Creating Our Future:
Students Speak Up about their Vision for 21st Century Learning

Speak Up 2009
National Findings
K–12 Students & Parents
March 2010
Introduction
For the past 7 years, the Speak Up National Research Project has provided the nation with a unique window into classrooms and homes all across America and given us a realistic view on how technology is currently being used (or not) to drive student achievement, teacher effectiveness and overall educational productivity. Most notably, the Speak Up data first documented and continues to reveal each year the increasingly significant digital disconnect between the values and aspirations of our nation’s students about how the use of technology can improve the learning process and student outcomes, and the values and aspirations of their less technology-comfortable teachers and administrators. Students, regardless of community demographics, socio-economic backgrounds, gender and grade, tell us year after year that the lack of sophisticated use of emerging technology tools in school is, in fact, holding back their education and in many ways, disengaging them from learning. In many communities and states, this hard realization that today’s classroom environment does not mirror the way today’s students are living their lives outside of school or what they need to be well prepared to participate, thrive and compete in the 21st century economy is actually exacerbating the existing relevancy crisis in American education. The Speak Up 2009 national findings paints a vivid picture of this continuing digital disconnect and also, advances the premise introduced with the data last year that by listening to and leveraging the ideas of our nation’s students we can start to build a new vision for 21st century education that is more reflective of the needs and desires of today’s learners. In many ways, our students are already functioning as a Digital Advance Team for the rest of us; rapidly assimilating and adapting new technologies used in their personal lives to drive increased productivity in their learning. With this year’s findings, we give voice to a new genuine “student vision” for learning and in particular, the student’s experience-based blueprint for the role of incorporating emerging technologies in 21st century education, both in and out of the classroom.

About the Speak Up National Research Project and Speak Up 2009
Speak Up is a national initiative of Project Tomorrow, the nation’s leading education nonprofit organization dedicated to ensuring that today’s students are well prepared to be tomorrow’s innovators, leaders and engaged citizens. Since fall 2003, the annual Speak Up National Research Project has collected and reported on the views of over 1.85 million K-12 students, teachers, administrators and parents representing over 23,000 schools in all 50 states. The Speak Up data represents the largest collection of authentic, unfiltered stakeholder input on education, technology, 21st century skills, schools of the future and science and math instruction. Education, business and policy leaders report using the data regularly to inform federal, state and local education programs.

In fall 2009, Project Tomorrow surveyed 299,677 K-12 students, 26,312 parents, 38,642 teachers, 1,987 preservice teachers and 3,947 administrators representing 5,757 schools and 1,215 districts including public (97 percent) and private (3 percent) schools. Schools were located in urban (38 percent), suburban (31 percent) and rural (32 percent) communities. Over one-half of the schools were Title I eligible (an indicator of student population poverty) and 42 percent of the participating schools had more than 50 percent minority population attending.
The Speak Up 2009 surveys for K-12 stakeholders were administered online between October 18, 2009 and December 18, 2009. The surveys included foundation questions about technology use, 21st century skills and schools of the future, as well as emerging technologies (online learning, mobile devices and digital content), math instruction and STEM career exploration, and the challenges faced by teachers and administrators. The survey was a convenience sample; schools and districts self-selected to participate and facilitated the process for their students, teachers, parents and administrators to take the survey. Every school and district in the United States was eligible to participate in the research project. To minimize bias in the survey results, significant outreach was done to ensure adequate regional, socio-economic and racial/ethnic/cultural distribution. To participate in Speak Up, districts registered their schools, promoted the survey to their constituents and scheduled time for their students and staff to take the 15-minute online survey. Starting in February 2010, every participating schools and districts had free, online access to their stakeholder data with comparative national benchmarks. The national data is annually summarized, analyzed and subsequently verified through a series of focus groups and interviews with representative groups of students, educators and parents.

This report is a first in a series of Speak Up reports based upon the Speak Up 2009 data collected from over 368,000 K-12 students, parents, in-service and pre-service teachers and administrators that will be released this year to inform the national, regional and local discussions about how to improve American education. Most importantly for us, we hope that the resulting discussions will also provide new guidance to the greater education community on how to fully leverage resources, both human and technological, to ensure that all students gain the skills and experiences they need to participate, compete and thrive in the 21st century economy.

Creating Our Future: Students Speak Up about their Vision for 21st Century Learning

As a reaction to this newly exacerbated relevancy crisis in American education, the 2009 Speak Up National Findings provide compelling evidence that our nation’s K-12 students are increasingly taking responsibility for their own learning, defining their own education path through alternative sources, and feeling not just a right but a responsibility for creating personalized learning experiences. This “Free Agent Learner” student profile is not a future persona for students that are beyond the current purview of today’s schools. Rather, the Free Agent Learner characteristics accurately depict the way many of today’s students are approaching learning. For these students the schoolhouse, the teacher and the textbook no longer have an exclusive monopoly on knowledge, content or even the education process, and therefore, it should not be surprising that students are leveraging a wide range of learning resources, tools, applications, outside experts and each other to create a personalized learning experience that may or may not include what is happening in the classroom. Through the Speak Up 2009 survey, we learned about the kinds of technology-based learning experiences that students are having outside of school, not directed by a teacher or part of a class assignment or homework. Those activities, self-directed by the students themselves in their quest to define their own personalized learning, included seeking out other students for collaborations, information sharing and tutoring via Facebook, taking online assessments and tests to evaluate their own status in the knowledge acquisition process on a particular topic, using cell phone applications for self-organization and increased productivity, taking online classes not for a grade but to learn more about subject that interests them, accessing podcasts and videos to help in classes they are struggling in, and finding experts (including other students) to connect with online to exchange new ideas and explore content in a myriad of new
ways. These students are not necessarily waiting for our schools to provide the tools or applications (or even for national policy to suggest a new vision) to do this; they are instead taking their educational destiny and future into their own hands by adapting the tools they have become accustomed to in their personal life for learning. Our nation’s students are, in fact, through their fearless adoption and clever adaptation of emerging technologies and tools, developing and implementing their own version of a 21st century education vision. They are, in the absence of a more relevant learning process, creating their own future.

In this report, we identify the three essential elements of this new emerging student vision for American education. At the heart of each element is the innovative use of a wide range of emerging technologies including online learning, mobile devices, Web 2.0 tools and digital content. While these three essential elements represent some dramatically new approaches to teaching and learning in a classroom setting, for the students, the incorporation of the tools and applications is merely a natural extension of the way they are currently living and learning outside of that classroom. Thus, there exists a very special opportunity today to both increase the relevancy of a student’s education experience and to start to close the persistent digital disconnect between students and educators on learning with technology. The key to unlock this opportunity is a long overdue realization that the students’ ideas on how to effectively leverage technology within learning can provide meaningful insights and even present a clear pathway for implementation. The essential elements are the first step in visioning that new pathway:

- **Social-based learning** – students want to leverage emerging communications and collaboration tools to create and personalize networks of experts to inform their education process.
- **Un-tethered learning** – students envision technology-enabled learning experiences that transcend the classroom walls and are not limited by resource constraints, traditional funding streams, geography, community assets or even teacher knowledge or skills.
- **Digitally-rich learning** – students see the use of relevancy-based digital tools, content and resources as a key to driving learning productivity, not just about engaging students in learning.

The report provides a selection of Speak Up data findings to demonstrate how students are currently leveraging a wide variety of emerging technologies to implement their vision and how their aspirations for using technology more effectively within the traditional classroom can be a catalyst for transformational change in our nation’s classrooms. Where important to the discussion of each essential element, we have also included parents’ and teachers’ views to provide a reality based context to this vision.

Our overarching goal with this report is to honor the request of our nation’s K-12 students who overwhelmingly told us in this year’s surveys they want to be more involved in education decisions at their school and to have their ideas heard. This report is therefore dedicated to all of the students whose voices need to be heard. We are listening. Go ahead and speak up!
Essential Element 1: Social-based learning

*Students want to leverage emerging communications and collaboration tools to create and personalize networks of experts to inform their education process.*

To provide clarity to the value that students place on social-based learning, the Speak Up data provides new insights into how today’s students are using advanced communications and collaboration tools, both for schoolwork purposes and in their personal, outside of school technology-infused lives. Additionally, the Speak Up data helps to illustrate the challenges students face in leveraging these tools for greater productivity due to restraints placed on their use by their schools.

**How are you currently using communications and collaboration tools for schoolwork purposes?**

*Figure 1: Students use a variety of tools to collaborate and communicate about school work*
How are students currently using communications and collaboration tools outside of school?

Figure 2: Students use a variety of methods to communicate and collaborate outside of school

Of special significance is that 43 percent of students in grades 9-12 say that their primary vehicle today for communicating with their friends online is through their social networking site.

When asked what kinds of educational experiences they had done on their own, without teacher direction or as part of a homework assignment, we learned that today’s students are developing their skills as “Free Agent Learners.” By leveraging a wide range of technology-enabled communications and collaboration tools, the students are starting to build a personalized network of experts and in fact, also sharing their own expertise in the same way with others.
While students are developing these skills outside of school, many schools are not taking advantage of either the tools or the students’ knowledge about how to use these tools within the classroom. About one-third of middle school and high school students’ report that two major obstacles to using technology more effectively at school is their inability to access personal communications accounts or send messages to classmates during the school day. Not surprisingly, therefore, one-third of middle and high school students want their school to provide access to students’ personal communications accounts and to allow access to their social networking sites. Notably, students also want to be able to use these tools to communicate with their teachers; one-third of middle and high school students want their schools to provide tools so that they can electronically communicate with teachers.

Parents are actively using many of the same tools that their children are using as well within the context of their own professional or personal activities, and thus they are developing a good foundation for supporting the students’ vision for social-based learning. In fact, over one-half of parents report they communicate using social networking tools (see Figure 4).
However, when asked about which technology tools would be a good investment to drive student achievement, only 20 percent of parents identified collaboration tools (such as blogs, social networking sites, wikis, etc) and only one-third selected communications tools (such as email, IM and text messaging). Yet, the highest ranked technology for investment in the parents’ perspective was a school website or portal with 60 percent of the parents selecting it as their top choice for driving student achievement. The parents, therefore, value the information provided to them from the school website or portal and the direct access they can have to their child’s teachers and administrators. As a result of this acceptance by parents of the value of the school website, these portals have a significant potential to be the forum for enhanced home-to-school communications and collaborations with the inclusion of some of the Web 2.0 tools already used by the students and parents.

The student vision for social-based learning is not divorced from curriculum or content. In fact, when asked to describe what instructional techniques or methodologies would be most helpful in learning math, about middle school students (47 percent) and high school students (40 percent) selected “discussing how to solve a problem with my classmates” and “helping other students with their math problems.”

This social-based approach to learning applies to how the students want to learn about careers in the science, technology, engineering and math fields. Some of the top student responses for high school and middle school students included: meeting successful role models (55 percent, 58 percent), talking to professionals about their jobs (54 percent, 52 percent) and working with mentors (41 percent, 35 percent) who can help with college and career planning.

As schools and districts examine how to effectively and appropriately engage students in learning by leveraging emerging tools that are native to students’ learning processes, the voices of the students about social-based learning provide sound recommendations.
Essential Element 2: Un-tethered learning

Students envision technology-enabled learning experiences that transcend the classroom walls and are not limited by resource constraints, traditional funding streams, geography, community assets or even teacher knowledge or skills.

Learning for today’s students is not bound or limited by the same things that constrain traditional education including geography, time, resources, teacher quality, community assets etc. Students see the Internet and the resources available to them in the world as a giant learning sandbox which they can explore at their own pace and in their own time. In many communities, the students feel a strong need to access online resources due to the lack of resources in their own community or concerns about the quality or effectiveness of their teachers or textbooks. In that sense, un-tethered learning that leverages the best educational content and learning experiences, wherever it may be in the world, is the truly ultimate classroom for today’s students. The Speak Up 2009 data provides new information about the access that students have to devices, tools and applications that empower un-tethered learning and how they want to use these resources such as mobile devices, the Internet and online learning for both personalized learning and increased productivity. The views of parents and teachers on these emerging technologies are also shared to provide a reality-based context around classroom usage.

Mobile Devices

What types of electronic devices do you have access to for your own use?

Figure 5: Students have access to a variety of electronic devices

- iPod: 85%
- Desktop: 74%
- Laptop/Tablet PC/Netbook: 70%
- Cell phone - without Internet: 67%
- Flip Camera: 42%
- Smart phone - with Internet access: 31%
- Digital Reader: 6%

G9-12
G6-8
G3-5
K-2
If allowed at your school, how would you use mobile device to help you with schoolwork?
In the student vision, mobile devices have the potential to directly impact learning and personal productivity.

Figure 6: Students’ suggested uses of mobile devices for learning

- Look up information on Internet: 70% (G9-12), 31% (G6-8)
- Take notes or record lectures: 56% (G9-12), 56% (G6-8)
- Work on projects with classmates: 55% (G9-12), 36% (G6-8)
- Access online textbooks: 48% (G9-12), 31% (G6-8)
- Take videos of class presentations or experiments: 37% (G9-12), 30% (G6-8)
- Play educational games: 31% (G9-12), 29% (G6-8)

Figure 7: Students believe that mobile devices can also enhance personal productivity

- Communicate with classmates: 64% (G9-12), 29% (G6-8)
- Receive reminders & alerts: 58% (G9-12), 37% (G6-8)
- Organize schoolwork: 53% (G9-12), 36% (G6-8)
- Communicate with teachers: 52% (G9-12), 29% (G6-8)
- Learn about school activities: 44% (G9-12), 29% (G6-8)
- Access social networking: 43% (G9-12), 30% (G6-8)
- Create/share documents or media: 42% (G9-12), 28% (G6-8)
- Upload/download to portal: 40% (G9-12), 27% (G6-8)
- Coordinate calendars: 37% (G9-12), 27% (G6-8)
- Share/Edit bookmarks: 29% (G9-12), 27% (G6-8)
Despite the increasingly widespread access to mobile devices and students’ aspirations for their use within education, they continue to fight resistance to the use of these devices in the school day. In fact, when asked to identify the major obstacles the prevent use of technology at your school, the #1 response from the students in grades 6-12 was “I cannot use my own cell phone, smart phone or Mp3 player” in school, beating out for the first time since 2003, school filters and firewalls as the students’ top obstacle.

As we have been documenting for the past few years, students have their own solutions to these obstacles. When asked to give a recommendation about how their school could make it easier to use technology for schoolwork, the top 5 responses from the students reflect the same kinds of obstacles:

1. Let me use my own cell phone, smart phone or MP3 player
2. Let me use my own laptop or netbook
3. Provide me with unlimited Internet access throughout the school
4. Provide access to my social networking sites
5. Provide tools to help me communicate with my classmates

Parents like their children are increasingly relying upon mobile technologies for communications, access to the Internet and productivity tools. Three-quarters of parents indicated on the Speak Up survey that they had personal access to a cell phone, a laptop and a MP3 player; 39 percent were using a smart phone. It is therefore interesting to examine parental viewpoints on the potential benefits of using mobile devices within instruction.

Many schools are thinking about how to use mobile learning devices within education. What do you think would be the primary benefits of using such devices within instruction?

<table>
<thead>
<tr>
<th>Potential Benefits</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases student engagement</td>
<td>43%</td>
</tr>
<tr>
<td>Prepares students for world of work</td>
<td>41%</td>
</tr>
<tr>
<td>Extends school day learning</td>
<td>38%</td>
</tr>
<tr>
<td>Provides access to online textbooks</td>
<td>37%</td>
</tr>
<tr>
<td>Improves teacher-parent-student communications</td>
<td>35%</td>
</tr>
<tr>
<td>Students can review class materials</td>
<td>32%</td>
</tr>
<tr>
<td>Personalizes instruction</td>
<td>31%</td>
</tr>
<tr>
<td>Provides way to help struggling students</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: Speak Up 2009 data, © Project Tomorrow 2010
What is your biggest concern about students using mobile devices in your classroom?

Table 2: Teachers’ biggest concerns about using mobile devices at school

<table>
<thead>
<tr>
<th>Reason</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will be distracted</td>
<td>76%</td>
</tr>
<tr>
<td>Not all students have the mobile devices</td>
<td>62%</td>
</tr>
<tr>
<td>Concerned that students will cheat using the devices</td>
<td>33%</td>
</tr>
<tr>
<td>Do not know how to effectively use the devices within instruction</td>
<td>24%</td>
</tr>
<tr>
<td>Need curriculum to support the use of mobile devices</td>
<td>23%</td>
</tr>
</tbody>
</table>

Source: Speak Up 2009 data, © Project Tomorrow 2010

Teachers indicate the same top line benefits as parents with only 13% of teachers and 18% of parents dismissing mobile devices as not having a positive impact on learning.

Despite the positive votes for the value of mobile devices within learning, teachers however still have some reservations. Interestingly, while a majority of teachers agree that the use of the devices will increase student engagement; three-quarters are concerned about the potential for these very compelling, interactive devices to distract students from their learning at hand.

To better understand how strongly parents felt about the value of mobile devices, we asked them to vote with their pocketbooks in mind, thus sending a very strong signal to the schools and districts about parental support for the use of these devices for educational purposes.
If your child’s school allowed use of mobile devices for educational purposes, how likely are you to provide one for your child?

Figure 8: Parents’ willingness to purchase mobile devices for their child to use at school

- Likely: 62%
- Not Likely: 16%
- School responsibility: 11%
- No Opinion/Unsure: 11%

Internet Access

Students tell us that a primary way that they use technology for schoolwork is to access the Internet for research. Students also tell us that they would like to have greater access to the Internet at school. About one-half of middle and high school students recommend that their school provide unlimited Internet access throughout the school and one-third of middle and high school students would like to also access the school network from any computer at home or at school to work on school projects. This discussion around levels of Internet access inevitably leads to a conversation about online safety, a particularly important concern of parents.
What concerns you the most about your child’s Internet use at school or home?

**Figure 9: Parents’ concerns about their child’s safety on the Internet**

When parents are asked to rate the use of technology at their child’s school, 41 percent of parents believe that the processes the school has in place for Internet safety and protecting personal information are acceptable. In contrast to the parental concern, high school (41 percent) and middle school (38 percent) students report they know how to be safe and protect themselves when they are online.
What is the best way for you/your child to learn about being safe on the Internet?

Overwhelming, 81 percent of parents reported that they or another family member are the best resource for their child to learn about Internet safety. Students in all grades agreed to varying degrees, younger students in grades 3rd through 5th (56 percent) were more likely than middle school students (34 percent) or high school students (26 percent) to select their parents. Students prefer different strategies for learning about Internet safety depending on their current grade, 3rd through 5th grade students prefer learning from their teacher (48 percent), through a special class (26 percent), or on their own using technology (22 percent). Aside from their parents, middle school students reported using technology in class (14 percent) was a good strategy for learning Internet safety; while high schools students (22 percent) wanted to learn on their own using technology.

Figure 10: Parents and students Speak Up about teaching Internet safety
Online Learning

With almost three-quarters of high school students saying that they know someone (a family member or friend) who has taken an online class, it is not surprising that student interest in online learning has exploded over the past few years and is a key component of the untethered learning element in the new student vision for education. However, while student interest is on the rise, students also tell us that the primary barriers to actually taking an online class are a lack of information about available classes and the logistical steps for taking an online class.

*In the past 12 months, how have you been involved in classes taught online?*

*Figure 11: Students have a growing interest in taking classes online*
What would be the most significant benefits to you of taking an online class?

Figure 12: Students take online classes to be in control of their learning

<table>
<thead>
<tr>
<th>Benefit</th>
<th>G9-12</th>
<th>G6-8</th>
<th>G3-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work at own pace</td>
<td>51%</td>
<td>49%</td>
<td>44%</td>
</tr>
<tr>
<td>Get extra help</td>
<td>35%</td>
<td>37%</td>
<td>19%</td>
</tr>
<tr>
<td>Earn college credit</td>
<td>44%</td>
<td>49%</td>
<td></td>
</tr>
<tr>
<td>Take class not offered at school</td>
<td>44%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fits schedule</td>
<td>37%</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>Get more attention from teachers</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As we have seen with other emerging technologies, parents’ own familiarity with the new tools and applications helps to solidify the value for their children. Over one-third of parents indicated in the Speak Up surveys that they have taken an online class for personal or professional reasons; an additional 27 percent said they would be interested in taking an online class. Correspondingly over 48 percent of parents recommended online classes as a good investment to help enhance student achievement.

Whether it is using mobile devices to increase student productivity or online classes to personalize the learning experience, students have good ideas about how to leverage un-tethered learning to improve student achievement.
Essential Element 3: Digitally-rich learning experiences

Students see the use of relevancy-based digital tools, content and resources as a key to driving learning productivity, not just about engaging students in learning.

Today’s students are totally immersed in the sophisticated use of digital media, tools and content in most aspects of their lives. Not surprisingly, therefore, today’s youth are consummate documentarians, documenting their lives as they are unfolding with photos, videos, blog entries, lists of favorites, explicitly named networks of friends and colleagues, status postings and rankings from online games, and opinions on just about everything that is happening in their universe. Being technology-enabled, these resources and applications are highly engaging for the students but they also provide the students with new ways to approach self-directed learning and educational productivity. The Speak Up data provides new insights about how students are currently using digital media tools, content and resources within learning and also provides guidance on student preferences for digitally rich learning environments. As a comparative, we have provided some specific parent and teacher data that relates to their values around digital content as well.

How are you currently using digital media tools, content and resources for schoolwork purposes?

Figure 14: Students’ use of digital resources for schoolwork
**How are you currently using these kinds of tools, content and resources outside of school?**

*Figure 15: Students’ use of digital resources outside of school*

<table>
<thead>
<tr>
<th>Activity</th>
<th>G9-12th</th>
<th>G6-8th</th>
<th>G3-5th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upload/download videos, podcasts or photos to Internet</td>
<td>55%</td>
<td>40%</td>
<td>18%</td>
</tr>
<tr>
<td>Participate in online games</td>
<td>40%</td>
<td>31%</td>
<td>20%</td>
</tr>
<tr>
<td>Create or modify digital media</td>
<td>40%</td>
<td>31%</td>
<td>20%</td>
</tr>
<tr>
<td>MashUp</td>
<td>25%</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Contribute to a blog</td>
<td>18%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Participate in 3D virtual reality</td>
<td>18%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Share resources (digg, diigo, reddit)</td>
<td>13%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Contribute to a wiki</td>
<td>13%</td>
<td>10%</td>
<td>8%</td>
</tr>
</tbody>
</table>

We see in the comparative of the in-school usage versus the out-of-school usage that the students are doing more creation and manipulation of digital media in their personal lives. This process of creating content from other content is a key characteristic of the Free Agent Learner who relishes the learning opportunities presented through interactive experiences. In a change from traditional education, the process of creation is as important and sometimes more important than the end result of the activity in a digitally-rich learning environment. The latest Speak Up data around the use of games and online textbooks within learning is particularly demonstrative of how students want to leverage more digitally-rich learning experiences within their unique vision for education.
Focus on Games

*What do you think would be the benefits if video or online games were part of your regular schoolwork or classroom activities?*

![Figure 16: Students value the use of games for learning](image)

Parents also have strong value statements about the potential of games to help students with learning.
Some teachers are starting to use educational games within instruction. How do you think using online or video games in schools could help students’ learning?

Table 3: Parents’ perceived value of the use of games for learning (top responses)

<table>
<thead>
<tr>
<th>Benefits</th>
<th>% Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appeals to different learning styles</td>
<td>76%</td>
</tr>
<tr>
<td>Increases student engagement</td>
<td>76%</td>
</tr>
<tr>
<td>Develops problem solving &amp; critical thinking skills</td>
<td>57%</td>
</tr>
<tr>
<td>Helps students visualize difficult concepts</td>
<td>56%</td>
</tr>
<tr>
<td>Develops creativity</td>
<td>53%</td>
</tr>
<tr>
<td>Provides immediate feedback</td>
<td>52%</td>
</tr>
<tr>
<td>Gains experience through trial &amp; error</td>
<td>50%</td>
</tr>
</tbody>
</table>

Focus on Online Textbooks

When asked to design the ultimate online textbook, the students focused on three key themes for their desired features and functionality: interactivity and relevancy of content, fostering collaborative learning and personalizing the learning process. This new online textbook desired by the students is not a CD of the printed textbook, nor is it digital reader. Rather, the students are looking for a learning tool that mirrors the way they are currently using a wide range of Web 2.0 tools and applications in their out-of-school lives. As we have seen before, with their wish list for this new kind of textbook, the students are functioning as a Digital Advance Team. They are adapting emerging technologies for educational purposes and signaling a new way for the rest of us to think about digitally-rich learning.
Imagine you can design a new kind of textbook that will be 100% online. What should be included in that new online textbook?

The ultimate textbook: Putting personalized learning in the hands of the students.

Figure 17: Students want their online textbooks to be interactive and up to date

Figure 18: Students want their online textbooks to have tools that facilitate collaboration
Figure 19: Students want to use their digital textbooks to personalize learning
Similarly, parents are also looking for a new kind of textbook to enhance their child’s learning. In fact, 93 percent of parents like the idea of an online textbook and 47 percent feel that online textbooks would be good investments for schools to make to improve student achievement.

Table 4: Parents’ recommended features for online textbooks

<table>
<thead>
<tr>
<th>Benefits</th>
<th>% Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive and Current Resources</td>
<td></td>
</tr>
<tr>
<td>Access to online tutors</td>
<td>66%</td>
</tr>
<tr>
<td>Animations and simulations</td>
<td>66%</td>
</tr>
<tr>
<td>Links to real-time data and websites</td>
<td>62%</td>
</tr>
<tr>
<td>Podcasts from experts</td>
<td>37%</td>
</tr>
<tr>
<td>Personalize learning</td>
<td></td>
</tr>
<tr>
<td>Search terms</td>
<td>77%</td>
</tr>
<tr>
<td>Electronic highlights/notes</td>
<td>71%</td>
</tr>
<tr>
<td>Quizzes/Assessments</td>
<td>67%</td>
</tr>
<tr>
<td>Brain teasers/advanced topics</td>
<td>62%</td>
</tr>
<tr>
<td>Self-paced tutorials</td>
<td>60%</td>
</tr>
<tr>
<td>PowerPoint Presentations</td>
<td>47%</td>
</tr>
<tr>
<td>Calculator</td>
<td>46%</td>
</tr>
<tr>
<td>Download to cell phone</td>
<td>23%</td>
</tr>
<tr>
<td>Facilitate collaboration</td>
<td></td>
</tr>
<tr>
<td>Communications tools</td>
<td>50%</td>
</tr>
<tr>
<td>Create podcasts/videos</td>
<td>33%</td>
</tr>
<tr>
<td>Collaboration Tools</td>
<td>33%</td>
</tr>
<tr>
<td>Webcams/Video Conferencing</td>
<td>24%</td>
</tr>
</tbody>
</table>

Though this digitally-rich learning environment represented by games and online textbooks is widely supported by both students and their parents, teachers use of digital resources lags behind these aspirations. While a majority of teachers (66%) are using digital teaching aides in their classroom such as lesson plans, test-prep software, and websites, only 26% say they are using games and only 23% are using online textbooks. Less than 12% are incorporating the kinds of interactive simulations desired by two-thirds of parents and a majority of high school students into their classroom instruction.

This disconnect around digitally-rich learning environments is even more pronounced when we examine what students say about learning math. When asked about what kinds of teaching strategies would be most helpful in learning math, the high school students identified the following digital tools as most effective:

- Using interactive simulations to solve math problems (37 percent)
- Using online or computer based math games (40 percent)
- Using animations to help me visualize difficult concepts (34 percent)

Additionally, one half of middle and high school students chose learning math by solving real world problems as the most effective strategy. This underscores the real value of the digitally-rich learning experiences for the students and why this essential element is included in their new vision for education. Whereas students will concede that incorporating technology into learning does increase student engagement and motivation for learning, it is equally important to realize that for today’s students emerging technologies such as games and online textbooks increase their personal productivity as well. Using technology as part of learning is an essential business practice for today’s students, not just an add-on for skill development or motivation.
Ending Thoughts

As this report is released, there is a great deal of discussion nationwide about new ideas for leveraging emerging technologies to drive student achievement, to reclaim our nation’s predominance in college graduation rates, and how to take back our global leadership role in innovation. Ground-breaking policies, programs and plans are being unveiled to jumpstart a new standard for 21st century learning in America. This is a very exciting time with so much promise on the horizon in terms of finally tapping into the potential of technology to transform our schools and communities, and to give all students the opportunity to be well-prepared for the jobs and careers of the future.

Each year in the Speak Up survey, we ask our nation’s students in kindergarten through twelfth grade to envision with us an ultimate school where the learning processes are designed specifically to meet the needs of today’s learners and to leverage a wide range of emerging technology tools and applications to improve student learning. In focus groups conducted all around the country, we facilitate conversations with students around this same question. The students’ response to the Speak Up questions and our subsequent conversations all point to one resounding fact: though often not explicit, our nation’s students already have a plan in mind for how to effectively leverage technology to drive student achievement and ensure that all students are well-prepared for the future, and they are, in fact, with or without the rest of us (parents, teachers, administrators, legislators, community leaders) executing their own vision for a 21st century education. Their vision is much broader than the individual technology components often described in local education technology plans and more focused on transformational changes in the learning process that are enabled by the use of a wide range of emerging technologies. The students want to be able to interact and learn from their own personalized network of experts using cutting edge communications and collaboration tools. They understand that learning is a 24/7 enterprise and need learning tools and processes that are not tethered to time, place and geographic boundaries. And they recognize from their own experiences growing up immersed in digital media that the best way to drive educational productivity is through the effective use of rich and relevant digital tools, content and resources. Technology is enabling, empowering and engaging these Free Agent Learners in ways that traditional learning paradigms are not, and thus it is, in fact, unintentionally exacerbating the relevancy crisis in American education. And that is a good thing.

The Speak Up National Research Project each year shares data findings from K-12 students, teachers, parents and administrators to inform federal, state and local policies and programs for improving education. With this year’s national findings, we are providing new insights not just into how students are using technology in school, but also the vision that the students have for a truly 21st century learning environment. Let’s use this exciting time with so many rich discussions underway about the future of education to include the voices and ideas of our nation’s students in these critical conversations. Let’s embrace the new student vision for education with its three essential elements that have the power to catalyze change in our nation’s schools. Let’s empower our students to take part in this education transformation. And let’s always remember that the future of our nation is in the hands of today’s students. Students: We are listening for your ideas. Go ahead and speak up!
Special Thanks to our Speak Up 2009 Sponsors:

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