The Project K-Nect Mobile Learning Initiative Creates Personalized Learning Environments for Math Students in Onslow County School System

Prepared by Project Tomorrow® for Digital Millennial Consulting (April 2012)

“This is a great way for our generation to learn based on technology.”

Southwest High School Student
Project K-Nect participant, Fall 2011

Background
Project K-Nect, developed by Digital Millennial Consulting and funded in part through Qualcomm’s Wireless Reach initiative, is designed to increase student achievement in math and close the digital access gap for students in Onslow County School System in North Carolina. This report highlights the evaluation findings from both spring 2011 and fall 2012 and serves as a continuation of Project Tomorrow’s annual program evaluation of Project K-Nect, a project first started with spring semester 2008. Previous Project Tomorrow evaluation reports can be found at http://www.tomorrow.org/publications/ProjectKnect.html.

Students in Onslow County School System are required to complete four credits in math for graduation (Algebra I, Geometry, Algebra II and one other math course). This report focuses on the Project K-Nect implementations with three math teachers assigned to two different high schools: Suzette Kliewer and Eric Kliewer at Southwest High School, and Homer Spring at Dixon High School. These teachers have integrated the Project K-Nect tools and applications through initially smartphones and more recently tablet computers into a course sequence comprised of Algebra I (semester length course), Geometry (semester length course), Algebra II (semester length course), and pre-calculus/Advanced Placement Calculus (yearlong course) as well as non-sequence courses such as Tech Math and Advanced Placement Statistics. Students typically complete the Project K-Nect sequence courses in five semesters and meet both their high school graduation and college admissions requirements. Based upon a change in the past year, the state currently only offers a state administered end-of-course assessment in Algebra I. Students participating in Advanced Placement Calculus and Advanced Placement Statistics have the option to take Advanced Placement exams upon completion of their course.

The evaluation findings in this report are especially significant for three primary reasons:

1. This report focuses on the efficacy of Project K-Nect in the classrooms of three teachers who have been involved with the project since the beginning and thus represent a highly experienced set of skills
in the usage and integration of mobile devices within math instruction. Project K-Nect has been the nation’s leading bellwether in the classroom use of mobile devices within instruction and the project scope and impact has evolved alongside the experiences in the classroom. The Project K-Nect teachers have had a front row seat in this evolutionary process and thus their views on the project and mobile learning in general are especially valuable.

2. The graduating class at Southwest High School in June 2011 included thirteen (13) students who had been involved with Project K-Nect for all four years of high school. Thus, their math classroom experiences (which included the use of smartphones in all of their math classes) provides an interesting background for understanding both the evolution of mobile learning within Onslow County Schools and the impact of such experiences on these students.

3. The migration of the project from smartphones to tablet computers was a significant development with the fall 2011 classes and this report documents the student and teacher point of view specifically on that transition and the impact of the device form and function as well as enhanced software capabilities on learning. Additionally, a specific cohort of students at Southwest High Schools had the opportunity to use the smartphones in spring 2011 and then be part of the transition to the tablets in fall 2011. Their perspectives on the value and efficacy of the two different devices are also documented in this report.

The spring 2011 implementation of Project K-Nect included 110 students and three teachers teaching four different classes; a TechMath class at Dixon High school and an Algebra I class, and Algebra II class and a AP Calculus class at Southwest High School. The fall 2011 implementation included the participation of 85 students and 3 teachers; one Algebra I class at Dixon High School, and two Algebra I classes and one Algebra II class at Southwest High School.

Participating Project K-Nect teachers use many of the standard features of the mobile devices, as well as algebraic problem sets and a mobile-enabled suite of tools for sharing student work, facilitating collaboration between students, and assessing student activity and growth. To help students master math concepts, teachers are encouraged to create problem-based lessons and activities that utilize the features and functionality of the devices as well as the Project K-Nect environment. Teachers have the flexibility to select the Project K-Nect components that best meet their instructional needs in the classroom and, as such, students have a variety of experiences and utilize the mobile devices and tools to varying degrees. During their participation in the Project K-Nect classes, students were initially given a smart phone with a 24/7 data plan for access to the internet; that was subsequently replaced with a tablet computer in fall 2011 that included 3G/4G connectivity options. The Project K-Nect environment enabled the students to be online and connected with their teacher and other students anytime in or out of school. This report highlights the power and promise of mobile learning initiatives where students can be connected anywhere, anytime to internet resources, their teacher and classmates, and how that personalized learning environment supports enhanced student achievement and teacher productivity.
Context for the Project K-Nect Impact in the 2011/2012 School Year

Each fall, Project Tomorrow polls over 400,000 K-12 students as well as their parents, teachers and administrators on their views on the role of technology within learning. The analysis of the student data points to a unique student vision for leveraging technology effectively to create a new model for 21st century learning. According to the students, that 21st century learning model includes more social-based learning, untethered learning and digitally-rich learning environments. The bottom line is that today's students want learning that is engaging and enabled and empowered by a wide range of emerging technologies.

Since its inception in 2008, Project K-Nect has embodied this unique student vision for learning. The introduction of the smartphones into math classrooms with software and tools that increased student collaborations, facilitated project based learning and enhanced teacher effectiveness directly addressed the student vision of peer to peer coaching and teacher collaborations through the use of un-tethered and digitally-rich tools. For this reason, the lessons learned from Project K-Nect are significant not just for those schools and districts that are interested in mobile learning, but also for any education institution that places a high value on creating more personalized learning processes for their students and teachers. The Project K-Nect model is a demonstration case on the potential of improving student engagement and achievement through the thoughtful implementation of emerging technologies that instigate and incubate changes in teacher practice and classroom paradigms.

Per the recent Speak Up 2011 National Report, “Mapping a Personalized Learning Journal: K-12 Students and Parents Connect the Dots with Digital Learning,” three key components of personalizing learning are emerging as paramount: self-directed exploration activities, learning where the pace is modulated to each individual student, and the ability for the students to choose the right tool for the right task within their learning environment. In this evaluation of the Project K-Nect implementations, we pay particular attention to how Project K-Nect now only supports personalized learning but actually empowers a new way of teaching that aligns with these tenets of personalized learning.

Evaluation Findings

At the heart of Project K-Nect is the implementation of a very effective project based learning environment. The Project K-Nect environment provides ample opportunities for students to self-direct their math exploration (with impressive achievement results) and also at the same time to develop a wide range of 21st century workplace ready skills that are the cornerstone for college and career readiness. The development of these skills enables the Project K-Nect students to visualize follow-on success in math and for many, to build a self-efficacy portrait of a math related career.
Project K-Nect develops 21st century workplace ready skills

With the spring 2011 cohort of Project K-Nect students, we particularly focused on the students’ perceptions on how the mobile enabled environment helped to develop key “soft skills” important for future college or career success; skills such as problem solving, critical thinking, collaborative teamwork and communications skills. The results of this focused evaluation are impressive and point to the sustained value of Project K-Nect.

- 82 percent of the students self-identified themselves as a “good problem solver” as a result of their Project K-Nect experience. Most notably, the students in the Dixon High School Tech Math class experienced an 80 percent increase in their self-assessment on their problem solving skills during the semester. With 92 percent of the Algebra I students scoring at the proficiency level on their end-of-course assessment, the students’ self-assessment of their problem solving capacity appears to be accurate.

- 91 percent of the students reported that as a result of Project K-Nect they now liked collaborating with other students. This new perception is based upon a significant shift in their comfort with collaborative teamwork. Prior to entering the Project K-Nect class, only 43 percent said that they had regularly collaborated with peers on math problems; after the Project K-Nect class 100 percent said that they were likely to continue to tap into collaborative learning environments in the future.

- 9 out of 10 students said that they are confident talking about math as a result of their Project K-Nect experience. Additionally, they are more confident using math terminology appropriately and discussing potential solutions to math problems with classmates and their teacher.

- As a byproduct of Project K-Nect, the students also report that they are more likely to use a variety of different technology tools to help with schoolwork, demonstrating a knowledge and appreciation of how to effectively leverage emerging technology for focused results and personalized learning. The Southwest High School students specifically noted: videos (86 percent), communication tools with other students (75 percent) and their teacher (70 percent), blogs for collaborations (52 percent) and online games (43 percent).

- 95 percent of the students say that this unique approach to math helps them develop the skills they need for their future success.

Project K-Nect builds math capacity for future success

While the increases in student proficiency in math is impressive, another aspect of the sustainable impact of Project K-Nect is how the mobile-enhanced, project-based learning environment has expanded the capacity of the students to be successful in follow-on math classes in high school and even consider a math related career.

- 86 percent of the students in Algebra I said that they were better prepared for the end-of-course (EOC) exam because of their Project K-Nect experience.
76 percent of the Algebra I students and 54 percent of the Tech Math students are interested in taking more math classes.

90 percent say that they think math is easier now – an increase of 58 percent over the way the students felt at the beginning of the semester.

93 percent say that they feel successful in math and 97 percent are more comfortable learning math indicating that the Project K-Nect environment has fundamentally changed the way students think about math education.

The impact of Project K-Nect on the students’ aspirations for college and career were most significant with the Tech Math cohort in spring 2011. 39 percent of the students said that their academic or college plans changed as a result of participating in the class. At the end of the semester 77 percent reported being more interested in college, 31 percent were more interested in a degree where they could use their math skills and ¼ of the students said they had greater interest in working in a career that utilized math such as computer science, finance or engineering.

**Teachers’ insights on the Project K-Nect mobile-enabled, project based learning model**

Even though the three project teachers have been involved with Project K-Nect since its inception, their interpretation and assimilation of the model into their classrooms has naturally followed a unique path based upon their teaching style. A few key tenets however have emerged from their experiences. Per the Project K-Nect teachers:

- Mobile devices empower students to not only solve problems efficiently and effectively but also prompt them to **collect evidence to demonstrate a personal knowledge base of the key concepts**. The student-directed aspect of personalized learning supports the teachers’ views on project-based learning.

- Mobile devices are multi-functional tools that can be used in a variety of ways and an important **role of the teacher in this environment is to “set the table” for student led explorations** that are empowered by various features and functionality of the devices. Additionally, it is important that teachers employing tools such as blogs and videos in the classroom regularly review their students’ self-developed content and to provide valuable commentary as a way of extending instruction beyond the classroom.

- Students need instruction on the **responsible use of the devices and how to be an effective digital citizen today**. Too much emphasis on the “things you cannot do” undermines the spirit of both personalized and project-based learning that values student self-determination. The mobile devices provide an optimum backdrop for a thoughtful and sustained in class discussion around how to leverage technology responsibly. **Modeling effective behavior and strategic classroom management techniques** are also highly valuable with this goal.
Hats off to the first graduating class of Project K-Nect Students!

The first generation of Project K-Nect students graduated from high school in June 2011. For these 13 students, their math learning journey from Algebra to Calculus was fundamentally different than most high school students. By leveraging smartphones and project based learning, these students experienced a high degree of personalized learning that embodies the Speak Up student vision of social-based, un-tethered and digitally rich learning. According to the students, the following benefits are their key takeaways from the Project K-Nect experience:

- The emphasis on student-directed learning fostered multiple opportunities for the students to develop and nurture personal leadership skills.
- The cohort model that provided continuity of mobile experiences with a select set of common classmates provided a safe and supportive environment for greater participation, curiosity and engagement in math exploration.
- The students said that this “community of learners” model also created an environment for the students to take greater personal responsibility for their own learning and ownership for supporting each other in the learning process.
- The project approach coupled with the use of the social media tools inherent to the use of the mobile devices helped the students learn a variety of strategies for problem solving. Through this process the students also gained a greater appreciation for the different perspectives of their classmates within their personal learning class network.
- The unforeseen success experienced by the students in the Project K-Nect math classes helped them develop confidence in their abilities to be successful in math, in college and in life.
- Project K-Nect had a distinct and important influence on their future that goes far beyond grades or academic achievements. A majority of the graduating students said that they are more likely now to pursue a career that uses math than they first imagined as freshman and over a quarter of the students are seriously considering a career in teaching – a testament to the transformational nature of the Project K-Nect classroom and the innovative practices of the project teachers to personalize learning and bring greater contextual relevancy to learning math.
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Transition to Tablets

The transition within Project K-Nect from a smartphone to a tablet computer as the empowering device was an evolutionary process. With collective technological advancements in tablets and a desire to enhance the learning environment, the logical next step in the implementation and the research was the introduction of the tablet as the student device. Beginning with the fall 2011 semester, students in the Project K-Nect math classes were provided with an Android based tablet with 3G/4G connectivity and new enhanced project software that utilized the Android operating system. Teachers were trained on the new hardware and software capabilities. As noted earlier, this transition provided a unique opportunity to not only study the efficacy of the tablet as a learning device but also to compare the functionality of the tablet form and features with the previous smartphone implementation results. From a research standpoint, we focused this part of the evaluation on three key components: access to the Internet, efficacy in terms of the usage, and efficiency as it relates to impact on student learning and performance.

Tablets are providing unprecedented access to the Internet – especially at home

One of the original goals of Project K-Nect was to enable students to have greater access to the Internet outside of school through a mobile device with enhanced connectivity. To understand the importance of that goal, it is instructive to first learn from the Speak Up data findings about mobile devices and home Internet access.

As we have learned through the Speak Up 2011 National Results, administrators and teachers are increasingly concerned about digital equity issues around the use of student owned mobile devices. Whereas many administrators (58 percent) are interested in the potential impact of mobile devices such as smartphones and tablets to extend learning beyond the school day, a sizeable cohort of administrators are also concerned about creating a new “digital divide” between students who have access to personal devices and those that do not. Additionally, the variety of device features also is setting up an additional layer of equity divide based upon type of connectivity and functionality. Despite this, the Speak Up data also illuminates the fact that a majority of students in grades 9-12 nationwide (55 percent) say that their primary access to the Internet outside of school is through a mobile device. Students have increasingly over the past few years shared with us that even when they have high speed broadband access to their home, their opportunity time to use that connection is often limited by siblings and parents who also want to go online for both personal and professional reasons. The mobile device therefore provides a personal access point for the student to the Internet and their extended learning live outside of school.

With the tablets, the Project K-Nect students enjoy Internet access both at school (through their school’s filtered network) and out of school (using the 3G/4G connectivity). As one Project K-Nect student explained about this use of the tablet, “This is the best Internet access I have ever had.” For many of the students, their perception is that the personal high speed access they have through the tablet is much superior to their current home access.
It should be noted that student usage of the tablets however outside of school is dictated by whether or not the parents agreed to allow their students to bring the devices home. For the most part, the parents are highly supportive of the project and gave permission for their students to have access to the device outside of school. According to some students whose parents did not sign the permission slip, it was not that their parents were unsupportive of the project, but rather they were concerned about potential liability with loss or breakage.

A majority of the Project K-Nect students (58 percent) say that they use their tablets on a weekly basis outside of school; less than a quarter of the students report that they rarely use the devices at home (23 percent). Amongst the students that use their devices outside of school at a minimum weekly, 44 percent use their tablet daily, 42 percent use it 3 to 5 times a week, and 14 percent use it at least once a week. Not only has Project K-Nect provided this cohort of students in Onslow County with unprecedented access to the Internet, but the students themselves are taking full advantage of that access as supported by their frequent usage outside of school.

Additionally, the students almost universally in all four classes noted that they never share their device with their parents or siblings at home, or allow their other family members to use the device. To do so would rob them of one of the key benefits of the tablets – their own personal Internet access. In fact, when asked to identify the most significant benefits of having access to the tablet, the number one response chosen by the students was “I like having a device that I don’t need to share with anyone else.” The Project K-Nect students are therefore highly representative of the student vision articulated in the Speak Up 2011 National Report for more personalized learning through a mobile device.

**Efficacy of the tablet as a learning tool – it’s all about usage!**

Student usage of the tablets involves both self-directed activities as well as teacher directed classroom activities. As we observed with the smartphone implementation, all three teachers have personalized the use of the tablets to fit their instructional style. And the teachers’ in class usage in many ways influences the students’ self-directed activities. When asked to identify the activities that have supported their learning of math, the students’ responses reflect both how they have used the tablets personally as well as in class.
As observed in the Project K-Nect classrooms, the capabilities of the devices and the flexibility of the software provides multiple pathways for leveraging the tools within learning, and gives the teachers many opportunities to personalize the instruction to their students’ needs as well as their particular curriculum focus.

The students themselves place a high premium on the value of having access to the tablet as part of their education. 90 percent of the students rated access to the tablet as valuable, with 44 percent calling it “very valuable.” Specifically, the students’ identified the following top ten benefits associated with having access to the tablets in math class.

**Students' Speak Up about the Top Ten Benefits of the Tablets in Math Class**

1. Not having to share the device with anyone else
2. Makes it easier and faster for me to access the Internet
3. I like math more now
4. My understanding of math has improved
5. I am more engaged in class
6. My critical thinking and problem solving skills have improved
7. Instruction is more personalized to my needs
8. Math is easier for me now
9. I can review class materials whenever I want
10. I have more confidence in my abilities to be successful in math class

In our focus groups and classroom discussions with the students, three reoccurring themes emerged about the efficacy of the devices within math. First, the “always on” feature of the devices especially when compared to laptops or netbooks was especially noteworthy. The students felt that this gave them the potential for instantaneous access to information, and more importantly, the opportunity to self-direct remediation when it was needed, without any lag time between question and answer. Second, the multiple uses for the device was especially meaningful for the students and provided them with the opportunity to customize their own usage to meet their particular needs. For some students, the calculator function was the highest priority; for others it was the communications tools. As noted earlier, this ability to self-determine which tools to use is a key tenet of personalized learning. Third, the devices provided an efficient and effective way for them to do their work. While we all recognize the power of increased student engagement on the learning process, it is especially noteworthy that the Project K-Nect students also acknowledge the impact of the devices on their
own “professional tasks” as learners. Having access to the student developed videos for example is about much more than engagement in learning; it is really about the students seeking out information about how to solve math problems from a variety of different points of view. When asked to imagine what they would tell other students about the “pros” of using a tablet in math class, the students’ open-ended responses illustrate all three of these key themes.

“Some of the great things about the tablet are being able to have answers right at your fingertips if you need help. You are able to communicate with friends if you are at home and need help or you can do on the website and look at videos on how to do the problems.”

“It is a lot better than just using a calculator. You can do so much more!”

“You can do all sorts of mathematics fast and easy.”

“The pros about using a tablet are that it makes doing math more fun than before.”

“It helps me learn better and I can communicate with my classmates on it.”

“A pro is that you have all of your work in one spot.”

“I feel like it helped me a little bit more in math by doing the problem sets with Project K-Nect.”

“You can learn from other students by using the tablet.”

“It makes class more interesting.”

“It helps you solve problems easier.”

“It is bigger than a smartphone but compact too. You can have notes and your calculator on it and take pics of notes and homework so if you forget it you will have always have it no matter what.”

“Tablets should be used in every single class of high school instead of buying four years of school supplies – just buy a tablet that will last the whole time through. :)”

The Tablet Formula: Increasing student + teacher efficiency = greater productivity and achievement

As noted earlier (and in previous Project K-Nect evaluation reports) the device is simply one component of a comprehensive project based learning approach to math instruction that leverages sophisticated software and productivity tools to increase the instructional efficiency of students and teachers. The project based learning approach within Project K-Nect is an embodiment of the Speak Up student vision for social-based learning that supports un-tethered interactions around content that is digitally rich. Just as with students nationwide, the Project K-Nect students have a strong vision for how the classroom experience, especially in math class, can better leverage technology to create a more personalized learning environment.
On the Speak Up 2011 national survey, high school students were asked to identify ways to improve their math class specifically. The top vote getters nationwide include all aspects of the student vision for digital learning:

- Collaborating with my classmates on problem solving tasks (52 percent)
- Learning from a teacher who I feel a connection with (48 percent)
- Being able to text or email my teachers with questions (43 percent)
- Learning from a teacher who is excited about math (43 percent)
- Playing online or computer math games (32 percent)
- Using a mobile device to video math lessons to review later (30 percent)
- Using animations and simulations to help visualize difficult concepts (29 percent)
- Using real time data to understand the context for math (21 percent)

**While for most students nationwide this ultimate math class is still only aspirational, for the students in the Project K-Nect math classes this kind of learning environment is an everyday reality.**

Project K-Nect students are actively leveraging class blogs and other social media tools to collaborate with their classmates both in school and out of school on math problems. The blogs in particular provide the students with a safe environment for exploring new ideas and gaining new perspectives on math, and learning in general. The students enjoy a different kind of relationship with their teacher as a result of the increased access outside of school. And the in class experience more closely mirrors a collaborative space that is learning centric – with both the teacher and the students as co-learners. The problems sets provide a high degree of context and relevancy to the instruction and the students highly value the animations and simulations that are built into the problem sets. With this more personalized, digitally rich learning environment, it is not surprising therefore that the Project K-Nect students from Southwest High School were 50 percent less likely than their national counterparts to identify “practicing problems from my textbook” as a key component of the ultimate math class.

The video capabilities of the tablets provide multiple significant benefits for the students as well as their teacher. As a regular part of the instructional formula behind Project K-Nect, students use their tablet to video each other demonstrating an approach for solving a math problem. The key components of this unique approach include:

- Providing an opportunity for students to use math terminology in a problem solving setting, thus increasing their familiarity and usage with math vocabulary.
Focus is on the problem solving process, not just getting the right answer which propels students to develop more sophisticated critical thinking skills.

Students working in teams develop teamwork and collaboration skills as they design and direct their videos, gaining a greater appreciation for their peers’ unique talents and strengths.

Students also develop a sense of responsibility for their classmates’ math success as well as their own through the collaborations and videos, creating a mutually supportive learning network within the class. Students “stand up taller” and articulate more clearly when the video light on the tablet is on!

The process creates a culture for success within the classroom that encourages the students to self-direct their learning and to have a greater appreciation for math success in particular. The result is more positive statements about math education and greater interest in math related careers.

Having access to a rich library of student developed videos that can be used over and over for remediation and homework help; a student developed “Kahn Academy “ of sorts for highly targeted math instruction that addresses the district and state curriculum.

The process provides a special opportunity for the teacher to evaluate their students’ grasp of key concepts as well as general understanding, both from doing a walk about while the students are creating their videos as well as accessing the videos on the class website and student blogs.

The tablets this year are also empowering the teachers to experiment with new approaches and tools to support their classroom instruction. A good example of this at work is Mrs. Kliwer’s use of ClickerSchool in her Algebra I classes. The ClickerSchool application provides a highly efficient way to Mrs. Kliwer to do spot assessments within the class on concepts as well as give her time and justification to provide personalized support and remediation. And the students enjoy the visibility of knowing where they are compared to their peers in the knowledge acquisition process. We were especially impressed with how the students were naturally using that knowledge to provide informal support to their classmates as well.

Student Performance on the Algebra I End of Course Exam

While we can calculate the impact of the use of the tablets within the math classes using several different metrics and evaluation techniques, the student achievement results as measured on the Algebra
I End of Course tests are important to also consider. As noted above, student achievement in Mr. Spring’s Algebra I course from fall 2011 as compared to the school wide performance in the 2010/11 school year was markedly improved with a jump of almost 21 percent in terms of students scoring at the proficiency level (Level III or Level IV) on the test. Additionally, the performance in Mrs. Kliewer’s class continues to outpace the district in student proficiency in Algebra I.

Note: Classroom performance is based upon the fall 2011 course exams. School level and district level performance is from the 2010/11 school year.

Ending Thoughts - Big Lessons Learned

Project K-Nect continues to be the premier mobile learning project in the United States, both from an implementation strategy perspective as well as for the evaluation research findings. The transition this past year from a smartphone environment to an Android based tablet environment was a significant undertaking that resulted in new research findings, most notably around the students’ acceptance of the new device and how the teachers embraced the new software and application opportunities. The “big lessons learned” from this year’s evaluation is therefore as follows:

1. Creating a supportive learning environment that values innovation and embraces student directed learning is a key component for success.

2. The skills that the students acquire through the mobile learning environment far exceed math skills and thus the value of the project must be measured holistically with regards to the students’ future success as a lifelong learner.

3. The combination of the project based learning approach with the mobile technologies serves as a catalyst for transforming the teaching practice in the classroom and builds upon the teachers’ innate capacity for sustained innovation.

4. Project K-Nect empowers a shift in thinking about the role of “technology tools” in the classroom. For the students, initially the value proposition around the use of the mobile device within math class was simply around the increased engagement in learning. Subsequently, with increased sophistication of usage, that value proposition is replaced as the mobile device becomes the agent for creating more personalized learning experiences, both in and out of school. For the teachers, the mobile learning tools take on new roles as well for student assessment and professional productivity.

With the strong national interest in leveraging technology to create more personalized learning environments, Project K-Nect stands as a proven model for not only supporting students’ interests in using the right tools for the right tasks, but it also demonstrates how the use of mobile technologies can empower a transformative way of teaching.
Methodology

This evaluation report represents the views of the 110 high school students and 3 teachers who participated in the spring 2011 implementation of Project K-Nect program and 85 high school students and 3 teachers from the fall 2011 implementations. For comparative purposes, national data from Speak Up 2011 is also included. The evaluation team collected data through onsite classroom observations, in class focus groups with students, and online surveys. Additionally, interviews with the participating teachers and school and district administrators provided additional insights. Project Tomorrow staff also collected and reviewed available class data on the end-of-course exams for Algebra I as provided by the Onslow County Schools staff.

About Project Tomorrow

Project Tomorrow®, the national education nonprofit organization dedicated to empowering student voices in education discussions, prepared this program evaluation for Digital Millennial Consulting. Project Tomorrow® has 16 years of experience in the K-12 education sector and regularly provides consulting and research support to school districts, government agencies, business and higher education about key trends in K-12 science, math and technology education.

Data collected through its Speak Up project is included in this report. Since the project’s inception over 2.6 million students, teachers, parents and administrators have shared their views through annual online surveys. The data represents the largest, authentic, unfiltered dataset from educational stakeholders.

About Digital Millennial Consulting and Project K-Nect

Project K-Nect was designed and implemented by Digital Millennial Consulting. The initiative represents a successful reference design for mobile learning in the United States. The initiative delivers managed instructional activities (a comprehensive Algebra I curriculum and resources) and support services to teachers and students via smart phones and wireless Carrier 3G network infrastructure.

Implemented in several North Carolina school systems Project K-Nect has yielded significant academic gains for student participants and has had a ‘transformative’ impact on teachers involved in the program. For more information, please visit www.projectknect.org

About Qualcomm Wireless Reach

Qualcomm believes access to advanced wireless voice and data services improves people's lives. Qualcomm’s Wireless Reach initiative supports programs and solutions that bring the benefits of connectivity to underserved communities globally. By working with partners, Wireless Reach projects create new ways for people to communicate, learn, access health care, sustain the environment and reach global markets. For more information, please visit www.qualcomm.com/wirelessreach.