Advantages and Disadvantages of Using ICT in Education

Jozef BUSHATI, PhD (1) Ezmolda BAROLLI, PhD (2) Prof. Ass. Dr. Gezim DIBRA (3) Arben HAVERI, MBA (4)

1. 3. 4. University of Shkodra "Luigj Gurakuqi"
2. University of Tirana

Abstract

The presence of technology in every aspect of our life in the XXI century faces up the people all around the world with new choices, opportunities and challenges that has parallel emerged and developed, have created a new global economy powered by ICT and driven by knowledge. While ICT has had a great impact on this “revolution” of the global economy, traditional teaching and learning paradigms have been shaken by the impact of ICT integration in education.

The paper is focused on addressing the advantages and disadvantages of use of ICT in education, mainly in institutions of higher education. This treatment is based on a theoretical and practical background, on the basis of reasoning interest groups and the benefits of each in this point of view. Argumentation od advantages and disadvantages is made through a variety of effective forms and opinions from the studies to observations, these in general view, but also according to the responses of the management staff, the lecturers and students. Comparative data of all Albanian public universities show their specifics, not visible advantages between them, but common ICT-related in these institutions of higher education.

Keywords: advantage, disadvantage, ICT, education.

1. Introduction

ICT can affect in the spread of education and to enable greater access to it. Moreover, they increase flexibility so that students can access educational resources regardless of time and geographical barriers. They can affect the way that students are given instruction and how they
learn. They enable collaborative development of skills and abilities to create knowledge. This as a result will bring a better preparation for students, lifelong learning and the opportunity to join industry. ICT can improve the quality of learning and contribute to the overall economy. “Information and Communication Technology considered the most powerful means of education in this century. This is as true that today opened a debate that if has changed the classical meaning of education. If not entirely, at least the conception of education, as a process, that cannot be limited to the classical form of knowledge, and its transmission within the classical institutions”, from (http://www.mash.gov.al). All these continuous transformations brought by the digital era justify the need to include technology in the education sector in Albania.

Below, we are citing some of the advantages that flow from the use of ICT in education: “Eliminates barriers to education for students and for teachers” (Sanyal et., 2001), (Mooij et al., 2007), (Cross et al., 2007), (UNESCO, 2002), (Bhattacharya, 2007); “Eliminates geographic barriers for students to be able to access knowledge resources from any location” (Sanyal et., 2001), (Mooij et al., 2007), (Cross et al., 2007), (UNESCO, 2002), (Bhattacharya, 2007); “Allows use of new methods of education” (Sanyal et., 2001); “Provides a balanced combination of work and family life education” (UNESCO, 2002), (Bhattacharya, 2007); “Increase the international dimension of education services” (UNESCO, 2002); “Allows education in the appropriate time and amount for employees of Organizations” (UNESCO, 2002); “ICT can also be used for non-formal education such as health campaigns and campaigns for illiteracy” (UNESCO, 2002).

Authors (Barolli et al., 2009) notes: “How much access students have today and how use ICT, how could improve the process of teaching and learning and within the academic sphere through it, are today key problems. Realization of process of teaching and learning through ICT can be achieved inter alia through a series of factors as: The necessary infrastructure related to ICT together with relevant technologies. Preparation accompanied training of human recourses that will work, with this technology and supported in this infrastructure.” During their studies (Bates et al., 2000) cite: “offers four levels of supporting the human resources required to fully exploit the use of ICTs: infrastructure support staff of technology (technical support - installs, manages, updates and maintains networks and devices) technologies for support staff education (staff that supports the development and implementation of programs and educational materials using technology), design of teaching staff (staff that provides services and educational expertise,
such as the design of instruction, professional development, project management, support for the use of technology for teaching), and subject experts (those who create content, such as academic staff).”

We also noticed some others as: Interaction with people in the process of world globalization; contribution in the field of information; overhaul of the classic model of giving information; exchange of ideas; learning exchange of ideas; recycling of time; formal learning; learning with measurement; collaboration; activation of attention; commitment; materialization efficiency; there will be not enable that student to work less, but will engage pupils to do with more work. Different experiences have shown that investment in ICT for education sector contributes to the growth of knowledge and human capital, which provides many benefits for stakeholders.

To summarize, the following table shows the main benefits of using ICT in education for key interest groups (stakeholders)

Table 1. The benefits that bring ICT in education for major interest groups (stakeholders)

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Students</td>
<td>Increase access</td>
</tr>
<tr>
<td></td>
<td>Flexibility of content and distribution</td>
</tr>
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<td></td>
<td>Combination of education and work</td>
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<td></td>
<td>The methods are focused on the student</td>
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<td>Employers</td>
<td>High quality, cost-effective professional development in place of labor.</td>
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<td></td>
<td>Improve the skills of employees, increase of productivity.</td>
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<td></td>
<td>Developing a new culture of learning.</td>
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<tr>
<td></td>
<td>Sharing of costs and timing of training among employees.</td>
</tr>
<tr>
<td>Government</td>
<td>Increased capacity and cost effectiveness of the system education.</td>
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<td></td>
<td>Achievement of target groups that have limited access to traditional education.</td>
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<td></td>
<td>Support and improve the quality and relevance of existing structures of education.</td>
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<tr>
<td></td>
<td>Provide links to ed. institutions and curricula with the networks.</td>
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</tbody>
</table>
2. The advantages of using ICT in education

2.1 Our survey and results of data processing

This survey is a part authors survey with specific questions (Barolli et al.):”Our survey was conducted on the basis study of regarding the use of ICT in teaching and learning in higher education institutions), and processing data from the 767 questionnaires that distributed to 11 public universities in Albania and that contained in this case questions that are questions about with advantages and disadvantages of the use of ICT in teaching and learning process in these organizational institutions. The survey population includes all students and lecturers of public universities in the country who attended classes. The survey sample consists of 351 lecturers and students sample to observe consists of 416 students. Selection of lecturers and students was conducted by the respective bases of choice through a simple random sample of no return. Results are representative nationwide. For our surveys, the sample size set out, with a safety ratio of 95%, gives us an error rate of +/-5%.

For procedural convenience sample selection was made after a preliminary stratification of universities.” Through descriptive analysis of data, collected from questionnaires is the reflected result from answers of questions concerning the most important elements of using ICT in education. This helps us to create a clearer view on the development of each of the issues in independence manner. Given the theoretical background, respondents were asked about the perception that has some of the following questions that are related of ICT. Issue of advantages of the using ICT in education, by observing the responses of respondents based on three question categories as below:

1. In general for all respondents of the study at all public universities
2. Addressed to three main categories:
   - Management staff.
   - Pedagogue.
   - Student.
3. For each of 11 Albanian public universities.

At the first question, respondents were asked their thought for the advantages of using ICT in education, by selecting among the given alternatives like sub-questions.
Advantages and disadvantages of using ICT in education

- Enables students to learn anywhere and anytime.
- Education enables more effective (e.g. contributing to the growth of academic skills).
- Provides teaching to the needs of students.
- Provides dedicated teaching through individual communication (student-lecturer)
- Education enables efficient (e.g. request less human resources).
- You can simply sit down costs than traditional education.
- Provides educational activities in geographic areas larger.
- Encourages individual studying of students
- Other.
- Do not know.

The charts below show the results of answers to this question

Chart Nr. 1. Classification in % of responses to the question:
"What are the advantages of using ICT in education?"

From above chart we see that:

- Significant proportion of respondents, 26% think that, the use of ICT in education enables students to learn anywhere and at any time. Other alternatives that were selected most often are that:
- ICT enable effective education (17%);
- ICT promote the study of individual students (16%).
At the second question, respondents were asked their thought for the advantages of using ICT in education, by selecting among the given alternatives like first questions but addressed for management staff, pedagogues, students.

Chart Nr. 2. Classification in % of responses to the question:
"What are the advantages of using ICT in education?"

From above graph, by analyzing responses based on three categories of respondents, it seems clear that most respondents (over 50% to 100%) think that the use of ICT in education enables students to learn anywhere and at any time. Alternatives that are more often selected by three groups that are:

- **ICT enables effective education;**
- **Provide instruction according to student needs;**
- **Provide educational activities in large geographical areas;**
- **Encourage the individual study, etc.**

At the third question, respondents were asked their thought for the advantages of using ICT in education, by selecting among the given alternatives like first questions but addressed separately for each of public universities that have participated in this study and that are respectively:
1. University of Tirana  
2. Polytechnic University of Tirana  
3. Agriculture University of Tirana  
4. University of Shkodra “Luigi Gurakuqi”  
5. University of Durres “Aleksander Moisiu”  
6. University of Elbasan “Aleksander Xhuvani”  
7. University of Korca “Fan Noli”  
8. University of Vlora “Ismail Qemali”  
9. University of Gjirokastra “Eqerem Qabej”  
10. Academy of Arts  
11. University of Sports

Chart Nr. 3. Classification in % of responses to the question:  
"What are the advantages of using ICT in education?” in universities.

The above options are selected more or less frequency by comparing the same respondents also by universities. This “same distribution” of thought we can observe even if we compare responses between different universities with below specifics:

- Great value for question: “Enables teaching via individual communication” (from 28, 29, 34, 36 % are from University of Shkodra “Luigi Gurakuqi”, University of Tirana, Polytechnic University of Tirana, University of Vlora “Ismail Qemali, University of Durres “Aleksander Moisiu”, University of Elbasan “Aleksander Xhuvani” with very
Running Head: Advantages and disadvantages of using ICT in education

few differences and those are from universities where ICT related disciplines, have a stable base involvement and have created / or are creating a reputation in this direction.

Other questions, between universities have not great differences, but can also be judged on the basis of deviations from the average of responses to the question. Really, related this issue, universities have more similarities than differences, they are in the front of using technology. As discussed by (Barolli et al., 2009). “Albania is part of a global shift from material resources to knowledge and intellectual resources as the basis for economic growth. E-Learning readiness is an initial part of e-Learning development. In order to benefit from e-learning, higher education institutions in Albania should conduct considerable up-front analysis to assess their readiness”

Realization of ICT in education, now is developed by e-Learning, as cited by (HEFCE 2005) “e-Learning is "any process of learning that uses ICT" and by (OECD, 2005). e-Learning refers to "the use of ICT, to improve and /or support learning in tertiary education" “In public universities in Albania, e-Learning and ICT integration in education is considered as a very important process and is seen as the main purpose of providing educational opportunity anywhere and at any time. Students and teachers see the e-Learning as a tool that would help in a more effective education as in creating opportunities for more personalized teaching in accordance with the personal needs of students and encourage individual study.“ by (Barolli et al) E-learning is without doubt an advantages of using ICT in education and really is cited : “E-learning is playing an increasing part in the lives of learners, learning and training organizations” by (Lewis et al., 2003) and as describes e-learning by (Knight, 2003) “The catalyst that is changing the whole model of learning in this century”.

“The majority of students think that ICT plays important role in their education. Undergraduate students in Croatia estimate the importance of usage the information and communication technology as very important factor of the effective university learning environment. At the Likert’s scale ranged from 1 to 5, the average estimate is high, placed higher than the median value of the scale (M=4.44, sd=0.72). The next results that appeared from the same comparative study are the estimates of the Albanian students regarding to the same questionnaire’s item. Their estimates are also over the median value (M=3.95, sd=1.3)” is cited on (Vidacek et al., 2010).
3. Disadvantages of the use of ICT in education

Without discussing more advantages of ICT, that they are without counting on the delivery of a range of benefits, again there are some risks of using ICT in education which should be alleviated through appropriate mechanisms, as cited from authors [11] that are part of this study.

Below we list some disadvantages of using ICT in education: ”ICT can create a partition, digital gap within the classroom, where students are more familiar with ICT and will have more benefits, will learn faster than others unfamiliar to technology; Can remove the attention from the main goal of the learning process to develop ICT skills, which may be a secondary goal in this process; May affect the connection process between teacher and student, as ICT become a communication tool instead of face to face communication, so the distance of the transaction will increase; Also since not all teachers are ICT experts, they may be negligent in updating the content of courses, which can slow down the process of learning to students”. But we mention and for: “Also there is a need for training related to ICT by all stakeholders; Cost of hardware's and software can be high; Exit from the concrete life and spread of virtual life; Feeling of filling that gap and loneliness; Informative learning; Individual learning; Individualism”.

3.1 Our survey and results of data processing

Issue of disadvantages of the using ICT in education, by observing the responses of respondents based on three question categories as below, at the same form that was analyze for advantages.

1 In general for all respondents of the study at all public universities
2 Addressed to three main categories:
   • Management staff.
   • Pedagogue.
   • Student.
3 For each of 11 Albanian public universities

At the first question, classification in % of responses for the question: "What are the disadvantages of the use of ICT in education?" Related sub questions:

• Academic staff should spend more time in preparation of teaching materials.
• It is more expensive than traditional education.
• Reduces desire of the students to learn.
• *Reduces communication with students who have difficulties in using ICT*
• *The burden of maintenance and management of the systems.*
• *Teaching effects are inferior related to the traditional method;*
• *Other;*
• *Do not know.*

The charts below show the results of answers to this question.

Chart Nr.4. Classification in % related response of question:
“*What are the Disadvantages using ICT in education*”

From above chart we see that selected alternatives among other things, that respondents deem as disadvantages of using ICT in education, they are:

- Reduced communication with students (25%);
- Academic staff should spend more time in preparation of materials (19%);
- It is more costly than traditional education (17%) and;
- The burden of maintenance and management systems (15%).

We think that roots of first response (reduced communication with students (25%) :) are based at traditional learning, that is not easy to change mention and this is most spread to older generation. f. e. average age of lecturers of some universities is years 50 (with scientific title).

Also we note that this average age of lecturers will be less than 50 in shorten time compare
growth of Ph. D students, together with establishment of strict rules for new recruitment that are preferable just for new generation. For second response we think that it flow from reality.

At the second question, classification in % of responses for the question: "What are the disadvantages of the use of ICT in education?". This question, (include and sub-questions) is the same as above question, but it is directed to three categories:

- Management staff.
- Pedagogue.
- Student.

Chart Nr. 5. What are the disadvantages of the use of ICT in education?"

(for management staff, pedagouges, students)

We have seen that:

At the group of Management staff: is observed to have a considerable frequency options:

- Academic staff should spend more time in preparation of materials (50%);
- It is more costly than traditional education (37%).

At the group of pedagogues, other alternatives that are mostly selected:

- Academic staff should spend more time in preparation of materials (40%);
- The burden of maintenance and management (37%).

At the grouping of students other alternatives that are mostly selected:

- It is more costly than traditional education (27%);
• Academic staff should spend more time in preparation of materials (23%)
• By comparing their responses among different groups of respondents we note that option that is selected from management staff is on the burden of maintenance and management of systems.
• For pedagogues and students selected options are the difficulties, that arises in the communication between them.

At the third question, classification in % according university of question: “What are the disadvantages of using ICT in education?

Chart Nr. 6. Classification in % according university of question:
“What are the disadvantages of using ICT in education?”

![Chart](chart.png)

This same distribution of thought, we can observe even if we compare responses between different universities with below specifics:
• Low value for question: “The academic staff should spend more time to prepare and teach materials” is from Academy of Arts (5%)
• Low value for question: ”It is more expensive than the traditional education” is from University of Sports.
• Low value for question: “Reduces the desire of students to study” is from Academy of Arts and University of Sports.
• Low value for question: “The effects of teaching are against the traditional methods” is
from Academy of Arts and University of Sports.

These responses (from 0 - 5%) are related to the specifications and content reports that these subjects as arts and sports have with ICT, but also their indifference relating to ICT. Perhaps the figures of 0% should be understood as a lack of understanding of technology in their disciplines. For other inquiries values are small fluctuations, which has to do with a rating not very different between the universities, but between special cases there are even mentioned, but no more like universities. For values of other questions, the fluctuations are smaller, which has to do with a rating, not very different between the universities, but between special cases there are, and even are bolded, but not much as universities. In these areas, the above issues should not be assessed as a negative side, but as an accent for a staggering ongoing involvement of ICT in these sectors, disciplines and subjects.

4. Recommendations

Explanations /conclusions related questions of the issues of the theme are shown in their respective part. To exploit advantages of use of ICT in education we will give some recommendations.

As emerges from the analysis of advantages in relation to issues addressed in all its elements are done efforts and has been worked by the staff of the Albanian universities in terms of using ICT in education and its involvement in the process of teaching and learning by institutional side of the respective institutions.

The budget is not satisfactory compared developed countries, to achieve European standards, for development of the contemporary necessary infrastructure to response rapid growth of admitted students, together with continuations of its updating and maintenance. Separate supporting structures (even within educational institutions) enhanced with specialized staff, will emphasize will foster ICT integration in education together with avoid, reduce, eliminate, the main obstacles / disadvantages of these technologies and to highlight better and still the indisputable advantages of Information and Communication Technologies as the vanguard of Albanian society.

We have seen that the presence of ICT into the curriculum is not at contemporary level, from being satisfactory and demands enormous efforts not only from educational actors, but from all stakeholders. Lecturers, teachers and students consider ICT integration in the education
process very important, but their perception is that not enough has been done. Should finds new ways and means to achieve development of other developed states, but not following by the same lines as their own development. In the last few years, Albania recognized an extraordinary boom in the development of growth of mobile phone subscribers (thanks to the growing liberalization of the relevant operators today is to figure for: “Mobile-cellular 141.93/for 100 inhabitants” (http://www.itu.int/ITU-D/ict/statistics), (data are for year 2010, but also what is more important, the exponential growth of Internet users with considerable influence in this quantitative growth have mobile phone subscribers that navigate in the Internet).

Even education must move in this direction. Students and professors in our universities possess about 25% of smart phones (this percentage is growing with direct access to new generation smart phones). Chances are, that through technologies and applications offered from cellular companies, can move in this direction. Strategies and experiences are not lacking. As mobile developments can be followed by "M-Government in Albania", its impact will be even greater from education and these can certainly give a great contribution to overcoming the “digital divide ”, and this is M learning.

Starting from the great importance of this process, the Albanian public universities have done more than first steps in this direction. This fact is reinforced by data processing and analyzing during our study, from which it results that in general all consider incorporation of ICT in teaching and learning important, but still prevailing perception that in this regard, has to do much more. In all the efforts made, a growing trend is in this direction.

Should work more, to involve increasingly disciplines related to ICT in the curriculum of higher education in three cycles, as one contemporary studies and a necessity in today's stage of education and Albanian society. In this line a discipline such as "Information Society" (a subject that includes the knowledge that there must have people in connection with the information society, without going into details to understand the Computer Science that they principally and practically to understand relevant issues how function as a developed society towards which are going) would fit better in some faculties, but also further to influence contemporary culture that must be a student today and a specialist of the future of culture, art, sports, why not the field of teaching being carried out gradually as optional discipline at the beginning of a broad range of ongoing.

Realization of the use of ICT in education, should go in parallel with pedagogy that help
to introduce this technology in teaching and learning process, but there are problems as noted below from authors: (Bilali et al.,) “Not worth noting, that developments in this area of Education Technology, which follow the line of the global and that is driven by technological and especially those relating to rapid development ICT which are also a boost, promotional and its customers, but it must be recognized as a major inertia with its pedagogical aspect, or as "delay" in time of pedagogy attempting to adapt to these developments.”.

Importance of advantages is more than beyond of it, but and to economy and innovation as discussed from (Kacani et al.) at article: “The internet age, the education, the technology and innovation as catalyst of new economic model”

As the end: As is written on (http://www.mash.gov.al) “Albanian Higher Education continues to have problems of its modernization and liberalization and efforts to unify the degrees with foreign universities, the implementation of the Bologna Charter etc.” We are in this process.
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