Are Your High School Students Tech-savvy Enough For College? Many Are Not
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Transitioning from a high school environment into the complex world of higher education is often difficult for students. For students planning to become K-12 teachers, this process is especially complex, as they enter their preparation already “apprenticed” from the K-12 world. This means that the experiences they had in their own K-12 structures heavily impact their perception of what a good teacher is and how to go about being a successful teacher. Though the use of computer technologies in teaching and learning has been championed for decades, and standards established (ISTE NETS-S) for K-12 students, aspiring teachers have not always experienced powerful technology use for teaching and learning in their high school years.

As these high school graduates enter college, they are expected to possess basic skills in word-processing, spreadsheet, presentation, Internet, and digital media. Some begin their college years ready to use digital technologies in rigorous ways to support their achievement in their coursework. Others lack even basics skills in the areas identified above. Even more astounding, many who lack these basic skills are UNAWARE that they are deficient in these areas of technology skill, believing instead that they are quite tech-savvy.

As an example of what types of skills are deemed “basic” by college faculty, we would like to share the instrument used at Bowling Green State University to assess the technology skills of entering freshmen who are majoring in teacher education. This assessment resulted from the realization that many college freshmen were not tech-savvy enough to use computer technologies in college-level work. Faculty members were frustrated by varying levels of student computer skills evidenced in their coursework; while some students were able to complete course assignments requiring technology use, others needed a tremendous amount of tutorial support in order to create basic presentations or spreadsheets. In an effort to insure students would have basic technology skills at the beginning of their college career, we implemented an Assessment of Technology Competencies <http://edhd.bgsu.edu/atc/info>.

Currently, the assessment is a four-page document that details the construction of three digital products to be completed by the student in a proctored, one-and-a-half hour session in the college’s computer lab. The products utilize word-processing, spreadsheet, presentation, and graphics software applications, and integrate Internet and file management expertise (Banister & Vannatta, 2005). These computer skills have been identified by ISTE, as well as BGSU faculty, and are considered to be essential for first-year education students. Students receive a score, based on a 40-point scale, upon completion of the assessment. If students are unable to successfully complete the ATC, they are allowed to retake the assessment the following month, to earn a passing score.

While four different versions of the ATC are used in this process, one particular version included a prompt in the word-

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processing section asking students to write about their high school experiences and computer technology. The exact prompt reads, “In the left hand column, write one or two paragraphs describing how you used computers in your high school classes.” Directors of the ATC began reading these essays and were struck by the varying descriptors shared by students. These teacher candidates’ responses included statements such as “In my small-town high school, we had few computers.” and “In high school we rarely used computers.” In contrast, others related, “In high school I used computers everyday.” One student shared, 

“In our high school, teachers used computers a lot to show what they wanted to teach. Often teachers would use PowerPoint presentations to help with their teaching. This helps the visual students learn better. The teachers often assigned projects that we had to use computers to do.”

“I personally used computers a lot in many of my projects. I made a PowerPoint presentation that was shown at a pre-prom assembly about not drinking and driving. This was shown to both the junior and senior classes. I also had to use computers to type all my papers for classes. We had many assignments with searching Web sites at our school also.”

Obviously, these students had very different experiences and perceptions involving technology integration at their high schools. We wondered if these perceptions would correlate with the skills students were bringing to their college coursework. Surprisingly, many of the students who indicated they were quite prepared to use computer technologies still FAILED the ATC. We categorized these students in a group entitled “High Perception/Low Score” (HPLS) and are working to understand this type of student. In the first round of testing, 32% of the students taking the ATC fell into this category. Perhaps what they consider to be solid computer skills don’t translate as such in the college arena.

### How did you use computers in your high school?

#### Examples of High and Low Perception Statements

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<tr>
<th>HIGH PERCEPTION</th>
<th>LOW PERCEPTION</th>
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<tr>
<td>In high school we were required to know how to use computers. All of our papers and other important documents had to be typed on a computer in order to be graded. Not only were we required to type all of our papers, but the school mandated that all of the students take a technology class.</td>
<td>In high school my computer use was minimal. I basically only used computers for three things. The first was typing school papers. The second was browsing the Internet. Finally the third was for my semester in yearbook.</td>
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<tr>
<td>I used computers in high school in many different ways...I mainly used computers to do research in high school.</td>
<td>In high school, I barely ever had to use computers. When I did, it was for research. No type of computer class was mandatory, and I had better subjects to learn than computers skills...</td>
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<td>Computers are a very important component of any high school experience. Not only are there papers to write and research, but also there are classes that revolve around computers...</td>
<td>In my high school we had three computer labs and a computer in every classroom. We were allowed to use the labs for homework assignments and research, nothing else. The classroom computers students weren’t allowed to use at all, which we all thought was strange and unusual.</td>
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### High Perception, Low Score (HPLS)

Students who described their use of technology in high school as strong, yet were unable to pass the basic skills test often described their computer strengths in two areas: use of word processing and researching the Internet. For example:

*At XXXX High School the students used the computers frequently. We would often use them during class for writing papers, or simply searching the Web. There were many computer labs in the school, and almost every period they would be packed with students. If a teacher needed a computer lab for their class, all they had to do was simply reserve the room, and the students were free to use the computers. Technology was very important at XXXX High School.*

Some students who we categorized as HPLS described their use of computers as skillful because of the amount of time they spend on computers at home. For example:

*In high school I used my computer for many things. I spent many nights on the Internet talking with my friends using Instant Messenger. I also used the computer to complete all my homework assignments. Having a computer helped me greatly. I was able to hand in documents that were neat and organized compared to my handwriting.*

These statements indicate that students are using technology, but the computer uses they describe do not provide them with the necessary skills they will need in higher education. Faculty in the College of Education at BGSU are expecting students to at least possess the basic technology skills of word processing, spreadsheet, presentation, and graphic software along with Internet skills and file management.