

The Effect of Educational Intelligent Technologies on the Academic Achievement of Elementary Students in Shiraz District One

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Abstract

The present study was conducted to determine the effect of using Educational Intelligent Technologies on the academic achievement of primary school students in Shiraz District one. The method of this study was semi-experimental, pre-test and post-test with control group. The population of this study was elementary school students in Shiraz District one, which 80 students were selected through a census method from schools equipped with Educational Intelligent Technologies facilities. After the pre-test, the content of the course was presented in eight sessions using intelligent technology and also traditionally for the experimental group, and finally, the academic achievement questionnaire with the same questions from the two groups was done. Based on the statistical sample, 80 questionnaires have been distributed. All of the questionnaires are valid and can be cited for data analysis. The research tool in this study included two researcher-made questionnaires of Educational Intelligent Technologies and Valerand Students' Educational Achievement. The validity of the questionnaires was evaluated based on the experts' opinion and also on the basis of Bartlett's test. The Educational Intelligent Technologies Questionnaire had a reliability of 0.765 and academic achievement of 0.742 and their reliability based on Cronbach's alpha coefficient for Intelligent Learning Inventory was 0.712. And academic achievement was estimated to be 0.894, which indicates the desirable reliability of the research questionnaire. In this study, linear regression analysis and Friedman test have been used. The results of this study showed that Educational Intelligent Technologies has a significant effect on the educational achievement of elementary school students in Shiraz District one.

Key Words: Educational Intelligent Technologies, Educational Achievement, Internal Motivation, Exterior Motivation, Unmotivated, Primary School Students in Shiraz District One.

1-Introduction

Everything has changed, with the exception of education in today's world. The skills that transform knowledge and information into new and innovative services and products represent successful knowledge-based economies. Because knowledge and information become a common coin to achieve productivity, competitiveness, wealth and prosperity. Countries also have a higher priority to develop human capital. As a result, governments around the world have focused on strategies to improve the quality of education. Decision makers and policymakers have also sought to answer key and challenging questions: What is the definition of quality education in today's global economy, based on knowledge and information? Does education keep pace with a rapidly changing world? Can we find a suitable model for reform that is adaptable?

The problem is if we compare the world today with the world 100 years ago, we are faced with spectacular advances in science, commerce, medical services, communications and many other fields. But as we go to school anywhere in the world, we do not see a difference between the classrooms a hundred years ago with today. Students are seated in rows, holding pencil and paper, and as the teacher tells and writes on the blackboard, they write quickly to keep them in memory and give them back quickly at the exam. While many things have changed due to advances in science and technology, more or less education and the way students learn and teachers teach, remains intact.

In our country, nowadays, the requirements of the age of knowledge and information and the necessity to keep pace with the developments and achievements of technology and human sciences have been felt, which is witnessed by recent government decisions in the field of investment to accelerate the acceleration of information and communication technology in the country. Also, in order to find a good answer to the above questions, education has sought to develop a charter to guide the reform of education in the country, which emphasizes the use of information and communication technology (ICT).

The above points confirm the critical role of educational intelligent technology on the development and reform of the educational system of the country. Therefore, in light of these

findings, the researcher attempted to investigate the effect of the use of educational intelligent technology on the academic achievement of elementary school students in Shiraz District One.

2. Theoretical Basics of Research

The wave of information technology in its various forms since the nineties of the 20th century has embraced the entire world. This wave extends through mobile phones, satellites, computers, the Internet, and so on. The way people communicate and interact, how they work, how they spend their leisure time, culture, and many other aspects of individual and social affects human life. But the institution of education seems to have been less influenced by this wave than other social institutions.

Gardner, a famous thinker and multiple intelligence theorists, states in an article that if it is possible for us to bring the man of the beginning of the twentieth century to today's society; he would be in trouble in confronting the community outside the school and adapting to it. But if the person goes to school, the school environment will be completely self-evident to him. The blackboard, the teacher, the lecture, the question and the answer, as if everything was in school like a century ago, and nothing has changed (computer and education, Tour James, translation by Muhammad Attar, 2003). This is an allegory of the resistance of the educational system to the technological changes of the modern age. Although three decades ago, in the industrialized world, efforts have been made to enter the symbols of information technology, such as computers, into schools or universities, but some training practitioners did not do this well enough. And still traditional methods in schools have retained their authority (William Flam, 2004). With regard to new education theories that call for school and community proximity and emphasize that the school should be organized in such a way as to equip the student to face up to the problems of the future society, it seems that Schools are not averse to preparing their students for future societies defined in the new era, called the "information society". A society whose value belongs to knowledge and it must be capable of generating and processing information and transforming it into knowledge. If this is neglected and the school cannot equip the learners to adapt to the information society, it fears that the school will lose its power and, in fact, what was once thought by school-de-thinking theorists like wish, in practice happened due to the inability of the school to coincide with the new situation. It should not be forgotten that today, thanks to new technologies, knowledge is not the monopoly of school and teacher, but the educational

spaces that created the important symbol of the new age, the Internet in the virtual world, have provided an unofficial and effective learning that does not have time limit, place, age, population, and other school requirements. That is, the institution of late-school and its main pillar, the teacher, have found rivals. In the field of competition, they have more attractive tools, and in this battlefield, either they have to give up the field and give it to their opponents or use new tools, and define new roles for themselves. In this special issue, which focuses on information technology and education, we try to look at information technology and education from different perspectives.

The present age, which is the age of change from industrial society to the post-industrial society or the information society, is natural that information, knowledge and awareness are considered as the most fundamental assets for human beings and human societies. The growth and development of information and communication technology in today's society has soared to a degree that it is considered to be the most important development indicator for developing countries. And believe that the present age will be a different world to be led by information technology.

An important feature of the IT phenomenon is that it facilitates and promotes human communication with humans as well as humans with the environment. Information technology is one of the most dynamic and controversial fields of science and technology due to its evolution and its impact on the educational, cultural, economic, national security, globalization and moderation of traditional information problems. Of course, this should not be ignored because of the specific features of IT. There have always been abuses. These abuses have led to misunderstandings in the use of this phenomenon. However, it must be acknowledged that information technology has many abilities to transfer knowledge, facilitate communications and interactions, and accelerate the growing trend of knowledge and information development, of course, all this is possible with the correct use of this phenomenon. These technologies are important in the education, especially the education of children and adolescents. Therefore, the necessity of research in achieving these goals also indicates the necessity of such research.

3. Research hypotheses

3.1 Main hypothesis

Educational Intelligent technology has an impact on the academic achievement of primary school students in Shiraz District One.

3.2 Sub-hypotheses

1. Educational Intelligent technologies affect the confidence of students in the elementary school in Shiraz District One.
2. Educational Intelligent technologies affect the acuity of elementary students in Shiraz District One
3. Educational Intelligent technologies affect the creativity of elementary students in Shiraz District One.

The purpose of this study is to investigate the effect of the use of educational intelligent technology on the academic achievement of primary school students in Shiraz District one and to determine the empirical relationship between educational intelligent technology and academic achievement of students and to add to the applied knowledge in this field. Accordingly, the present research is applied in terms of its purpose and in terms of collecting information; a descriptive survey one. The community of this research is elementary school students in Shiraz District One, which 80 students were selected through a census method from schools equipped with intelligent educational technology facilities. After the pre-test, the content of the course was presented in eight sessions using intelligent technology and also traditionally for the experimental group, and finally, the academic achievement questionnaire with the same questions from the two groups was done. The research tool in this study included two researcher-made questionnaires of Intelligent Educational Technologies and Valerand Students' Educational Achievement. The validity of the questionnaires was evaluated based on the experts' opinion and also on the basis of Bartlett's test., Their reliability was evaluated and calculated according to Cronbach's alpha coefficient, which indicates the desirable reliability of the research questionnaire. In this research, linear regression analysis and Friedman test have been used.

5. Research results

For analyzing all hypotheses, linear regression analysis has been used.

5.1. Testing the main hypotheses: Educational Intelligent technology has an impact on the academic achievement of primary school students in Shiraz District One.

Table 1. Results of the main hypothesis test using linear regression analysis

Significance test of regression		R2	R	p-value	t	B (Standardized)	β	
p-value	F							
0.000	3794.286	.909	.953	0.000 0.000	19.267 1.288	.953	10.419 61.598	(Constant coefficient) Educationa Intelligent I Technology

Regarding the significant level, it is concluded that the regression is significant. Also, the coefficient of determination is 0.909, which indicates that 90.9 of the changes related to the academic achievement of elementary school students in Shiraz District One can be explained by educational intelligent technology. Given the coefficients β obtained, the relationship between the variables studied can be formulated as follows:

(Educational Intelligent Technologies) \times 10.419 + 61.598 = Students' Achievement
Achievement

5.2. First Special Hypothesis Test: Educational Intelligent technologies affect the confidence of students in the elementary school in Shiraz District One.

Table 2. Results of the first hypothesis test using linear regression analysis

Significance test of regression		R2	R	p-value	t	B (Standardized)	β	
p-value	F							
0.000	5330.715	.933	.966	0.000 0.000	7.078 73.012	.966	1.090 0.324	(Constant coefficient) Educationa Intelligent I Technology

Regarding the significant level, it is concluded that the regression is significant. Also, the coefficient of determination is 0.933 which indicates that 93.3 percent of the changes in the confidence of the students in the elementary school can be explained by educational intelligent technology. Given the coefficients β obtained, the relationship between the variables studied can be formulated as follows:

$$(\text{Educational Intelligent Technology}) \times 0.324 + 1.090 = \text{Students' Confidence}$$

3.5 Second Special Hypothesis Test: Educational Intelligent technologies affect the acuity of elementary students in Shiraz District One

Table 3. Results of the second special hypothesis test using linear regression analysis

Significance test of regression		R2	R	p-value	t	B (Standardized)	β	
p-value	F							
0.000	1403.906	.786	.887	0.000 0.000	37.469 4.076	.887	75.279 0.194	(Constant coefficient) Educationa Intelligent Technology

Regarding the significant level, it is concluded that the regression is significant. Also, the coefficient of determination is equal to 0.786, which indicates that 78.6% of the changes in the acuity of primary school students can be explained by educational intelligent technology. Given the coefficients β obtained, the relationship between the variables studied can be formulated as follows:

$$(\text{Educational Intelligent Technologies}) \times 0.194 + 75.279 = \text{Student Acuity}$$

5.4. Third Special Hypothesis Test: Educational Intelligent technologies affect the creativity of elementary students in Shiraz District One.

Table 4. Test results of the third special hypothesis using linear regression analysis

Significance test of regression		R2	R	p-value	t	B (Standardized)	β	
p-value	F							
0.000	636.466	.625	.791	0.000 0.000	25.228 1.953	0.791	0.125 0.823	(Constant coefficient) Educationa Intelligent

								Technology
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Regarding the significant level, it is concluded that the regression is significant. Also, the coefficient of determination is 0.625, which indicates that 62.5 percent of the changes in the creativity of elementary school students can be explained by educational intelligent technology. Given the coefficients β obtained, the relationship between the variables studied can be formulated as follows:

$$(\text{Educational Intelligent Technologies}) \times 0.215 + 0.823 = \text{Students' creativity}$$

Friedman test has been used to rank and identify the prioritization of the research variables. Using the Friedman test, we can compare the rank of variables.

Table 5. Results of the comparison of the mean rank of variables using Friedman test

Significance level	Amount	Degrees of freedom	Number	Average rating	The dimensions of students' academic achievement
0.000	398.817	2	80	4.15	Students' self esteem
				2.47	Students' acuity
				2.10	Students' creativity

Considering the significant level, it can be concluded that there is a significant difference between the mean scores of different dimensions of students' academic achievement. Also, according to the Friedman test, it can be concluded that students' self-esteem is more and more highly ranked, followed by students' acuity and creativity respectively.

6. Discussion and Conclusion

One of the most important features of the present age is the increasing acceleration of scientific, technological, social and ... developments. At that time, human societies and organizations are bound to achieve new trends for survival, dynamism, and constructive changes in the future, because according to Tafler, "it is only by making creative use of change to direct itself that can be protected from future damage and to achieve to a better and more humane future. On the other

hand, in almost all societies, it is expected from the education institution that, while re-establishing culture and transition, be the valuable methods of the predecessors to the next generation and the source of changes and social innovations because the education system, based on its mission, creates the underlying foundation of social characters and perspectives, and thus, if this is done in this way, it will be easier to expect innovation in society. This means that the education system must be able, in addition to coordinating with the changes of the modern society, to anticipate changes in the future, and direct changes to bring about the desired changes in the future. In this regard, one of the approaches that can be used to meet the above needs in educational systems and is now implemented or being implemented in many developed countries today is the expansion of the use of educational intelligent technologies in educational systems. Such schools are in fact a kind of invention of a new philosophy and a concept of education and, by abandoning some traditional deterrents, are trying to use intelligent technology in education. Effective education in such schools requires that knowledge be accepted into new roles in the learning process so that information seekers can judge and evaluate the value of the extensive information available on the World Wide Web for their use. In such a situation, the role of teachers is also shifting from knowledge transfer to facilitating the learning process; they should also strive to provide students with confidence, information management strategies and necessary negation skills so that they can successfully set up and use technology and mass media tools in their everyday life and in their work environment.

But as noted, as with any other educational innovation in the education system, there are obstacles to the establishment and development of these schools, most of which are cultural and structural problems. In the last 50 years, there have been a lot of changes in human life. You see this claim if you look around your life, but unfortunately the classroom has not changed much more than 50 years ago, and it's still being done with blackboard. If it's not acceptable for officials, teachers, and people to admit that the repetition of traditional practices has come to an end, In that case, new practices will never be accepted because the basis of "changing" is the willingness to accept it; Otherwise, the change does not necessarily take place, it does not have predicted results and always comes with resistance and defenses. Another important point to be addressed in this regard is to know that technology is a tool and that the efficient use of any kind of technology emanates from thought, culture and deep social relations. Therefore, in order to effectively and efficiently use educational technology, especially in the development of

education, it needs to improve approaches, review educational policies, reorganize content, improve human resources, design effective syllabus and transform cultural standards to provide coexistence with technology. The advancement of intelligent educational technology has exerted a widespread impact on education and is increasingly used in this field, and no one has any doubts about the positive outcomes of the use of information technology in education. On the other hand, information technology capabilities in the production, presentation, and transfer of educational data are increasingly updated, and a new form of education is emerging with a comprehensive approach, and all evidence demonstrates the necessity and efficiency of information technology in the field of education and teaching. Therefore, it is necessary to look at a new perspective on this factor in education so that it can be used effectively to boost education and maximize efficiency, and save time and solve spatial problems that are the hallmarks of information technology. This requires a full-fledged effort and attention from the officials involved in the planning of education and duplication of effort by IT professionals and practitioners, especially computer scientists, to make progress in this regard by localizing this technology and identifying new developments and introducing them to the community, solving language problems and removing other barriers.

The use of information and communication technology can help teachers and students to be able to view future challenges. In order to make students face the challenges they face in the future, teachers and students should be able to use ICT, which facilitates the development of new skills and high thinking power. (Younes, 2007).

In many countries, the use of information and communication technology in the educational system has been considered in order to improve the quality of teaching learning methods (Pelgrām, 2001).

The present study was conducted to investigate the effect of using educational intelligent technology on the academic achievement of elementary school students in Shiraz District One. For this purpose, control and experiment groups, and pre-test and post-test were used.

The results of this study showed that the use of educational intelligent technology has been effective in increasing learning and academic achievement. However, in the study of the research background, the case that was similar to the current research has not been found; however, there

are many cases of research in relation to the impact of educational intelligent technologies in teaching and learning that are consistent with the results of the present study. Among them, one can mention Tummy and Cardan (2010), Heydari et al. (2010) and Sulimanpour et al. (2010), which directly point to the effect of the use of educational intelligent technology on increasing the learning of specific lessons in different educational levels. Also, we can refer to the results of research by Sattari and Mohammadi (2009), Daiizadeh et al. (2010) and Najafi (2008) that consider the use of information and communication technology as effective in academic achievement. In fact, one of the requirements for academic achievement is increasing the amount of learning. However, the results of the research Adimi (2012) and Osu et al. (2010) are not consistent with the findings of the present research and the mentioned studies. Adimi (2012) examined the impact of computer-aided education on the academic achievement of high school students in relation to social studies, and concluded that the use of computers as one of the main forms of information and communication technology has a significant effect on academic achievement in this field. In explaining this result, it might be said that the effect of the use of intelligent educational technology is not significant in relation to courses that are often theoretical and verbal, and that forms, graphs, and other visual aspects do not have much to offer in the lesson. However, in order to obtain reliable results and logical and scientific reasons, there were other studies in this field. In connection with the research by Osu et al. (2010), other studies also confirm this conclusion. Because both theoretically and according to the nature of the course, such as biology, the use of educational intelligent technology can have a positive impact. As in this study, the positive effect is mentioned. But in contrast to the traditional teaching method, it has not been able to make use of the technology in terms of quality of use and the degree of intervention. The mere use of modern technologies in various areas of life, including education, is not a suitable criterion, and the use of it is a precondition and a more important issue.

Kozma's study (2005, quoted by Michaels, 2011) shows that ICT has three main effects on education:

1. Student outcomes such as high scores in courses and learning the skills needed to enter a developed economy.

2-Teacher and classroom outcomes, such as: developing teachers' skills in using technology, developing their knowledge of new educational approaches, and developing their views on teaching.

3. Other outcomes, such as: Increasing school innovation and community access to adult education. Therefore, given the significant effects of the use of educational intelligent technology in education and its role in increasing learning and, as a result academic achievement, which has been emphasized in most studies, it has to be scientifically and accurately adapted to the widespread use of this technology in education. In addition to the above, one can also point out that the child today is the child of the age of information and communication, and is associated with the technology of this age from a child; If education and the education system are not suitable for this age, they cannot even come up with "citizens" (students), and thus, to a great extent, will lose their effectiveness Because a student familiar with technology in a traditional environment will be tired and discouraged, and on the other hand, this environment cannot lead to their talents adapted to the needs of the present age.

Of course, the quality of education through information and communication technology should also be considered. It should not be used in such a way that excessive use of technology leads to negative educational effects and reduces the productivity of education. In fact, it should be noted that technology is a tool for education, not its purpose. For effective use of information and communication technology, according to scientific findings that can be attributed to the culture-building among teachers as administrators and families, the necessary infrastructure should be provided and teachers should be informed about the desirability and proper use of technology in each lesson.

For this purpose, the following suggestions are presented:

Intelligent educational technology is the network of production management, processing, distribution and optimal use of information to enhance system performance, which is considered as a rehabilitating element in many new educational opportunities. As a systematic approach to examining the role of information and communication technology in education, it does clearly reveal that intelligent educational technology has a significant and positive impact on all components and factors of education. Considering the impact of intelligent educational technology on each component, its impact on the entire educational system should be seriously

addressed. The elimination of the problems and obstacles related to the deployment of ICT in education requires the development of comprehensive and strategic laws, the coordination and interaction of other organizations and ministries, private sector participation, training of specialist personnel, financial support and the expansion of the telecommunication network which ultimately leads to equality of educational opportunities and access to education for all at all levels, the improvement of the quality of education, the efficiency and effectiveness of the educational system, the strengthening of self-regulation, the prevention of brain drain and the training of entrepreneurship.

In July 1998, Japan's Educational and Training Programs Review Council, in response to the Japan Central Education Council on Information and Communication Technology (ICT), announced the pivotal focus of the curriculum reform. Some of the most important aspects of the reform program are: (Sarkaraii, 2002)

- Application of information and communication technology in the teaching-learning process
- Emphasizing the skills of using knowledge and information and passing on information transfer and learning how to learn
- Inclusion of education technology and training units on various topics for using computer skills such as Information Technology and Family Economics
- Applying the capabilities of the World Wide Web to the learning-teaching process
- Provide security for students on the World Wide Web
- Utilization and use of compulsory curricula in relation to ICT knowledge in high school
- The professional performance of teachers, with the development of information and communication technology

Functional suggestions

1. Officials and practitioners provide training in the field of investment and effective planning in this field, with a better understanding of the impact of the use of information technology in education.

2. Teachers and educators learn about the knowledge and skills of computer scientists in the use of modern information technology in education, and get updated with up-to-date progress.
3. Computer science and information technology practitioners will carry out substantial research on localizing this technology and making it easy for users to understand.
4. A panel of computer science, information technology and education professionals will be established to guide the use of information technology and formulate the massive strategy.

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