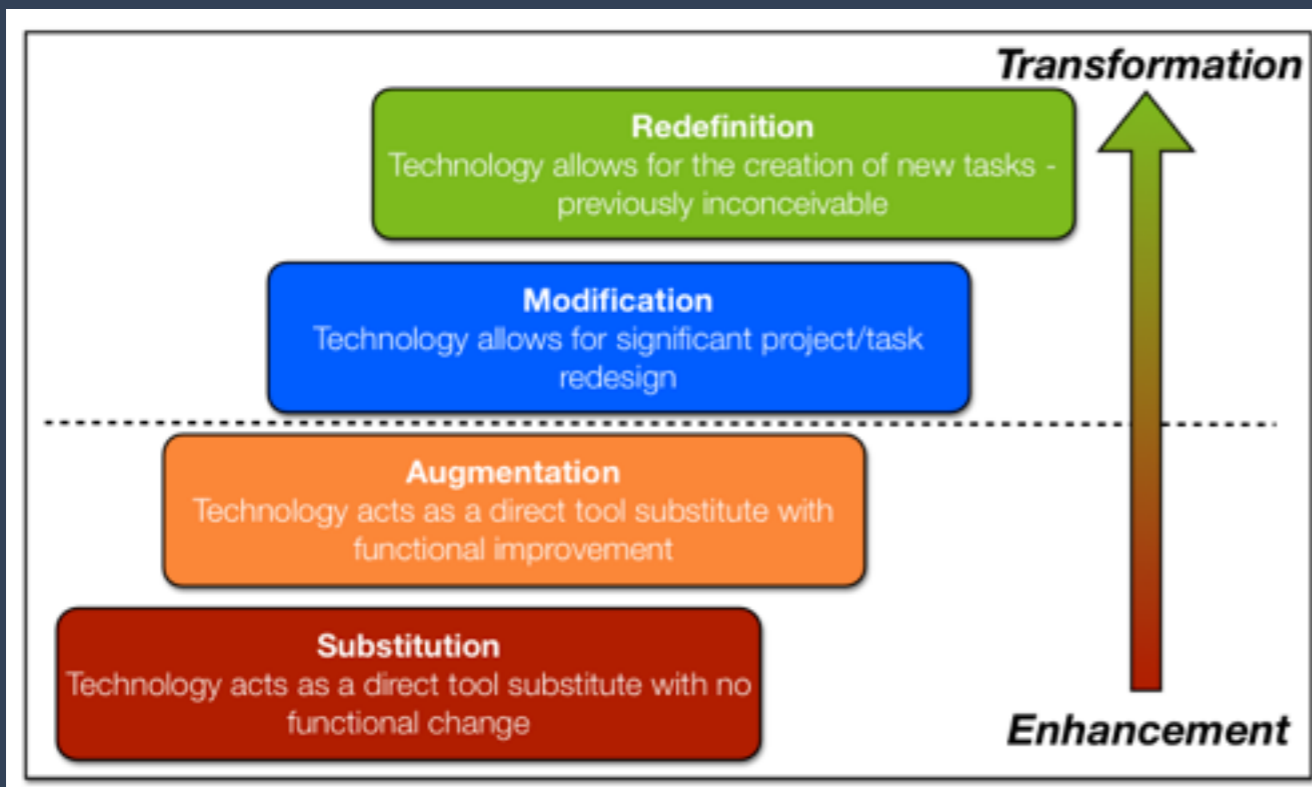
*How do the student achievement levels of those teachers who utilize the MacBook and its applications compare to those who have been more reserved thus far in the utilization of the MacBook?*

**RESEARCH QUESTION #3**

# TEACHER OBSERVATIONS

With the exception of one non-Vanguard teacher, all teachers observed used a variety of web resources and programs on the MacBook Airls. They also used the MacBook Airls on a daily basis. There was some variation in the amount of programs used and the types of instructional activities done, with Vanguard teachers using the MacBook Airls in a greater amount of ways than non-Vanguard teachers.

I also investigated the use of the MacBook Airls among Vanguard vs. non-Vanguard teachers, comparing the four academic subjects chosen for this study. Mathematics had the least amount of variety. The Vanguard Math teacher used them daily, but mostly with Microsoft PowerPoint as a supplement. The non-Vanguard teacher only used the MacBook Airls for administrative purposes and not for instruction. The other subjects used a variety of resources, depending on the content and curriculum. Science used digital textbooks and resources purchased for the 2014-2015 school year. The Social Studies department used MyBigCampus to create and administer their SGOs. Language Arts used a variety of web resources and programs to create a varied experience for their students.



**There is a noticeable lack of continuity among the various departments in how the MacBooks are utilized.**

# FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

- Students are eager to utilize relevant technology. A considerable percentage of teachers are rather cynical about the initiative. The data suggests that in order for the initiative to be successful in the long-run, there must be a unified approach and vision shared by both the faculty and students.
- Curriculum across subject areas must be infused with technology. Curriculum needs to be revised to reflect the current technological revolution.
- Professional development in relevant MacBook applications has not been sufficient to date. Professional development for teachers must be embedded within the job, workshops offered regularly.
- Vanguard members must serve as technology-coaches, and not merely go-to techs. Vanguard must be given a specific duty period in which they can serve in this position. They must emerge as leaders within the building, serving to move the initiative forward.
- Staff members must be exposed to the SAMR model, and unify this with other models such as Bloom's Taxonomy or Webb's Depth of Knowledge. Utilizing both will provide an advantageous model for growth.

# **STUDENT VANGUARD**

**BUILD UP THE TEAM TO DRIVE FORWARD THE ONE-TO-ONE  
INITIATIVE. ALLOW STUDENTS TO BECOME CHANGE-AGENTS.**



# REFERENCES

- Grundmeyer, T. A. (2012). *A qualitative study of perceptions of first-year college students regarding technology and college readiness*. (Order No. 3539365, Iowa State University). *ProQuest Dissertations and Theses*, 182.
- Hansen, R. C. (2012). *Exploring the effects of 1:1 laptop implementation on quantifiable student outcomes in junior high school science classes between demographic subpopulations of students*. (Order No. 3541618, Utah State University). *ProQuest Dissertations and Theses*, 236.
- Mills, C. E. (2010). *Laptop education: Impact on learning and achievement*. (Order No. 3445660, The University of North Dakota). *ProQuest Dissertations and Theses*, 142.
- Prensky, M. (2005). Listen to the Natives. *Educational Leadership*, 63(4), 8-13.
- Rosen, L. D. (2010). Rewired: Understanding the iGeneration and the Way They Learn. *Education Digest: Essential Readings Condensed For Quick Review*, 75(9), 20-22.
- Sauers, N. J. (2012). *1:1 laptop implications and district policy considerations*. (Order No. 3511653, Iowa State University). *ProQuest Dissertations and Theses*, 172.
- Staub, J. H. (2013). *Teacher training and teacher use of laptops in a 1:1 laptop program: A correlational study*. (Order No. 3574879, University of Phoenix). *ProQuest Dissertations and Theses*, 114.