What Else Do College Students Know Besides Using E-mail and the Internet?

Since 2001 students in the Introduction to Computer Science, a general education class, (from here on referred to as gen ed) and students in the Introduction to Microcomputers classes, a College of Business (from here on referred to as Business) required course have been surveyed during the Fall Semester in order to determine what they know about information technology and the tools available. They were asked questions about their use of and skill level with the Microsoft Office suite of products, using e-mail and the internet.

There were 1,542 respondents in this sample – 753 (48.8%) were in the general education course and 789 (51.1%) in the Business course. The mean age was 21.0 for the gen ed students and 20.1 for the Business students. The students ranged in age from 16 to 62 for the gen ed students and from 17 to 50 for those in the Business group. In the sample 60% were male and 39% were female for gen ed students and 62% female and 38% male for the Business students. The average year of graduation for both groups was 1998. The following table illustrates the breakdown by year in school classification:

<table>
<thead>
<tr>
<th></th>
<th>COMS100 (gen ed)</th>
<th></th>
<th>COMS101 (Business)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>183</td>
<td>24.00%</td>
<td>187</td>
<td>23.60%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>104</td>
<td>13.60%</td>
<td>158</td>
<td>19.90%</td>
</tr>
<tr>
<td>Junior</td>
<td>59</td>
<td>7.70%</td>
<td>86</td>
<td>10.80%</td>
</tr>
<tr>
<td>Senior</td>
<td>31</td>
<td>4.10%</td>
<td>15</td>
<td>1.90%</td>
</tr>
</tbody>
</table>

This homogeneity also was evident in a number of other areas. Over 90% of the students in both groups used a computer in high school and over 90% use a computer at home. Over 75% in both groups had either their parents or friends help them learn to use a computer and over 80% in both groups had at least one high school course that required the use of a computer.

When asked if they brought their own computer to school 54.7% of the gen ed students said yes and 60.5% of the Business students answered yes. This high percentage of Business students bringing a computer to campus is interesting in light of the fact that the Business students are required to lease/buy a laptop computer when they are admitted to the College of Business and they have no choice as to make or model.

So if students are going to bring a computer to campus what is it going to be – a desktop or laptop and what kind. Most of the students in both groups are bringing desktops. For the gen ed students the brand of choice is a Compaq and for the Business students it is a virtual tie between Compaq and HP.

Analysis of the data shows that students used computers in many of their high school courses. This usage reflects the students’ assessment of their skill level and amount of experience with respect to the information technology areas being studied. The data also reflects the difference between the two groups of students in the study. It would be safe to say that if a student used a
computer in an English class, the student was probably using a word processor to do the work in that class.

One would expect the percentages for use in an English to mirror used the percentages of students that use word processing. For the Business students this appears to be true, but not for the gen ed students.

The following is a table which shows how students used computers in high school courses.

<table>
<thead>
<tr>
<th></th>
<th>COMS100 (gen ed)</th>
<th>COMS101 (Business)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used in Math Course</td>
<td>169 (22.60%)</td>
<td>267 (34.10%)</td>
</tr>
<tr>
<td>Used in English</td>
<td>612 (81.90%)</td>
<td>640 (81.60%)</td>
</tr>
<tr>
<td>Used in Science</td>
<td>332 (44.40%)</td>
<td>306 (39%)</td>
</tr>
<tr>
<td>Used Word processing</td>
<td>696 (93.20%)</td>
<td>746 (84.70%)</td>
</tr>
<tr>
<td>Used Spreadsheeting</td>
<td>510 (68.30%)</td>
<td>566 (72.20%)</td>
</tr>
</tbody>
</table>

With all of this use of the computer at home, school and college what do these students do well? Students in both groups can use the internet, they can send e-mail, and they feel confident in using a word processor and have experience in playing games. They don’t have as much skill and experience with programming, working with a spreadsheet, database and presentation software.

Students were asked to self report their skill level as being one of the following: poor or none; fair, good; or expert. They were also asked to self report their amount of experience using one of the following responses: little or none; some; more than average; or a lot.

Over 80% in both groups consider themselves as being either ‘good’ or ‘expert’ in sending/receiving e-mail and they have the experience to back it up – over 80% in both groups indicated they had ‘more than average’ or ‘a lot’ of experience with e-mail. Only 2% in both groups considered themselves as having ‘poor’ or ‘no’ skills. In the gen ed class, 3.1% had little or no experience in using e-mail while there were only 2.4% in the Business group.

The same can be said for using the internet - over 80% in both groups considered themselves as being either ‘good’ or an ‘expert’ and over 80% said they had ‘more than average’ or ‘a lot of’ experience in finding information on the internet. However, 2.6% of the gen ed students reported they had ‘poor’ or ‘no’ skills with the internet while only 1.4% of the Business students did. These percentages for both groups with ‘poor’ or ‘no skill’ are also reflected in their amount of experience in the category of ‘little or no experience’.

In addition to most students feel comfortable in using e-mail and the internet, most students express having good skills and experience with a word processor. Over 70% said they were either ‘good’ or ‘expert’ in word processing and over 75% said they had ‘a lot’ or ‘more than
average’ experience in using a word processor. However, there are some students who don’t have any experience with a word processor and as result feel they have ‘poor’ or ‘no’ skills in using a word processor.

Students in the groups are differentiated on skills, or lack thereof, and experience or lack thereof in using a word processor. For the gen ed students 5% had ‘little’ or ‘no’ skills and 3% reported ‘little’ or ‘no’ experience. On the other hand only 2% of the Business students had ‘little’ or ‘no’ skills with only 1.9% having ‘little’ or ‘no’ experience.

This lack of experience is also reflected in both groups when considering the amount of experience in playing games. For gen ed students 10% reported they didn’t have much experience playing games and 8.8% of the Business students responded similarly. Over 50% in both groups had ‘more than average’ or ‘a lot’ of experience playing games.

Students were not asked to rate themselves on their skill level just their experience.

Student were asked to rate themselves on the use of the spreadsheet, one of the applications where more students do not rate themselves as high as the other areas and more students in both groups have lesser amounts of experience. This is also an area where you start to see a more noticeable differentiation between groups.

In assessing their skill levels many students in both groups do not rate themselves as having ‘expert’ skills nor do they have as much experience. For students who rated themselves as having ‘good’ skills 30% were gen ed students and 36% were Business students. When considering those who rated themselves as ‘expert’ both groups had 4+% in this response category. The amount of experience also reflects the trends demonstrated in the skill levels. Fewer in both groups had ‘a lot’ of experience and fewer in both groups had ‘more than average’ experience.

On the other end of the spectrum there are more students in both groups who have ‘poor’ or ‘no’ skills and ‘little’ or ‘no’ experience. For gen ed students 24% fall into this category and 18% of the Business students. However, 40% in both groups said they had only ‘fair’ skills in use of a spreadsheet. For the amount of experience 25% of the gen ed students and 18% of the Business had ‘little’ or ‘no’ experience. Again over 40% in both groups said they had only ‘some’ experience in using a spreadsheet.

The number of students in both groups who self report as being either ‘expert’ or ‘good’ falls off noticeable while those students in both groups who self report having ‘poor’ or ‘no’ skills increases noticeably. Only 1+% in both groups report themselves as being ‘experts’ in database skills. When considering those rating themselves as ‘good’, 14% of them are gen ed students and 19% are Business students. As a result of fewer students in the ‘expert’ or ‘good’ categories, there are now more students in the ‘pair or no’ and ‘fair’ response categories. For those students with ‘little or no’ experience 46% are gen ed students and 35% are Business students. In the ‘fair’ category, 36% are gen ed students and 42% are Business students.
Is this diminished self report of skill level reflective of the diminished amount of experience in using an Access database? Yes, it is. Only 2% of both groups reported they had ‘a lot’ of experience and only 7% and 10% of the gen ed and Business students, respectively, had ‘more than average’ experience using Access. While 62% of the gen ed students and 55% of the Business students reported they had ‘little’ or ‘no’ experience – 26% and 31% of the gen ed and Business students respectively said they has some experience.

The experience with and skills related to presentation software follow the same trend as illustrated above. Few in both groups consider themselves as ‘expert’ and only 20% rate themselves as ‘good’ in both groups. Yet 30+%, in both groups, indicate that they have ‘poor’ or ‘no’ skills and 30+% rate themselves as ‘fair’.

The amount of experience parallels the skill level. For the response category ‘a lot’ of experience there are 5% & 6% for the gen ed and business students respectively. For those having ‘little’ or ‘no’ experience, 43% of the gen ed students were in this category and 39% of the Business students – 34% and 36% gen ed and Business, respectively, indicated they had ‘some’ experience.

Students in the Introductory courses in Computer and Information Sciences have a good foundation and familiarity with the most popular software applications. They have experience with and good skills in use of e-mail, the internet and word processing. They can send and receive e-mail; they can search and use the internet to find anything they need. They can use a word processor to generate any written document they need. But for many students their skill level changes and amount of experience is lacking when considering spreadsheets, databases and presentation software.

For educators, this may signal a change in the amount of time devoted to the above topics. More time spent on spreadsheets, database and presentation software. Less time on e-mail, internet usage and word processing or more time in other areas associated with e-mail, internet and word processing. For example more time spent on the more technical aspects of e-mail like protocols, ethics, security, etc; more time on internet ethics, e-commerce on the internet, authenticity of information on web pages, etc.; more time on the creation of an index, table of contents, mail merge, data manipulation by using a word processor.

Because of the varying degrees of knowledge of students on the topic areas, as demonstrated by this research, there will always be the need for some type of introductory course in Information Technology.

---

1 In the survey, the question about the skill level using a database did not specify any particular database. The author is assuming the Access database is referred to because of the prevalence of Microsoft products in education market.