# A Study of Information Technology Use Among Students at South East European University

## Marika A. Trpkovska[1]

*Abstract –* **The main intend of this research was to study and point important issues in the human computer interaction through existing positives and drawbacks of students' information technology (IT) use at South East European University. The study was conducted to offer better education for the students by proposing information technology in learning and teaching process using optimal resources, minimal costs and maximal results.**

*Keywords –* **Human computer interaction, information technology, teaching and learning process, enhanced education.**

## I. INTRODUCTION

The interaction between human and computer supports the idea of designing, evaluating and implementing the interactive computer systems for human use [2].

For most students information technologies (IT) are essential for both the place of work and activities in everyday life's. Information technologies are part of how the students achieve knowledge, how they communicate and understand with each other.

The main requirement for students to benefit from this novelty depends on the level of achievement and understanding of these fundamental technologies and achieving essential technological skills.

Followed by the previous research studies made by other educational institutions like ECAR project [1] which focuses on positive and negative concerns about information technology use among students in higher education, the main point of this research was to investigate what students are doing with the existing IT technology in the SEE-University and how this technology affects on their experience. Several suppositions were given in this context:

1. Students insist greater use of IT in teaching and learning process.
2. Students prefer taking courses that use IT in the curricula.
3. Students are more engaged in courses that require using technology.
4. Students think that the technology has positive effect on their learning experience.
5. Students want more advanced technology to be used in teaching and learning process.
6. Students need more training or education in the use of IT.

[1]Marika A. Trpkovska is with the Faculty of Computer Sciences at South East European University, Ilindenska bb, 1200 Tetovo, Macedonia, E-mail: m.apostolova@seeu.edu.mk

7. Students can only benefit if IT is included in courses.

The general purpose of this research is to find evidence that supports these suppositions which will supply on proving that IT contributes to the educational processes.

In this connotation I was investigating the student's use and perceptions which focuses on their experiences and opinions about SEEU information technology background. For this reason an online questionnaire was e-mailed to undergraduate students from South East European University and it was completed by 250 participants from several departments including Computer Science direction, Public Administration, Business Administration, Law and Teacher Training Faculty. Some of the previous suppositions of the research were confirmed and some bring a level of surprise. The questionnaire included 17 questions sufficient to point to the student's expectations, preferences and opinions about various aspects of information technology use in South East European University (SEEU).

As it was mentioned previously, respondents were students familiar with information technology, its uses, and its unique characteristics. The modern, interactive and collaborative qualities of IT equipment use at SEEU were regarded as important reasons for using them. The results of the questionnaire indicated a high point of student's satisfaction with most aspects of the information technology use. In the following we will take a brief look of the results.

## II. OUTCOMES OF THE QUESTIONNAIRE

In order to support the above suppositions I divide them into several categories based on area of correspondence.

### A. Influence of IT on learning Student's preferences regarding the use of IT in courses

In order to extract the student's preferences, the levels of IT skills presented in ECAR study [1], helped me to confirm student's needs related to Information Technology use. In this context I came out with information that undergraduate students prefer taking courses that use information technology rather than not using it which is confirmed with the below results. As it's shown in Fig. 1, there is positivity among students on the use of IT. 31 percent of the students prefer technology to be used at moderate level (e.g., e-mail, several PowerPoint presentations, some online activities or content), 47 percent respond extensively (e.g., class lecture notes online, computer simulations, PowerPoint presentations, streaming video or audio, etc.) and 11 percent exclusively

(i.e., are entirely online with no required face-to-face interactions) in the courses.

For that reason, first and second supposition where students would like greater use of IT technology in teaching and learning and students' aspiration that IT should be included in course curricula are proved. Therefore this information should encourage teacher to use more technology in the teaching process.
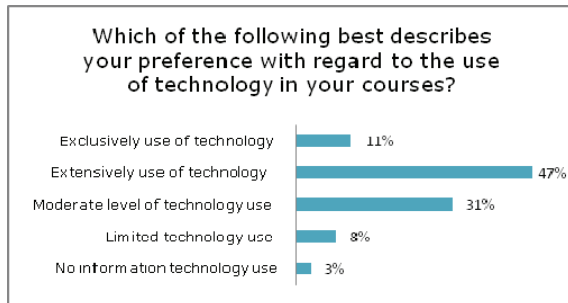


Fig. 1. Student's preferences regarding the use of technology in courses

## B. Training or education in the use of IT

Summarizing both levels moderate and extensively technology use in Fig. 1, we get that exactly 78 percent of students are more comfortable using fundamental information technologies such as e-mail, online messaging, Power Point presentations, Word processing and some advanced features like audio and video streaming but they rate themselves as not skilled in their use. The big percentages of the respondents give an inflection on not having many of the necessary skills to use IT as a support of academic work.

This information plus their significant need for additional training in the use of IT supporting learning and problem-solving skills, illustrated in Fig. 2, can confirm that besides of the crucial need and positive impact of the IT in the teaching and learning process, priority for the university should be to offer training or education in the use of IT. With this conclusion the sixth suppositions is confirmed.
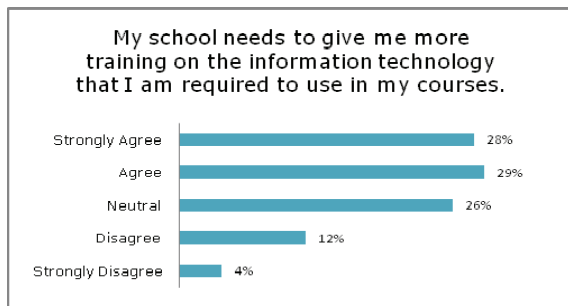


Fig. 2. Necessitate of IT training for students

## C. Engagement of students in courses with IT surroundings

The questionnaire results indicate that the students are more engaged in courses that require using technology rather than not using it. This is result from the fact that students want to involve themselves in a rapidly changing world in which every day work and other activities are more and more transformed by contact to various information technologies.

In the Fig. 3 we can see clearly that 42 percent of the respondent's agree and 26 percent strongly agree with this (third) supposition.
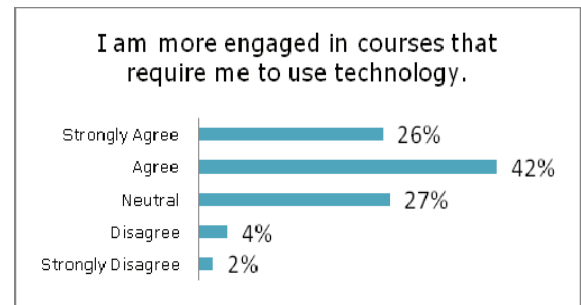


Fig. 3. Engagement of students in courses with IT surroundings

## D. Benefit of IT in learning

The seventh supposition which specifies that the students can only benefit if IT is included in courses, is confirmed as well. Students' responses illustrated in Fig. 4, show that the most valuable benefit of using technology in courses is Management of course activities like downloading course materials, sharing free time (36 percent) and learning (30 percent). Better communication with classmates and instructors (22 percent), followed by convenience (9 percent) are next. Only 3 percent of the students identify no benefit at all from using technology in courses.
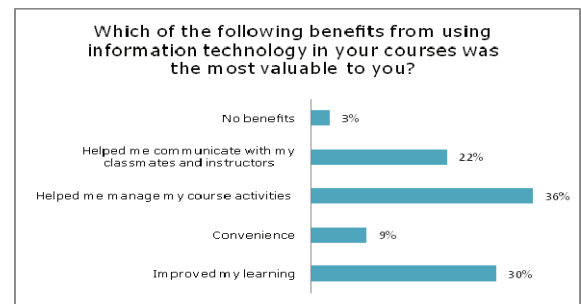


Fig. 4. Benefits from IT in the classroom

## E. Impact of IT in learning

The student perspective that the technology is improving their learning experience is also confirmed. While using technology to enhance their learning is the second highest benefit point out when students are required to choose just one benefit, students agree that IT in courses improves learning. 50 percent of respondents agree and 26 percent strongly agree (total of 76 percent) that IT in courses improves their learning illustrated in Fig. 5. This results support the forth supposition.
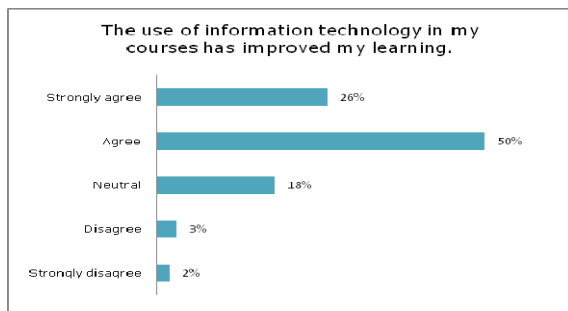
Fig. 5. Using IT in classroom improves student's learning

Consequently with above conclusion I can add that student's comments in the open-ended question also indicate on the importance of the instructor's skill on the learning outcome, despite of their negative experiences with the existing technology. Students also think that IT, used in appropriate way, will improve the qualifications of the instructor as well.

### F. Advanced technology in teaching and learning process.

Besides the modern IT infrastructure [4] that SEEU offers to the students, 68 percent of them are not very satisfied with the existing technology. Students believe that instructors should use some advanced IT facilities which will contribute on enhanced education.

Leaded by the world trends and the human psychology, at first place students ask for advanced technology not wondering whether they need more advanced technology or whether the whole capacity of the existing facilities is exploited. Everyone wants a fast, stable, and more relevant technologies intended, but if we look back, past generations of SEEU students had outdated technology [3] and still were able to program, present, communicate, learn and work on satisfied level for today's conditions.

What is said above is not in the context that there is no need for newer and more modern technology, but that there is a need of technology that will offer significantly more than the preceding, but of course for a reasonable price, greater utilization and greater compatibility with the educational directions outlined in the program of the University.

Modernization of the education requires upgrading of IT technology, and vice versa. Optimal changes are needed in both fields in order to achieve the goal and that is the modern education.

## III. STUDENTS' EXPECTATIONS OF INFORMATION TECHNOLOGY.

SEEU has spent considerable resources on technologies aimed to satisfy students' preferences, expectations and facilitations. Therefore I used questionnaire data, both quantitative and qualitative, to describe students' expectations of IT in three different districts: convenience, connection and learning.

Students' expectation in area of convenience is to have up-to-date modern technology, online resources and services which will satisfy their education needs. Moreover these facilities should be always available, accessible anytime and from anywhere, supported by stable network and professional technical support team.

From the other side when the connection is taken into account, students' stress the need of mobile electronic connections, combined with personal, customizable and portable IT devices like laptops with a possibility to be networked for online communication in order to be able to access existing resources and services at SEEU and to utilize them in their daily work.

And finally, concerning the expectation in learning district, students' advocate class with rich IT surroundings, combined with more practical, professional, experimental and inclusive participation.

Perceiving the students' experiences and expectations regarding the use of IT, of what was said above, I can conclude that the positive constraint of above suppositions depends on the real ability of faculty to use IT technology effectively in the teaching process and the negative depends on the existing up-to-date technology offered to students.

## IV. RECOMMENDATIONS

Summarizing the student experience and expectations in area of IT, I can point out the following three concerns that have to be taken into a consideration.

First concern is related to SEEU IT support. Guided by the qualitative comments of the students and gathered information on their likes, and overall satisfaction with the existing technology at SEE-University, I have to express student's dissatisfaction when networks are down, technical support isn't available when needed, or existing technology will prevent the completion of daily duties which are indented to students. Knowing this concern, IT support team is the one who is charged for the implementation of the technology environments in which students are learning, and without a core set of reliable IT systems and services, students will not entirely accept technologies to enhance the learning and also teaching environment.

Second concern is related to the University representatives. In this context, if we take into a consideration the research results, I believe that University has to pay attention to the following areas:
- incorporation of IT into the course curricula,
- available IT training for students and instructors (Students need to know how to study with the new technologies and instructors how to use them)
- IT service and support

Finally the third concern refers to the teachers and points on the following. The interactive and collaborative qualities of diverse technologies were viewed as significant reasons for using it. The research results point out a high student's satisfaction with most aspects of the information technology use. Furthermore, it is true that many new applications and tools exist and will continue to advance. If we take into consideration students' preferences conveyed on more information technology use in teaching process, this should

convinced teachers to value these innovations, to use them and to be trained in their use.

## V. Conclusion

Humans used to develop tools for making their life's easier. Automation of processes made people to be released of physical work with goal to have more time to advance psychologically. IT and especially HCI are developed for that goal. The question is: Is that goal achieved, and is the use of IT justified?

It is assumable that the use of IT contributes to educational processes. Today's generations are accustomed to technology. Education is process that must evolve, changing the methods and resources, to adapt to current needs of society. This research proved that students are more comfortable in learning, communicating and relating to educational processes when they are using the wealth of IT. The use of IT makes achieving knowledge for students easier, interesting, interactive, and modern.

Assuming this I can say: Yes, everyone must use IT for all purposes. But I will be wrong. IT has own price, and in most cases it's not so cheap. Present technologies are expensive. On other side growth of IT, and fast aging, makes decision for using IT difficult. To use IT, user must to be trained, which also costs. Maintains makes price higher. Student's preposition to IT support team has proved that in this research.

Taking a brief look into the university curriculum I can summarize that the part of implementation of IT in educational process has proved this conclusion which emphasize that the University must take into consideration the current needs of students and their likes and dislikes. IT must be used, but, the goal must justify the means.

It is of interest for the University to make a long-term investments and development in this area. There is a need of enduring strategy for the use of IT supported with evaluation.

## References

[1] Caruso J-B, Kvavik R-B. ECAR Study of Students and Information Technology 2005: Convenience, Connection, Control, and Learning.
http://www.educause.edu/ers0506

[2] Hewett, Baecker, Card, Carey, Gasen, Mantei, Perlman, Strong, Verplank. ACM SIGCHI Curricula for Human-Computer Interaction. 1992,1996 ACM SIGCHI.
http://old.sigchi.org/cdg/cdg2.html

[3] Kadriu A, Abazi L. ICT at South East European University. Information Technology Interfaces; 2006 June 19-22; Cavtat, Croatia, 28th International Conference on Volume; 2006. p. 271-276.

[4] South East European University (SEEU) official website.
http://www.seeu.edu.mk/en/the-university/presentation/infrastructure