CARY ACADEMY

HP Tablet PCs bring the world into the classroom

Cary Academy

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—Sam Morris, Instructional Technology Director, Cary Academy

HP customer case study: Independent school integrates technology into classroom with HP Compaq Tablet PCs

Industry: Education

HP recommends Windows Vista® Business

Objective:

Enhance the learning experience with a more dynamic use of technology in a grade 6-12 independent school

Approach:

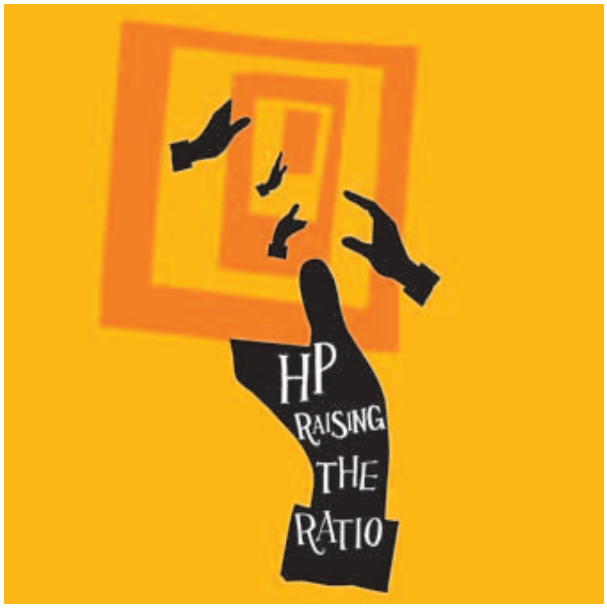
Cary Academy in North Carolina has developed a 1:1 program in which every student has an HP tc4400 Tablet PC

IT improvements:

- Guaranteed access—every student has a Tablet PC
- Tablet PC interface (stylus) supports math, science, and graphical applications
- Certified self-maintainer status enables Cary Academy to perform warranty repairs

Business benefits:

- Use of additional educational resources (and contact with people) outside the school
- More dynamic and appropriate use of technology in day-to-day activities
- Students retain possession of PCs for use outside the classroom



When Cary Academy committed itself to a 1:1 educational program featuring HP Tablet PCs, there were no halfway measures. Cary purchased some 750 HP Compaq tc4400 Tablet PCs and distributed them to every student in the school.

"We were hoping that with HP's Tablet PCs, students would make much more dynamic use of the technology, and I think in large measure, that's what has happened," notes Sam Morris, Instructional Technology Director at the school. "We want technology to enable students to maximize their learning potential and explore beyond the boundaries of the school environment. Tablet PCs are helping them do just that."

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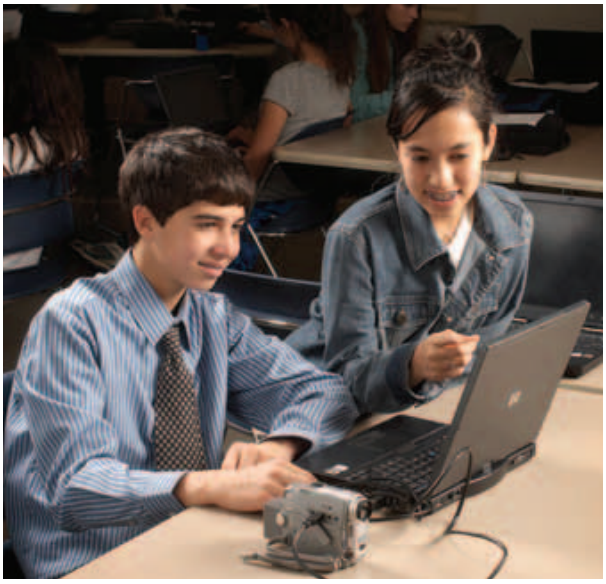

Cary Academy, located in the heart of North Carolina's Research Triangle, is an independent, college-prep school serving students in grades 6-12. Since the Academy's founding in 1997, technology has always played a role in its classrooms. For the school's first nine years, that meant having desktop PCs in all classrooms and in the media center.

"What we found over time was that our classes used the technology, but not as often as we hoped. It played a big role in projects, but not necessarily in day-to-day learning," recalls Morris. Faculty members found they had to plan for the use of technology as a special feature of a project. Morris wanted it to be fully integrated into the curriculum.

When it came time to refresh the school's classroom technology, Morris knew it would move either to traditional notebook PCs, or to tablets. He lobbied for the tablets.

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Sam Morris, Instructional Technology Director, Cary Academy

"First, they're clearly a great match for math and science education, because note-taking is rarely purely alphabetic. It tends to include symbols, diagrams, mathematical expressions and the like that a tablet is perfect for," he explains. "We anticipated that the stylus interface would help make the Tablet PC a daily tool in math and science classes, just as a keyboard is readily accessible for classes in the humanities."

In addition, he notes, Tablet PCs provide excellent classroom ergonomics. Teachers can maintain eye contact and clearly see students working with the technology.

The school evaluated major computer vendors that offered Tablet PCs, and generated a Request for Proposal. "HP clearly has a commitment to education and a support structure that proved it," Morris says. "It was clear they were dedicated to supporting technology in the education sector, and that was a big

Customer solution at a glance

Primary applications
PC access for students in grades 6-12

Primary hardware
- HP Compaq tc4400 Tablet PC

Primary software
- Genuine Windows® XP Professional
  Upgrade to Genuine Windows Vista Business
- Microsoft® Office
- Microsoft Office OneNote
- Bluebeam PDF Revu
- Adobe® Premier Elements
- Adobe Photoshop® Elements
- Key Curriculum Press Geometer's Sketchpad
- Audacity
- Key Curriculum Press Fathom
- Microsoft Internet Explorer
- Mozilla Firefox
- Smart Technologies SynchronEyes

"After our first year with the HP Tablet PCs, we asked our 300 Middle School students what piece of technology helped them learn more. Almost 20 percent cited the Tablet PC itself. In addition, quarter of them cited Microsoft OneNote, which we would never have even discovered if we hadn't gone to Tablet PCs."
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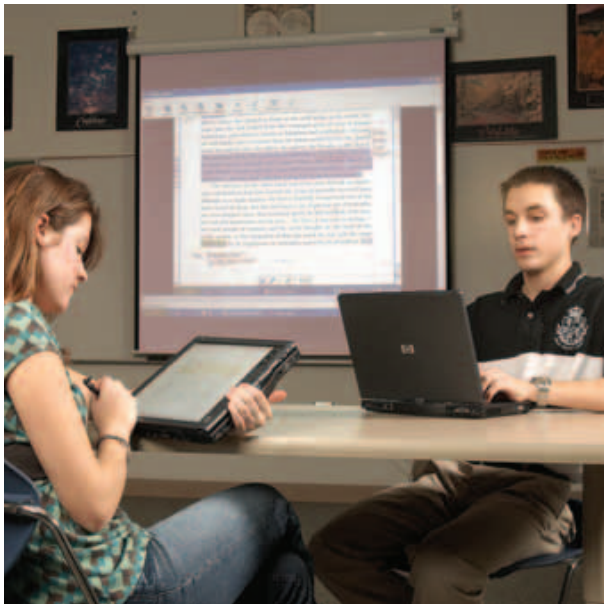

HP recommends Windows Vista® Business

factor for us." He also liked HP's adoption of Intel® processors in the HP Compaq tc4400 Tablet PC, the model Cary Academy eventually chose.

Transforming the classroom experience
The school initially purchased Tablet PCs only for the teachers. It gave them most of an academic year to acquaint staff with the technology, and to take advantage of faculty development activities on integrating it into the curriculum. The following year, it purchased Tablets for every student. The Information Services team developed a standard image of software including such applications as Microsoft Office, MS OneNote, Bluebeam Revu, Adobe Premier Elements and Photoshop Elements, Geometer's Sketchpad, Audacity, Fathom, and browsers including MS Internet Explorer and Mozilla Firefox.

"The majority of teachers have really re-thought how their classroom teaching is organized," Morris says. "What we're seeing is less teacher-centered activity—less 'sage on the stage', and a more conversational approach in the classroom." There is more student-driven learning, encouragement of individual initiative and Internet-based research, and adoption of Web 2.0 technologies, he notes.

After only six months, North Carolina State University's College of Education conducted an evaluation of Cary Academy's program. In it, students reported that the use of technology during math and science class jumped from perhaps four times a month to 20 times a month—that is, virtually every day students are in the classroom.

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"Teachers are relying less on static information like textbooks, and moving more towards Internet-based resources," Morris says. In history, students are using Questia, a web-based repository of primary history sources. Generally, he notes, students have access to real data and use it rather than pretend problems and data sets, which makes the classroom experience more relevant and tangible in their lives.

Teachers can use SmartTech SynchronEyes software to observe what every student in their class is doing, and to ensure they remain on task. It also allows them to take control of a student's screen and project it to the rest of the class—like going up to the traditional blackboard to do a math problem.

"After our first year with the HP Tablet PCs, we asked our 300 Middle School students [for the N.C. State University evaluation] what piece of technology helped

them learn more," Morris notes. "Almost 20 percent cited the Tablet PC itself. In addition, a quarter of them cited Microsoft Office OneNote, which we would never have even discovered if we hadn't gone to Tablet PCs."

Supporting the Tablet paradigm

Cary Academy became certified by HP as a self-maintainer, so that its own IT staff handles repairs under warranty. "We act like any other HP repair center would to fix or repair Tablets under warranty. That's a benefit, but the bigger thing is that we have better control over how quickly we can get that unit back in the student's hands," says Morris. To tide over students in the meantime, the school has a loaner program, so they experience little to no downtime if their Tablet is being repaired.

One of the results of the Tablet PC program is a dramatic reduction in the use of paper. Assignments are issued electronically, turned in electronically, graded and returned electronically. So Cary Academy created the virtual infrastructure necessary to support that process: shared network spaces and storage.

"Teachers quickly got tired of being e-mailed 100 documents after they had assigned some homework," Morris explains. "So we devised a network storage solution that allowed students to basically drop off their homework electronically."

The school originally developed a wired 100-megabit network throughout the campus. But for the Tablet PCs, it has added a wireless A-B-G network[1] that extends to every classroom. In addition, every classroom has a digital projector. Networked printing and copying are available throughout the campus.

Looking ahead, Morris doesn't anticipate any major changes—just working to make more of a good thing. "In our first two years with HP Tablet PCs, we've seen the classroom become a more dynamic place," he says. "We're starting to see teachers rely more and more on the global conversation, having students interact with people and information sources outside of the classroom."

Overall, the technology allows teachers and students alike to delve more deeply into subjects than they have in the past, Morris observes. "In the past, people memorized thousands of facts that today can be answered in half a second on Google. Our challenge is to change the curriculum to match the needs of our students today and in the future. Tablet PCs are helping us move in the right direction."

Contact the HP Reference2Win Program, 281-514-5755 for more information.

To learn more, visit www.hp.com

[1]Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wireless broadband requires separately purchased service contract. Check with provider for coverage in your area.

Certain Windows Vista product features require advanced or additional hardware. See http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and http://www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit www.windowsvista.com/upgradeadvisor.

This customer's results depended upon its unique business and IT environment, the way it used HP products and services and other factors. These results may not be typical; your results may vary.

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