Computer Usage and Perceptions of Incoming Students at a 2-year Agricultural School[1]

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Abstract

Many college professors assume incoming students are technologically savvy and have the appropriate computer skills for college. This research was conducted to determine if students perceive themselves to have appropriate computer skills upon entering college. A survey of incoming freshmen at the Ohio State University Agricultural Technical Institute (OSU ATI) was conducted in orientation classes during Autumn Quarter, 2010. Students were asked to rate their perceived level of computer competence in several areas including: email, digital photo editing, Internet research, word processing, spreadsheets and database usage. Most students felt their skills to be intermediate in the areas of email, Internet research and word processing. Skills in digital photo editing and spreadsheets were perceived as between beginner and intermediate, indicating less confidence and/or experience in these areas. Almost all of the students felt that computer skills would be helpful in college and that college would only add to their skills. Additionally, almost 90% of the students brought a computer to campus. Intriguingly, fewer than 8% of students reported that computers would not be helpful in their college careers, nor would they be helpful in their future careers.

Introduction

Technology and computers have become ubiquitous in today's society. The current group of college students and those who will be entering college in the next few years are often termed 'digital natives' (Prensky, 2001). These students have grown up with computers, cell-phones, MP3 players and the Internet. The use of technology in academic settings has also increased in recent years with the advent of Web 2.0, course management software, educational cell-phone applications, and social networking sites geared toward education. Due to the pervasive nature of technology in today's academic and non-academic settings, the assumption is often that students enter college with not only basic computing skills, but often advanced computing skills.

Incoming students not only navigate all the challenges and new experiences of college, but must learn new technological skills. In today's paperless society, course scheduling, registration, applying for financial aid and similar activities are completed online. Course management software is utilized for posting grades, discussions, assignment submission and testing. Because today's "digital natives" have grown up in, and are connected to, this virtual world the assumption is students are computer savvy. This includes having the knowledge and skills needed to navigate the online world with ease and utilize it effectively to increase their academic skills, knowledge and job readiness.

Employers have long been selecting college students with appropriate computer skills. More than a decade ago, 83% of potential employers reported technology skills as important or very important when making hiring decisions (Monk et al.,1996). As expected, recent studies confirm that employers continue to feel computer skills are important for recent college graduates (Bartholomes, 2004, Gupta, 2006 and Johnson et al., 2006). Since it is assumed that students already possess adequate computer skills, many colleges do not require a basic course in this area. Fewer still test incoming students on their computer skills.

If colleges are assuming the "digital natives" have at least basic computer skills, what do the students feel their perceived level of skill to be? Johnson et al. (1999) found that this assumption that students already have the skills needed in college was prevalent in the

1990's. However, little research has been conducted recently to verify if in fact this assumption made by faculty is also made by the students themselves. The main purpose of this paper is to determine if the assumption that incoming college students are "digital natives" holds true in the students' eyes.

Methods

The research reported in this article took place at OSU ATI which has Associate Degree programs in 29 areas of study, mostly related to agriculture or horticulture. However, there are also programs in business, biotechnology and engineering technologies. Incoming students enrolled in the orientation courses (General Studies 201T: Personal and Career Orientation and Food, Agricultural, and Environmental Sciences 100: Food, Agricultural, and Environmental Sciences Survey) at OSU ATI were surveyed about their computer usage and perceptions during Autumn quarter 2010. The orientation class was selected because it is a required class and is typically taken during the student's first quarter of enrollment.

A 15-question survey was designed with the following research objectives in mind:

1. Report the demographics of the incoming students enrolled in the orientation course and their use of computers prior to attending college.

2. Determine the students' self-perception of their computer skills and if they perceived those skills would be important while in college.
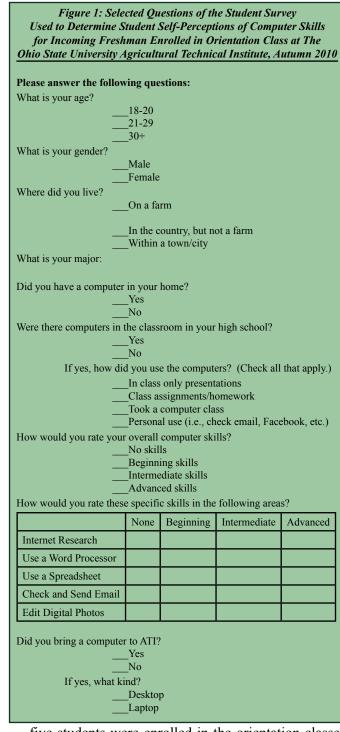
3. Correlate if student background (rural vs. non-rural) contributed in a significant way to student perceptions of their computer ability.

4. Evaluate if the students feel their computer skills would be enhanced while in college and if their skills would be important for future career success.

A portion of the survey instrument is included in Figure 1. Five questions were used to gather demographics while the other ten gained insight into whether the students had computers in their home or school and how they were used. Questions were asked to determine how students felt they would utilize computers while in college and if their computer skills would be enhanced in college. Finally, questions were asked to gauge how important students felt computer skills would be for their future careers. There were opportunities for the students to explain their answers as well.

Surveys were given to nine Orientation instructors to administer in their classes. Two instructors did not return completed surveys. The students were asked to complete the surveys during class time and participation was voluntary. Three hundred twenty-

Figure 1: Selected Questions of the Student Survey Used to Determine Student Self-Perceptions of Computer Skills for Incoming Freshman Enrolled in Orientation Class at The Ohio State University Agricultural Technical Institute, Autumn 2010

Please answer the following questions:

What is your age?
___18-20
___21-29
___30+

What is your gender?
___Male
___Female

Where did you live?
___On a farm
___In the country, but not a farm
___Within a town/city

What is your major:

Did you have a computer in your home?
___Yes
___No

Were there computers in the classroom in your high school?
___Yes
___No
If yes, how did you use the computers? (Check all that apply.)
___In class only presentations
___Class assignments/homework
___Took a computer class
___Personal use (i.e., check email, Facebook, etc.)

How would you rate your overall computer skills?
___No skills
___Beginning skills
___Intermediate skills
___Advanced skills

How would you rate these specific skills in the following areas?

	None	Beginning	Intermediate	Advanced
Internet Research				
Use a Word Processor				
Use a Spreadsheet				
Check and Send Email				
Edit Digital Photos				

Did you bring a computer to ATI?
___Yes
___No
If yes, what kind?
___Desktop
___Laptop

five students were enrolled in the orientation classes and 215 valid responses were collected for a return rate of 66%. Of the 29 technologies offered at OSU ATI, 23 were represented.

Results and Discussion
Demographics and computer availability of the incoming class of students at OSU ATI

Approximately 93% of students were of traditional college age, 18 – 20, 6% were 21 – 29 years old and 1% were over 30. Approximately two-thirds (61%) of

Computer Usage and Perceptions

Table 1. Demographic Statistics for Incoming Freshman Enrolled in Orientation Class at The Ohio State University Agricultural Technical Institute, Autumn 2010

Factor	Label	Number	Percent
Gender	Male	131	61
	Female	84	39
Age	18-20	197	92
	21-29	15	7
	30+	3	1
Background	Rural	157	73
	Non-Rural	58	27

those surveyed were male. Just under three-fourths of the surveyed students came from a rural setting, while 27% reported living within a town or city. See Table 1 for demographic statistics.

Ninety-three percent of the students had a computer in their home and 86% responded there were computers in their high schools. Of the 185 students who had computers in their high schools, 71% used the computer for in-class presentations, and 82% used computers for class assignments or homework, 39% used computers for personal use, and 61% completed a computer class. Ninety-nine percent of students had at least some exposure to computers prior to attending OSU ATI.

Most students (90%) also brought a computer to college with them. Of this 90%, 4% brought a desktop, 95% brought a laptop and 1% brought both a desktop and a laptop. It should be noted that a small percentage of OSU ATI students are commuters and this group may be included in the group of 22 students who did not bring a computer to campus. Interestingly, five of the students who did not bring a computer to college did not have a computer at home, four did not have access to one in high school, and one did not have one at home or in high school. The majority also thought they would be using a computer at least daily for school related activities, with most (69%) thinking they would use the computer two to four times per day for school.

Computer skill level perceptions of the incoming class of students at OSU ATI

The students were also asked to rate their overall computer skills in addition to specific types of computer skills. The results as a raw number and percentage can be seen in Table 2. The bulk of the students (65%) felt their overall computer skills were intermediate. Twenty one percent felt their skills were beginner, 13% felt their skills were advanced and 2% felt they had no overall computer skills.

As stated before, many faculty assume that incoming college students already have appropriate computer skills. This research confirms that students perceive themselves as already having these skills and generally at an intermediate level. Not surprisingly the skills the students feel most confident in are the ones that they would partake in most often such as emailing, word processing, and using the Internet. This research did not measure the students' actual ability in these areas so no conclusion can be made to see if the students' perceptions of themselves match reality.

Perceptions of the importance of having computer skills for the incoming class of students at OSU ATI

When asked if they thought they would gain additional computer skills while in college, 91% responded "yes." The reasons why students thought their skills would improve included: more computer use in classrooms and assignments, Internet research, and taking a computer class. Of the 9% that answered no to the question, most stated that they would not gain any additional skills because they would not be taking a computer class or they already knew everything they needed to know in regards to the computer.

A majority of students (93%) also believed computer skills would be important for their future. Based on the reasons given, it was observed that most students were thinking of computers very narrowly in the sense of the actual computer hardware or software programs. However, some were thinking more broadly about computers, such as equipment and/or facilities being run by computers. The 16 students that said computer skills would not be important for their future careers seemed to have a very negative outlook on computers. Most gave reasons such as they would not need it for their career (artificial insemination technician, farmer, owner/operator of a winery, lawn

Table 2. Self-Perceived Computer Skill Level for Incoming Freshman Enrolled in Orientation Class at The Ohio State University Agricultural Technical Institute, Autumn 2010[z]

Skill		None	Beginning	Intermediate	Advanced
Overall Computer Skills	#	4	45	139	27
	%	2%	21%	65%	13%
Internet Research	#	0	28	141	46
	%	0%	13%	66%	21%
Use a Word Processor	#	3	33	123	56
	%	1%	15%	57%	26%
Use a Spreadsheet	#	23	84	82	26
	%	11%	39%	38%	12%
Check and Send Email	#	5	24	88	98
	%	2%	11%	41%	46%
Edit Digital Photos	#	51	63	66	35
	%	24%	29%	31%	16%

[z] Percentages rounded to nearest whole number.

maintenance) or that they did not like computers and therefore did not want to use them.

Since many students at OSU ATI come from rural backgrounds the authors also wanted to determine if student background (rural versus non-rural) impacts a student's perceived level of computer skills. Therefore, a single factor analysis of variance was performed and showed no difference in student perception of their computer skills between rural and non-rural students. Thus, the background of a student did not impact his/ her perceived computer skill level.

Summary

Even though the assumption is that all incoming college students are "digital natives," this is not always the case, though it is reasonably accurate in the eyes of the student for the majority of students at OSU ATI. Though most students had access to a computer either at home or at school, some students did not, though this is a very small number. Indeed, a greater percentage of students attending OSU ATI had access to a computer in the home than in the general population of the United States (Marvist, 2009).

The background of the student (rural versus non-rural) did not impact his/her perceived computer skill level. The vast majority of students thought that they had intermediate overall computer skills. However, a few students admitted that they had no computer skills at all. All of the students surveyed thought that computer skills would be important while in college, and over 90% thought their computer skills would be enhanced in college. Yet, seven percent of students surveyed believed computer skills would not be important for their future careers. This research shows that most incoming college students do perceive themselves as having some computer skills, but the generalization that all college students are "digital natives" cannot be made. Future research will include faculty perceptions of student computer skills and testing the students' actual skills to corroborate if their perceived skills and their actual skills are similar.

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