The Level at Which Accounting Professors Use Information Technology at Universities

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Abstract	*Since education is affected by technological developments, more than anything else, it needs to equip itself to the latest technologies. In this research, we have reviewed the reasons of disagreements in choosing technology in accounting educations in MA and PHD courses. This research which is an applied survey research is performed through choosing 11 different technologies and sending questionnaire to two groups of professors in MA and PHD courses of state and Azad universities, then by using this information we analyzed the results. The measurement tool in this research has been questionnaire, and research population has been the professors of MA and PHD of accounting course in state, Azad, Payam-Noor and nonprofit universities of Iran. Statistical method of this research is t test. The results indicate that there is a significant difference between uses of above mentioned cases between two groups of accounting professors of MA and PHD courses of state and Azad universities. Practical solution to cover this gap is to use more information technology in accounting education, in order to improve the quality of education by dear professors in one side, and the affairs of students in learning modern technologies and applying them practically in another side.*
Key words	Education, scientific rank, communications, accounting and technology

1. Introduction

Nowadays, information technology and electronically communications are integral components of everyday life. The use of these technologies in different areas of life is very effective, so that many organizations, banks, and shopping centers, have changed their professional interactions based on this technology. So, the educational system, and specially accounting educational system can use these tools for development (Amjadian *et al*., 2012).

Since education is affected by technological developments, more than anything else, it needs to equip itself to the latest technologies. One of the difficulties of educational system is related to lack of familiarity and lack of using these patterns and developed methods of teaching. For the every single change to be taken place, we should begin from educational center. The fact is that educational systems especially universities, have not coordinated themselves with the most advanced scientific and practical principles. It is very important to make the position of scientific education stable, to use technology in accounting educations and also to understand its components.

In traditional education, one had to read and write constantly, and the relationship was almost one-sided. But through applying information technology, by using virtual world in education, we can reach to modern and efficient education. The reason that we apply information and communication technologies in education is to reach to better and faster education. Applying information and communication technologies in education, created a new method of learning in which education is not only performed in verbal method.

Since a little researches have studied the effectiveness of technology in teaching, there are still much more things that accounting researchers and professors should know about the technologies which are needed for education of accounting. Considering what was said above, this research follows the below goals:

1. The necessity of using computer and information technology in accounting education for accounting professors.

2. To determine which technologies have a broad application among accounting professors.

3. To review the reasons of disagreements among educations, in the field of choosing technology and the level it is used.

2. Theoretical basics and history of research

The attention that was paid to educational movies all around the world, acted as a motivation for the ministry of culture and education to constitute international festivals. Since 1964, a number of such festivals have been held in Iran. In 1980, after the approval of high council of informatics by council of revolution, the responsibility to guide the overall system of Iran`s informatics was given to this council, and through secretary of high council of informatics in program and budget organization, budget was assigned to this organization.

In 1993, Iran joined internet network. The first computer which was connected to internet was in the research center of theoretical physics. Currently this center is one of the internet service centers in Iran. Research center of theoretical physics and mathematics, is known as the only organization in charge for registering domain names in Iran. In 1994, "Neda Rayaneh" institution was established. After establishing the first Bulletin board (BBS), this institution set up the first Iranian website inside Iran. Moreover, this institution published "hamshahri" newspaper on Internet in Persian language as the first official newspaper which was published on internet. In the same year, after connecting to internet through Canadian satellite named "Cad-vision", "Neda Rayaned" started his activity as the first internet service provider (ISP) company in Iran.

Dr. Isa Ebrahimzade knows distant education as the product of industrial era and as the industrialized form of education, he believes that the growth and evolution processes of this system have an obvious synchronization with industrial stages historically. He called the first generation of distant education as correspondence and single intermediate education. The spread and diversity of informational and communicational tools, and changing the current world into a global village, in which the transfer speed of information and science has been boosted very much, has unbelievably made the cultural and intellectual structures of societies homologous and standard. By considering these, it is so irrational to close the doors of our society on modern technologies in different informational and communicational cases, just because we want to preserve our cultural structures.

The age of communicational-informational revolution has brought new concepts, which will have many effects in economical, social, cultural and political fields in order to ministrant cities and citizens. The spread of electronic business, electronic banking, the increase in using credit cards and decrease in service providing costs, are some of benefits of these modern technologies in economical field. Recent revolutions have caused interactions between education and technology. One of the effects of modern technologies on education has been the revolution which has been made in educational tools, and creation and spread of new education-assisting instruments. While, education and educational programming should meet the needs of these age.

The beginning of the fast and surprising growth of information technology in 1980`s, revealed a new problem, that is unbalanced growth of profession and science of accounting, so that this science has not been able to coordinate itself with the development of technology, and it also failed to create a proper revolution for this development in the main tools of information systems. So, in 1990, the workgroup of change in accounting education proposed that by considering immediate influence of technology on organizations, accounting profession should understand the current and future roles of information technology in organization.

In another side, the opening of business doors, freedom of investing and entrance of new countries to the market of industrial products, have resulted to increase in competition in trading field. Low cost of information and increase in competition, are two significant feature of current trading environment. These revolutions have also affected the accounting environment.

The process of education for change needs two below factors:

a) Characteristics of students;

b) Education method.

The effects of these two main factors in nous of accounting students should be reviewed, and education method should be modified according to their abilities and science. The nature of job and profession life is being changed for accountants and accounting professors should react appropriately to these changes. The report of research workgroup of Bedford and Shinker in 1987 in USA, indicated that accounting education has not been changed fundamentally, so there are many criticism that accounting graduates do not know how to relate and argue logically. The workgroup proposed that accounting education method should be reconstructed, so that two years should be assigned to general education, two years to professional education and one year to specialized accounting education.

The presence of weakness in accounting informational system causes that online and correct information is not given to users, and irreparable losses are imposed to them subsequently. Accounting is defined as a kind of informational system in which the processing of raw data and changing them into information is comprehensible. But nowadays in many accounting lessons, students are placed in the position of accounting information users, and almost in non of the lessons they do not learn that where these information are come from.

Today, top managers of organization turn toward management accounting systems from software operational systems; perhaps information technology has transformed management accounting.

Global development in the field of information and communication technology has resulted in extension of learning opportunities and access to educational sources, so that this is not possible through traditional tools. Applying this newly developed technology, not only resulted in acceleration and simplification in education and learning, and promotion of effective management of educational systems, but also it has resulted in changing of common basics of traditional education systems. Therefore, the level of importance and reliance on books which are predefined for each class and course, the method of evaluation of educational methods, measurement of effectiveness, the level of learning, the role and value of home works and quizzes, are some of issues that have been qualitatively changed by using information technology. To access to information regarding selection and use of educational technologies in order to transfer lessons more rapidly, is very important. Moreover, faster relationships with advanced universities require that university professors be able to access educational technologies. Professional organizations, in their educational courses, encourage their faculty members through using educational technology. Graduates who enter their own professions should obtain their required skills for applying technology effectively.

In the age of information technology and communications, market needs for accounting graduates change rapidly. Bill Gates believes that: "classrooms are the best laboratories in which we can make use of all the advantages of information highways." Nowadays, reviewing education method of accounting course is essential.

Ravlice (2000) and Khan (2002) performed some researches in the field of using internet for internet reporting, they came to the same conclusion. They both announced that the most significant factor that limits the use of internet for financial reporting is the lack of trust in internet financial reporting.

Lodhia *et al.* (2003) in their researches believed that the most significant reason that companies do not use the total potential of internet for financial reporting, is the lack of trust and low level of skills in information technology. Dull et al. (2003) expressed that using better relation in financial statements can affect the process of judgment.

Etemadi *et al.* (2006) reviewed the effect of information technology on any qualitative features of accounting information. First, the type of reporting which is obtained through using information technology was reviewed, and then the quality of information resulting from reporting was reviewed. In order to determine the effect of information technology on qualitative features of accounting information, firstly the logical network of the effect of information technology on any of qualitative features of accounting information was established through expanded review of theoretical basics. Then, by considering the relations of the main components, research hypotheses were formed. Finally, test statistical methods and variance analysis and Danken test were used to approve the hypothesis. The research findings indicate that information technology results in increase in relevancy of accounting information and decrease in its reliability, it also decreases comparability a bit.

Amjadian *et al.* (2012) reviewed the views of accounting professors about the use of information technology in accounting, availability of facilities and infrastructures required for using information technology in Kurdistan province. They used questionnaire. The results of 62 questionnaires which they received indicated that 87.1% of professors believed that the level and conditions of using information technology is below the average level, and only 12.9% of professors believed that the use of information technology is high and very high.

Moreover, regarding usability of information technology in accounting, professors` views indicate that, 85.5% of professors totally agree that these tools can be used in accounting, and only 14.5% of them believe that these tools cannot be used in accounting. Finally, reviewing this issue that if the required infrastructures of information technology exists or not, the findings indicate that, 88.8% of professors believe that the required infrastructures and also the limitations of applying information technology in accounting are high and very high, and only 11.2% of them believe otherwise. Moreover, they reviewed the difference of different professors` views about research hypotheses, and they divided the professors to professors more than 5 years of experience and professors of less than 5 years of experience, and also professors who employed in their profession, and professors who teach in university. Finally, they concluded that, despite that information technology has been effective in accounting education system, and it can develop and improve accounting education, but the required facilities and infrastructures for using these tools in Kurdistan province are not yet provided.

3. Research hypotheses

1. The level of applying different technologies in accounting education is different among university professors dependent to sexuality and organizational facilities.

1.1. There is a significant relationship between the level of applying technology in accounting education and sexuality.

1.2. There is a significant relationship between the level of applying technology in accounting education and organizational facilities.

Definitions of terms and variables

Communications: it means that something is connected to something else. It is also defined as dependency and cohesion.

Information: it means to be aware of something. Information is used in the meaning of those who make others aware.

Accounting: accounting is a science that by applying it, information related to dealings and financial operations, and events which have financial effects on an organization, are collected, analyzed, measured, registered, classified, and reported.

Sexuality: it means male and female.

Information technology: it includes email, internet, word processor, excel, power point, data analysis software, electronic book etc.

Statistical population and sample volume

Among state universities 4 universities in accounting MA course, 6 Azad universities in accounting MA course, 6 state universities in accounting PHD course, and 1 Azad university in accounting PHD course were chosen. Among 150 questionnaires which were sent, only 119 questionnaires were answered and the others were returned back.

Descriptive characteristics of statistical sample

In this section, a questionnaire which contained 60 questions, were provided. The first 5 questions were related to the characteristics of respondents such as, sexuality, university course, professional experience, and in the following 11 methods were considered in order to measure and evaluate the level that professors use each of the methods, each method was consisted of 5 questions.

Description of statistical sample according to university type is shown in table 1:

Table 1. Descriptive characteristics of statistical sample according to university type

University type	Abundances	Percentage
Azad	63	52.9
State	56	47.1
Total	119	100

According to above table, we can understand that a number of 63 persons from Azad University and a number of 56 persons from state university have participated in this research. Description of statistical sample according to education degree is shown in table 2:

Table 2. Distribution of volume of statistical sample according to education degree

Education degree	Abundances	Percentage
MA	77	64.7
PHD	42	35.3
Total	119	100

According to above table, we can understand that a number of 77 persons who participated in this research were in MA course, and the rest 42 persons were in PHD course. Description of statistical sample according to sexuality is shown in table 3:

Table 3. Review of statistical sample according to sexuality

Sexuality	Abundances	Percentage
Male	85	71.4
Female	34	28.6
Total	119	100

According to above table, we can understand that a number of 85 participants were male and the other 34 persons were female. Description of statistical sample according to academic rank is shown in table 1:

Table 4. Distribution of volume of statistical sample according to academic rank

Academic rank	Abundances	Percentage
Teacher	26	21.8
Associate professor	56	47.1
Assistant professor	29	26.4
Professor	8	6.7
Total	119	100

4. Testing the first hypothesis

The first hypothesis: there is a significant relationship between the level of applying technology in accounting and job experience.

The difference between applying different technologies in accounting learning according to job experience is shown in table 5.

Table 5. Reviewing the difference of level of applying different technologies in accounting learning according to job experience

Experience (years)		Number	Mean	Standard deviation	t	Freedom degree	Significant level
1 to 5	Email	54	11.4	1.8	-7.8	117	0.0001
6 to 10		65	14.7	2.6			
1 to 5	Internet	54	18.1	3.9	-3.9	117	0.0001
6 to 10		65	20.7	3.1			
1 to 5	Excel	54	7.2	1.5	-6.04	117	0.0001
6 to 10		65	9.7	2.8			
1 to 5	Software	54	14.1	3.6	-2.4	117	0.01

Experience (years)		Number	Mean	Standard deviation	t	Freedom degree	Significant level
6 to 10		65	15.6	3.05			
1 to 5	Word processor	54	5.5	2.3	-1.07	117	0.2
6 to 10		65	5.9	2.09			
1 to 5	Video projector	54	17.2	3.3	-0.85	117	0.3
6 to 10		65	17.8	3.2			
1 to 5	Computer workshop	54	7.4	1.7	-5.4	117	0.0001
6 to 10		65	9.5	2.2			
1 to 5	Analysis software	54	7.1	2.8	-3.2	117	0.002
6 to 10		65	9.09	3.6			
1 to 5	Electronic book	54	14	2.4	-3.7	117	0.0001
6 to 10		65	15.7	2.5			
1 to 5	Blogging	54	12	2.2	-5.2	117	0.0001
6 to 10		65	14	2.05			
1 to 5	Educational CDs	54	13.2	1.7	-2.1	117	0.03
6 to 10		65	14.1	2.5			

Through considering above table, and observing significant level, we can understand that t value has become significant when using e-mail, internet, excel (for doing homework), multi-media software, computer workshop, data analysis software, e-books, blogging, and educational CDs (significant level is less than 0.05), it means that there is a significant difference in using above mentioned methods, between two groups of professors (professors with less than 5 years of job experience and professors with 6 to 10 years of job experience).

Testing the second hypothesis

The second hypothesis: there is a significant difference between the level of applying technology in accounting education and sexuality.

The differences of the level of applying different technologies in accounting education according to sexuality, is shown in table 6.

Table 6. Reviewing the difference of level of applying different technologies in accounting education, according to sexuality

Sexuality		Number	Mean	Standard deviation	t	Freedom degree	Significant level
Female	Email	34	13.3	2.8	0.19	117	0.8
Male		85	13.2	2.8			
Female	Internet	34	20	3.3	0.84	117	0.3
Male		85	19.3	3.9			
Female	Excel	34	8.8	2.9	0.64	117	0.5
Male		85	8.5	2.5			
Female	Software	34	15.1	3.3	0.37	117	0.7
Male		85	14.9	3.4			
Female	Word processor	34	5.7	2.2	-0.21	117	0.8
Male		85	5.8	2.1			
Female	Video projector	34	17.5	3.5	-0.16	117	0.8
Male		85	17.6	3.2			
Female	Computer workshop	34	9.1	2.6	1.5	117	0.1
Male		**85**	8.4	2.1			
Female	Analysis software	34	8.5	3.5	0.6	117	0.5
Male		85	8.1	3.3			

Sexuality		Number	Mean	Standard deviation	t	Freedom degree	Significant level
Female	e-book	34	15.9	2.2	2.4	117	0.01
Male		85	14.6	2.6			
Female	Blogging	34	13.5	2.3	1.2	117	0.2
Male		85	12.9	2.3			
Female	Educational CDs	34	14.3	1.8	1.7	117	0.08
Male		85	13.5	2.3			

Through considering above table, and observing significant level, we can understand that t value has become significant when using e-books (significant level is less than 0.05), it means that in this case, there is a significant difference between male and female.

5. Discussions, conclusions and recommendations

Information technology is a powerful tool which can make relationships among people of universe in the shortest possible time. This powerful communicational tool deals with information. Nowadays, information technology has created landscapes for the universe, which have affected political, martial, economical, social and educational dimensions of life in 21th century, so that it has turned the attentions of students toward computers and working with them. Through providing required opportunities for practice and schooling, computers assist academic educations. In order to equip the student to cognitive skills, it is essential to review the traditional teaching method and replace them with new methods. So, to obtain the goal of "high quality learning for all", it is inevitable to use information and communication technology.

The results indicate that when using e-mail, internet, excel (for doing homework), multi-media software, computer workshop, data analysis software, e-books, blogging, and educational CDs, there is a significant difference between two groups of professors (professors with less than 5 years of job experience and professors with 6 to 10 years of job experience). In all above mentioned cases, professors with 6 to 10 years of experience have had a higher average.

Moreover, the results indicate that only when using e-books, there is a significant difference between male and female, and the average of female is higher in this case.

According to the results we can make below recommendations:

1. Technology is a powerful tool. It is wrong to be so much fascinated to this tool, or negate it because of lack of facilities, so that the results would be lagging from other countries.

2. If the application of computers be assimilated in other lessons like a glue to attach topics, it acts passively. Computers can be used to organize data, reporting, creating connections with other students, performing internet researches, and sharing tasks with global audiences.

3. The highest successful level in using information and communication technologies in education will be obtained when we exit from bewilderment about communication and information technology, and concentrate our mind and senses on learning wonders.

4. The problem is that still in many countries, professors and students use computers in a show mode, while using technology in the field of general content has been neglected. Surely, the key of using technology in education appropriately is in the hands of professors. If they do not totally understand how to effectively use information technology in education, investments which have been done in information technology will be wasted easily. Applying information technology needs that professors be prepared well even in the content of topics which they teach, and also the methods by which the content can be taught or learned. Different factors affect the level of applying information technology by professors:

• The level of professors` awareness in different levels of IT;
• Qualitative level of instructions which have been given to professors;
• Software and hardware facilities;
• Different types of lesson content;
• Motivations of students and professors.

Of course, we cannot make a revolution in universities through adding more equipment to them; because just investing and applying IT software and hardware is not enough. Professors should use IT for profession growth and efficiency of their activities. So, proficiency and academic ability of professors are very important.

We make below recommendations for solving the problems which exists in applying information technology:

1. We should make high priority on investment in education quality improvement, as an effective cost.

2. Professors have a significant role in applying technology in classrooms. Applying IT is a fundamental need that should be associated with university programs. The application of technology in education and teaching should be learned. Using technology in classrooms bravely is one of the best methods which may be effective in creating motivation.

3. More professionals should be present in the field of IT in educational centers.

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