

Making Learning Mobile 2.0

Falconer Elementary School Project Evaluation Results 2013/14 School Year

The Mobile Empowered Classroom: Transforming the Learning
Experience and Outcomes at Falconer Elementary School

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Making Learning Mobile 2.0:

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Results of the Project Evaluation Study

“I would tell next year’s 5th graders that the tablets are excellent. You can watch math videos to help you with your homework. You can play educational games too. And if you need any information you can email your teacher for an answer. These tablets will show you that you have improved and made much progress during the year. You will have as much fun as I did with the tablets.”

5th grade student, Chicago Public Schools, Chicago IL

About the Study

The goal of the three-year Making Learning Mobile (MLM) Project is to evaluate the benefits of mobile learning by providing every student and teacher with a tablet computer for use at school and at home. Specifically, this project was developed to evaluate how access to these devices for communication with teachers and classmates increases comfort with technology, extends the learning day, and allows students to develop digital citizenship skills within a safe and secure learning environment. The project site is Falconer Elementary School, an urban K-6 school on the southwest side of Chicago. Project participants include 5th grade students and their teachers. Kajeet sponsored the MLM project with funding from Qualcomm® Wireless Reach™.

During the first year of the project (the 2012-2013 school year), the research focused on how the 5th grade students used the tablets and the at-home access to learning resources to support their schoolwork. A key finding from the first year was how the tablets increased student engagement in learning in the classroom, and how the enhanced home access to learning resources changed student behaviors and self-efficacy around learning. Another key finding from the first year implementation was increased awareness of the need for more teacher professional development, specifically around instructional strategies and tools to support mobile learning. A more detailed explanation of the research findings is included in this report on the first year of the project (<http://www.kajeet.com/4u/education/MLM-report.html>).

For MLM 2.0, the second year of the project (the 2013-2014 school year), the evaluation continued to focus on student use of the devices as essential learning tools, but also incorporated a greater emphasis on the process of teacher adoption and integration into daily instructional process. This report

documents the evaluation results with quantitative and qualitative data results from the students and teachers involved with the study at Falconer Elementary School during the 2013-14 school year.

Study Objectives

From the perspective of Chicago Public Schools (CPS), the primary objective of this study was to evaluate and document the impact of creating a 1-to-1 tablet environment within 5th grade classrooms. The CPS Central Office was particularly interested in learning how the teachers would integrate the devices into instruction and how that integration would help the students develop stronger research skills. CPS was also interested in exploring the impact of student access to the tablets and 4GLTE connectivity outside of school on their learning potential. This project is an anomaly within CPS because the students in this project are allowed to bring school-owned devices home; most tablet implementations within the district are for school use only.

In addition to those Central Office objectives, the school principal was particularly interested in how the personalized access to the tablets and specific online instructional materials would increase student engagement in learning and enhance the English language literacy of his students, including comprehension. Given a student population that is 45 percent English language learners and the school's upcoming implementation of the Common Core State Standards (CCSS) in English, the emphasis on improving student literacy in reading, writing and speaking is a paramount school objective. Subsequently, the second year of the study put an additional focus on the use of the tablets to increase student access to reading materials, especially non-fiction works, and how the access at home to online resources could support classroom instruction in English language acquisition.

Fundamental to achieving both study objectives was how readily the teachers integrated the devices into their daily instruction. Given that this was the second year of this implementation at Falconer Elementary School, the study team anticipated that the teachers' comfort level with using the devices and online tools within instruction would be at a higher level than observed in year one. However, due to staffing changes from year one to year two, two of the four teachers still had a learning curve. The addition of project specific professional development and coaching this school year supported the integration process with all four of the teachers. Within this study year, the research team therefore looked for demonstrations of both second year comfort, as well as first year awareness building.

Study Methodology

Project Tomorrow®, a national education nonprofit organization with expertise in digital learning, designed and implemented a mixed methods evaluation study at the request of Kajeet. Both quantitative and qualitative data were collected from students and teachers involved in the project at Falconer Elementary School. The participating students completed surveys at the beginning and end of the school year to capture their attitudes and aspirations around the use of the mobile devices, to self-assess their digital citizenship skills, and to identify usage patterns of the devices for learning purposes.

Making Learning Mobile 2.0 – Falconer Elementary School Project Evaluation Results – 2013/14 School Year

Project Tomorrow staff visited Falconer Elementary School twice during the school year to conduct interviews with the four classroom teachers and various members of the school and district administrative staff, observe teachers' lessons with the devices in the classroom, and to conduct focus groups with students. Additionally, Project Tomorrow staff conducted online focus groups with the teachers and the students who had participated in the previous face-to-face focus groups. Kajeet provided usage data specific to the use of the devices by Falconer students outside of school.

About the Study Participants

The MLM 2.0 project was implemented with 127 5th grade students and their four teachers at Falconer Elementary School within the CPS system. Falconer was chosen by the central office team for this multi-year project based upon the strength of their pre-existing school site technology staff and the demographics of the student and family population within the school community.

Chicago Public Schools: Chicago Public Schools is a decentralized public school district with 681 schools and over 24,000 teachers serving a diverse student population of over 400,000 students in pre-kindergarten through 12th grade.

Falconer Elementary School: Falconer Elementary School is a Technology Magnet Cluster School located on the northwest side of Chicago. The school houses 1,319 students in pre-kindergarten through 6th grade classes. Ninety-three percent of the school families are considered low income. Ninety-three percent of the students identify as Latino and 44 percent qualify as English Language Learners.

Each of the 5th graders and their teachers received a Samsung Android tablet for personal use at school and at home. Within this year's student cohort, there was equal distribution of boys and girls in the classes. Over a third of the students identified math as their favorite subject in 5th grade. When asked on the pre-survey if they liked to read stories or books, 59 percent of the students said yes. However, when asked if they liked to write stories or school reports, only 22 percent answered affirmatively.

Just over one-third of the Falconer students (37 percent) noted that they did not have access to high speed Internet when at home. Additionally, in terms of having personal access to a variety of mobile devices outside of school, the Falconer students reported less familiarity and usage of devices such as phones, tablets and laptops than their peers in Chicago and nationwide as illustrated by Table 1.

Table 1: Personal access to mobile devices – not school provided

	Falconer 5 th Graders	CPS 5 th Graders	Nationwide 5 th Graders
Laptop	55%	57%	62%
Tablet	49%	54%	58%
Smartphone	41%	50%	50%
Cell phone (no Internet)	15%	48%	42%
MP3 Player	40%	50%	60%

This seeming lack of usage or familiarity with mobile devices may also help to explain differences in the Falconer students' self-efficacy around their technology skills. When asked to assess their technology skills compared to their peers, only 19 percent of the Falconer 5th graders considered their skills advanced. Nationwide, 26 percent of 5th graders identified with that level and within CPS, 22 percent of district 5th graders saw themselves as advanced tech users. Given that one of the study goals was to increase students' skills with using the tablets for research and literacy activities, the perceived skill level of the students is an important consideration, especially considering the lower availability that the students have at home for using these types of devices as academic tools.

Within the MLM 2.0 study year, there were four teachers who were directly involved with the implementation of the tablets within their classrooms. Two of the four were involved with the first year of the project. One teacher was new to the 5th grade teaching cohort from the beginning of this school year. The fourth teacher was brought into the cohort due to an assignment change in November. The cohort made a strong team who regularly planned their class activities together. Based upon a request from the first year of the project, the teachers were provided with over 56 hours of dedicated professional development, coaching and mentoring to increase their effectiveness with using the tablets for instruction. The teachers' strong commitment to professional development and their willingness to incorporate new strategies and resources into their classroom is a hallmark of a successful and maturing mobile learning project.

Key Study Findings

The central question for this study was the following: ***What is the impact on learning when every student in the class has a tablet with 4GLTE access at school and at home?*** The key findings from this study indicate that the powerful combination of the tablet with 4GLTE access resulted in:

1. **Greater student engagement in learning:** Eight out of 10 students said having the tablet made learning more fun and interesting, and 72 percent said they were more engaged in their lessons because of having a tablet.
2. **Increased reading and writing:** 60 percent of the Falconer students said they did more reading and writing this school year because of having a tablet.
3. **Increased Internet access:** 78 percent of the students said they accessed the Internet on a daily basis in 5th grade; whereas in 4th grade, only 4 percent of the students had that same level of daily access.
4. **Development of independent learning study habits:** 99 percent of the students said they used their tablet regularly to look up information on the Internet when they had a question about something.
5. **Professional development helped change teacher practice:** The teachers increased comfort using the mobile devices was evident by the level of integration of the tablets into everyday instruction and the new project based learning orientation within the classes.

Detailed Study Findings

The Mobile Empowered Learning Experience

While Falconer Elementary School has a long tradition of providing their students with regular computer access through dedicated computer labs, the students in this year’s 5th grade cohort reported that they did not have regular in-class access to technology when they were in 4th grade. A comparative analysis of the technology uses in 4th grade and 5th grade indicated that the tablets enabled deeper and more frequent digital learning opportunities in 5th grade. Additionally, teachers’ instructional practices were changed as a result of every student having an Internet accessible tablet, and that change in practice empowered new learning experiences, both at school and at home.

The students’ actual usage of the tablets for learning far exceeded their initial usage expectations in several areas. While the Falconer students accurately anticipated that the devices would allow them greater communications capabilities with their teacher and classmates, they underestimated the role that the devices would play within instructional activities such as working collaboratively on projects and having ready access to the Internet for research or resources. Table 2 provides a comparative analysis of the students’ usage expectations– from the beginning to the end of the school year.

Table 2: Students’ Expectations of Tablet Usage vs. Actual Usage

September: How I think I will use the tablet to support my learning	May: How I used the tablet to support my learning
<ul style="list-style-type: none"> ▪ Check grades (92%) 	<ul style="list-style-type: none"> ▪ Look up info on the Internet (99%)
<ul style="list-style-type: none"> ▪ Write papers / do homework (80%) 	<ul style="list-style-type: none"> ▪ Write papers / do homework (83%)
<ul style="list-style-type: none"> ▪ Email with teacher & classmates (67%) 	<ul style="list-style-type: none"> ▪ Check grades (78%)
<ul style="list-style-type: none"> ▪ Look up info on the Internet (66%) 	<ul style="list-style-type: none"> ▪ Play edu games (77%)
<ul style="list-style-type: none"> ▪ Play edu games (62%) 	<ul style="list-style-type: none"> ▪ Take photos of assignments (77%)
<ul style="list-style-type: none"> ▪ Work on projects with classmates (58%) 	<ul style="list-style-type: none"> ▪ Contribute to class blog (76%)
<ul style="list-style-type: none"> ▪ Take notes in class (55%) 	<ul style="list-style-type: none"> ▪ Work on projects with classmates (68%)
<ul style="list-style-type: none"> ▪ Organize my schoolwork (50%) 	<ul style="list-style-type: none"> ▪ Email with teacher & classmates (63%)

In general, the students’ expectations in September were highly focused around activities that they would initiate such as checking their grades and emailing with classmates. However, the list of actual activities demonstrates not only the importance of student-initiated activities but also how the teachers enabled specific types of usage to support learning. The development of class blogs, a teacher enabled activity, provided a unique opportunity for the students to use the tablets to support additional writing exercises, a key component of enhanced literacy. Additionally, according to the teachers, the blogging activities were more appealing to the students than the traditional composition book based writing exercises and thus increased student engagement in writing.

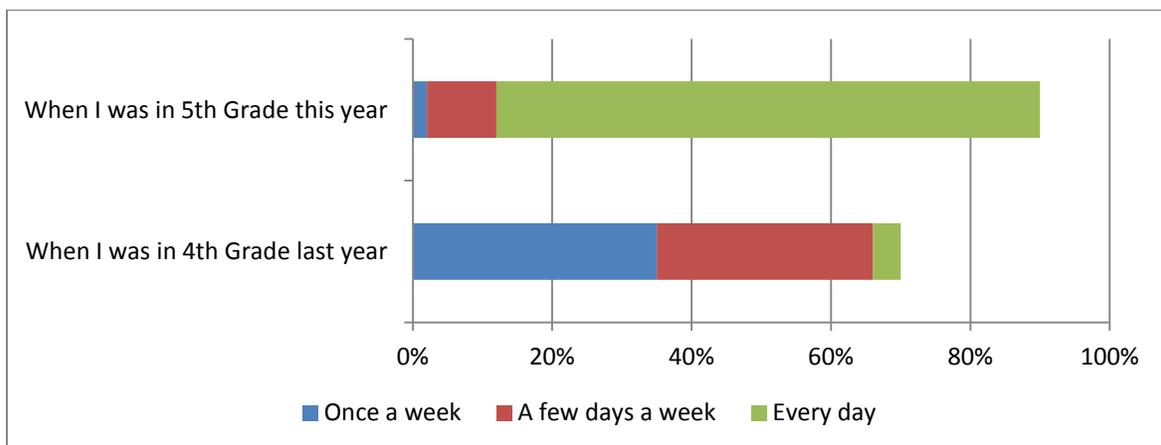
Making Learning Mobile 2.0 – Falconer Elementary School Project Evaluation Results – 2013/14 School Year

Two interesting developments resulted from the teachers' incorporation of blogging within their instructional practice. First, the teachers were able to incorporate more writing into daily classroom activities and used strategies such as free writes and prompt responses across all discipline areas. The tablet-enabled blogging activities provided a way for the students, especially those with limited English, to reach greater writing proficiency more quickly during the school year. Second, the blogging process allowed the students to see others' writing and made the students more self-accountable for grammar, spelling and content. The students also commented on each other's writing and developed stronger written language and vocabulary skills. *(Want to learn more? See this [sample](#) best practice on how the teachers and students used the tablets and appropriate content to support non-fiction reading comprehension.)*

The greatest difference, however, between the students' expectations and their actual behavior was in the use of the tablets to access online information anytime, anywhere. **The access to the Internet in the hands of the students transformed the classroom environment by allowing both students and teachers to bring additional resources into the learning process, at just the right moment to have the greatest impact on learning.**

There was a significant shift in the frequency of the students' access to the Internet at school and at home. Charts 1 and 2 document the differences in how frequently the students accessed the Internet to support their learning activities comparatively from 4th grade to 5th grade.

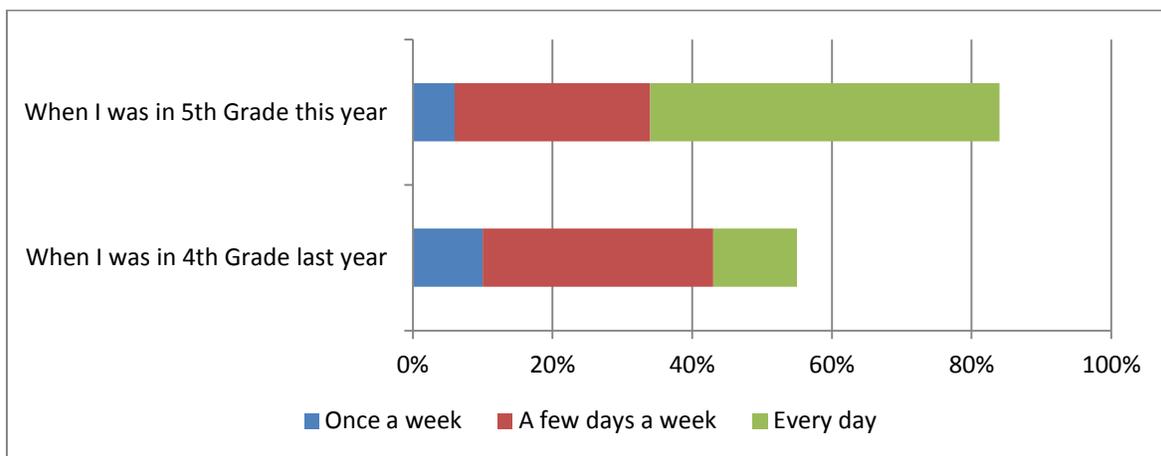
Chart 1: How often did you access the Internet at school to support learning activities?



During the 5th grade, 78 percent of the students accessed the Internet daily *at school* in support of learning activities using their tablets. Comparatively, only a handful of students (4 percent) said they did the same in 4th grade. The access to the tablets combined with the teacher endorsement of “looking up information” when needed during class activities resulted in this change. Additionally, the teachers demonstrated many effective strategies for using the tablets and Internet access to support enhanced literacy development specifically during this past school year.

This change in how the students approached learning was also evident in their out-of-school use of the tablets to access the Internet as shown in Chart 2. **In terms of using the tablet as a gateway to the Internet and online educational resources, 84 percent of the 5th graders said they went online from home at least once a week, compared to only 55 percent having online access at home through non-school provided devices during 4th grade.** The assignment of a personal tablet to each student increased at-home Internet access for this cohort of students by 53 percent. This is especially significant given the persistence of the digital divide in home Internet access within our urban communities.

Chart 2: How often did you access the Internet at home to support learning activities?



The students expressed that a significant benefit to having their own tablet was that they did not have to share that access with others. This ability gave them confidence that they could go online when they needed to access the Internet to do homework from home, email their teacher with a question, or consult with classmates about an assignment or collaborative project. This increased confidence in their ability to access resources increased their self-efficacy as learners, a proven factor in improving student achievement.

The Kajeet usage statistics acquired through the device monitoring system provided additional insights into how the students extended learning beyond the school day. Each of the student devices were automatically disabled for Internet access at 9 pm each evening to ensure that the students got needed rest and that the devices were used primarily for homework or school related activities. The analysis of the usage statistics supports the use of the tablets for educational purposes with websites most frequently accessed by the students including the following:

- Reading A-Z (www.raz-kids.com)
- Cool Math Games (www.coolmath-games.com)
- ABCya – Educational Games (www.abcya.com)
- KidBlog (www.kidblog.com)
- Wikipedia’s Media Server (www.wikimedia.org)

Making Learning Mobile 2.0 – Falconer Elementary School Project Evaluation Results – 2013/14 School Year

- Scholastic (www.scholastic.com)
- PBSKids (www.pbskids.org)
- BrainPOP (www.brainpop.com)
- National Geographic (www.nationalgeographic.com)

In addition to these websites, the teachers made extensive use of Edmodo (www.edmodo.com) this school year to facilitate homework assignments and school projects and as a repository for class resources. Consequently, as both teachers and students became more familiar with using Edmodo and Edmodo played a more significant role within class management, the usage statistics indicate greater usage at the end of the school year. In October, Edmodo was accessed 19 times per day on average. By April, average access by day was 933 requests. A similar pattern exists with the use of Google docs. Students' average daily usage of these tools outside of school increased five times from October to April. **The change in the learning environment in school resulted in new opportunities for learning to be extended beyond the end of the school day.** (*Want to learn more? See this [sample](#) best practice on how a 5th grade student used his tablet to self-direct his learning outside of school.*)

Learning Outcomes Enabled by the Mobile Devices

The integration of the tablets and the accessibility to the Internet, both in school and at home, transformed the learning environment for the Falconer 5th graders. Additionally, the teachers' increasing aptitude with using the devices to increase student engagement in content, support differentiated instruction and increase time spent on literacy learning activities resulted in an overall increase in the teachers' perception of their own effectiveness in the classroom.

The students identified significant benefits associated with having a personal 4GLTE tablet. Those benefits are categorized into three primary outcomes: increased self-efficacy as a learner, development of college- and career-ready skills, and the enabling of different learning behaviors that support academic success. Table 3 summarizes the benefits by outcome category.

Table 3: Benefits of having a tablet to support learning

Benefits that increased student self-efficacy as a learner	Benefits that helped students develop specific skills	Benefits that enabled different learning behaviors
The tablet makes learning more fun and interesting (81%)	My teamwork skills have improved (68%)	I can easily find images online for my schoolwork (78%)
The tablet helps me with my learning (79%)	My communications skills have improved (60%)	I can access useful educational websites (74%)
I am better organized (64%)	My critical thinking and problem solving skills have improved (58%)	The tablet makes it easier and faster for me to access online resources (69%)
I have more confidence in my abilities to be successful with school (61%)		I communicate more with my teacher (59%)

The value that the students placed on increased communications with their teachers is particularly noteworthy in light of the students' previous experiences in 4th grade. While less than one-quarter of the students (23 percent) said that they regularly emailed with their teacher in 4th grade, almost two-thirds (64 percent) of the students said it was a regular occurrence in 5th grade. Reflecting the increased access to their teacher, 59 percent identified that activity as a primary benefit of having the tablet.

The students' views on the role of the tablet in making learning more fun and interesting equates to increased engagement in the learning process. **More than seven out of ten students (72 percent) said having the tablet increased their engagement in school lessons; 32 percent strongly agreed with that connection.** This increased engagement in the learning process also created unique project-based learning opportunities for students to develop the types of college and career ready skills espoused by the new CCSS. *(Want to learn more? See this [sample](#) best practice on how the teachers and students used the tablets and appropriate content to support a maker project.)*

Supporting a school-wide goal to increase literacy proficiency during this school year, the students and teachers both reflected on how the mobile devices contributed to that goal. **In terms of improving reading skills, 60 percent of the students agreed that they read more this school year because of their personal access to the tablet and the Internet.** The teachers' change in practice contributed to this also. As one teacher explained, the tablet provided an environment where the student never had an excuse for not reading, such as "I do not have a book to read." The classes had access to several apps that included books and articles that were grade level and reading level appropriate. It became part of the class culture for students to simply take out their tablet and start reading whenever they finished an assignment or had some extra time. As noted earlier, this emphasis on increasing reading time is especially important for the English language learners in this cohort. **Correspondingly, 72 percent of the students also noted that they believed that their reading skills improved because of having the tablet.** In terms of writing, a similar percentage of students (60 percent) noted that they did more writing this school year than in previous years and that the tablet helped them improve their writing skills (62 percent). *(Want to learn more? See this [sample](#) best practice on how the teachers and students used the tablets and online collaborations tools to transform a literacy learning experience.)*

As we think about helping students develop habits of life-long learning, the value of the increased reading and writing enabled by the tablets is a significant finding with applicability within many communities. It also demonstrates how emerging technologies such as tablets with 4GLTE access can empower both a transformed learning experience for students, and enable enhanced learning outcomes. The MLM 2.0 Project at Falconer Elementary School in Chicago is a landmark example of this new learning paradigm.

About Project Tomorrow

Project Tomorrow®, the national education nonprofit organization dedicated to empowering student voices in education discussions, prepared this program evaluation for Kajeet. Project Tomorrow has 18 years of experience in the K-12 and higher education sector, and regularly provides consulting and research support to school districts, government agencies, business and higher education institutions about key trends and research in science, math and technology education.

About Kajeet

Kajeet, the only wireless solution provider dedicated to kids and education, is bridging the digital divide in school districts across the country. Kajeet provides a safe, affordable, mobile broadband solution that connects disadvantaged students to the resources they need to complete required assignments and projects outside of school. The Kajeet SmartSpot solution, a portable Wi-Fi hotspot combined with the innovative Sentinel® cloud portal, enables administrators and teachers to provide CIPA-compliant, customizable filtered Internet access that keeps students focused on school work and provides off-campus Internet connectivity without worry of data abuse. The Kajeet service platform, which operates on both the Sprint and Verizon network, is protected by the following patents 8,774,755; 8,774,754; 8,755,768; 8,731,517; 8,725,109; 8,712,371; 8,706,079; 8,667,559; 8,644,796; 8,639,216; 8,634,803; 8,634,802; 8,634,801; 8,630,612; 8,611,885; 8,600,348; 8,594,619; 8,588,735; 8,285,249; 8,078,140; 7,945,238; 7,899,438; 7,881,697. Other patents are pending. For more information, please visit us at kajeet.com/education.

About Qualcomm® Wireless Reach™

Qualcomm believes access to advanced wireless technologies can improve people's lives. Qualcomm Wireless Reach is a strategic initiative that brings wireless technology to underserved communities globally. Wireless Reach invests in projects that foster entrepreneurship, aid in public safety, enhance the delivery of health care, enrich teaching and learning and improve environmental sustainability. For more information, please visit www.qualcomm.com/wirelessreach.

Best Practice: Using Tablets to Support Non-Fiction Reading Comprehension

The goal of the three-year Making Learning Mobile (MLM) Project is to evaluate the benefits of mobile learning by providing every student and teacher with a tablet computer for use at school and at home. In its second year, the project was implemented during the 2013-14 school year with 5th grade students at Falconer Elementary School within Chicago Public Schools. Kajeet sponsored the MLM project with funding from Qualcomm® Wireless Reach™. This best practice vignette documents an innovative example of how the tablets supported student learning.

What: Using tablets to engage students in reading more non-fiction and to develop stronger reading comprehension skills.

How: The teachers demonstrated many effective strategies for using the tablets and Internet access to support enhanced literacy development during this past school year. One of the most effective observed was the use of the NewsELA (<https://newsela.com>) website for non-fiction reading and comprehension. In elementary school, teaching non-fiction comprehension skills is often difficult for many teachers but with the implementation of the Common Core State Standards, non-fiction reading skills are becoming more important. The challenges associated with incorporating non-fiction materials into instruction are compounded at Falconer by the diversity in reading levels and English literacy within the 5th grade. NewsELA includes a collection of non-fiction articles about current events and news that are leveled for reading competency, resulting in an ability for students across a spectrum of reading levels to read the same or similar articles. The articles encompassed a wide range of topics and thus the teachers could imbed a non-fiction reading activity within science or social studies to increase reading time. A typical lesson would involve the students reading their appropriately leveled NewsELA article on their tablet and then creating a presentation on the tablet to demonstrate their comprehension of the reading content. Both the students and the teachers noted the increased engagement in this type of a learning experience and attributed it to the personalization of the reading level and the inclusion of videos and other multi-media content within the articles. This increased engagement resulted in the students asking to do additional NewsELA assignments and their use of the site as their daily newspaper to keep up to date on current events, both of which meant additional time spent on reading. As one teacher noted, “The use of NewsELA changed the way I teach non-fiction and changed the way my students think about reading non-fiction.”

Best Practice: Using Tablets to Support Self-Directed Learning

The goal of the three-year Making Learning Mobile (MLM) Project is to evaluate the benefits of mobile learning by providing every student and teacher with a tablet computer for use at school and at home. In its second year, the project was implemented during the 2013-14 school year with 5th grade students at Falconer Elementary School within Chicago Public Schools. Kajeet sponsored the MLM project with funding from Qualcomm® Wireless Reach™. This best practice vignette documents an innovative example of how the tablets supported student learning.

What: Using tablets with home Internet access to empower students to extend learning beyond the school day and pursue self-directed learning experiences.

How: The at home access available to the students through the tablets was pivotal to opening up new avenues for them to pursue extracurricular interests and follow learning passions. One of the best examples of how the technology enabled self-directed learning is from a 5th grader this past year. This particular 5th grade boy had always wanted to learn how to play the piano, but his family could not afford either lessons or a piano. Being resourceful, the student found a mobile app that simulated a piano, and some online tutorials and YouTube videos to teach himself how to play the piano on his tablet. His proficiency over the school year increased to the point in the spring where he was writing his own music and lyrics, and performing in his class for his teacher and peers. Besides achieving a dream to play the piano and making his parents proud of his accomplishments, this student was also a model for his classmates on how to leverage the tablets to explore new academic interests, and to be responsible for the development of digital content, not just to consume it. While we cannot predict the future for this young man in Chicago, it may be that the next great Billy Joel got his musical start with a tablet provided to him through this project.

Best Practice: Using Tablets to Support a Maker Project

The goal of the three-year Making Learning Mobile (MLM) Project is to evaluate the benefits of mobile learning by providing every student and teacher with a tablet computer for use at school and at home. In its second year, the project was implemented during the 2013-14 school year with 5th grade students at Falconer Elementary School within Chicago Public Schools. Kajeet sponsored the MLM project with funding from Qualcomm® Wireless Reach™. This best practice vignette documents an innovative example of how the tablets supported student learning.

What: Using tablets to support a classroom maker project that resulted in students developing specific college and career ready skills such as collaboration, communications and critical thinking.

How: One example of a class maker project that was enabled by the tablet involved having teams of students take apart an old desktop computer. The school tech team identified several old computers that were going to be salvaged and provided them to the 5th grade classes for this project that was inspired by the maker movement. The students' task was to take apart the computer down to the board chips and then re-assemble it. To do so, the students used their tablets to keep track of their inventory of parts, the sequencing of the disassembly and reassembly process, and to photograph the different components and locations within the computer CPU. Working as a team, the students took on different jobs in the project and several used the tablets to video the work from start to finish. These projects provided the students with the kind of hands-on learning that develops critical thinking, communications and collaboration skills in addition to supporting high levels of engagement in the activity. The activity also supported the students' interest in understanding how computers work, what many thought leaders identify as the first step in developing the next generation of technologists. Both teachers and students acknowledged that this type of highly complex project was only do-able with 5th grade students due to the availability of the tablets as a key project component.

Best Practice: Using Tablets to Support Increased Literacy

The goal of the three-year Making Learning Mobile (MLM) Project is to evaluate the benefits of mobile learning by providing every student and teacher with a tablet computer for use at school and at home. In its second year, the project was implemented during the 2013-14 school year with 5th grade students at Falconer Elementary School within Chicago Public Schools. Kajeet sponsored the MLM project with funding from Qualcomm® Wireless Reach™. This best practice vignette documents an innovative example of how the tablets supported student learning.

What: Using tablets to engage students in learning activities that support the development of enhanced reading and writing skills.

How: One such example from this school year where the increased engagement in the learning activity resulted in enhanced reading and writing outcomes was the “*Where the Mountain Meets the Moon*” literary project. With this project, the 5th grade students at Falconer Elementary School along with 5th grade classes from two other schools, one in Massachusetts and one in another part of Illinois, read the book, “*Where the Mountain Meets the Moon*,” by Grace Lin. The students used their tablets to blog about the different chapters they were reading and participated in online chats with their fellow students at the other schools. The teachers created interdisciplinary activities that helped the students gain additional online research skills, explore various themes within the book through art projects, and create presentations to demonstrate comprehension. The online chats provided the Falconer students a unique opportunity to see the book through the perspective of students that were from very different backgrounds than their own, and to develop online presence skills not often found in 5th graders. The culminating activity within this project was an online “meetup” with the author, Grace Lin, who spent an hour answering students’ questions about the book and her career development as an author. In preparation for the Google hangout with Ms. Lin, the Falconer students developed and voted on questions to ask her. The impact of this experience on the students was extraordinary and one of those highly memorable activities of a student’s elementary education. For most of these students, Ms. Lin was the first author they had ever met. Her advice about reading as much as they can, practicing writing and expressing themselves and taking risks to advance learning touched key points that the teachers were emphasizing as well. Most importantly, this project taught the students about how technology, and most notably tablets and Internet access, can open up their world to new possibilities for connecting with experts, exchanging ideas with peers in other communities and how to leverage digital tools for learning.

Best Practice: Stimulating a Change in Teacher Practice in the Classroom

The goal of the three-year Making Learning Mobile (MLM) Project is to evaluate the benefits of mobile learning by providing every student and teacher with a tablet computer for use at school and at home. In its second year, the project was implemented during the 2013-14 school year with 5th grade students at Falconer Elementary School within Chicago Public Schools. Kajeet sponsored the MLM project with funding from Qualcomm® Wireless Reach™. This best practice vignette documents an innovative example of how the ubiquitous Internet access and one-to-one tablets stimulated a change in how teachers' approached instruction.

What: A mobile-enabled classroom – every student with a personal tablet and Internet access at their fingertips – and targeted professional development transformed how the teachers approached instruction and redefined their role relative to student learning.

How: For many teachers, the transition from being the “sage on the stage” in the classroom to a new role as a facilitator or coach of student self-directed learning is difficult. This is true even in classrooms where every student has access to the Internet at their fingertips as with the MLM Project in Chicago. To support this transition, the project provided the teachers with a personalized mashup of professional development opportunities. Every month, a mobile learning instructional expert provided the teachers with just-in-time mentoring on educational mobile apps, classroom management techniques, new strategies for instruction, and how to develop a personalized learning network for continued support. The project also supported the teachers' participation in two education technology conferences during the school year – the Wireless Ed Tech Conference in October and the Illinois Computing Educators (ICE) state conference in February. The professional events opened up the teachers' eyes to not only new tools for classroom use, but also gave them the confidence to step outside their comfort zone and try some brand new approaches to teaching in their classroom.

An example of such a new approach is to allow students to answer their own questions by looking up information online. For example, during one classroom reading activity, the word “telegram” came up in a passage. Today's 5th graders do not know what a telegram is. In the past, the teacher would have simply provided a verbal explanation. However, in the mobile learning classroom, there are new options. Correspondingly, the teacher directed her students to “look it up online.” The students used their always-on tablets to look up the word and the resulting class discussion was especially rich as it built upon the students' prior knowledge of history and helped them develop greater contextualization of what they were reading. This small example is representative of how the teachers' increasing comfort with device integration can be the stimulus for a change in instructional practices, and a new role for the teacher in the learning process. In this case, the teacher facilitated the learning process for her students' own self-discovery. With the confidence that every student in the class could access information online, the teacher thereby adopted a new set of sustainable instructional practices that resulted in enhanced student learning.