



## Professional Learning with Mobile Technology:

# POSITIVE FINDINGS FROM THE VERIZON INNOVATIVE LEARNING SCHOOLS (VILS) PROGRAM

Prepared by  
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VILS  
EXPANDED INTO  
**24 SCHOOLS**  
NOW REACHING  
**200**  
**TEACHERS**  
**11,000**  
**STUDENTS**

## OVERVIEW

- Introduction
- Methodology
- Key Findings
- Limitations

## INTRODUCTION

The Verizon Innovative Learning Schools (VILS) program was designed to support teachers as they increase the use of mobile technology in today's classrooms in ways that align with the ISTE Standards, the country's most commonly-used technology standards describing digital-age learning experiences. In supporting effective classroom integration of mobile technology, the program also hopes to increase student interest and improve student performance in science, technology, engineering and math (STEM). The Verizon Innovative Learning Schools program partners with administrators and teachers in 24 underserved schools across the U.S., and provides them with a comprehensive two-year sequence of onsite and online professional development focused on leveraging mobile technology for teaching and learning.

Twelve elementary, middle and high schools participated in the program launch during the 2012-2013 academic year, and VILS expanded into an additional 12 schools in 2013-2014, now reaching 200 teachers and 11,000 students. Three-fifths (63 %) of students in VILS schools are enrolled in free/reduced lunch programs.

VILS is a comprehensive, ongoing teacher training program focused on integrating mobile technology into classroom instruction.

The International Society for Technology Education (ISTE) provides VILS professional development training and mentorship to educators and a designated technology coach at each school.

**This summary covers ISTE's evaluation results from the 12 schools during the 2012-2013 VILS school year, and the mid-year survey results of all 24 schools from the 2013-2014 VILS school year.**

IN 2013, JUST  
**34%**  
OF U.S.  
8TH-GRADERS  
WERE RATED  
PROFICIENT  
OR HIGHER IN A  
NATIONAL MATH  
ASSESSMENT,  
AND MORE THAN  
**1 in 4**  
SCORED BELOW  
THE BASIC LEVEL

### **Teacher training model includes:**

- Initial three-day, hands-on workshop on effective tools and strategies for mobile learning and the ISTE Standards for digital-age learning
- Ongoing support from an ISTE Instructional Consultant (IC)
- Webinars throughout the year
- Online access to a project community and professional development and classroom resources
- A day-long virtual conference including participant presentations of VILS-developed lessons and projects

ISTE continually evaluates the program to measure teacher and student proficiency with technology, student engagement, interest in STEM and academic achievement.

This summary covers ISTE's evaluation results from the 12 schools during the 2012-2013 VILS school year, and the mid-year survey results of all 24 schools from the 2013-2014 VILS school year.

## **Changing the way teachers teach and students learn**

While many classrooms across the country have begun implementing mobile technology, teachers need training as to how to successfully integrate it in a meaningful way.

In 2013, just 34% of U.S. 8th-graders were rated proficient or higher in a national math assessment, and more than one in four scored below the basic level.

There is limited research available directly linking the use of mobile devices in the classroom to academic achievement in STEM.

The ISTE VILS evaluation indicates teacher training to integrate mobile technology in the classroom may have positive impact on students' standardized test scores. In addition, the VILS program reported gains in teacher and student proficiency with mobile devices and student interest and engagement in STEM.

## **METHODOLOGY**

*ISTE's multi method evaluation included multiple teacher surveys, classroom observations, on-site interviews and school visits, student surveys of STEM engagement and analysis of standardized test scores*

### **Waves of data collection:**

- June 2012: 138 teachers, administrators and support staff took a self-reported survey on technology use and proficiency, ISTE Standards for Teachers and the presence of ISTE Essential Conditions
- January 2013: 90 VILS teachers (80% percent of teachers in the program at the time) completed a survey on satisfaction with VILS resources, changes in teaching, and changes in student technology use, engagement and learning
- March-May 2013: ISTE conducted observations in 43 VILS classrooms (six schools) and 14 comparison classrooms (five schools)\*
- April and May 2013: 3,037 students (VILS and comparison) completed a survey about STEM interest and technology use
- January 2014: 163 VILS teachers, including teachers from all 24 schools, completed a survey on changes in teaching and changes in student technology use, engagement, and learning

\*Efforts were made to identify comparable schools based on similar demographics, i.e., similar percentage of free and reduced price lunch students and English Language Learners.

## Measuring Academic Achievement

ISTE examined whether VILS students improved their performance on standardized tests in mathematics and science.

- Six VILS schools were selected based on online resource engagement, recommendations by the school's assigned Instructional Coach and internal consultation with the ISTE project management team. Selections were also made to reflect a diversity of geography and grade levels.
  - Assabet Vocational High School (Marlborough, Mass.), Charles Carroll Middle School (New Carrollton, Md.), Hartford Middle School (Canton, Ohio), Lewisville High School (Dallas, Texas), Long Branch Middle School (Long Branch, N.J.), Niemes Elementary School (Cerritos, Cal.)
- Seven comparison schools: Efforts were made to identify comparable schools based on similar demographics, i.e., similar percentage of free and reduced price lunch students, English Language Learners, etc. All comparison sites were schools from the same districts as the VILS schools.

ISTE acquired pre (2012)- and post (2013)- scores on standardized mathematics and science assessments for students at VILS sites and comparison schools, including 2,889 student records.

ISTE conducted site visits and interviews with teachers and administrators at selected VILS schools (and comparison sites) to gather data about program implementation, including classroom observations assessing technology integration and interviews with teachers, tech coaches and administrators.

THE AVERAGE  
PERCENTAGE  
INCREASE IN  
SCORES FOR VILS  
STUDENTS WAS

▲ 4.63%

WHILE NON-VILS  
STUDENTS  
REPORTED AN  
AVERAGE  
DECREASE OF

▼ 4.18%

## KEY FINDINGS

*Students\*\* at VILS schools showed stronger gains in mathematics and science than did students from schools not involved with the VILS program.*

- In general, students in VILS schools performed better on standardized mathematics and science tests than did students from comparison schools.
- The average percentage increase in scores for VILS students was 4.63%, while non-VILS students reported an average decrease of 4.18%.
- In four of six classrooms, students showed better gains or were insulated against declines experienced by comparison students.
- During site visits, observers noted that VILS teachers used technology to efficiently facilitate drill and practice test preparation activities. Such technology-enabled content review and formative assessment could have contributed to the positive effects on test scores VILS students exhibited. Student engagement — measured as the percentage of students off-task for three or more minutes during a period was also higher in VILS classrooms (90% of students engaged) than in comparison classrooms (75%).

\*\* Students participating in VILS launch (2012-2013 academic year)

**VILS students reported that they had higher interest in both math and science and more frequent use of various technological tools, including computers, mobile phones and tablets.**

**99%**  
OF TEACHERS  
REPORTED  
POSITIVE IMPACTS  
ON EITHER  
STUDENT  
ACHIEVEMENT  
OR LEARNING

- Although these positive effects were observed in test scores and classroom observations, multilevel regression analysis did not confirm the effect of program participation on test score gains. With only 13 schools, the sample was not large enough to offer a good chance at statistical significance. If the observed patterns in classroom engagement, technology integration and test score gains hold during the current year, ISTE expects statistically significant results with a 24 school sample for the 2013-14 school year.

*Students\*\* in the VILS program demonstrated improvements in student engagement, interest and achievement in STEM subjects.*

Classrooms that implemented VILS resources and training were observably different from classrooms that did not implement VILS resources, and had measureable differences in student attitudes toward technology implementation and student achievement

- VILS students reported that they were more likely than their non-VILS peers to expect to both attend college and major in a STEM field
- VILS students reported that they had higher interest in both math and science and more frequent use of various technology tools, including computers, mobile phones and tablets
- VILS students were more likely to agree that “using technology tools in science and math” makes those subjects more interesting

*Teacher training on mobile technology integration into the classroom continues to demonstrate important and positive results for teachers and students.*

The impacts teachers reported on classroom technology use, changes in teaching and student engagement and learning have remained consistent as the program expands.

Teachers† reported that an average of one in three (35%) of their students showed increased academic achievement (or, higher scores on assessments), 32% showed increased engagement, and 62% demonstrated increased proficiency with mobile technologies.

- 99% of teachers reported positive impacts on either student achievement or learning
- 69% of students are using technology to access useful learning resources
- 66% of teachers are individualizing instruction more
- 60% of students are helping one another with technology in class
- 42% of students exhibited more sophisticated projects or products
- 40% of students are completing work more promptly
- 36% of students exhibited an increased ability to solve problems

In year two, teachers also reported “weekly” or “daily” use of at least one device, and 86% reported “daily” use.

\*\* Students participating in VILS launch (2012-2013 academic year)

† Survey included teachers from program launch and expansion (both VILS academic years 2012-2013 and 2013-2014)