

Investigating the Effect of Organizational Innovative Climate on Continuous Use of Electronic Teaching with the Role of Computer Self-Efficacy Among Male Teachers

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Abstract

Background: Nowadays, more than ever, teachers need to adapt using new technologies in teaching, especially when electronic teaching is a necessity.

Objectives: The present study aimed at evaluating the effect of organizational perceived innovative climate on continuous use of electronic teaching with the role of computer self-efficacy among male teachers in Ardabil province.

Methods: This was a correlational study with causal modeling. The study population consisted of 312 male teachers. The sample of 172 teachers was selected using cluster sampling method and Cochran formula. Three questionnaires were used for data collection: King et al. innovative organizational climate, Karsten and Roth computer self-efficacy, and Chow et al. Continued use of electronic teaching. The experts confirmed the face and content validity and the reliability of the questionnaire (0.78, 0.82, and 0.89, respectively) using Cronbach's alpha. The data were analyzed using SPSS 20 software and LISREL software (Version 8.54).

Results: The results showed the impact of perceived innovative climate on computer self-efficacy and revealed that the continuous use of electronic teaching among the teachers was positive and significant ($P < 0.001$). The causal model was designed based on the fit model of structural equation: goodness of fit index (GFI = 0.90) and root mean square residual in latent variables (RMSEA = 0.078). Thus, the model was fitted, and the structural equation model perceived innovative climate on electronic teaching directly ($\beta = -0.11$) and indirectly through computer self-efficacy ($\beta = 0.21$). The continuous use of electronic teaching among teachers was effective ($P < 0.001$).

Conclusions: Organizational innovative climate can be more successful and effective in schools by employing teachers who have knowledge of the continued use of electronic teaching and by improving their computer self-efficacy.

Keywords: Organizational Perceived Innovative Climate, Computer, Self-Efficacy, Continuous Use of Electronic Teaching, Teaching, Schools

1. Background

Education has undergone many changes. Every day we witness the development of virtual universities, business, municipalities, education services, and electronic services. These developments, along with the rapid development of knowledge through the internet network, are swiftly expanding, transforming a traditional old world to a multi-dimensional world in the virtual era.

The most important achievements of information and communication technologies can improve the quality of students' learning, ease of access to vast amount of information, fast and timely access to information in a short period, reduction of training cost, the accuracy of the material, promote media literacy, and improve students and teachers' knowledge. In the past, training was done only by teachers, trainers, and books as the only source of in-

formation. However, today, new communication tools are used for training and education; and the influence of new information technologies to streamline training centers have affected teaching-learning relations strongly (1). Electronic teaching and learning methods could be a great help for educational organizations (2). In other words, the use of this new technology allows learning at any-time and anywhere and provides it more quickly. However, teaching through e-learning is a new philosophy in educational services of the modern societies. Electronic teaching utilizes smart whiteboards, downloadable slides with lectures, and discusses different issues, and it is the most essential dimension of the teacher training approaches (3).

The national policy on education has defined electronic teaching as a teaching that students can learn beyond the time and location of the classes. For this purpose, various media and tools have been used to provide

quality education for all students (4). The use of electronic methods of education on the ability of teachers in using technologies such as images, animations, videos, and sound teaching has been greatly emphasized. In this type of teaching, technology acts a teaching aid to provide more attractive classroom activities and enhance students' learning (5).

Electronic teaching in classrooms with a specific emphasis on content and instructional strategies, allow the teachers to use the computer, the internet, and other information technologies as educational tools. The researchers have founded that students acquire more success when teachers used new educational methods such as brainstorming, electronic teaching, and computer-based teaching (6). Therefore, in today's changing world, students have the choice to use the internet and its related tools. Thus, to adapt to these changes, schools should be able to take advantage of new methods of e-learning, and teachers should be update their teaching tools to use new teaching methods such as electronic teaching (7, 8). Moreover, those teachers who use electronic teaching resources and new tools can reorganize educational content (9). Studies have also shown that teachers have used different patterns in electronic teaching with physiological incentives and social expectations to satisfy their students' needs (10).

Self- efficacy is one of the most important aspects of Bandura's theory that refers to people's beliefs about controlling their own life. The concept of judging the facilities and implementing the strategies needed to achieve a variety of projection functions, which can have a significant impact on people's cognition, motivation, and creativity (11).

Thoughts, feelings, and behaviors make sense of an individual's behavior and empower them to face different situations (12). Therefore, self- efficacy is a feeling that is created to show ability in performance. Some experts have likened the current period into the computer age that fits computer influence in various spheres of social life. Each of the members of the society has at least a short practical experience in the use of computers and has had positive or negative reactions to their computers. Nowadays, computers are a part of people's lives, and are used in education at all levels (13).

Computer self-efficacy refers to the users' beliefs in their ability to perform certain tasks with the help of computer, reflecting their judgment of their ability to use the computer (14-16).

Moreover, computer self-efficacy means confidence and trust that a person feels with respect to his/her ability to work with a computer (17, 18). People can use information technology to benefit from high levels of computer self-efficacy (19). According to the above consider-

ations, unchecked spread of the internet and its application in the learning process increases the role of computer-based training in media and the need of educational institutions to use virtual learning environments (20). Numerous studies have examined the computer self-efficacy on individuals and showed that computer self-efficacy increases performance and technological innovation among employees, reduces computer anxiety, and increases employment capacity (19, 21). Recent studies have shown that computer self-efficacy empowered the teachers to use computers and participate in computer-based activities, and solve problems rapidly and successfully. However, more anxious teachers had low computer self-efficacy (22). Self-efficacy was also important for the students, and homework increased student performance and success in using the computer (23).

Students with high computer self-efficacy tend to spend more time using e-learning and are involved more in the e-learning process (24). Self- efficacy as a supplement classroom education faces daily spread and teachers can use it in the virtual lessons, assignments, and course materials (25, 26). Such new challenges require a favorable culture and climate in schools and educational institutions.

In the past 2 decades, researchers have widely emphasized the importance of school climate (School climate refers to the quality of school life, norms and values of the school, interpersonal and social relations, and structure and school culture) (27).

Educational technology has introduced electronic teaching as a key factor for creative teaching, allowing the schools to improve the learning culture (9, 28). Innovative climate has formed business knowledge and innovative culture that could enrich individual learning and creative knowledge (29, 30).

Organizational innovative knowledge has been created and shared through interpersonal communication in schools (31). However, the role of teachers and school climate is very important. Moreover, those teachers who use electronic teaching should acquire more targets and a variety of opportunities in the field of electronic teaching content, activities, and teaching methods.

Organizational innovative climate was considered effective by different theorists (such as Borne in 2008) in creating incentives for employees, improving staff morale, participating in decision-making, and enhancing creativity and innovation (31), and according to Basu, the in developing the ability to accept a belief or a new behavior (32). Moreover, Mihm et al. have emphasized the development of innovative learning (33).

In addition to the existing beliefs, Mc Murray in a study challenged the organizational climate as a significant factor in the behavior of organizations (34). According to

Chang and Yang, in employment and technological advances in the society, school climate should be innovative through creative strategies to grow and provide student learning (35).

Chang et al. in another research, found that the behavior of school leaders, innovative features, and internal motivation were influential (36).

In a study, Rashidi and Avizhgan defined electronic teaching as a new mechanism that is more satisfying for students and the faculty, which promotes the flexibility of learning both in the person and in electronic learning (37).

Qarabaghy et al. investigated the relationship between creativity and computer self-efficiency and found a significant relationship between creativity and computer self-efficacy among students (11). The results of Hung et al. study showed that among the university graduate students, those with computer self-efficacy were more successful; and in that study, the use of computers and personal satisfaction from working with the computer was emphasized (38). Bassam in another study showed that the experience of working with computers in an innovative environment led to computer self-efficacy (39).

Paraskeva et al. showed the effect of computer self-efficacy and personality characteristics of teachers on the use of new technologies (40).

Pellas found that computer self-efficacy, metacognition, self-regulation, and self-esteem and willingness to attend online courses were negatively associated with behavior dimension (41).

Teachers' perceptions of innovative school climate are effective not only in the development of creativity and innovation but also in the performance at work and occupational success. In the researches conducted on the relationship between school climates and continued use of innovative electronic teaching and computer self-efficacy, the role of mediator has been emphasized. Researchers believe that innovative organizational climate affects the interaction and performance of teachers (9, 42).

Wu and Yang in a study on the relationship between teachers' perceptions of the organization's innovative climate on the use of electronic teaching concluded that it is important to increase information literacy of the teachers to make them more efficient in their professional fields (43). Chu, Chu, and Han also stated that teachers tend to use information technology to enrich traditional education.

The perception of teachers about innovative organizational climate increases the continued use of electronic teaching (6) and performance (9, 44). Moreover, based on the adoption of information technology, teachers' use of new technologies affects their attitudes and behavior in the use of electronic teaching and computer self-efficacy

(10, 17, 28, 45-48). Therefore, there is a significant relationship between computer self-efficacy of teachers and the use of electronic teaching (16). Despite the possibilities, if teachers' computer self-efficacy is low, their willingness to use technology in teaching will be reduced (17).

The organizational innovative climate in schools plays a major role in enhancing the computer self-efficacy and enables teachers to continuously use electronic teaching.

The question is whether organizational innovative climate in schools affects the teachers' continued use of electronic teaching with the mediating role of computer self-efficacy or not.

To examine the fundamental question of the conceptual model (Figure 1), the following hypotheses were presented:

Hypothesis 1: School organizational innovative climate influences teachers' computer self-efficacy.

Hypothesis 2: School organizational innovative climate influences teachers continued use of electronic teaching.

Hypothesis 3: Computer self-efficacy influences the teachers' use of electronic teaching.

Hypothesis 4: School organizational innovative climate indirectly influences the teachers' continuous use of electronic teaching.

Hypothesis 5: Is the proposed model fit the experimental data?

The hypotheses of the present study have been integrated in a conceptual model (Figure 1).

2. Methods

The present study aimed at evaluating the effect of teachers' perception of organizational innovative climate on continuous use of electronic teaching, with the role of computer self-efficacy in boys' schools (public schools and schools for the talented and gifted). The first and second grade high school male students in Ardabil province were evaluated in 2014 - 2015. In this study, the IT infrastructure (computers, video projector, smart board, etc.) was evaluated for electronic teaching in schools. The study population was special schools in Ardabil province. This was a descriptive (nonexperimental) and correlational study with structural equation modeling. The statistical population consisted of 312 male teachers from 20 schools and sample size was 172 (with alpha 0.05). Using Cochran formula, the sample was randomly selected, and cluster sampling method was used to test 5 cities. Thus, in the first stage, 5 cities were randomly selected. In the next stage, among each city, one boy school at first high school and one boy school at second high school were selected randomly, and

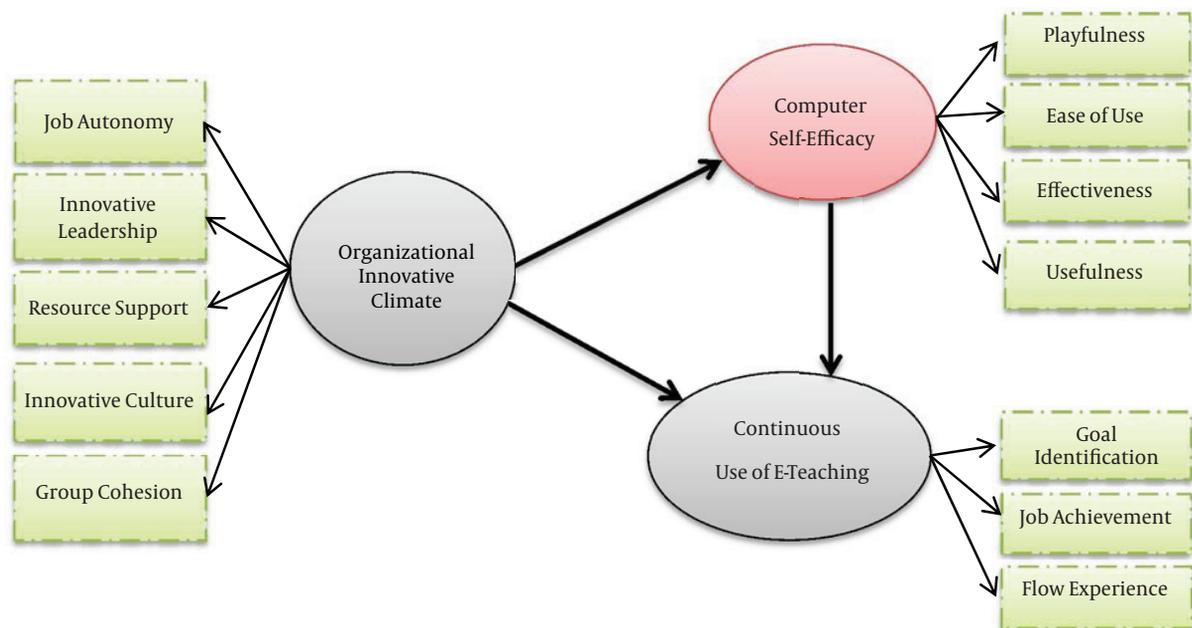


Figure 1. The Initial Causal Model of the Research in Accordance With the Literature

the questionnaires were distributed among teachers in 10 schools.

Consent was obtained from all the participants, and they were assured of the confidentiality of demographic data. The study was authorized by department of education of Ardabil province. Then, the questionnaires that were distributed among teachers of special schools in Ardabil province were studied. Of the questionnaires distributed to the teachers, 160 were gathered and about 149 were returned, with response rate of 83%, (some of the questionnaires were excluded).

Measurement tools were investigated for content and face validity by 3 professors of educational science at Mohaghegh Ardebili university. Some of the questions that did not adapt to the culture of our society were removed and some were modified. In one of the special schools in city of Ardabil in a sample of 30 people, the reliability questions and Cronbach's alpha were 0.78, 0.823, and 0.89, respectively, indicating a high reliability.

Data were collected using the following questionnaires:

(a) Organizational innovative climate questionnaire, which was used to assess the organizational innovative climate; and King and colleagues organizational innovative climate questionnaire with 16 items (49). These innovative organizational dimensions of organizational climate measured the following factors:

Autonomy at work (Questions 1, 2, and 3), innovative leadership (Questions 4, 5, and 6), support sources (Questions 7, 8, 9, and 10), innovative culture (Questions 11, 12, and 13), and internal consistency (Questions 14, 15, and 16).

The tool was based on the 5- point Likert scale (from strongly agree to strongly disagree), and reliability coefficient was formulated based on Cronbach's alpha, and it was found to be 0.781.

(b) Computer self-efficacy scale:

This 12-item scale was designed by Karsten and Roth (23). This tool is based on 5- point Likert scale (from strongly agree to strongly disagree), measuring the following factors: self-efficacy (Questions 1- 3), information technology (Questions 4 - 6), ease of use (Questions 7 - 9), effectiveness and usefulness (Questions 10 - 12). Cronbach's alpha was 0.823.

(c) Inventory continuous use of electronic teaching tools targeted research was adopted by Chow, Siv, and Shen (6). It identifies 3 objectives (Questions 1 - 5), career success (Questions 6 - 10), and current and constant experiences (Questions 11-15). It covers the 15 items based on the 5-point Likert scale; the Cronbach's alpha of 0.89 was obtained.

Before assessing the hypothetical structure to create an acceptable measurement model and determine whether these markers measured the theoretical constructs, confirmatory factor analysis was conducted on all potential factors. A hypothetical model involving 3 variables (inno-

vative organizational climate, computer self-efficacy, and continuous use of electronic teaching) was assessed in the present study. Each of these factors was measured. Factor load factor measured variables of latent factor organizational innovative climate and found it to be 0.62 to 0.87. Factor loads latent loads computer self-efficiency was from 0.35 to 0.80, and latent loads of continuous uses of electronic teaching was from 0.46 to 0.79 (Figure 2). Latent variables are significant indicators of operating loads at 0.05. According to the results of confirmatory factor analysis and assessment of the indicators, the models measure of fitness are acceptable (RMSEA = 0.078, $\chi^2 = 20.97$, GFI = 0.90, CFI = 0.97 and NFI = 0.93). The parameters are presented in the final model.

3. Results

The mean age of the participants was 37 years. Of the total participants (N = 149 patients), 54 patients (36%) had a bachelor's degree, 81 had a master's degree (54%), and 14 (10%) had a PhD or were PhD students. In the periodic review of IT, more than 87% of them participated in ICT courses. To check the validity and adequacy of the data, the KMO (kaiser-meyer-olkin) was used, and the index for data is that in order for perception organizational innovative climate questionnaire at 0.854, Computer self-efficacy questionnaire for questioning the continued use of electronic teaching at 0.882 and 0.922 respectively are obtained. The index is in the range of zero to one and is closer to a desired data sample sizes are more suitable for factor analysis. Bartlett's test was used to check the correlation matrix. Bartlett test for all the 3 questions, as given in Table 1 and assuming smaller than the 0.05 unit (IU) of the correlation matrix is rejected.

The results of the Bartlett test for all the 3 questions are presented in Table 1. was smaller than 0.05 and assuming unit (IU) of the correlation matrix is rejected.

In response to the first hypothesis (School organizational innovative climate has a direct effect on teachers' computer self-efficacy.) and in accordance with the output of structural equation (Figures 2 and 3), the level between cognitive and innovative organizational climate variable efficacy against the computer (3.81) was greater than (1.96), indicating that the relationship between organizational perceived innovative climate and computer self-efficacy computers was significant at the confidence level of 99% ($P = 0.000 < 0.001$). Moreover, according to the coefficient between these 2 variables (0.69), the organizational perceived innovative climate had a positive effect on teachers' computer self-efficacy. Thus, the first hypothesis was confirmed. In response to the second hypothesis (School organizational innovative climate has a direct effect on teachers' continuous use of electronic teaching.) and in accordance with the outputs of SEM (Figures 2 and 3), the level of innovative organizational climate varied significantly between the continued use of electronic teaching (-0.87) and was smaller than 1.96, indicating that the relationship between organizational perceived innovative climate and the continued use of electronic teaching was not significant at the confidence level of 95% ($P = 0.514 > 0.05$). Also, according to the coefficient between these 2 variables (-0.11), the innovative organizational climate had a direct effect on teachers' continuous use of electronic teaching. Thus, the second hypothesis was rejected.

In response to the third hypothesis (Computer self-efficacy of the teachers has a direct effect on the use of electronic teaching.) and in accordance with the output

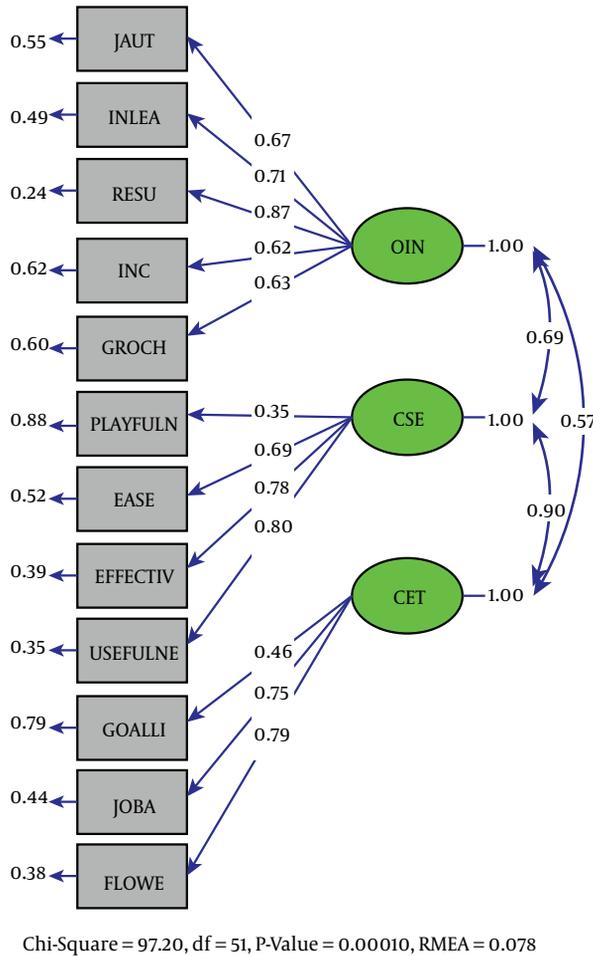
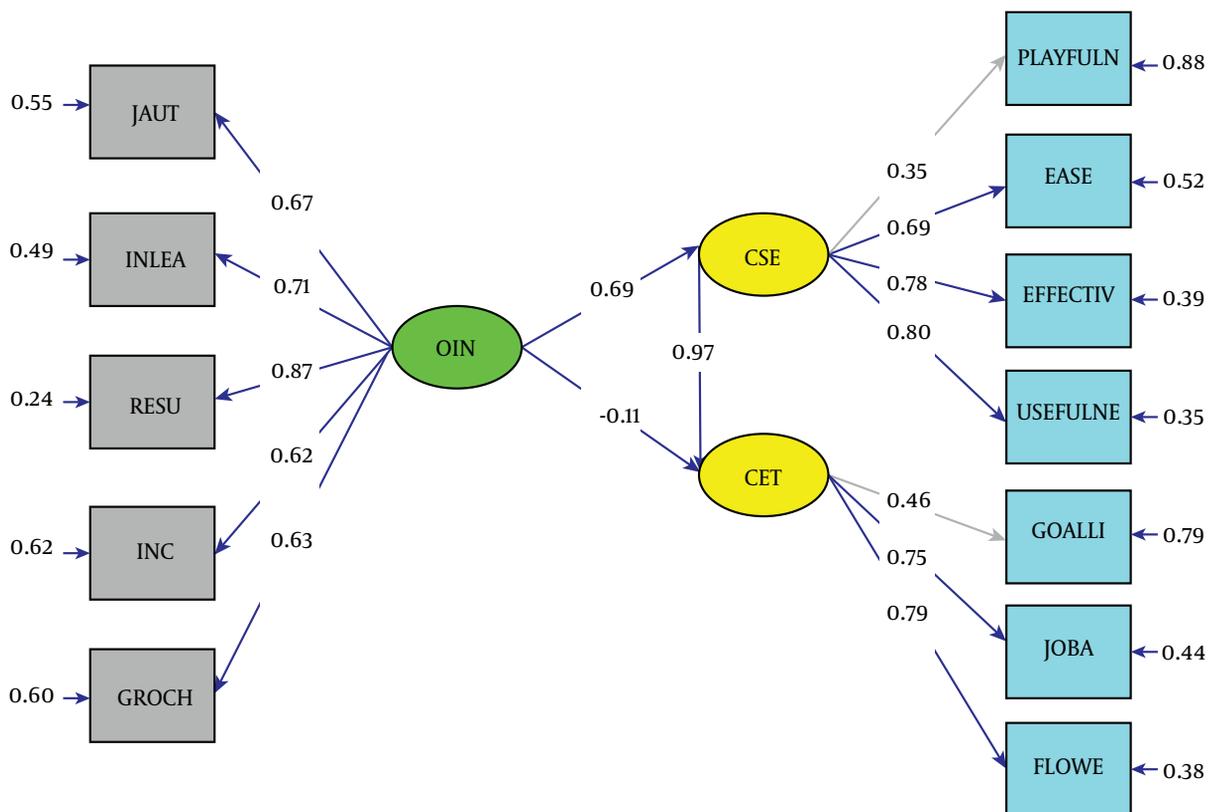


Figure 2. Confirmatory Factor Analysis of the Latent Variables in the Initial Survey

Table 1. The of KMO and Bartlett's Test

	Test		Result
Organizational innovative climate Q	KMO test		0.85
	Bartlett's test	χ^2	800.40
		Df	120
		Sig	< 0.001
Computer self-efficacy Q	KMO test		0.88
	Bartlett's test	χ^2	891.57
		Df	66
		Sig	< 0.001
Continuous use of electronic teaching Q	KMO test		0.92
	Bartlett's test	χ^2	1264.89
		Df	105
		Sig	< 0.001



Chi-Square = 97.20, df = 51, P-Value = 0.00010, RMEA = 0.078

Figure 3. Standard Estimate Coefficients for Research Models

of structural equation (Figures 2 and 3), a significant level of computer self-efficacy variable and the continued use of

electronic teaching (3.18) was greater than 1.96, indicating that the relationship between computer self-efficacy and

continuous use of electronic teaching was significant at the confidence level of 99% ($0.001 > P = 0.000$). In addition, according to the coefficient between these 2 variables (0.97), computer self-efficacy had a positive impact on the continued use of electronic teaching. Thus, the third hypothesis was confirmed.

In response to the fourth hypothesis (School organizational innovative climate and teaching through the continuous use of electronic computer self-efficacy affect teachers indirectly.) and to investigate the role of intermediary computer self-efficacy, the variable of interest was the structural equivalent output. In determining the relationships between variables with the mediator, direct effects, indirect, and total affect should be examined (50). The total effect of the direct and indirect effect was obtained. If the indirect effect were greater than the direct effect, then the mediating role of the mediator would have been accepted.

The following table demonstrates the effects of direct, indirect, and the total effect between innovative organizational climate perception and continuous use of electronic teaching.

As presented in Table 2 and Figure 2, the direct effect on cognitive variables, innovative organizational climate of continuous use of electronic teaching -0.11 (t value = -0.87). Organizational perceived innovative climate variables had an indirect effect on the continued use of electronic teaching with the mediator impact of computer self-efficacy, which was equal to 0.67. As the product of the multiplier effect of the indirect route (direct effect) variable organizational perceived innovative climate and computer self-efficacy (0.69) and the coefficient of the continuous use of electronic teaching and computer self-efficacy (0.97) is obtained. The indirect effect of continuous use of electronic teaching on organizational perceived innovative climate (0.67) was greater than its direct effect (-0.11). As a result of the mediation of computer self-efficacy on the relationship between organizational perceived innovative climates on continued use of electronic teaching will be accepted. ($P < 0.001$) resulting in a fourth research hypothesis is accepted.

In response to the fifth hypothesis (The model with experimental data used is proportional.), it should be stated that the purpose of evaluating the fit of the model was to determine to what extent the model used the experimental data compatibly. Fit a wide range of criteria and indicators that can be used to measure the fit of the model. Unfortunately, none of these are superior in all respects than others. Determining a certain fitness criteria that depend on the sample size, estimation method, the complexity of models, assumptions about normality, or a combination of the above conditions are different acts. Thus, different people depending on the various indicators model may be for

model used (51).

In this section, a conceptual model of research in the form of diagrams was drawn using a variety of methods to fit to the way it was measured. A structural equation model represents a combination of path diagram and confirmatory factor analysis. Figures 2 and 3 in the estimated coefficients and standard model for research see significant numbers. Some fitting indicators are also visible at the bottom of this form. The following variables are presented along with their abbreviated name in Table 3.

In the final model, the relationship between all components and preliminary research suggests that the model is positive and significant ($P = 0.00010 < 0.001$), so the model was confirmed. Before the discussion and conclusions, extracted deal is worth noting models and one of the best fit structural equation models fit index root mean square error of approximation (RMSEA). The amount of deviation per degree of freedom is the same test, for models that have a good fit; you should be a little less than 0.08. The average numbers of square error of models that are less than 0.08 fitness were weak. The fitness index was divided by the square of the degree of freedom, and this value must be less than 3 (52).

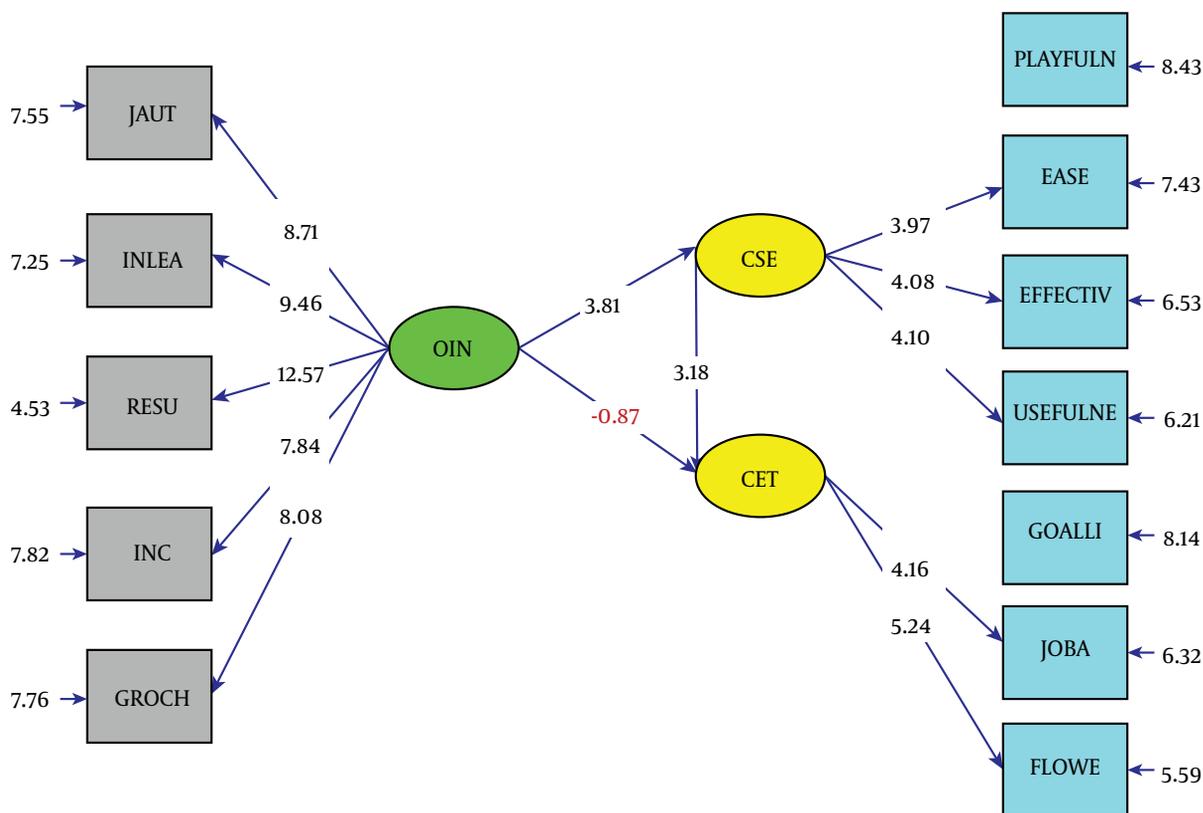
The index for the conceptual model obtained reasonable amount is equal to 0.078. The model measures the impact of organizational innovative climate, and computer self-efficacy and the continued use of electronic teaching, the state governor estimates, and results indicate the suitability of the model. According to the LISREL output chi-square value 97.20 and 51 degrees of freedom is calculated. So chi-square value was divided by the degrees of freedom for the conceptual model 1.905 is equal to that amount is acceptable. The suitability of the 2 indexes mentioned above showed little difference between the conceptual models and the data. The fit indices are presented in Table 4.

4. Discussion and Conclusion

Overall, the results of the present study revealed that teachers' organizational perceived innovative climate directly affects computer self-efficacy and indirectly affects the teachers continued use of electronic teaching. Moreover, an organizational innovative climate as a perceptual phenomenon can enhance computer self-efficacy. Also, teachers' computer self-efficacy can be effective in the continuous use of electronic teaching. In this section of the study, to approve or disapprove the research hypothesis, the results were compared with the results of previous researches. The first hypothesis assumed that teachers' perceived organizational innovative climate has a significant positive effect on computer self-efficacy. This finding is

Table 2. The Direct, Indirect and Total Effects Between the Variables

Variables	Path		
	Effect of Direct	Effect of Indirect	Total Effect
Continuous use of electronic teaching	0.18	0.21	0.39
Innovative organizational climate			



Chi-Square = 97.20, df = 51, P-Value = 0.00010, RMEA = 0.078

Figure 4. Significant Numbers for Research Models

Table 3. Abbreviation of the Variables

Variables	Symbol
Organizational innovative climate	OIN
Computer self-efficacy	CSE
Continuous use of e-teaching	CET

consistent with research findings of Bassam and Paraskeva et al. (39, 40). In explaining how organizational perceived innovative climate can affect computer self-efficacy of the

teachers, it should be noted that organizational perceived innovative climate in an organization can motivate employees, improve staff morale, increase participation in decision-making and can also enhance creativity and innovation (30). According to Bandura’s self-efficacy theory, and since 1997 that the belief about life in their own hands is said to be controlled as well as computer self-efficacy beliefs in the ability of their users to perform certain tasks with the help of computer (14); it can be concluded that innovative organizational climate of the schools can raise teachers’ computer self-efficacy and it is effective in e-learning. The second hypothesis assumed that teachers’

Table 4. Summary of the Evaluation of the Model Fit

Variable	Value
Normed fit index (nfi)	0.93
Comparative fit index (cfi)	0.97
adjusted goodness of fit index (agfi)	0.85
Goodness of fit index (GFI)	0.9
Root mean square error of approximation (RMSEA)	0.07
χ^2/df	1.9
Df	51
χ^2	97.2

organizational perceived innovative climate has no significant direct impact on the teachers' continued use of electronic teaching. This result was not consistent with that of Chou et al. (6). So research findings that cognitive organizational innovative climate have not had much impact on teachers continuous use of electronic teaching and new technologies allow schools improve teaching and learning creative culture and organizational innovative climate (6, 25). Thus, it can be concluded that organizational innovative climate affects the continued use of electronic teaching according to some researchers; moreover, it is effective in enhancing the effects of other variables such as self-efficacy, as revealed by the results of the present study.

The third hypothesis presumed that teachers' computer self-efficacy has a significant positive effect on their continuous use of electronic teaching. This result is consistent with findings of Pellas, Chou et al., Paraskeva et al., Brinkerhoff, Matulich, Ho et al., Anderson and Maninger, Koc and Bakir, Vajargah and Jahani, and Oliver and Shapiro (6, 7, 10, 16, 17, 40, 41, 46-48). To explain these research findings, it should be stated that despite IT facilities, if a teacher's computer self-efficacy is low, his/her willingness to use this technology in teaching would be reduced (17).

In other words, when the teachers are informed of the benefits, flexibility, and simplicity of the electronic teaching systems, they tend to adapt to it (42). That is, a person with self-taught computer on which the electronic despite initial infrastructure will be achieved growing success in school. The fourth hypothesis assumed that teachers' organizational perceived innovative climate through the continuous use of electronic teaching influences computer self-efficacy. The mediating role of computer self-efficacy variable on the relationship between innovative organizational climate perception and continued use of electronic teaching was accepted.

The result of this research is consistent with those of Chou et al. that found that teachers' perceived innovative

climate has indirect effects on continuous use of electronic teaching (6); 79% of the variance was explained by the continued use of electronic teaching, and the study found that 67% of its indirect effect was fitted and it was confirmed.

According to the research findings, the role of computer self-efficacy of teachers over the innovative organizational climate is important. Moreover, organizational innovative climate in schools plays the role of facilitator to continuous use of electronic teaching of teachers. With the help of such a climate, the students can gain new skills and knowledge. According to the findings of the present study, it is suggested that the schools' principals should provide the required conditions to create innovative climate and promote self-efficacy of teachers in the field of new technologies (computer).

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Footnotes

Authors' Contribution: Mahdi Moeinikia and Adel Zahed-Babelan conceived the study and developed the methods; Seyyedmohammad Seyyedkalan and Ghafar Karimianpur collected the data; Mahdi Moeinikia and Seyyedmohammad Seyyedkalan analysed the data; Seyyedmohammad Seyyedkalan wrote the first draft of the manuscript; all of the authors contributed to the revision of the manuscript and have read and approved the final version.

Conflict of Interest: This research has no potential conflict of interest and did not have any third party sponsorship.

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