# UNIVERSITY STUDENTS' COMPUTER SKILLS: A COMPARATIVE ANALYSIS

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**ABSTRACT**
As technology advances, its impacts on people's lives have become more visible. Therefore the dependency on technology has increased in time. Computers are of the most outstanding ones of the technological devices which become part of daily routines. To be able to make use of such a facility, recognizing the potential role of computers and being technologically literate are essential. Computer skills must be improved to become technologically proficient and to prevent the prospect negative situations in the career. In the recent years, education has started to be one of the fields which uses computer based technology intensively. Thus, having computer skills and using computer based technology effectively during the classes have started to become important aspects for teachers. In this study, it was tried to find out the computer skills of university students and their experience levels of using defined software.
**Keywords:** University student, computer skill, physical education.

## INTRODUCTION
In order to be successful in academic programs and careers, it is essential that university students possess improved computer skills (Furst-Bowe & Boger, 1996). There are a lot of factors producing wide variations in the computer skill levels of college students, such as the courses they completed at high school and college, their academic major, their work experience, and their personal interest in computers and computing (Smith & Furst-Bowe, 1993). There is little agreement on what skill level was necessary for success in introductory and advanced coursework or on the types of computer skills necessary to obtain and maintain employment after graduation (Furst-Bowe & Boger, 1996). Researches suggest that factors such as gender, age, experience, and interest in computers might affect students' attitudes toward computers and their computer skills as well (Morahan-Martin, 1992).

Many faculties expect students to know how they should use a word processor to create and format papers, make use of software for classroom presentations and speeches, use spreadsheet software to prepare charts and graphs, navigate the internet for research, and have the ability to learn and participate in online classrooms using various software (Lahore, 2008). On the other hand, many students do not have the knowledge, memory, learning, intelligence, or expertise to assess what they do and do not know and what they need to learn to succeed in a particular course. Because they essentially "don't know what they don't know," they are unable to recognize their exact level of competence (Kennedy, Lawton & Plumlee, 2002).

Technology is human innovation in action and computer literacy is the basic condition for technology learning environment (International Technology Education Association, 1996; Li, 2008). The term *"computer literacy"* is often used as a basis of making decisions regarding a student's ability to perform specific tasks on a personal computer (Lahore, 2008). Computer literacy is important, because it transforms the computer's capability into proficient and productive activities (Simonson, Maurer, Montag-Torardi & Whitaker, 1987). It consists of the experience and ability to operate computers, including knowing the structures of computer software and hardware, having the skills to operate computer software, and applying computer usage to social issues (Foreman, 1998; Lin, 2003; cited in Li, 2008).

The abilities on information technologies have turned out to be vital elements which effect individual economic success, political participation and social interaction. As the information technology becomes more widespread, the importance of computer and technology use increases and turns out to be an important element in human resources (Ono and Zavodny, 2004). Educational technology will contribute to the solution of many problems if it is used accurately. During the last few years educators have begun to use computer assisted teaching methods often to increase the student participation to the classroom activities and to promote access to learning materials. Computer assisted teaching which is defined as the use of computer by the students in teaching is an interactive process which makes learning easier (Azarmsa, 1991).

The aim of this study is to discover computer skills of the university students and the effects of owning personal computers, the presence of computer labs at their schools and their families' computer skills on the students' computer skills.

## METHOD
### Research Scale
In the study, a 42-item-likert type scale measuring different competence areas on computer using was applied. The students had to choose one of the options between 1-4 in each question; No Experience, Little Experience, Some Experience and High Experience.

In the analysis, the grading was done as: No Experience=1, Little Experience=2, Some Experience=3 and High Experience=4

The scale consists of six parts. In the first part, there are personal questions like having a computer at home, having a computer laboratory at school, family's computer using and benefiting from the computer laboratory. There are items measuring the skills on Windows in the second part, Word in the third part, Excel in the fourth part, PowerPoint in the fifth part and multimedia programs in the sixth part.

In the scale, there are 9 items related to Windows, 9 items related to Word, 8 items related to Excel, 8 items related to PowerPoint, 8 items related to multimedia programs.

### Reliability of the Scale
Having Cronbach Alpha level higher than .60 is enough to consider the scale as a reliable one. In the computer use capacity scale used in this research, Cronbach Alpha level is 0,982 for the Recreation Department and 0,992 for the Sport Management Department.

### Research Data
The data of this research was obtained by applying the mentioned scale to 282 students studying at Sakarya University Physical Education Sport College Recreation and Sport Management Departments during 2009-2010 academic year. According to the results of the applied scale, an evaluation was made considering the situations of having a computer at home, having a computer laboratory at school, family's computer using and benefiting from the computer laboratory.

### Statistical Methodology of the Research
Qualitative and quantitative research skills were used in this research. SPSS Statistics Program was used to analyze the research. Each competence area was evaluated by the frequency, percentage and mean values according to having a computer at home, having a computer laboratory at school, computer using and always benefiting from the computer laboratory of the family. At the last stage, each individual's total points from the whole scale were analyzed and evaluated considering the situations of having a computer at home, having a computer laboratory at school, family's computer using and benefiting from the computer laboratory. For each variable frequency and percentage values were given in addition to Independent Samples T-Test is used to find the correlation between the variables.

## FINDINGS
### Demographic Situations of the Participants

Table 1. Demographic Situations of the Participants

| Variables | RECREATION | | MANAGEMENT | |
|---|---|---|---|---|
| | N | % | N | % |
| *Is there a computer at home?* | | | | |
| Yes | 70 | 48,6 | 54 | 48,2 |
| No | 74 | 51,4 | 58 | 51,8 |
| **Total** | 144 | 100 | 112 | 100 |
| *Is there a computer lab at school?* | | | | |
| Yes | 90 | 62,5 | 19 | 17,0 |
| No | 54 | 37,5 | 93 | 83,0 |
| **Total** | 144 | 100 | 112 | 100 |
| *Do your family use computer?* | | | | |
| Yes | 72 | 50,0 | 23 | 20,5 |
| No | 72 | 50,0 | 89 | 79,5 |
| **Total** | 144 | 100 | 112 | 100 |
| *Do you always benefit from the computer lab?* | | | | |
| Yes | 35 | 24,3 | 17 | 15,2 |
| No | 109 | 75,7 | 95 | 84,8 |
| **Total** | 144 | 100 | 112 | 100 |

Table 2. Item Analysis Results

| | RECREATION | | | | SPORT MANAGEMENT | | | |
|---|---|---|---|---|---|---|---|---|
| | No Experience | Little Experience | Some Experience | High Experience | No Experience | Little Experience | Some Experience | High Experience |
| Using the Windows-Start menu | 4 | 20 | 87 | 33 | 16 | 30 | 41 | 25 |
| | 2,8 | 13,9 | 60,4 | 22,9 | 14,3 | 26,8 | 36,6 | 22,3 |
| Using Windows-Programs menu | 4 | 32 | 78 | 30 | 17 | 36 | 38 | 21 |
| | 2,8 | 22,2 | 54,2 | 20,8 | 15,2 | 32,1 | 33,9 | 18,8 |
| Using Windows-File menu | 4 | 32 | 82 | 26 | 16 | 37 | 36 | 23 |
| | 2,8 | 22,2 | 56,9 | 18,1 | 14,3 | 33,0 | 32,1 | 20,5 |
| Using Windows-Set Up menu | 10 | 36 | 72 | 26 | 20 | 39 | 30 | 23 |
| | 6,9 | 25,0 | 50,0 | 18,1 | 17,9 | 34,8 | 26,8 | 20,5 |
| Using Windows-Control menu | 12 | 45 | 67 | 20 | 25 | 31 | 34 | 22 |
| | 8,3 | 31,3 | 46,5 | 13,9 | 22,3 | 27,7 | 30,4 | 19,6 |
| Using Windows-Search menu | 9 | 45 | 70 | 20 | 20 | 37 | 38 | 17 |
| | 6,3 | 31,3 | 48,6 | 13,9 | 17,9 | 33,0 | 33,9 | 15,2 |
| Using Windows-Help menu | 9 | 49 | 68 | 18 | 25 | 32 | 36 | 19 |
| | 6,3 | 34,0 | 47,2 | 12,5 | 22,3 | 28,6 | 32,1 | 17,0 |
| Using Windows-Launch menu | 4 | 35 | 79 | 26 | 19 | 32 | 42 | 19 |
| | 2,8 | 24,3 | 54,9 | 18,1 | 17,0 | 28,6 | 37,5 | 17,0 |
| Playing Windows -Game | 9 | 23 | 66 | 46 | 22 | 24 | 37 | 29 |
| | 6,3 | 16,0 | 45,8 | 31,9 | 19,6 | 21,4 | 33,0 | 25,9 |
| Using Word –File menu | 10 | 41 | 73 | 20 | 20 | 42 | 33 | 17 |
| | 6,9 | 28,5 | 50,7 | 13,9 | 17,9 | 37,5 | 29,5 | 15,2 |
| Using Word-Edit menu | 28 | 52 | 50 | 14 | 33 | 31 | 30 | 18 |
| | 19,4 | 36,1 | 34,7 | 9,7 | 29,5 | 27,7 | 26,8 | 16,1 |
| Using Word-Insert menu | 32 | 54 | 46 | 12 | 38 | 25 | 31 | 18 |
| | 22,2 | 37,5 | 31,9 | 8,3 | 33,9 | 22,3 | 27,7 | 16,1 |
| Using Word-View  menu | 43 | 48 | 42 | 11 | 41 | 28 | 29 | 14 |
| | 29,9 | 33,3 | 29,2 | 7,6 | 36,6 | 25,0 | 25,9 | 12,5 |
| Using Word-Format menu | 34 | 49 | 48 | 13 | 38 | 32 | 27 | 15 |
| | 23,6 | 34,0 | 33,3 | 9,0 | 33,9 | 28,6 | 24,1 | 13,4 |
| Using Word-Tools menu | 46 | 43 | 44 | 11 | 45 | 29 | 25 | 13 |
| | 31,9 | 29,9 | 30,6 | 7,6 | 40,2 | 25,9 | 22,3 | 11,6 |
| Using Word-Table menu | 34 | 46 | 52 | 12 | 36 | 28 | 32 | 16 |
| | 23,6 | 31,9 | 36,1 | 8,3 | 32,1 | 25,0 | 28,6 | 14,3 |
| Using Word-Window menu | 23 | 38 | 66 | 17 | 28 | 32 | 36 | 16 |
| | 16,0 | 26,4 | 45,8 | 11,8 | 25,0 | 28,6 | 32,1 | 14,3 |
| Using Word-Help menu | 19 | 57 | 52 | 16 | 29 | 30 | 36 | 17 |
| | 13,2 | 39,6 | 36,1 | 11,1 | 25,9 | 26,8 | 32,1 | 15,2 |
| Using Excel-File  menu | 18 | 53 | 55 | 18 | 33 | 41 | 24 | 14 |

|  | 12,5 | 36,8 | 38,2 | 12,5 | 29,5 | 36,6 | 21,4 | 12,5 |
|---|---|---|---|---|---|---|---|---|
| Using Excel-Edit menu | 28 | 62 | 41 | 13 | 46 | 27 | 24 | 15 |
|  | 19,4 | 43,1 | 28,5 | 9,0 | 41,1 | 24,1 | 21,4 | 13,4 |
| Using Excel-Insert menu | 35 | 58 | 41 | 10 | 44 | 28 | 29 | 11 |
|  | 24,3 | 40,3 | 28,5 | 6,9 | 39,3 | 25,0 | 25,9 | 9,8 |
| Using Excel-View menu | 41 | 56 | 34 | 13 | 45 | 30 | 25 | 12 |
|  | 28,5 | 38,9 | 23,6 | 9,0 | 40,2 | 26,8 | 22,3 | 10,7 |
| Using Excel-Format menu | 43 | 50 | 35 | 16 | 47 | 27 | 25 | 13 |
|  | 29,9 | 34,7 | 24,3 | 11,1 | 42,0 | 24,1 | 22,3 | 11,6 |
| Using Excel-Tools menu | 41 | 62 | 28 | 13 | 48 | 25 | 24 | 15 |
|  | 28,5 | 43,1 | 19,4 | 9,0 | 42,9 | 22,3 | 21,4 | 13,4 |
| Using Excel-Table menu | 35 | 56 | 40 | 13 | 41 | 32 | 26 | 13 |
|  | 24,3 | 38,9 | 27,8 | 9,0 | 36,6 | 28,6 | 23,2 | 11,6 |
| Using Excel-Window menu | 29 | 58 | 40 | 17 | 37 | 30 | 29 | 16 |
|  | 20,1 | 40,3 | 27,8 | 11,8 | 33,0 | 26,8 | 25,9 | 14,3 |
| Using Excel-Help menu | 29 | 59 | 39 | 17 | 40 | 33 | 24 | 15 |
|  | 20,1 | 41,0 | 27,1 | 11,8 | 35,7 | 29,5 | 21,4 | 13,4 |
| Using Power Point-File menu | 16 | 53 | 58 | 17 | 34 | 29 | 30 | 19 |
|  | 11,1 | 36,8 | 40,3 | 11,8 | 30,4 | 25,9 | 26,8 | 17,0 |
| Using Power Point-Edit menu | 26 | 53 | 50 | 15 | 37 | 29 | 28 | 18 |
|  | 18,1 | 36,8 | 34,7 | 10,4 | 33,0 | 25,9 | 25,0 | 16,1 |
| Using Power Point-Insert menu | 30 | 50 | 47 | 17 | 40 | 31 | 23 | 18 |
|  | 20,8 | 34,7 | 32,6 | 11,8 | 35,7 | 27,7 | 20,5 | 16,1 |
| Using Power Point-View menu | 35 | 47 | 44 | 18 | 47 | 21 | 32 | 12 |
|  | 24,3 | 32,6 | 30,6 | 12,5 | 42,0 | 18,8 | 28,6 | 10,7 |
| Using Power Point-Format menu | 36 | 48 | 42 | 18 | 46 | 23 | 32 | 11 |
|  | 25,0 | 33,3 | 29,2 | 12,5 | 41,1 | 20,5 | 28,6 | 9,8 |
| Using Power Point-Table menu | 35 | 54 | 41 | 14 | 47 | 28 | 24 | 13 |
|  | 24,3 | 37,5 | 28,5 | 9,7 | 42,0 | 25,0 | 21,4 | 11,6 |
| Using Power Point-Window menu | 31 | 53 | 41 | 19 | 44 | 30 | 25 | 13 |
|  | 21,5 | 36,8 | 28,5 | 13,2 | 39,3 | 26,8 | 22,3 | 11,6 |
| Using Multimedia Programs- File menu | 24 | 55 | 46 | 19 | 38 | 30 | 25 | 19 |
|  | 16,7 | 38,2 | 31,9 | 13,2 | 33,9 | 26,8 | 22,3 | 17,0 |
| Using Multimedia Programs - Edit menu | 48 | 40 | 47 | 9 | 37 | 38 | 22 | 15 |
|  | 33,3 | 27,8 | 32,6 | 6,3 | 33,0 | 33,9 | 19,6 | 13,4 |
| Using Multimedia Programs - Insert | 57 | 41 | 39 | 7 | 42 | 36 | 17 | 17 |
|  | 39,6 | 28,5 | 27,1 | 4,9 | 37,5 | 32,1 | 15,2 | 15,2 |
| Using Multimedia Programs - View menu | 55 | 45 | 37 | 7 | 44 | 34 | 18 | 16 |
|  | 38,2 | 31,3 | 25,7 | 4,9 | 39,3 | 30,4 | 16,1 | 14,3 |
| Using Multimedia Programs - Format menu | 58 | 44 | 35 | 7 | 50 | 29 | 23 | 10 |
|  | 40,3 | 30,6 | 24,3 | 4,9 | 44,6 | 25,9 | 20,5 | 8,9 |
| Using Multimedia Programs - Tools menu | 56 | 44 | 36 | 8 | 46 | 30 | 24 | 12 |
|  | 38,9 | 30,6 | 25,0 | 5,6 | 41,1 | 26,8 | 21,4 | 10,7 |
| Using Multimedia Programs - Table menu | 57 | 45 | 34 | 8 | 48 | 30 | 23 | 11 |
|  | 39,6 | 31,3 | 23,6 | 5,6 | 42,9 | 26,8 | 20,5 | 9,8 |
| Using Multimedia Programs- Window menu | 47 | 46 | 40 | 11 | 43 | 30 | 25 | 14 |
|  | 32,6 | 31,9 | 27,8 | 7,6 | 38,4 | 26,8 | 22,3 | 12,5 |

**T-Test Results Regarding Having a Computer at Home**
As a result of the analysis, students who have computers at home had more experience at a meaningful level P=0,000 than the students do not have computers at home considering all of the items in both Recreation and Management Departments.

**T-Test Results Regarding Having Computer Laboratory at Home**
According to the results of the analysis, students who are in Recreation Department and have computer laboratory at school, stated that they had more experience on "Using *Windows - Research menu P=,045"*, *"Using Word-File menu P=,041"*, *"Using Excel-Edit menu P=,042"*, *"Using Excel-Insert menu P=,016"*, *"Using Excel-View menu P=,002"*, *"Using Excel-Format menu P=,022"*, *"Using Excel-Tools menu P=,022"*. According to the results there were not any meaningful differences between the answers of the students from the Management Department.

**T-Test Results Regarding Family's Computer Using**
In the result of the analysis, the students who are studying in the Recreation Department and whose families use computer, stated that they had a meaningful degree P<0,005 of experience on all of the items except those *"Using Launch Menu"*, *"Using Word – File Menu"*, *"Using Word-Insert Menu.*

Students who are studying in Management Department and whose families use computer, stated that they had experience at a meaningful degree on the items "Using *Windows – Start menu P=,021"*, *" Using Windows - File menu P=,042"*, *" Using Windows – Help menu P=,022"*, *"Using Windows - Launch menu P=,011"*, *"Playing Windows – Game P=,028"*, *" Using Word-Window menu P=,023"*, *"Using Word-Help menu P=,029"*.

**T-Test Results Regarding Benefiting Computer Laboratory**
In the result of the analysis, students who are studying in Recreation Department and who benefit from computer laboratory, stated that they had more experience at a meaningful level on the items *"Using Windows – Research menu P=,049"*, *" Using Word-File menu P=,041"*, *" Using Excel-Edit menu P=,042"*, *" Using Excel-Insert menu P=,016"*, *" Using Excel-View menu P=,002"*, *" Using Excel-Format menu P=,022"*, *" Using Excel-Tools menu P=,022*.
Students who are in Management Department and benefit from the laboratory, stated a meaningful degree of P<0,005 experience on all of the items in the scale.

**CONCLUSION**
The results of the analysis showed that having a personal computer or having the possibility to access computer from the lab at the faculty that they attend affected students' computer skills in a positive way. Similarly, computer skills of the students' families had positive impacts on students' computer experiences. Therefore, it could be stated that the students' chance to access computer easily at home and at school and the families modeling in terms of computer skills might affect students' computer skills in a favorable way.

Depending on the findings the following suggestions might be made: it is important for each student to have the possibility of using computers in order to improve their computer skills. When they do not have such a possibility at home, school labs are the places where they supply their needs. Thus, it could have positive effects on students' computer skills if the labs are organized in way to make students access the computers more comfortably. Moreover the families' positive effects on the students' computer skills should not be neglected. Providing lifelong learning courses for the parents might help the children at home to improve their computer skills.

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