

Lessons Learned: High Poverty High School 1:1 iPad Project

Roosevelt High School, Portland Public Schools, Portland, Oregon

Research Questions & Student Data on Access, Attitude and Use

“Teachers must leverage technology to provide engaging and powerful learning experiences and content, as well as resources and assessments that measure student achievement in more complete, authentic, and meaningful ways.” (National Education Technology Plan, US Department of Education, 2010)

The digital divide between technology-mediated instruction for students in low and high socio-economic schools is a serious equity issue with repercussions for student learning. (DeWitt, 2007)

Portland (Oregon) Public Schools received a grant to:

- Improve the quality of and access to technology tools and resources that result in improved student attendance, behavior and academic achievement.
- Reduce the disparities in technology access and instruction among low-income students by providing an iPad to each student at Roosevelt High School.

Student Characteristics 2013-2014 (N= 752)

Grade	9 th	39%	10 th	35%	11 th	26%		
Race	White	44%	Black	21%	Other	18%	Hispanic	17%
Gender	Male	56%			Female	44%		
Special Education		21%			Not SPED	79%		
Academic Priority		51%			NOT Acad Priority	49%		
ELL		15%			NOT ELL	85%		
Identified Talented/ Gifted		7%			NOT TAG	93%		

What is the impact of the 1:1 iPad project on students’ access, skills and experiences and use of technology?

Relationship between demographic and academic variables and equitable iPad access:

- In 2012-13 **40%** of eligible students had a Take Home iPad; 60% could use iPad on cart in some classes.
- In 2013-14 **59%** of eligible students had a Take Home iPad; 41% could use iPad on cart in some classes.

In both years students were significantly more likely to have a Take Home iPad if they were ninth graders, white, identified as ELL, NOT identified as academic priority and had a GPA of 2.0 and above. In 2013-14 Asian and Hispanic students, and those identified as Talented and Gifted, were also significantly more likely to have a Take Home iPad.

Relationship between iPad access and student responses on survey of their technology skills and experiences in 2012-13:

- Students who had a Take Home iPad reported using an iPad **in school** more frequently (2-3 classes/week) than students who could only use an iPad on a classroom cart (less than 2 classes/week).
- Students who had a Take Home iPad also reported using technology **outside of school** more frequently (2-3 times/week) than students who did not have an iPad (less than once a week).
- Students reported using their Take Home iPads 2-3 times/week to do homework, communicate with their teachers, create videos and presentations, find information, watch videos, play games, listen to music, and use social media.
- Students who had a Take Home iPad also reported greater proficiency and satisfaction with iPad. Compared to students who could only use an iPad at school, they reported the iPad was significantly more helpful for doing homework, communicating and collaborating, completing writing assignments, organizing their school work, and staying motivated/engaged.

Relationship between iPad access and student responses on technology use survey of technology use:

- In both years students reported using a variety of applications depending on the subject area. School-wide, the top five were: Google tools, web browsers, learning management systems (Edmodo, Schoology), assessment tools (Socrative, Quizlet) and presentation tools (Educreations, Explain Everything, SlideShark).
- In both years students reported using the iPads in class for a variety of purposes. The top seven were: writing, doing research, reading, taking notes, producing media, collaborating with other students on a project and watching videos.

Frequently Used Apps



Teacher Attitudes & Instructional Use of Technology

What is the impact of the 1:1 iPad project on teachers’ attitudes toward and use of technology for instruction?

- In both years students from a minority of teachers (six) accounted for the majority of student technology use surveys. These teachers were early technology adopters and embraced the use of iPads as essential instructional tools. While the majority of teachers reported they used technology in their classrooms at least weekly, student technology use surveys painted a different picture. One teacher from each department (English, math, science, social studies, ESL and technology) was most frequently represented. One caveat to this finding is the student technology use surveys were voluntary, and classroom observations indicated that sometimes students used their iPads regularly but were not asked to complete the survey by their teachers.
- In fall 2012, 38 teachers representing core academic subjects and ESL/SPED, completed an anonymous survey about their attitudes and experiences with iPads in the classroom. Two-thirds of the teachers reported being familiar with iPads, and almost three-fourths reported feeling comfortable integrating technology into their classrooms. While three-fifths of the teachers felt they had received enough professional development to use the iPads in their classroom, four-fifths wanted additional training.
- Teacher responses differed significantly by subject area when reporting student engagement with technology. ESL/SPED, math and science teachers reported higher student engagement when using technology than teachers of English or other subjects. There were significant associations between teachers’ comfort with integrating technology and their report of students’ responses. Teachers who were most comfortable with technology reported student behavior problems decreased, student higher order thinking increased and student writing increased when students used the iPads. Teachers who were least comfortable with technology reported the opposite results.

iPad Distribution & Management

Considerations for 1:1 Take Home

1. WiFi access outside of school
2. Security software
3. Check-out system
4. Digital citizenship curriculum
5. Sufficient time for ongoing professional development and collaboration
6. Expectation that iPads will be an essential curriculum tool that students use on a daily basis to support learning
7. Onsite technology coordinator to mentor teachers and onsite technical support staff

1:1 Take Home	
Pros	Cons
Personalization of device	Classroom distraction
Addresses racial equity gap	Personnel Intensive
Excellent resource for ELL and SPED students	
Students have time to explore	
1:1 At School	
Pros	Cons
Less breakage, loss, theft	Check-in and check-out time
Guidance on apps	No personalization
Prescriptive use of devices	Can’t use for homework