

## The Role of learning-teaching in use of Information and Communication Technology for improving education process at high schools of Karaj city

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**Abstract:** Nowadays, Information and communication technology (ICT) has entered to our life widely and students use it extensively. But the actual Theme is that: why, Information and communication technology doesn't use in schools for improving educational process and efficient of it? Usually, we can observe less of its use. It seems that at school and college teachers can improve the process of learning teaching by using of Information technology. And the main aim of present research is to investigate this issue This research is surveying type. 380 participants of our research were selected randomly from 950 teachers. The result is that: the both powers :an intellectual potential of teachers and potential of skills of specialists with strength of Information technology can make a great differences and success in process of learning- teaching. Our research showed the positive role and useful strength of IT in educational process by examples from schools of Karaj city. We can add that the periods of studying IT at schools is a big need of teachers of modern society and teachers want provide teaching of IT and knowledge through widely using of it.

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**Key words:** ICT (Information and communication technology, education, technology, Information technologies)

### Introduction:

Undoubtedly, the development of IT in all aspects' of human life has influenced

Education and teaching process and the Information technology capabilities are in various ways. So, that the connection between IT and education is top issue of the present time and its importance is so real that no one can ignore it. The power and capabilities of Information technology in various aspects of human life is like a symbol of new civilization or the rise of a new wave of civilization (1).

The term of IT united all spheres of new technology including software and hardware systems for getting information (2).

### Information and communication technology<sup>1</sup>(ICT)

Consist of getting, saving processing, reviewing, looking up, searching and transferring information. Now, we can observe its development. Information and communication has a lot of similarities and relationship, that Information is like machine of produce and communication is like its product (3).

ICT based on great member of Information, systems of saving, processing and transferring and last one the system of accessing Information. We can add to this list radio and telecommunication, that also provide Information.

**1. The role of ICT.** Nowadays in fact traditional methods of teaching are not so effective and they can't appropriate progress and development of education process. New technology has much more facilities for earning know ledge of students and they are interesting and attractive. For example using of IT provide in short time practice period of students and show up their real knowledge (4)

A lot of experiments has showed that IT has a great role in process of giving and getting knowledge quickly and easy: may be new technology can sat free teaching process from the boundaries of written programmers of school lessons. And may be IT can build strong bridge between study at school and out of school, between study at home and far away from home, and can create foundation for term of learning for living together and side by side. In modern society new technology is an inalienable part of study and succeeded that teacher who widely used ICT for better results during their classes. Of course, teachers has a lot of options for using ICT in classes, but using of internet and computer for giving different knowledge is more common(5)<sup>2</sup>.

The main aim of (learning for being) development of personality is doing with double independence, creating and analyzing, and being responsible. So, in process of learning nothing should make damage in esthetic feelings, realizing, thinking and physical strength and natural gift and abilities.

<sup>1</sup> Information and communication technology(ICT)

<sup>2</sup> ErdoganTezchi(2009)

Actually ICT has lots of facilities and opportunities for making more effective the process of learning and teaching, but we have to emphasize some points that improve and change teachers role in it:

- change behavior with students;
- Changes in role of teachers
- during classes with students;
- Changes in structure principals and person who provide education and essence of learning;
- Changes in rules and central control of teacher to learner

New information Technology, mainly internet created a new phase in traditional education and a new relationship in all aspects between teacher and student from school up to universities. IT makes the process of learning various and more simple. Its easiest type of learning and it can make faster the process of getting knowledge. So, students being in touch with resources can use it successfully (6).

Using of IT in classes and at schools depends on human strength, not on strength of IT. We can add that using of IT it isn't only helping to another one in using of machine, but the main aim is helping to teachers in using of this machines (software, hardware) in learning process.

## **2. Use of ICT in teaching –learning process**

The importance of teaching –learning in accordance with necessities of an individual and society is increasing day by day, because present world has connected with global net resources and request working power who understand and know new technology and been able to use it for needs of society. This type of abilities and strength of skills are contained of IT, in which prestigious recourses can introduce it I selves and transfer information to another one, so employer requesting from employee this type of skills and abilities in team –work and exchanging information through global net connection; that is solving problem according to different sources. Investing in a education became national investment and according to Alphred Marshad a well-known economist “not one change and development can be like increasing national treasure then change and development of schools(7). The rate of scientific progress and development of new technology request a great changes in system of education. Therefore, nowadays demanding from education is stronger and more difficult than before, and we can't satisfy by traditional type of learning –teaching only (8).

So, for making differences and changes in traditional and repeated methods of education teachers should know new technology and its power and they should learn it seriously. In fact, teachers can investigate the process of improving getting

knowledge through IT and they can complete their own research and investigations (9)<sup>3</sup>

Learning - teaching process, at least can make greatest differences and development in modern society by using successfully ICT.

## **3. Necessity of attention to ICT**

There are a lot of new scientific changes and inventions in every sphere of our modern world and of course they influenced the life of the human of new century century of progress of new technology. Every moment we can see different inventions, changes in various systems of technology, there for we can't teach new generation only according to old, traditional methods of education (10).

ICT is very strong and powerful machine that in a very short period of time can make connection between peoples all over the world. And of course, this powerful connecting machine deals with communication. Today in our society IT has presented people all over the world with gift of new facilities that has entered in to all spheres of life, like political, military, economy, social and educational life of the man of the xxI century. In the age of new technology all educational system request reorganization of teaching –learning process properly. Traditional methods of teaching are request replacing with new, effective methods (11).

## **4. Objectives:**

The main objective of this research is to investigate the role of ICT in learning-teaching process of students of high schools of karaj city and we have to answer following three questions:

1. Investigation of scientific revising of school authorities in situation of teaching and its influence in using of IT in classes.
2. How contents of textbooks could be a reason for traditional methods of teaching in comparison to facilities of ICT use?
3. How practical strength and working experience could be a reason for successful using of ICT at school by teachers?

Why at present time teachers use traditional methods in teaching process and how can education provide progress in learning subjects at classes and how can ICT influence to learning process according to the teacher's opinion? Are there any differences between success made by teachers that use ICT in classes and teachers who doesn't use it? What is the main thing for using ICT in classroom? And how to use ICT for effective and development education? What are the main aims of learning –teaching at schools? We completed our research for answering these questions.

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<sup>3</sup>.Ioanna Vekiri

### 5. The main aims of the research

The role of teaching –learning in use of ICT for improving educational process

The minor aims of the research

1. Practical revising of school authorities in situation of teaching of teacher and its influence in using of IT in classes.
2. Investigation the role of contents of textbooks for teachers in using of IT.
3. To investigate connection between scientific strength of teachers and using of ICT at schools.

#### Course of the research

This research is descriptive –investigative type. The statistic tool of it is school teachers of 4 districts of Karaj city in 2009-2010years (total: 950teachers, 600femal and 350male).

We selected 4 districts of Karaj city because of deficiency of school and geographically scattered conditions. So, accordingly to 4 district were selected 380teachers randomly (134men and 240ladies).

#### Research collection tools;

The questionnaire used in this research is kind of investigation in which content was emphasized. This questionnaire was revised by several professionals including lecturers of Aallameh Taba Tabai University –Dr. Nourozi and Uuniversity of Tarbiat –e-Moallem-Dr. Shah Jafari and Dr.Rastegarpour. Questionnaire used to collect data includes 18 questions.

#### Data analysis

To collect, organize and describe the data to draw conclusions, the describe the data to draw conclusions, the descriptive statically techniques were used to determine frequency and percentage and also deductive statistics techniques(T- test one way)were used to answer the questions of the research.

In this section the findings are presented and the research questions are answered. There are some tables in this section and data are analyzed in two parts, in which gathered data are classified and summarized through descriptive statistics. in deductive statistics section, the T-test used to answer the main question of the research.

#### The single – sample T-test

The single – sample T test in based on this assumption that the number of randomly independent observation of subjects with resulted. Normal distribution in one variable and with interval is available, although practically it's impossible at least we should accept the correctness of the assumption. To collect and summarize the required data and data analysis, the descriptive statistics was used to determine the frequency and present I age (12).

#### The1question:

How much real and sufficient practice could influence and make real impact in using of ICT in education by teachers? The results of 1 and 2 tables showed that medium index of randomly example is 13/145 t. with foredoom-376 and confidence level - 0/01, table's equated -2/58.

So, the null hypothesis is rejected, it means that real and sufficient practice in ICT use in education by teachers has positive impact.

Table 1 frequency distribution of real and sufficient practice in ICT use in education by teachers.

Table1. T-test

Standard error of mean	SD	Mean	Frequeny	
0/04201	0/81898	2/4477	380	Use of real and sufficient practice in education

Table2.T- test

3=test value				
Mean differences	Confidence level	Df	T	
0/5523	0/01	379	13/145	Use of meal and sufficient practice in education

**The 2question:** how contents of text books could be a reason for traditional methods of teaching in comparison to facilities of ICT use?

According to tables 4 and 3 the random sample mean is 13/545t.The degree of foredoom is 379 with confidence level of 0/01.

The observed T(13/545) is bigger than T critical(2/58), therefore, the null hypothesis is rejected. In other words, textbooks provide condition for application of traditional and old methods in comparison to information and communication technology.

Table 3 Content-centered book frequency distribution

Standard error of mean	SD	Mean	Frequeny	
0/04227	0/82399	2/4274	380	Content. Centered book

Table n4.Text books pave the way for application of traditional methods in comparison to ICT.

Table4. Content –centered books T-test.

3=test value				
Mean differences	Confidence level	Df	T	
0/57260	0/01	379	13/545	Content. Centered book

Table 5. The indicator of using of ICT by teachers at schools.

Standard error of mean	SD	mean	Frequency	
0/038050	0/741700	2/6361	380	Scientific potential, strength of knowledge and skills of teachers in use of ICT

Table 6. T- Test for indicator of using ICT at schools by teachers according to their knowledge and professional skills.

3= test value				
Mean differences	Confidence level	D f	T	
0/36390	0/01	379	9/564	Importance of knowledge of teachers in ICT use

## Results and discussion

1. May professional skills and knowledge of teachers assist ICT use in classes?

The result of this research has showed that teacher's professional skills and knowledge of IT, real and sufficient practice could be a strong reason for effective ICT use in schools (99%). Knowledge of using ICT, practical using education by teachers. Can make great development in education by teachers.

So, we can't ignore the unusual and extraordinary effects of results of ICT use at schools. And education for providing further progress and development in giving knowledge to students unavoidable have to invest ICT. It is necessary, because trained specialists, like technologists can train ordinary teachers and after trainings they successfully can use ICT in classrooms during lessons. It is necessary, keeping in step with development of the new world and society therefore methods of education also should be updating and renovate. The results of this research are the same with investigations of Ghaffari 43(13), 2004; Darkiyan (14), (2005); but they are not equal to researches of Mossain –e-Farhangi(15), 2006; Asaf – e Amlashi (16), (2004).

2. To what extend do content –centered books pave the way of the application of traditional and old methods of teaching in comparison to ICT?

The finding of this research show that the content –centered books provide weakens of the application of ICT at schools and they are the main reason of making teachers being in distance from new technology. Content – centered books block up the process of entering ICT to schools and classes. School authorities and responsible person. have to

assist for extending and intrusion of ICT and provide using of it in classroom's lessons. Because, new technology been able make the process of teaching – learning more interesting and effective. The results of this research are similar from investigations of Rezaeyan (17), (2003); Saadatmand (18), (2003); Soleymani (20), (2000), Jenks and Springer (20), (2003) and this questionnaire is different from researches of Karimi (22), (2005); Kanzak and I Cristine (20), (1997).

## Conclusion

At the present time with rapid development in the world teachers have to know new technology properly and use ICT and its facilities in teaching – learning process. Ministry of Education can change the situation through changing the traditional and old content. Of books and provide facilities and conditions for the ICT use and lead the educational system to use web, CD, internet, e-books est. the results show that the period of learning ICT is the main problem of teachers and fortunately, teachers are ready for learning, using of ICT. The another findings of this research is that ICT has positive impact to teaching –learning process. In this case, ministry of education have to develop ICT use in schools through training teachers with help of technologists for further widely and effective, ICT use in schools. And another thing is financial and moral support of teacher for widely using of ICT in classes. According to present research we can put forward following suggestions:

1. Provide facilities for teachers for ICT use in classrooms.
2. Responsible for education system have to make changes in content –centered books.
3. Provide training courses for teachers.
4. Ministry of education have to budget for providing conditions for teachers in buying necessary techniques for ICT
5. Provide students with Internet and being “online”
6. Old textbooks should change in to CD books and they should be handed to teachers and students.
7. Working and exploitation of software.
8. ICT should be the main subject at schools and student should use the facilities of I it I, they make the process of study more interesting and effective.
9. Leading meetings, competitions, discussion –clubs for extending ICT use between teachers and students.

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