Proper and efficient teaching by implementing smart schools

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Abstract

The purpose of this study is to investigate how school smartening affects teaching in schools equipped by electronic supplies. In this research, statistical population included 20 schools in Darab, Iran. For this purpose, questionnaires consisting of open questions and answers of 30 statistical samples were collected and analyzed and the reliability of questionnaire was .924 by Cronbach's alpha. The research showed that applying ICT in teaching could reduce the distance between "what is" and "what should be" in a short period of time. Solving physical problems of these schools can reduplicate their efficiency. Moreover, the entrance of specialist and skillful individuals can solve many of these school problems. Information and Communication Technology with the support of the Internet could provide an appropriate range for development of necessary opportunities in order to create new ideas in the worldwide. From among the results of this study, one can point to the improvement of empirical learning, research-orientation and student-orientation in teaching/learning processes. Furthermore, the results show that there are strong meaningful relationships between smartening of schools and teacher instruction and also between smartening of schools and student learning. Because this research seeks to introduce changes to the education method through the smart school approach, its method is a correlational one.

Keywords: smart schools, Information and Communication Technology, instruction and learning, electronic education.

Introduction

Nowadays, the most important concern of the education system of a country is creating a suitable place for development and sublimity of intellectual capital in an informational and wisdom-oriented society. For effective participating of all social groups in such a society, they should learn continuous learning, creativity, innovation, and active and continuous participation. Realization of this ideal requires a new definition of the role and function of schools as the main educational foundation in a society. Today, the educational system of a country needs a school that by means of Information and Communication Technology (ICT)can provide continuous learning and give modern opportunities to individuals for experiencing life at an informational society in such a way that this technology is considered not only as a means, but also as a fundamental infrastructure shaped by professional education (Style smart building, 2012).

The word "smart school" has entered our education for some time and valuable activities have been performed in this area although they have been incoherent. By inspiration of religious teachings, time requirements, realization of the goals of Iran landscape in 2025, achieving top goals of education and increasing educational justice, the Education Ministry of Iran has begun to define the structure, position, organization and conditions of developing smart schools on the basis of scientific and international criteria and local conditions. Therefore, for achieving this goal, serious efforts should be made including changing the approach to educational method, managing the educational centers and supplying required infrastructure (Style smart building, 2012).

Using ICT in education processes, simultaneously with the evolution of the educational approach in the world, has provided the ground for creating smart schools. These schools are among key requirements of knowledge-based societies and they follow the approaches of developing knowledge and entrepreneurship skills of students. In such schools, the instruction-learning process has been improved and an integrated interactional environment is provided for increasing

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the major skills of students by relying on group activities in the era of wisdom (Style smart building, 2012).

The main research question

Does implementing smart schools lead to an improved quality and change in teaching methods?

Research hypotheses

1. There is a significant relationship between implementing smart schools and teacher instruction.

2. There is a significant relationship between implementing smart schools and student learning.

Research objectives

- To provide a teaching/learning environment and its continuity inside and outside of schools;

- To promote empirical learning, research and student orientation in teaching-learning processes;

- To improve educational conditions in schools.

Materials and Methods

Because this research is aiming to change the instruction method by implementing the smart school approach, its method is correlational. The data were collected through the field and library method through questionnaires, and online papers and field research were used to study schools in Darab, Iran. Also, in this research, the smartening Style Sheet codified by the Education Ministry was used.

In this study, inferential statistics including Kolmogorov–Smirnov test (normality data test), regression and Pearson correlation were used to analyze data. Kolmogorov–Smirnov test is used in cases that variables are in rank order and distribution of that variable can be specified in the society. This test is exerted by comparing the distribution of relative frequencies observed in sample and society.

Kolmogorov–Smirnov test

The Kolmogorov–Smirnov test is used to check the normality of data distribution:

Because the values of Z statistic of Kolmogorov–Smirnov are greater than 0.05 for all of variables, it can be concluded that data distribution is normal. Therefore, all conditions for using regression and Pearson correlation are met.

Table 1: Normality data test

	Student learning	Teacher instruction	Smart school
The Zstatistic of Kolmogorov−Smirnov	1.313	0.947	1.202
Meaning level	0.064	0.331	0.111

Results

Information technology can be utilized for improving efficiency and effectiveness in work processes, managerial decision-making, and group work. ICT with the help of the Internet can provide a suitable atmosphere for the development of necessary opportunities to create new ideas. Cultural plurality and educational variation are among opportunities provided by smart schools. Despite the traditional structure and organization of Iranian schools, applying information technology demands efficient organization and structure as well as the development of appropriate legal positions.

Investment for solving hardware problems of these schools can duplicate their efficiency. Also, the entrance of specialist and skillful experts can solve many problems of these schools. On the other hand, these schools cannot be managed by the traditional view while desired goals cannot be simply achieved through traditional methods with the aid of some advanced computers.

In this documentary, schools' prerequisites are defined for launching and performing plans in four divisions: (a) infrastructures (local network, Internet connection and hardware); (b)software (websites, educational management systems, electronic content and other electronic teaching software, office automation of school and email); (c) teaching (for four learner-group including management staff, teaching staff, students and parents); and (d) human resources (strategic document draft of smart schools, 2005).

Now, fortunately, performing this plan has been developed in many high schools of Iran and it is going to be done in all educational levels of schools. In the city of Darab, currently 20 schools with 30 smart classes enters smart environment; it is hoped that remained schools attain this aim in 5 stages and it is in the second stage of the plan.

Descriptive statistics

Descriptive statistics is used for explanation and description of collected data:

Table 2: Descriptive statistics of variables

variables	Mean	Standard deviation
Implementing smart school	3.43	0.438
Teacher instruction	3.86	0.431
Student learning	4.32	0.441

Implementing smart schools

The following diagram indicates the mean of 3.43 and standard deviation of 0.438 for the variable *implementing smart school*.

Teachers' training

The following diagram illustrates the mean of 3.86 and standard deviation of 0.431 for the variable *teacher instruction*.

Students' learning

The following diagram shows the mean 4.32 and standard deviation 0.441 for the variable students learning.
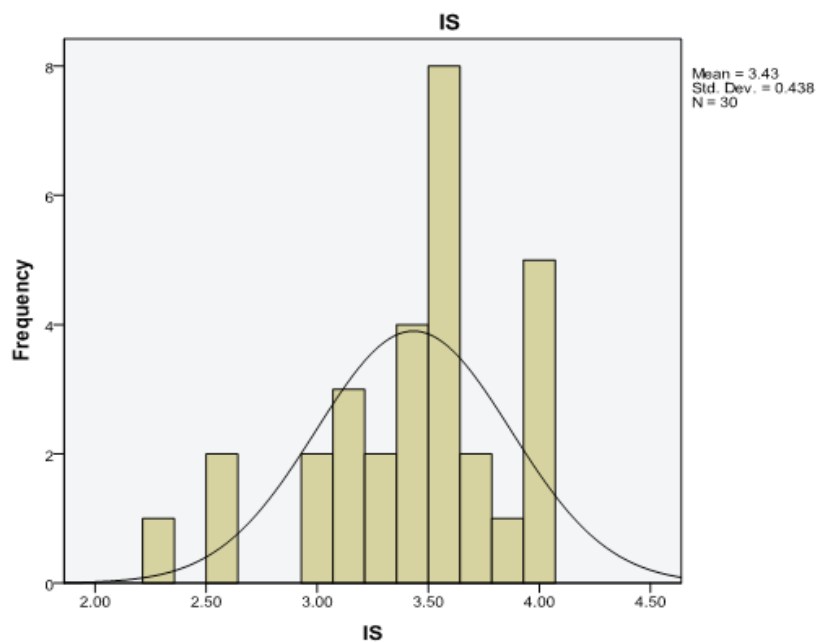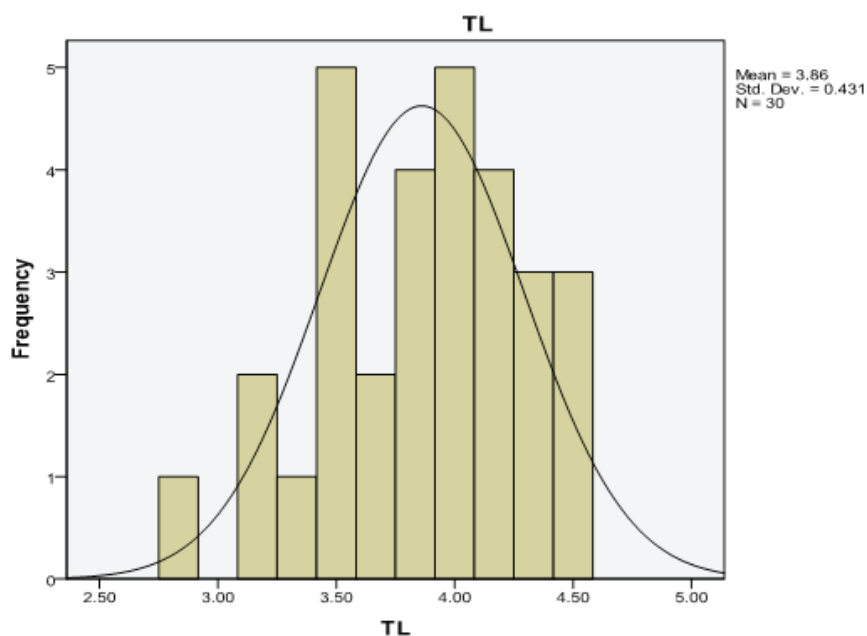

Figure 1. Smartening of school

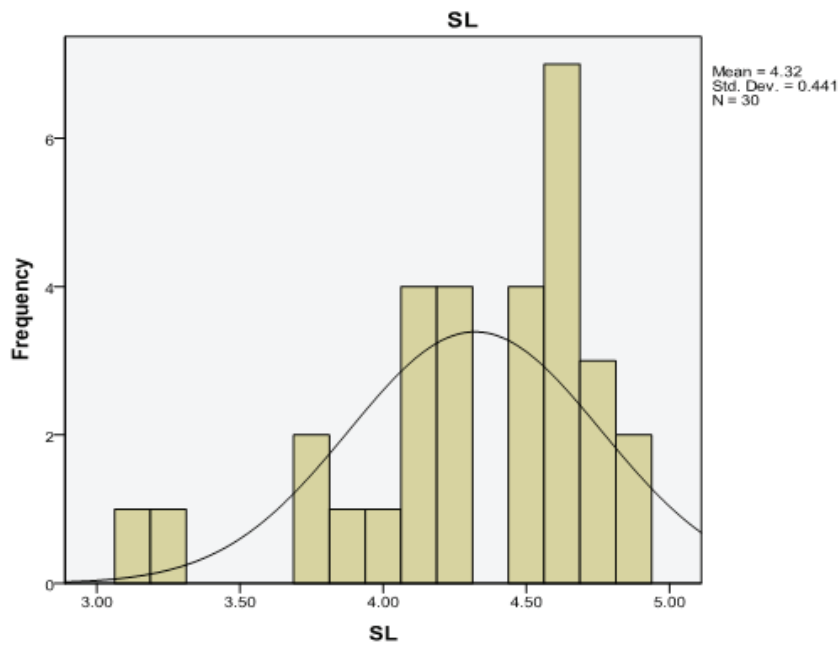

Figure 2. Teacher's instruction

Figure 3. Students learning

Pearson correlation coefficient

Hypothesis 1: There is a significant relationship between implementing smart schools and teacher instruction.

Regarding the obtained results from the correlation matrix, it can be claimed that with 0.99 confidences, there is a relationship between implementing smart schools and teacher instruction. On the other hand, the rate of this relationship which equals to 0.620 is direct (positive) and strong. That is, by school smartening, the rate of teacher instruction considerably increased.

*Hypothesis 2.*There is a significant relationship between implementing smart schools and student learning.

Considering the obtained results from the correlation matrix, it can be stated that by 0.99 confidences, there is a relationship between implementing the smart school and student learning. On the other hand, the rate of this relationship which equals to 0.578 is direct (positive) and strong. In other words, by implementingthe smart school, the rate of student learning considerably increased.

Table 3.Correlation of school smartening and teacher instruction

Teacher instruction	School smartening	
.620**	1	Pearson correlation of smartschool
.000	30	Sig. (2-tailed)
30		N
1	0.620**	Pearson correlation of teacherinstruction
	0.000	Sig. (2-tailed)
30	30	N

Table 4.Correlation of school smartening and student learning

Learning student	School smartening	
0.578**	1	Pearson Correlation of smart school
0.001		Sig. (2-tailed)
30	30	N
1	0.578**	Pearson Correlation of student learning
	0.001	Sig. (2-tailed)
30	30	N

Regression coefficient

The following Table 5 shows the standardized regression coefficient for the variable implementing smart school. As a result, it can be stated that the relationship between implementing smart schools to teacher instruction and student learning is the infrastructure of technology; that is, for each increase in standard deviation of the variable implementing smart school, the rate of teacher instruction is 0.620 and standard deviation of student learning is 0.578 of.

Table 5. Regression coefficient of school smartening and instruction-learning process

Meaning level	F	T	B	R^2	R	
0.002	17.523	4.186	0.523	0.385	0.620	Smart school and teacher instruction
0.001	14.024	3.745	0.665	0.334	0.578	Smart school and student learning

Discussion and Conclusion

Information technology can be used to improve the efficiency and effectiveness in work processes, managerial decision-making, and group work. Information and Communication Technology with the help of the Internet can provide a suitable atmosphere for the development of necessary opportunities to create new ideas. Cultural plurality and educational variation are among opportunities provided by smart schools. Despite the traditional structure and organization of Iranian schools, implementing information technology demands suitable organization and structure as well as development of appropriate legal foundations. Investment in solving hardware problems of such schools can enhance their efficiency. Also, employing specialist and skillful individuals can solve many problems of these schools. On the other hand, these schools cannot be managed by the traditional method while the desired goals can be achieved by traditional methods simply aided by some advanced computers. Evolution in such schools should be realized in teaching methods and the style of textbook codification. Furthermore, as far as the threats to these schools are concerned, most of the problems can be solved by legislation and regulation which are appropriate for such schools, teachers, students and principals. Also, educational opportunities of these schools can be promoted which in turn breeds creativity and the morale for research-orientated schools.

The number of many students in smart schools is a serious threat for them. In smart schools, because students can easily access to various sites, they may check immoral websites and this matter needs to be addressed. Other possible threats of employing individuals in smart schools include the lack of any advantage for students of smart schools in comparison to other schools, negative approach of parents toward smart schools, the stress and anxiety of passing entrance examination of universities, and high dependability to other countries for supplying hardware and facilities.

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