The Role of Technology in Consolidating the Knowledge

Aida Spahiu

Faculty of Electrical Engineering /Automation Department
Polytechnic University of Tirana, Tirana, Albania
aida.spahiu@fie.upt.al

Luljeta Buza

Luarasi University, Tirana, Albania
luljetabuza@yahoo.com

Silvana Vishkurti

Faculty of Mathematic Engineering, Physic Engineering/Centre of Foreign Language
Polytechnic University of Tirana, Tirana, Albania
vishkurtisilvana@yahoo.fr

Abstract: *During the last 20 years of Albanian democracy, constant scientific and technological innovation and the change has had a profound effect on learning needs and styles in the Albanian society that acquires today creative individuals who value knowledge, learning and the innovative education. Lifelong learning is considered as one of the important indicators of our future development of the society where the change is constant and rapid. The change of emphasis in Albanian educational policies to promote teaching/ learning through IT technology is a remarkable outcome in itself. But what is its role and how is it used in education process for consolidating knowledge? The studies are based on a research and provide answers to the above mentioned questions, and require a great concern for reshuffling the education system be that in high school or universities. Our study is an empirical one and doesn't aim at absolutizing the role of technologies, but it considers them as a means of consolidating and exchanging the achieved knowledge. The findings indicate ways of how to infuse these concepts into teaching process; by encouraging students` choices of where and when to study and at what rate; it highlights as well the circumstances, which dictate the teachers` education for updating teaching methods. The study ends in recommendations and conclusions.*

Keywords: *Information and communication technology, independent learning, university didactic, knowledge.*

1. INTRODUCTION

In our daily life, the wide use of technology is one of the characteristics which are part of Albanian students' everyday activities. The contradiction lays here when the means of technology are so complex, (Internet, information programs, electronic mail and above all social networks) only few of them are used in the teaching/ learning process. On the other hand, despite the fact that some of these technologies are used as a means of information, the professors at the universities show great interests to these technological opportunities for perceiving competences and skills and creating a diversity in the teaching process and students` learning styles. In spite of the fact, they are pretty conscious that they prepare students for the future still exist some of concepts that technology is far from learning and profound knowledge.

The use of information technology and communication asks for a special attitude in education process, so, different information knowledge that the students' gain by using internet does not only upgrade their knowledge but also their practices in the field of their studies. The study highlights that living in times of technology; the social change would have direct impact in their workplace and the living conditions. The most valuable outcome of all education as Thomas H. Huxley points out is the ability to make yourself do things you have to do, when they ought to be done, despite you like it or not; it is the first lesson that ought to be learned; however early human's training begins, it is probably the last lesson he learns thoroughly. Therefore, preparing

students for the future and to educate learners to enlarge their knowledge by independent work in internet is an imperative duty due to the fact that it offers opportunities to update their knowledge of activities.

The hypothesis presented the useful usage of technology, which would be realized through the presentation of its wide spectrum in teaching methodologies in different branches of the universities. As the study points some of the effective ways of using these technologies during the teaching process where the methods must be focused in how and why these techniques are used during teaching and learning. Analysis is realized through questionaries' and interviews with higher school students in their assignments using IT technology.

The results highlight the fact that there is a need for qualification of teachers in finding ways of using and implementing IT information for the students to get adequate methods for a life learning process.

2. THEORETICAL FRAMEWORK

In fact, IT should be used to express and to complement the style of learning of students which has been changed due to advancement of information technology tools. The IT technological methods have brought about new cooperation and exchange programs in teaching process. The teacher and students` interaction has been widened by presenting direct communication through electronic mail, different social forums, blogs and social networks and by the other means which technology offers. In the area of teaching, the use of technologies aimed at the progress of students as well as increasing the level of formation, which requires a new methodology and the curricula conception of university.

The use of IT technology has lead towards a complete knowledge due to the quantity of the information, crude information, abstracts, analysis and studies. It is pointed out that the way of class interpretation has changed due to crucial information, additional information, experimental or presented in the other theoretical methods during the lectures in the class or in front of other public.

The information may be presented through different ways because of the characteristics of individuals, personal and public experiences, abilities and the chosen methods of presentations. All these offered possibilities have paved the way to the increase of teaching methods which led to the high level knowledge.

Based on these technological developments, many researchers like in references [1], [2], [3], [4] put emphases on the negative effects which would be caused by the use of these technologies in cases when education is not accompanied with a personal and social attitude towards these means of teaching and learning. When the information is presented without being filtered by specialists provides negative interpretations of the happenings because the massages do not convey the elements that the direct communication offers. One of the impacts is when the individuals are computer addicted and keep themselves away from social life.

Sometimes, in educational communication the use of technologies is not accompanied with field concepts of presentation:

- Differences of methodologies and implementation of the internet materials cause problems in research activities and nowadays it is important to underline that computer literacy does not mean if you know how to find materials and use them in the classroom known as "informing capabilities".

- The relation between the new technologies and its usage is not a matter of technical abilities; it is a matter of pedagogy which uses this "new" and "renovated technology" [5]. It should be pointed out that the technologies would not be fully applied if the education process has not been changed. The attitude towards knowledge and the way of assimilating the technology is very important.

It is obviously true that the information taken by electronic means are unlimited and sometimes misleading. The real and the final aim of using such materials by the individuals or the group of individuals who have a specific approach towards realities is not how to find them but how to implement and establish something new. If students neglect the main element of the gained

information and tries to adopt its function in specific situations this is not in favor of the knowledge.

In the cases when we transfer the information from online to the paper material and if this transferring documentation is not accompanied by practices like, keeping notes, abstracting, comparing, discussion in the classroom would lessen the value of material [6]. Attention should be paid to the distinction between the usage and evolved technology during the teaching/ learning process keeping in mind the expression "to use technology but not to be its slave"[1].

Firstly, the genuine documentation, and the equipment of schools with computers and internet access and on line services create itself possibilities of knowing the technology and computer programs as well. Nowadays, there are no limitations for getting information which is free and free of charge and no doubt it is a step forward towards knowledge.

Secondly, the involvement of Information Technology (IT) in teaching process has strong ties with the content of the information which are retrieved by electronic links and explained by school textbooks. It must be pointed out that information culture in the high school level is presented by documentary information; meanwhile at the university level is based on the methodological formation of the students of how to use these technologies [7]. Speaking from practical point of view we have to do with "knowledge, ability and information skills" [8].

As far as the level of knowledge is concerned it would be distinguished in one side the type of information which is in line with level of the public, professionals and experts and on the other one with the resources of information. As an orientation, based on right track, we would recommend the webpage and types of research engine during the practice.

The abilities are very complex and begin with the specification of the necessities of information, and consultations for appropriate resources managing and reforming it according to the content and the results we would like to achieve [9]. It is developed and established in the course of time the role of the teacher who plays a decisive role in providing didactic knowledge and answers to the students. In one side the professor processes the information for the students and on the other side information is taken and processed by the students during the learning process [10], [11]. But how, this needs to have a parallel comparison on knowledge and the role of information technology. The teachers, professors and students have identified the problems in auditorium that acquire attention and have highlighted that for the presentation there are drafts and standards that should not be neglected during communicative technologies in our schools[2].

3. METHODOLOGY OF RESEARCH

The study is an empirical one based on interviews, questionnaires and observations, it points out has been designed to the curriculum planning needs and problems in line with global IT issues. The study aimed to provide evidence of such needs from practitioners` perspective and opportunities to explore the effectiveness of current IT approaches. The study is based on 1) the perceptions and beliefs of the students of Faculty of Electrical Engineering at Polytechnic University of Tirana and Law University; 2) level of IT knowledge; 3) the role of curriculum in the development of future aspects IT; and 4) its role in the process of environmental education. The research methods used were questionnaires analysis, formal discussions and interviews.

3.1. Participants

A considerable number of social groups of two Universities were part of the research, 25 bachelor students from Luarasi University and 45 students of bachelor and Master level from Faculty of Electrical Engineering at Polytechnic University of Tirana. The target students in the research were comprised of first year students of "Luarasi" Law University and first, second and third year students of bachelor level and second year of Master of Science from Faculty of Electrical Engineering aiming to provide evidence of the needs of current IT programs of students from

---

[1] The source: http://www.orme-multimedia.org/r2007/Prog0103/bibeau.pdf

[2] Ministry of Science and Education (2011)

http://www.izha.edu.al/files/standartet/Standarde_mesuesi_TIK.pdf

different level of study program. These students are first state certified in Albania and then they may continue further studies in other national or international universities. The curriculum is based upon professional standards and includes a general studies component and a professional component of subjects exploring the theories of different subject matters with a total of 30 credits per semester, and 180 credits after three year studies for bachelor level and 120 credits after two year studies for Master level. Credits are based on the European Transfer Credit System (ETC).

3.2. Instruments

Interviews were undertaken with the professors and students of Faculty of Electrical Engineering at Polytechnic University of Tirana and professors and students of Luarasi Universities. A group discussion was arranged providing the opportunity for each group to summarize their opinions on the points and then provide their concerns and their statements about the use of technology. 70 % of students` interviewers consider themselves to be active in using information technology, while only 25% have actually made a concrete effort in any specific issue, especially the students of third year in bachelor level and second year in master level of Faculty of Electrical Engineering. 90% of professors use information technology during teaching process.

The activities covered a wide spectrum of use of information technology and range from the general to the specific, from first year to upper levels, and from graduate to postgraduate, they can move between the levels as they engage in the learning process. They involve student engagement in pair work, small and large group work, case analyses, debates, simulations and role-play. Both categories of students are improving their studies with available latest information technology materials.

A questionnaire was administered and data was collected through a well-designed questionnaire and consisted of four main questions: 1. Why is information technology important? 2. Do you consider technology as a means of teaching/learning process? 3. Do you consider IT as an instrument to increase knowledge? 4. What kind of IT programs do you use?

4. FINDINGS AND DISCUSSIONS

The findings are analyzed according to the key questions mentioned above and in relation to the themes which emerged from the data analysis. It is noteworthy that the responses of the two respective faculties Electrical Engineering and Law University have differences which may be attributed to different orientation of the subject matter. The study gives a clear picture of the existing situation of using Information Technology in teaching at the respective universities.

The results highlight that teaching and learning through electronic instruments can play a very decisive role in shaping the new global citizen. The results indicate ways how to improve these experiences and provide some recommendations.

The teaching and learning, by using IT information grew bigger during the last years in Albania. Its aim was to implement activities and to educate the students with abilities of getting right and information from Internet. 92% of them listed as first, the selection of information for empowering accurate knowledge in the fields of their studies, as second was the communication through electronic means, and as the third was listed communication between them with the professors. The findings of questionnaire's analysis are shown in summarize way, fig. 1.
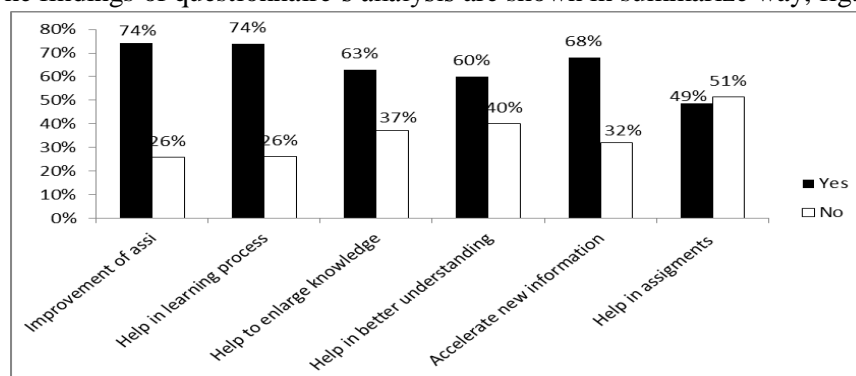

Figure1. *Influence of information technology in learning process.*

97 % of students highlighted as very important the role of IT in teaching/ learning. The question was directed at relevant professors of these universities asking them about the main constraint that they encountered in using IT technologies. 90% of them highlighted the lack of financial resources and capacities. 87% of them listed the lack of internet access in the auditoriums. Other serious constraints that have appeared in their answers were 95% because of low government support for electrical engineering, while 100% of professors of Luarasi University do not have such constrains because it is totally supported by private owner.

As far as the interviews were concerned we have paid attention to the following questions: Do the universities use electronic resources? How do they use? What kind of difficulties are they confronting with? 100% of the students confirmed the use of electronic resources; they have gained knowledge during electronic courses. The use of technology was a normal process used not only in their individual presentation but also in the design and implementation of their course project for 65% of electrical engineering students of bachelor degree and 100% of electrical engineering students of master degree.

The findings about how TIK helps in relations between students and professors in both Universities are shown in fig.2.
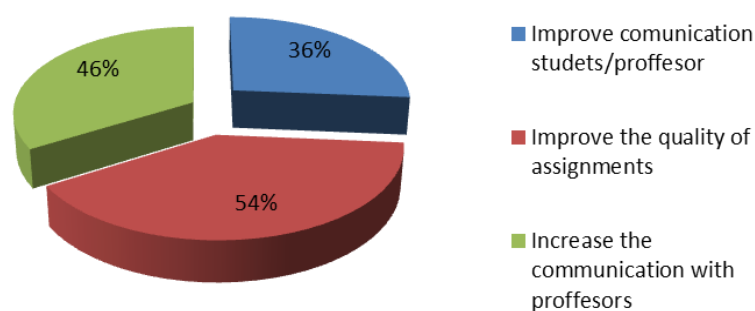

Figure2. *Information Technology and relations students/professors*

One of the most effective ways of getting adequate information is through IT technology told 78% of the interviewers. 90% of them considered IT as the potential of being extremely effective instrument for communication. 100% of students of both Universities consider IT technology as an imperative need to use it, for consolidating and empowering their knowledge told 90% of law students, and 100% of electrical engineering students them think that through use of technology they can raise their knowledge and their responsibility in their field of study. It is worthwhile to mention that in the public university there is a lack of modern computers, internet access in the classrooms, but when we refer to private university the situation is in favor of high technology. The big project of the government named "Albania in the New Digital Area" is considered by 97% as a project which will have a direct impact even in use of IT technology.

The teaching process would be valued by knowledge of the students and not by the number of pages taken from internet because the transfer of information without interpretation does not consolidate the knowledge. During the discussion process, interaction among the students and the exchange of information is consolidated in our universities but the method of conveying and transmitting knowledge and interacting in the classrooms should be a dominating factor.

It is pointed out that the use of technology is mostly considered as an ability to further develop the fantasy and initiative in accomplishing students` assignments and responsibilities and not as methodological and instruments in assimilating knowledge.

4.1. The Role of Technology Expectations and its Limitation

Nowadays, we cannot imagine humanity without communication technologies. Its usage and presentation to the whole aspects of the life brought about a true social revolution. PowerPoint

presentation is considered mostly as very normal one in some of the school practices (internet browsing, different school notification announcements, timetable, methodological documents for the students etc).

The great number of Internet resources about the data base and reference documentations, search engines, catalogs, pedagogical web pages, on - line education, different platforms like (MOODLE), which ask for identification and registration of the user are considered very helpful told 95% of the students. The tendency to brows in internet on different documentation offered by the universities is seen as a best information resource for being in rolled in those universities that accomplish their expectations. The students have gained the opportunity to be enrolled in online courses that cover a wide field of scientific studies addressing to massive students. The course content was available for online students who could participate through collaborative tools, including blog posts. Stephen Downes considers these so-called cMOOCs to be more "creative and dynamic" than the current xMOOCs, which he believes "resemble television shows or digital textbooks." [3]

Information and communicative technologies have helped even in the writing style and the standards forms found in each computer software programs. So in using computers the fear of committing errors is killed and the proof reading is done according to the standards, what is highly valued is that it promotes independent reading in internet [12]. This kind of usage has not only consolidated critical thinking but also writing by creating possibilities to use changes of diagrams, conceptual schemes, and adoption of research methods according to the academic trend and standards etc., by methods offered by different computer programs.

5. CONCLUSION

IT technology has changed the learning style and communication. In one side the use of sophisticated technological tools should not become a goal in itself, but serve to enhance cognitive abilities, interpretative selection of students. On the other hand, the study highlights important activities of students` work as the selection of sources of information, reflection on selected materials, and degree of synthesizing ability of their interpretation. These activities cannot be realized only through a solitary work of students, but also through group discussions and exchange of ideas.

There is a need for the teachers to be trained for using the IT technologies and improving pedagogical skills. Selection and processing of teaching materials should be transformed into an object of reflection and discussion in class. The intellectual skills like comparison and implementation should take maximum attention during the teaching hours, because these instruments are used in its continuous updating. It should be established methodological practice in teaching and learning process.

REFERENCES

[1] Wolton, D. (1997). *Penser la communication*, Flammarion

[2] Bougnoux, D. (2001). *Introduction aux sciences de la communication*. La Découverte. 57-71.

[3] Pedler, E. (2005). *Sociologie de la communication*, Armand Colin. 105-108.

[4] Breton, Ph. (1997). *L'Utopie de la communication*. La Découverte. 144-152

[5] Magli, R. et Winikin, Y. (2002) Changement dans le rapport au savoir et au pouvoir: une approche ethnographique des TICE à l'école, in: GUIR, R., *Pratiquer les TICE, former les enseignants et les formateurs à de nouveaux usages*. Bruxelles. de Boeck, p. 63-75,.

[6] Vishkurti S., Spahiu A., Paci M., Issues Of Science Teaching In Higher Education. Problems of Education in the 21st Century, PEC 2011, Volume 28, p 123-130.

[7] Serres, A. (2008). La culture informationnelle. [Online] Available:

http://hal.archivesouvertes.fr/docs/00/26/71/15/PDF/A.Serres_Problematique_culture_informatio nnelle.pdf, f.12.

---

[3] MOOC:(Massive on-line open courses). http://en.wikipedia.org/wiki/Massive_open_online_course

[8] Catherine, S. (2011). Où en sont vos pratiques? [Online] Available: http://tribuneci. wordpress.com/2011/12/06/ou-en-sont-vos-pratiques/

[9] Raby, C. et al., (2011). Usage des TIC en pedagogie universitaire: points de vue des etudiants. *International Journal of Technologies in Higher Education* 8 (3). 6-19.

[10] Lameule, G. (2008). Les effets de l'usage des technologies d'information et de communication en formation d'enseignants, sur la construction des postures professionnelles. *Savoirs*, 17. 73-94.

[11] Valluy, J. (2013). TIC et enseignement supérieur: comment (re)nouer le dialogue ? *Distances et médiations des savoirs* [Online] Available: 4. mis en ligne le 22

[12] Hoxhaj, E. (2014). Ndikimi i teknologjisë në zhvillimin e aftësisë gjuhësore të të shkruarit. [Online] Available: http://www.doktoratura.unitir.edu.al/wp-content/uploads/2014/01/ Doktoratura-Ervin-Hoxhaj-Fakulteti-i-Gjuheve-te-Huaja-Departamenti-i-Gjuhes-Angleze.pdf. 44-45.

AUTHORS' BIOGRAPHY

Assoc. Prof. Dr. Aida Spahiu is lecturer at Faculty of Electrical Engineering, Polytechnic University of Tirana. Her teaching and research interests include the energy efficiency and control of electrical drives, fuzzy logic based control, sliding mode control, development of higher education, sensorless control of ac electric drives, the intelligent motion control of electrical machines, applications of computational intelligence to control. She is currently responsible of Department of Automation at Faculty of Electrical Engineering.

Assoc. Prof. Dr. Silvana VISHKURTI has been a researcher and has been teaching French for the center of Foreign Languages in the Polytechnic University of Tirana since 1993. As a Doctor of Philosophy in linguistics, her research work is oriented towards French for Specific Purposes, sociology of education and communication through advertisements

Assoc. Prof. Dr. Luljeta Buza is Lecturer at Law Higher School "Luarasi" in Tirana, Albania, (2003 – 2014). Program Manager United Nations Development Programme (UNDP), (2001- 2003). Program Manager Norwegian People`s Aid (NPA), 1998- 2001. Director of IRC Information Resource Center (IRC) in Tirana, 1993 - 2001. **Education:** Ph.D.in European Environmental Law. Master of Science (MSc) in European Studies. Bachelor degree in English branch University of Tirana, Albania.