



ORIGINAL ARTICLE

## The comparing the effect of "traditional training" and "electronic blended training" on the rate of self efficiency and Self-Regulation

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<b>ARTICLE HISTORY</b> Received: 20.02.2016 Revised 26.03.2016 Accepted 12.05.2016	<b>ABSTRACT</b> <i>In the recent years, in the field of medical sciences training, designing and setting up the training new techniques, especially the training models based on web is so important. In this regard, this study was conducted with the purpose of the comparing the effects of "traditional training" and "electronic blended training" on the rate of self efficiency of surgery room students of Birjand University of Medical Science in 2014-2015. This experimental study was conducted on 50 students of surgery room during passing the microbiology course. The participants in the study were divided in two groups including 25 students randomly. Then, pretest was done based on Sherer self- efficiency questionnaire and self regulation Bufard questionnaire. For the traditional training group, the common training methods and for blended training group the virtual training facilities were provided as well. After education course pos test was done based mentioned questionnaires. For analyzing data were used software version 16 SPSS, independent T test, paired T test, Mean and standard deviation. The results showed that in the electronic blended training group there was difference between self- regulation Mean before and after intervention(<math>p&lt;0.05</math>), also, for self-efficiency too(<math>p&lt;0.05</math>); while in the traditional group there was no difference between self-regulation Mean before and after intervention(<math>p&gt;0.05</math>), also, for self-efficiency too(<math>p&gt;0.05</math>). By considering the shortages of resent training systems and the training traditional methods, according to the obtained results of study, the electronic blended training strategy is recommended for increase of training deep as well as increase of self- efficiency of students.</i> <b>Keywords:</b> electronic training, traditional training, self- efficiency.
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### INTRODUCTION

In the recent era, the training has been recognized as the primary rights of humans and the factor of change and social promotion (1). It seems the training traditional methods including the main part of recent trainings in the developing countries, is not alone as a responsive of rapid move of science and knowledge convoy as well as continuous change of the communities need in the informatics era.

Moreover training of medical groups in the university does not end and should continue during the professional activities. So being familiar with the new methods of training is too important (2). By considering the low expenses of blended trainings, establishing use of it has suggested in universal training of Iran (3). Today using the information technology and communications in training have caused that the training environment to be propelled to virtualization; and followed by that the communications between the people to training and extent of knowledge in an increasingly way through computer to be possible(4).

Knowledge sharing with the help of information technology and communications can provide a comprehensive wealth for the nations in form of a better training (5). By considering the interests of virtual training in the higher education level, the demand for holding the virtual trainings courses in the universities training program have been increased(6). The electronic training refers to the educational system that trainer and training, due to the physical distance are far from each other but with the help of tools and means provide them with the technology are related to each other. (7)

The offer and demand system of higher education has no recognized exactly the training virtual environments yet; and is not familiar with their abilities and performances; and does not know the basic skills of information technology (1). One of the main factors that may affect the academic achievement is the self- regulation (8). The self-regulation is as a gravity point of the effective function in the field of impulse control, time management and coping with stress (9).

Base of self-efficiency is that "how do students improve their learning in terms of cognitive, motivational and behavioral?" (10).

Bendora believes that learning of self-regulation relate to motivation and educational achievement. In fact, the research self-regulation in learning is as the best predictor of educational performance. The obtained results of previous conducted studies show that there is a positive and significant relation between self-regulation and educational achievement (11).

The researchers believe that using the students form self-regulation strategies, increases their self-efficiency and lead to promotion of their learning (12).

Self- efficiency is as a recognition process that shows the role of people regarding their abilities in doing the treatment expected of them; and is as one of the main self-efficiency factors. Self-efficiency is considered as judging the individual regarding his abilities for doing a specified action. The self-efficiency recognized by the individual is considered as a significant factor in his performance; and it is possible to increase the self- efficiency and ability of individual by creating appropriate ground regarding acquisition of skills and required knowledge and achieving success. (13,14).

Most of the universities today, are attempting to increase the efficiency of emerging technologies in their training activities (15).Birjand University of Medical Sciences including the universities that in this regard are pioneer and has proceeded to provide the required facilities for electronic training remotely. Because of increasing use of computer training in the world as well as need to life-long learning, in the line with Birjand University of Medical Sciences politics for presenting computer training programs remotely, researchers decided to conduct a study. The purpose of study was comparing the effect of two electronic blended learning methods and lectures on the amount of self-efficacy and self- regulation of microbiology course of the surgery room students in paramedical School and Health of Ferdows in Birjand University of Medical Sciences.

The results of this study based on the conditions and the facilities of training environment may lead to making appropriate decisions as well as planning to implement appropriate training methods.

## **METHODS**

This study is an experimental research that was conducted on all surgery room students of Birjand University of Medical Sciences that in 2014-2015 had selected the microbiology course (50 students). Written consent for entering to the study was taken. Then, the participants in the study were divided based on simple random method in two groups including 25 students in each group. Data gathering instruments in this study were self- efficiency Sherer questionnaire contain 17 questions with 5-item multiple-choice and self regulation Bufard questionnaire contain 14 questions with 5-item multiple-choice. For validity confirmation of these questionnaires content validity method and for confirmation of reliability was used Cronbach's alpha method which  $\alpha = 0.85$  and  $\alpha = 0.82$  respectively, after that, pre test based on this questionnaire was done which these questionnaires were given to the students. After pretest training was started and in parallel with holding the attendance classes and traditional training that was done by lecture, questions and answers and presenting slide for the traditional training group, the virtual training environment for microbiology course in the electronic training portal with the

internet address of [www.lms.bums.ac.ir](http://www.lms.bums.ac.ir) was at the disposal of blended training group users without any charge.

The users of training clips portal used articles, training games, chat room, training slides, illustrated encyclopedia and the other facilities of portal.

In this environment the students were able to exchange information with each other as well as the course professor; and by introduction of related websites the he was considered in web environment, the students could have access to the specialized websites of microbiology. In this course besides the web-based training, the students through short message system got the training subjects as well.

At the end of this study, post test was done based on mentioned questionnaires, for the E-learning group was gotten in form of E-test and for the traditional group through traditional methods (paper based) simultaneously and with the same questions; meanwhile the password of group individuals with the traditional training was eliminated from portal. It was asked from them to only use the explained training subjects in the class and not to refer to the other training methods. For analyzing data was used software version 16 SPSS, independent T test, paired T test, Mean and standard deviation.

## RESULTS

The present study was conducted with the purpose of comparison the effect of "traditional training" and "electronic training method" on the rate of self-efficiency and self-regulation in the surgery room students of Birjand University of Medical Sciences in 2014-2015 that the results analyzed generally.

Women included the majority of our society in both groups (64% in traditional training group and 72% in the electronic training group); also the majority of both groups were not married (84% of traditional training group and 88% of electronic training group).

**Table 1. Comparing self- efficiency in both groups before and after intervention**

Mean of self- efficiency score	The duration of intervention	Mean	Standard deviation	DF	T	Significant
Traditional training group	Before intervention	62.12	11.21	24	1.31	0.20
	After intervention	60.56	11.18			
Electronic blending training group	Before intervention	57.92	12.18	24	3.10	0.00
	After intervention	64.92	6.16			

Based on the results there is no different between the self- efficiency score average of microbiology course in the traditional training group before and after intervention ( $p>0.05$ ). It means training in from of traditional had not any effect on the self-efficiency amount of students. But, base on the results there is difference between the self-efficiency score average of microbiology course in the electronic blending training group before and after intervention, ( $p<0.05$ ). It means that training with the electronic method had positive effect on the self-efficiency amount of students.

**Table 2. Comparing self-regulation in the traditional groups before and after intervention.**

Mean of Self- Regulation score	The duration of intervention	Mean	Standard deviation	Free degree	T	Significant
Traditional training group	Before intervention	51.48	6.35	24	0.10	0.91
	After intervention	51.56	6.44			
Electronic blending training group	Before intervention	50.76	7.10	24	2.49	0.02
	After intervention	54.44	6.53			

According to the obtained results, there is different between the self- regulation score average of students in the microbiology course in the traditional group before and after intervention ( $p<0.05$ ). It means training with traditional method has not any effect on the self-regulation amount of students. In addition, the obtained results showed that there is difference between the average score of students self-regulation in the microbiology score in the electronic training group before and after intervention ( $p<0.05$ ). It means that training with the electronic method has positive effect on the self- regulation amount of students.

**Table 3. Comparing the self-efficiency and self-regulation after intervention**

Variable	Groups	Mean	Standard deviation	df	T	Significant
Self-efficiency	traditional	60.56	11.18	48	1.95	0.046
	Electronic bending	64.92	6.16			
Self-regulation	Traditional	51.56	6.44	48	2.48	0.01
	Electronic bending	56.24	6.86			

The obtained results showed that there is different between the self-efficiency score average and self-regulation of students in microbiology course in the electronic bending training group and traditional group after intervention ( $p < 0.05$ ).

#### DISCUSSION

Base on the results of this study the score average of self- efficiency and self- regulation after training in the electronic group was more than the traditional group. This difference was significant statistically; that expresses more efficiency of electronic method in comparison with traditional on the learning amount of students.

The obtained results of studies conducted by Tsai and Chiu on assessing the training based on the web showed that training based on the web leads to increase of self-efficiency of learners (16). In addition, Poddar et al. besides conducting a research regarding training interventions based on the web concluded that training and intervention through web lead to increase of self-efficiency and self- regulation (17).

These obtained results are in consistent with the results of this study. The results of study conducted by Sung et al. in Korea showed that e-learning is effective on the increase of nurses' knowledge regarding the drug and treatment (18)

These obtained results are in consistent with this study. The results of study conducted by Lu et al. in Taiwan showed that electronic blended learning may lead to increase of knowledge and skill of nursing students regarding intramuscular injection training (19).

Besides these findings the studies conducted by Jonas and Burns in England showed that using the electronic learning in the training of pain management in children by the nurses staff is so effective (2). The results of study conducted by Wilkinson et al. on the nurses showed that they were satisfied with the flexibility of electronic programs, having high control on learning as well as the quality of training subjects; in addition, they enjoy this training method (21).

In the study done by Bong et al. the nursing teachers considered the ability and increase of scientific skills in the students as the advantages of electronic learning (22).

Based on the obtained results in this study between the score average of self-efficiency and self-regulation of microbiology course in the studied group before and after intervention the difference has seen ( $p < 0.05$ ). It means training with the method of electronic has had a positive effect on the self-efficiency and self- regulation of students; while, the results showed that between the self- efficiency score of microbiology course in the traditional group, there is no different between before and after intervention ( $p > 0.05$ ).

Sung et al. in comparison of face to face and electronic methods of pharmacology training, to 26 nurses face to face program in classroom and to 24 nurses the pharmacology training program by electronic method were presented.

The level of knowledge regarding drug, drug self- efficiency, self- regulation and the satisfaction with the learning programs in the electronic group was significantly higher than the control group; that was consistent with the obtain results of this study (18).

The obtained results show the more effect of electronic method in comparison with the traditional methods. The e- learning not only has the ability of more effective transfer of learning subjects; but also is as a more effective training method (19,22). Superiority of this way is collective moral boost, the communication skills, self- regulation and the satisfaction of students specially in the electronic training systems (23,24).

The obtained results of the study conducted by Hassani et al. also express that self- efficiency and self- regulation has roll in the ability of caring the patient; and help to the potential growth and professional skills of medical sciences students(25).

In addition, the obtained results of Jeffries' study with the purpose of comparing the efficiency of two traditional and electronic training methods on the implementation skill of ECG showed that both two groups were satisfied with their training method. No any statistical significant difference in terms of

doing the considered skill was seen ( $P>0.05$ ); and both methods besides promoting the knowledge of students, had identical performance in presenting skill (26)..

## CONCLUSION

Based on results it can be said that the electronic training has many advantages that the most important of them is the active learner and studying in desired time and place. Moreover, having easy and rapid access to the educational contents, studying with desired speed, no need to travel, saving time and education expense and using the new means for training are as the other advantages. These numerous advantages especially activity of learner cause that the individual trust his abilities for studying; and study the lesson subjects with more interest; these mentioned items lead to increase of educational promotion and self- efficiency of students. Hence, it is important that the mentioned method would be replaced with the traditional method.

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## COMPETING INTERESTS

The authors declare no conflict of interests in this study.

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