Using Information Technology for the Efficiency Activities in the Educational Field

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In a knowledge-based society, Information and Communications Technology plays an important role in learning process, involve teachers and students into a relationship that allows students to acquire knowledge and skills needed in their future work. The learning environment created by the teachers affects the students' achievements, their attitude regarding the compulsory school subjects.

We wanted to have feedback from the students regarding what they wait from the course, how much the interest in learning process depend of learning environment and the teacher's attitude, whether or not their expectations are accomplished, so we organized a survey using a questionnaire with 3 group of questions: (1) why the students learn ICT; (2) how the interest in learning process depend of learning environment and the teacher's attitude; (3) to what extent the assessment methods affect the students' attitude.

The survey give answers to important teachers' problems who want to improve their relationship with the students and bring into question new problems regarding the attitude of the students towards the learning process.

The answers suggest the way the teacher must organize the environment in class, give answers the assumption regarding the way the students want to work (individual or in team), their interest, curiosity, motivation, openness.

Keywords: Information and Communications Technology, learning environment, attitude, motivation.

General considerations

Computer technology provides support for the development of an educational system continuously adapted to the demands of the society. This requires that students, teachers, university staff and the whole community have to work together in order to create an integrated and accessible set of resources that support learning. Schools need to understand the evolution of the external world, students should be aware that after graduation they enter in global professions, employers have to develop an organizational learning culture.

The basic reason in choosing such a theme is offered by the fact that the evolution in computer technology has deeply transformed society, research and education, that under these new conditions, the learning environment become more and more important in learning basic knowledge and in acquiring skills .

The learning environment involves teachers and students, teachers with knowledge, skills and positive attitude to apply Information and Communications Technology (ICT) in practice, students who live in a global society and learn to communicate in an online community. Together they have to find solutions for an appropriate curriculum, for useful courses and knowledge leading to skills development and acquiring competences needed in an online community.

There are many books and articles that approach the changes produced by the new technology in the educational process. We mention two of them, which try to structure the ways the technology has changed education and the way the technology is changing the way of students learning.

In the article [6], Dr. Katherine McKnight discus a short list of the top 12 ways how technology has changed education. She highlights communication evolution and expanding audience, shows that e-books are becoming more prevalent in schools and concludes that "technology facilitates the teacher ability to meet the needs of all kinds of learners".

In the article "Four Ways Technology Is Changing How People Learn" [7], the author brings into question the collaborative learning which replaces individual learning and "the shift from passive to active learning or from a teacher-centered to a student-centered approach". In the new conditions, when "a hybrid of self-study, individualized instruction and group study" is possible, the teachers could adopt differentiated instruction, the students could research, communicate and solve problems guided by teachers. A new relationship emerges between student and teacher, in which students can be authors and problem solvers, and turn to their teachers only to look for guidance.

Objectives and methodology

Starting from the interest regarding the learning process in "the computer era", the purpose of this paper is to determine whether or not the relationship between the students and the teachers affects the environment learning, which is so needed in an educational process within a knowledge-based society.

We wanted to have feedback from the students regarding what they wait from the course, how much the interest in learning process depend of learning environment and the teacher's attitude, whether or not their expectations are accomplished .

To do so, we organized a survey and used a questionnaire with 3 group of questions: (1) why the students learn ICT; (2) how the interest in learning process depend on learning environment and the teacher's attitude; (3) to which extent the assessment methods affect the students' attitude. In each group of questions the students have to choose a variant of answer.

It would first be necessary to mention that we organized the survey after some important changes in the curricula and the contents of the ICT courses for the students of the economics faculty of Titu Maiorescu University. The survey is a quantitative research and tries to analyse the implications of these changes in the achievements of students and not in the least, whether or not the students are aware of their role in the educational process, whether or not they are interested in improving learning process.

During the survey, answers are collected from a group of students with different results in the learning process, in order to describe some aspects or characteristics (such as opinions, attitudes, beliefs or knowledge)

of the population of which that group is a part, to compare the answers with their achievements.

The survey on Students' Perception toward ICT

The teachers adapted the curricula and the content of their courses to the demands of the society

Every day we notice more and more increasingly the role of computer technology in the educational system and a permanent demand to adapt our educational system to the society demands. Accordingly, every new year is a challenge for the teacher to choose an appropriate curricula, to update the content of the courses and to adopt new methods in order to prepare students for their future work.

In our university, at the faculty of economics, taking into account that the aim of the educational process is to develop the general competences for the students, the teacher adapted the content of their courses to the new technology. For example:

a) In their future work, students from economics faculty are involved in decision-making process, so they need to acquire competences in working with decision-making informatics system. Traditionally, decision is defined as a resolution taken after having examined a situation. The phases in taking a decision are: information phase, design phase, choice phase and implementation. In the new context, teachers speak about a decisional process, a process which includes activities which are based on solid background information. It is an outcome of a long and difficult process and the solution is chosen from several possible alternatives, depending on achievement of certain conditions (depending on achieving certain conditions). The steps in this context include gathering data for outline the outcomes (analysis), brainstorming to develop alternatives (discovery of causes), list advantage and disadvantage of each alternative (projection of future effects), reflecting on the decision making (measuring the results) and implementation.

b) Usually, the information system in an organization adopts the bi-dimensional information managed by a Relational Data

Base Management System.   By approaching the decision as a process, students need the definition of complex data collections that lead to multidimensional analysis. The staff of faculty included in the curricula a new course with OLAP (On Line Analytical Processing) components that help students to work in client-server architecture for multidimensional analysis of data stored in data warehouses, which accustom students with the financial analysis and forecasting.

c) Aware of the importance of object-oriented methodology in design decision models, the teachers included in the course "Management Information Systems" a chapter dedicated to object-oriented methods. On this way, the course prepares students to develop an existing model by adding new components, applying conclusions which result from the analysis process, helps students to develop networks between the defined objects, to reuse components in different programming environments, to adopt an efficient mode of action in the decision making process, changing focus from symptoms to causes, from assertion to justification, from particular to general; [Quality through E-Learning and Quality for E-Learning] www.scientificpapers.org/download/222/]

Research questions

➢ *Why do I learn ICT?*
It is difficult to know the real reason that determine students to learn ICT: the awareness of its importance in achieving success in life, or only the fact that is a part of curricula, the requirement of the parents or the wish of self-improvement. To find the answer, we request the students to choose one of these possibilities:

I'm interested in good IT skills:
• because it is a compulsory school subject
• because it helps in learning other subjects
• to find out a job
• for success in life
• because it is my parents wish

> *Has the attitude of the teachers any effect to the students' interest in learning ICT?*

To have an answer to this question we start from considering the learning as process with two partners: student and teacher. The relationship between them is very important and determines the interest of students in the learning process. They may or may not to be involved in this process, they may or may not to be active in the class, and finally they may or may not acquire skills needed in their future.

The questions are divided in two groups, one regarding how the teachers' attitude influences the students' interest in learning ICT and the other one regarding the conditions which are necessary for students to learn better.

My interest depends on the way:
- there is a relation between ICT problems and our daily life.
- content is taught in the class.
- my teachers provide guidance when required.
- my teachers provide opportunities to students to increase participation by asking questions.
- each student is encouraged to do experimental work by himself.

I learn better if:
- my teachers show interest in and respect all students.
- my teachers are approachable.
- my teachers listen to the students with patience and tolerance.
- students do their practical work in groups, guided by teacher
- my teachers give me more recognition for the good work I do.

Are the achievement affected by the assessment methods?

Finally, the learning process aim is to give students knowledge and skills necessary in a society based on information and knowledge. The last group of questions regards the achievements of students reported to assessment methods.

> *The achievements of students are affected if:*
>   - my teachers give feedback to the students with constructive criticism.

- the teachers discuss common errors that students make, suggesting ways to avoid them
- my teachers award marks in the examination fairly to all students.
- my teachers give individual attention to the students.
- my teachers return assignments promptly, after evaluation.

Data analysis and results

The next sections will show the students' answers regarding previous questions. At the same time, we analyzed the answers and tried to suggest what teachers have to do in order to improve their role in the learning process.

Why do I learn ICT?

The chart from figure 1 summarizes/ synthesizes answers to the questions regarding the motivation the students have in order to learn ICT. While most of students consider that they need ICT in order to find a job, only a small percent from the students are compelled by their parents. For the teachers is important to take into account this choice, because they are the ones who create the learning environment.
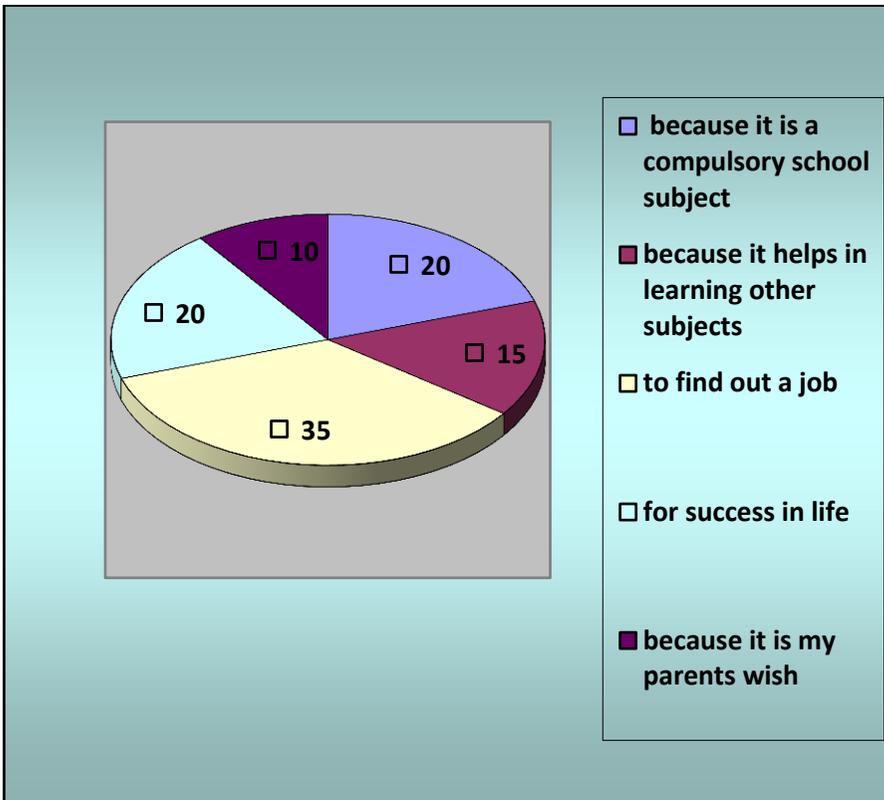
Figure 1: The motivation the students have in order to learn ICT

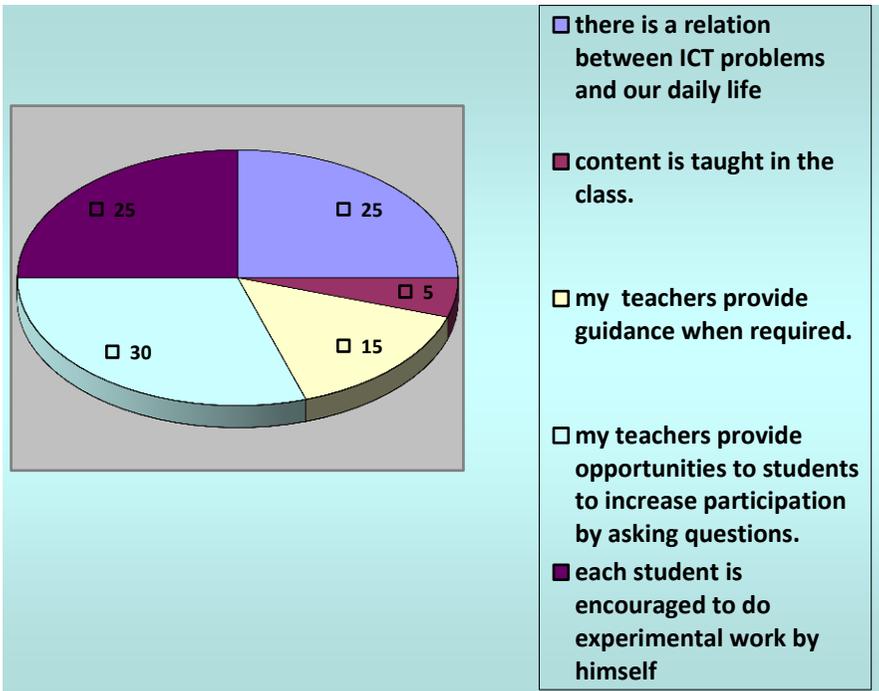Analyzing the answers, we noticed that:

➢ 20 % of the students are interested in learning ICT because it is a compulsory school object and 15 % of the students learn ICT because it helps in learning other subjects. They are confident in the school system and they want to have good marks and to be praised. There are the students who want the teacher to give them problems, help them to solve problems, without much effort from their part. Usually they need to learn the content in classes and complete assignments exactly the way the teachers tell them to act. The teachers' task is to help students to analyze the effect of computer use in their activity, to develop a business environment in which students can improve their skills and could apply acquired knowledge. On this way, students understand that ICT is more than

a compulsory school object, that it helps them to have success in life.

➢ 35% of the students consider that ICT is imperative in finding a job and 20% of them think that the ICT help them to have success in life. This means that in the years of the bachelor's study program, the students are aware that their success in the future work depends on the competences acquired in school. They need ICT competences to develop their own personality, in order to find a job. They are confident in their ability to learn, want to be ready to adapt to the business environment in which they will work. On the other side, teachers have to direct students to acquire skills that help them to operate in an environment in constant motion, to prepare them for the gradual acquisition of professional tasks required in a real system. Furthermore, they should help students to understand how economic organizations use information to create knowledge, develop the ability to interpret data from the appropriate collection.

➢ Only 10% from/of the students learn ICT because it is their parents' wish. We hope that the other side acquired a certain experience, so they could decide what is useful for them, that at their age they are independent and ready to start their own life.

Has the attitude of the teachers any effect to the students' interest in learning ICT?

The chart from figure 2 summarize/ synthesize the answers to the questions regarding the way the attitude of the teacher has an effect to the students' interest in learning ICT. We can observe that most students claim that teachers provide opportunities to increase their participation through asking questions and prefer to be encouraged in doing experimental work by them. Only a small percent is interested that the content is taught in the class, considering more important the environment created by the teacher, the environment that allow them to solve problems related with their daily life.

**Figure 2:** The attitude of teachers has an effect to the students' interest in learning ICT

Analyzing the answers we observe that 25% of the students are interested in ICT whether there is a relation between ICT problems and their daily life. That percent highlights that the teachers have to develop an environment where they are provided with the necessary tools, support and time for their continuous development of intellect, capability and integrity. They think that with solid knowledge and skills to adapt to the new environment, they will be able to find easier a job.

A small percent of the students (5%) need content is taught in the class and 15% of them need the teachers provide guidance when they required. We note that there are the same students who are confident in the school system and want to have good marks and to be praised.

A significant number of student (30%) claims that teachers provide opportunities to students to increase participation by asking questions and 25% of the students ask to be encouraged to do experimental work by themselves. That highlights the important role of the teacher in creating an

environment favorable to access unlimited resources, which allow student to develop their own personality.

The chart from figure 3 shows conditions in which students learn better and how students' success is influenced by the teachers' attitude.
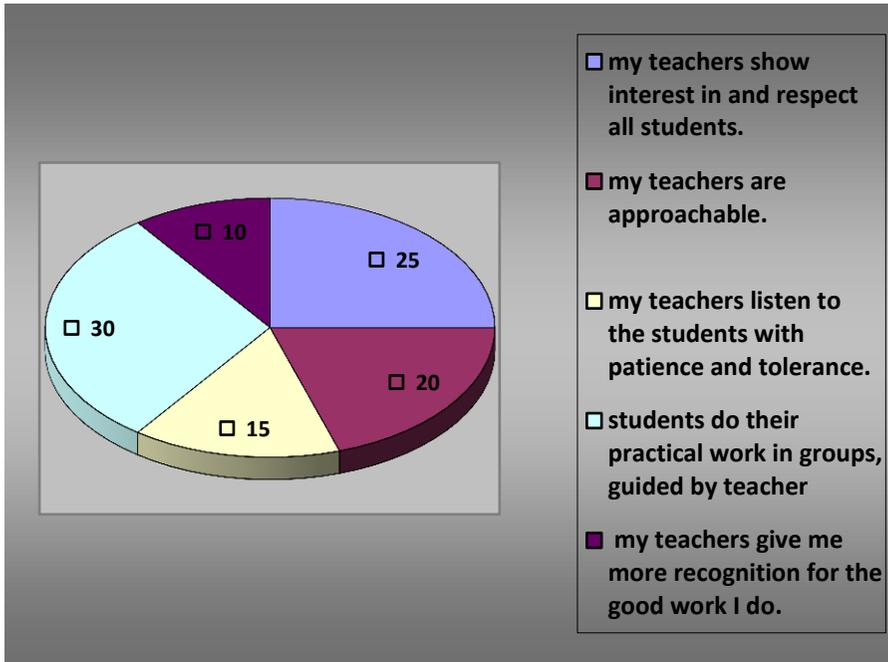
Figure 3: The conditions in which students learn better

25% of students claim that teachers show interest in and respect all the students. This gives them more confidence and the teacher more responsibilities. The students become more motivated in their studies when the teacher is the leader in the class, when he becomes an example and develops self-reliance and self-efficacy among students.

20 % of the students need the teachers to be approachable and 15% of the students learn better if teachers guide students with patience and tolerance. This allows them to ask questions, to propose their own solutions. Is a necessary relationship between the two partners, the only way for the teachers to guide students in achieving basic level in informatics.

30% of the students want to do their practical work in groups, guided by teacher. This is a sign that is useful for students to be part of a

team, that they seek collaboration of others. At the same time, this is a sign that teachers have to involve students in common project, in situations with different solutions. They have to guide students in understanding knowledge networks and in developing knowledge bases, create situations in which students become familiar with data security issues and understand how important cooperation is, give students skills in communication on Internet and Intranet.

10% of the students learn better if the teachers give them more recognition for the good work they do. We hope that the other 90% of the students learn because they are aware of the importance of ICT, want to have competences to be ready to work in a competent business environment.

Are the achievement affected by the assessment methods?

It is interesting to observe that the students' achievements are close related to the feedback the teachers give, to constructive criticism. Most of students are interested to discuss common errors that they make and recognize that are affected if teachers award marks in the examination fairly to all students. This means that teachers must be aware that their behaviour influences the students' achievements, must be aware that they have to create a learning environment that stimulates creativity and students' interest.
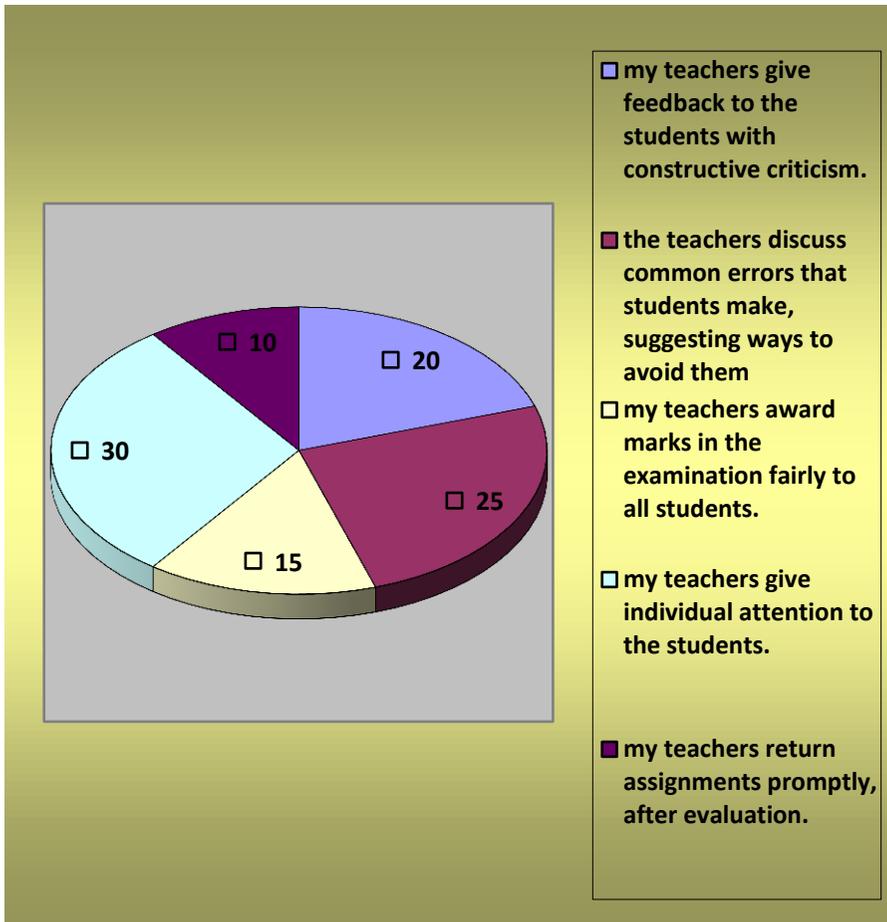
Figure 4: The achievement is affected by the assessment methods

It is interesting to observe that 20 % of the students want to have the confirmation of the good results, want to understand what is wrong in their work. More than that, 25% of the students want the teachers to discuss common errors that they make, want to receive suggestions thus to avoid errors another time. These conclusions give more responsibilities to the teachers, ask teachers to comment the students outcomes, give them additional exercises, in order to improve their results.

30% of the students recognize that are affected if teachers award marks in the examination fairly to all students, but only 15% of the students

are affected if the teachers give individual attention to the students. This is a sign that students are interested to be involve in a fair competition, that the teachers have to take care of the way they award marks in the examination. Maybe it is good that teachers seek to stimulate self-assessment and interactive evaluation to allow students to demonstrate acquired skills and more responsibility.

Only 10% of the students need the teachers to return assignments promptly, after evaluation. This could mean they are confident in the teacher's capability to help them to rectify the errors and they consider that to rectify the errors is necessary to work more and more.

Conclusions

The survey give answers to important teachers' problems who want to improve their relationship with the students and bring into question new problems regarding the attitude of the students towards the learning process.

Corroborating answer from different group, we have information regarding student's type, their attitude towards ICT, the way the teacher must organize the environment in class. In the future researches it is necessary to question the assumption regarding student learning styles, it is a need to give answers the assumption regarding the way the students want to work (individual or in team), their interest, curiosity, motivation, openness.

The study is useful for teachers' educators, curriculum developers, for employees to hire teachers with relevant competences and interest. Significance is not only for our students and the ICT disciplines. We are sure that every course has its problems, its solutions for improving the students' achievement. The success in learning ICT could cause positive effects for all the other courses, helps students in learning basic knowledge and in acquiring skills needed to become tomorrow's workers.

More than that, we consider that for the future, the learning environment based on computer technology is important for the entire learning process. The students could approach the interdisciplinary projects, could use the ICT software in modeling and simulation processes, and could help their researches with CASE instruments.

The topic of this paper raises many difficult but interesting problems, helps us with some examples of how we acted in order to adapt our education system to the society demands. Our opinion is that we could change the teachers' responsibilities and prepare the students to operate in a continuously evolving business environment. We express our hope that on this way we challenge the specialist in the field and together we will try to build e-learning environment which will prepare today's students to operate in future workplaces.

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