The Impact of Native Social Networking on Promoting Student's Environmental Attitude (Case Study: Eitaa)

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تأثیر کاربرد شبکه‌های اجتماعی بومی بر ارتقای نگرش محیط زیستی دانشجویان (مطالعه موردی ایتا)

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Abstract:
The growth of social networking has made it possible to define new applications for this tool especially in learning, including formal, informal, and tacit education (visual, auditory and written). The purpose of this study was to explain the impact of the use of Eitaa social network on the environmental attitude of students in three cognitive, emotional and behavioral areas. The present study is the type of applied researches which regarding the purpose, and regarding the data collection tool, it is a semi-experimental study with pre-test, post-test, and control group. The study sample has consisted of 46 students of Payame Noor University of Markazi province that were selected by the convenience sampling method and were randomly divided into two control and study groups. According to the results of the covariance analysis test, it was concluded that there is a significant difference between the three variables in the two stages of pre-test and post-test, which shows the effect of environmental training with the application of Eitaa social network on all of the three dimensions of the students' environmental attitude. The comparison of the mean of the two stages of pre-test and post-test showed that the mean of all of the three variables in the post-test was higher than the pretest. Scheffe post hoc test results also showed a higher mean in the study group than the control group in all three variables. According to the calculated level of effect, respectively about 70, 10 and 14 percent of the variance of the cognitive, emotional and behavioral dimensions of the environmental attitude of the study group was explicitly explained by applying the training method (environmental training of Eitaa).

Keywords: Training, Eitaa, Social networking, Environmental attitude.

چکیده:
رشد شبکه‌های اجتماعی باعث شده است تا کاربردهای جدیدی ازجمله در آموزش اعم از آموزش‌های رسمی، غیررسمی و ضمنی(دیداری، شـنیداری و نوشتاری) برای این ابزار تعریف شود. هدف این پژوهش، تبیین تأثیر استفاده از شبکه اجتماعی ایتا بر ارتقای نگرش محیط‌زیسـتی دانشـجویان در سـه حیطه شناختی، احساسی و رفتاری، بوده است. پژوهش حاضر ازنظـر هـدف کاربردی و ازنظر نحوه گردآوری داده‌ها، نیمه آزمایشی از نوع پیش‌آزمون–پس‌آزمـون بـا گـروه کنتـرل اسـت. نمونـه موردمطالعـه شـامل ۴۰ نفـر از دانشجویان دانشگاه پیام نـور اسـتان مرکـزی بـود کـه بـه روش نمونـه در دسترس انتخاب و به‌طـور تصـادفی در قالـب دو گـروه کنتـرل و آزمـایش گروه‌بندی شدند. بر اساس نتایج آزمون تحلیل کوواریانس، نتیجه گرفته شد که تفاوت معنی‌داری در بین هـر سـه متغیـر در دو مرحله پـیش‌آزمـون و پس‌آزمون وجود دارد که نشان‌دهنده تأثیر آموزش محیط‌زیسـت بـا کـاربرد شبکه اجتماعی ایتا بر هر سه بعد نگرش محیط‌زیسـتی دانشـجویان بـوده است. مقایسه میانگین دو مرحله پیش‌آزمـون و پـس‌آزمـون نشـان داد کـه میانگین هر سه متغیر در مرحله پس‌آزمون نسبت به پیش آزمون، بالاتر بوده است. نتایج آزمون تعقیبی شفه نیز بیانگر بالاتر بودن میانگین گروه آزمایش نسبت به کنترل در هر سه متغیر بود. بر اساس اندازه اثر محاسبه‌شـده، بـه ترتیب در حدود ۷۰، ۱۰ و ۱۴ درصد واریـانس ابعـاد شـناختی، احساسـی و رفتاری نگرش محیط‌زیستی گروه آزمایش اختصاصاً توسـط اعمـال شـیوه آموزشی (آموزش‌های محیط‌زیستی ایتا) قابل تبیین بوده است.

واژه‌های کلیدی: آموزش، ایتا، شبکه اجتماعی، نگرش محیط‌زیستی.

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1. INTRODUCTION

In the recent decades in addition to the social, economic, political, and value crises that each of them are a severe threats, the environmental problems and crises are also added to the list of the global crises. Environmental issues in today's world are in such a way that environmentalists call them "excessive pressure and collapse status." In Iran, despite the statutory provisions, the condition of environment is extremely worrying, and it points to the fact that the people who have a role in the area of natural environment of Iran, including the crowd of people, the academic community, enterprises, and at the head of all of them the government have failed in the field of environmental protection and prevention of the expansion of destruction and pollution. According to the human-made origin of many factors of the creation of the contemporary environmental crisis, it seems that the best solution is to change the attitudes and functions of human beings. The prerequisite of these changes is the promotion of the level of the environmental training of individuals and groups, that training plays an essential role in the formal, informal and implicit formats in this regard. The goal of this training is to empower individuals to make the right decisions, change their behavior and performance, and increase the optimal use of resources. Therefore, environmental training is a prerequisite and a scientific solution to deal with the increasing environmental destruction and pollution. According to the definition given by the United Nations Educational, Scientific and Cultural Organization (UNESCO), training is "all actions and effects, ways and means that are applied for the growth and development of the brain and cognitive ability as well as the skills, attitudes, and behavior of the human being. Meanwhile, training happens in such a way to maximize the personality of human beings as much as possible (Dadgaran, 2013). Also, attitude refers to a set of beliefs that are related to a particular subject or position (Ranjbar et al., 2016). Barnard also believes that attitude is a prerequisite for action and it is a statement of readiness that affects the person and leads one to behave in a certain

way (Rahman et al., 1999). According to the above definitions, attitudes have a significant impact on forming and shaping behaviors, creating motivations, satisfying the needs, and directing the tendencies. For this reason, their study has allocated a substantial part of social psychology to itself (Kaviani et al., 2017). The definition that most of the social psychologists use for attitude in conducting the researches is as follows: a durable system that includes three cognitive, emotional, and tendency to act (behavioral) elements. Measurement of attitudes is also based on the principles, which the more these principles are observed, the more accurate measurements will be made; these principles can be divided into five parts: 1. the coherence or one-dimensionality, 2. Linear mode or equal intervals, 3. Reliability, 4. Validity, 5. Staged or stacked proliferation (Sarmad et al., 2017). The definition of the dimensions of attitude is also explained as follows:

1. The cognitive part of it includes beliefs, values, and information about the apparent target by the individual, or in other words, perception, understanding, and knowledge about the product's existence.
2. Its emotional part includes feelings and emotions about the target, the individual, the thought, the event or the object, or in other words, the evaluation, the likelihood and preference of a product to another product.
3. The behavioral part derives from the attitude and refers to the intent "behavior in a certain way," or in other words, tendency, desire, intention to purchase and testing a product. The cognitive attitude is more important for some issues; for some other matters emotional factor is more critical, and for some other matters behavioral factor is more important. Meanwhile, the essential cognitions are those that are associated with some evaluation. The emotional component of attitude includes the feelings that raise the subject of attitude in a person, which means that an item may be pleasant or unpleasant; this is the aspect that plays a motivational role in behavior and emphasizes the importance of emotional dimension in attitude. In fact, it is the emotional dimension that gives power to mentality. The other part of the attitude is the behavioral attitude or the component of

readiness to take action that leads a person to behave in dealing with a subject. These three components of attitude have mutual effects, and they are not separated from each other (Ranjbar et al., 2016).

In the transformation of attitudes, Levin's three-step theory must also be considered, in which the change in attitudes requires passing these steps:

1.   Unfreezing: Kurt Levine believes that when an attitude is formed in a society, it is likely to be influenced by several pressures. One category is the pressure to change the attitudes, and the other category is trying to make them more stable. Each attitude has an acute state that sometimes closes its shell and tries to protect itself with that shell; it means that in dealing with the first attitude, it must be fissured continuously. Kurt Levine believes that we need to unfreeze at this stage, which means at first we should unlock the connectors. We need to do two things to open the connectors. First is informing and the second is curved methods. Both of these methods are the communications' missions.

2.   Replacement: The media quickly influences the minds of the people and changes it, which acts as a relatively stable power in this battlefield, and then the rest of the forces that must change attitudes start to work and do their tasks. One of the difficulties, which the third world countries' planning is faced with, especially in the aspects of cultural changes, is the gap between these two stages. Therefore, the first shot may be very well, but the change of the new attitude may is not properly replaced, in which the possibility of returning to the previous attitude will be high. It is here that we are supposed to do something that should be in coordination and balance with the change of the attitude. In the case of doing this issue properly, if it becomes more indirect, the probability of success will be greater. 3. Re-freezing: attitudes always have an elastic and reversible state; therefore, according to Levine's opinion to reduce this reversibility state, the created attitude must be restrained so that it won't return to the first status. Here, the role of the media becomes important again; the media can do this restriction of connectors

quickly and with an excellent approach (Bakhshi, 2011). On the other hand, the current world is changing rapidly, and undoubtedly one of the most important factors affecting the process of the transformation of societies is the emergence of new information and communication networks, especially the newfound virtual social networking (Jalali, 2015). The new communication technologies and their information highways, especially the Internet and virtual social networking, have led to the changes in the intensity and extent of human beings' communication around the world and they have created a qualitative change in the manner of connection between people. This means that today by using the Internet and attending in this highway, it is possible to use a mass of information in the shortest reasonable time and provide a verbal, written or visual communication at a relatively low cost. Although the emergence of this phenomenon was the reason for several developments, it was the source of significant changes after its appearance (Afshar and Adlipour, 2015). Due to the changes, developments, and revolutions that were taken place in technology and the process of its use in the world and the emergence of information and communication technology, the process of spending the time has also been changed in different age groups (Farzaneh and Falahati Shahabodini, 2015). All of the informal and formal statistics around the world indicate that virtual sites and social networking have gained a considerable position in recent years and they have reached the rate of the most viewed sites of the Internet (Mohkamkar and Hallaj, 2014). This is how virtual sites and gadgets, which once were considered as new and marginal issues, become a pervasive phenomenon. These tools, which the developments in communication networks have played a significant role in their development, are now easily accessible via the mobile web (Sarafzadeh and Alavi, 2014). The growth of social networking has made it possible to define new applications such as training with this tool. Meanwhile, students are among the first people who showed eagerness and enthusiasm to the latest technologies and are attracted to them. All of

these issues, as well as the high interest of young people and students and other age groups in virtual social networking (Robelia et al., 2011), remind the need for individual attention and the design of various researches to study the role and impact of these networks in education including formal, informal, and tacit training (visual, auditory and written) to help educate policymakers for further plans, which naturally can be generalized to the environmental training to improve the environmental attitude of students.

The social network concept was first introduced in 1940 by Radcliffe Brown in anthropology. Then, in the middle of 1950s, this concept was used by Boot and Barnes (Farzaneh and Falahati Shahaboddini, 2015). Social networking is one of the Web 2.0 tools that are highly considered today. These networks are very flexible and offer a wide-range of facilities with easy access for users. These networks generally consist of individual or organizational groups that are connected to each other through one or more types of affiliations, and they depict the efficient function of the convergent network in the context of a complex information society, and their increasing success and popularity are because of their social nature. Today, this term is used mainly to name the bases where individuals can access information from other members, become familiar with their interests, share text, auditory and visual productions, and form groups based on common interests with some other members of the base. It can be said that the breadth of the use of social networks is as much as all the fields that human beings are engaged in them today, and the thinkers and experts consider it in such a way that they have introduced it as the key dimension of power in the 21st century (Ghazi Noori et al., 2014). The importance of social networks cannot be confined to the growing popularity of social networking and abandonment of rivals in the global rankings, but it should also be seen from other angles, such as the use of networks to convey message and instill thoughts to users, along with the charm and the great effects that these virtual societies have in real life of societies. A set of new approaches to Internet social networking

indicates the intellectual and philosophical infrastructure in this communication system. The social networks, which are based on open development models, are flexible and participatory for content production systems that lead to the increase of public awareness and the transformation of information flow and even media. This feature distinguishes social networking from ordinary Internet sites (Web Generation 1), which are the source of providing one-way information because one-way information transfer systems rely on a narrow understanding of communications. Accordingly, if we consider social networking on this rational basis, we will never be able to recognize it, and we cannot find suitable solutions for using such networks through the first method (Mahmoudi et al., 2015). Iran is one of the countries that have a high rate of social networking usage (Mahmoudi et al., 2015). In addition to virtual networking capabilities, these websites provide the possibility of using various opportunities on the Internet, including searching, reading and sharing news, uploading photos and videos, writing notes and membership in various groups, etc. and this issue has made internet users more eager to virtual social networking (Rahmanzadeh, 2011). Social networking sites can become useful and effective tools for fundamental transformation and change in the field of education, provided that they would be controlled for the knowledge and science needs (Zaidieh, 2012). The social network audience can range from any spectrum, age, race, and gender, and there is no limitation for it. Young people are the greatest social networking fans (Sylvester et al., 2010); however, the prevailing atmosphere of the global Internet networking has always been exposed to the incidents and emergence and growth of technologies that are constantly shaped by the new ideas or the emergence of new needs, and efforts to meet those needs. The Eitaa application is one of the Iranian messengers, which due to the filtering of the social networking of Telegram application based on the government policies since 2018, is mentioned as a substitute for Telegram application. The weakness of the server of the messengers such as Soroush, or the weakness of the available facilities of the other internal

messengers as well as the lack of their user-friendly atmosphere, have made Eitaa have a great chance to be seen because in general, it is similar to the Telegram application. One of the features of Eitaa application is the ability to create groups and super-groups that can accommodate up to 5,000 people at a time and users can easily create these things and manage them. It should be noted that the Eitaa's administration officials have provided an interesting possibility for the channels of Telegram application, which were registered in the Ministry of Communications system, to be transferred to the Eitaa application without the need for specific technical measures and solely through the channel management authentication, which increases the charm of use for large channel managers and help them easily decide to transfer from the Telegram application. In the case of the availability of channel management and user groups, also many common accesses of Telegram are available in this application.

There is an overview of the history of relevant domestic and foreign studies in this area in the following:

The results of Ellison et al. (2007), Christophides et al. (2009) and Ross et al. (2009) showed that the use of social networking in training leads to the increase of the ability of learners. Tsai et al. (2011) have identified the access to electronic content as the visible and practical feature of social networking. Valkenburg et al. (2005), Mason and Rennie (2007) and Ellison et al. (2007) have considered the possibility of participation as a provided opportunity for social networking in education. Huang and Yen (2010) studied the facility of social interaction among audiences, and Wang and Chiu (2011) also considered the increase of the speed of production and dissemination of knowledge as the excellent features of the use of these networks in education. Redecker (2009) also refers to the lifelong and independent learning of the learner in this regard. Since the emergence of social networking, there have been many other researchers such as Yang (2008), Pask and Hargittai (2009), Schwartz (2009), Selwyn (2009), Mezer et al. (2009), Roblyer (2010)

and Hew et al. (2011), who have studied and investigated in the field of social networking application in educational affairs. These researchers have concluded that social networking through web tools empower team critique thoughts, project-centered learning, and group problem solving; not only their power is created due to producing and sharing knowledge among members of these networks, but also they provide the ability to reflect and generate new concepts. These networks offer the possibility of creating, challenging, changing, and criticizing and evaluating ideas by a great system. The point is that all of these things do not last for several months or years, but sometimes they continue in just a few minutes (the same). Immature ideas can be quickly rebuilt and used through collaborative actions.

Lee and Mcloughlin (2008) have introduced social networking sites as educational tools that students can use them for communication and social support to receive and share information. Robelia et al. (2011) have explored the role of Facebook's social networking community in increasing youth's knowledge of environmental issues and promoting environmental behaviors to reduce greenhouse gas emissions by emphasizing on the growing importance of online social networking for young people; according to the results of this study, the social networking has been considered as a useful tool for achieving these goals. The results of the survey of Viglianisi and Sabella (2011) also indicated that the use of social media based on information and communication technology, such as blogs and social networks such as Facebook and YouTube could be used as a strategic tool for biodiversity conservation at both local and global levels.

Stanciu et al. (2012) in a research entitled "Social Networking, An Alternative to Environmental Education" have analyzed the impact of social networking on environmental training in Romanian higher education, and they have developed a model for using Facebook's social networking for educational processes of higher education for environmental training of students and faculty members of the Faculty of Economics. The

results of this study showed that by considering the popularity of social networking sites among students, these networks should be considered as valuable tools and the level of the ability of students and faculty members to use these sites should also be increased. Dessai and Kamat (2013) explored the role of the Facebook social networking community in developing the environmental attitudes of students in India, and they have concluded that using this social network had a more significant impact on promoting environmental learning than the traditional ones. In another conducted study by Lachlan et al. (2014) in connection with the Twitter network, the researchers claimed that Twitter could meet the scientific and informative needs of the audience. The results of the study by Zita et al. on the role of the use of social media in creating environmental awareness among the faculty members at the Nelson Mandela University of South Africa, it was also concluded that Facebook was the most active social network among the studied systems. Koohestani's research results (2015) indicated that virtual social networking act as a catalyst to advance the environmental goals, and in some cases, they even become effective social movements in the form of groups and environmental campaigns. Also, about virtual social networking and the water crisis, Getchell, and Sellnow (2015) have conducted a study titled as Twitter Analysis and Water Crisis in West Virginia. The results indicated that in the issue of Water Crisis, Twitter was used by the people that were the members of the groups of this network. The information about water scarcity and educational content, including how to compensate for it and to respond to relevant questions were spread rapidly on the network among users. Rezaei et al. (2016) investigated the effect of the Instagram social network on improving the environmental literacy of the students of Payame Noor University in Markazi province, and they have concluded that the use of this network had a positive and significant effect on the improvement of all of the three studied dimensions of environmental literacy of student, and the highest impact was on the students' environmental literacy attitude. Also, Rezaei and Shobeiri (2017) in research titled

as The Effect of Social Networking on Promoting Environmental supportive Tourism behavior (Case Study: the social network of Telegram) reported that environmental training by using this social network had explained about 57% of the variance of environmental tourism behavior of the study group.

The mentioned features for virtual social networking and an overview on previous internal and external researches have shown that social networking can become a powerful tool for education in different areas, but a review of the research background in this regard has been demonstrated that despite many opportunities that it creates, the use of this networks in training brings about challenges such as the resistance of learners (Cheraghmolaeei, et al 2014), inappropriate characteristics of some audiences (Green & Azevedo, 2007), the issue of security and protection of privacy sanctum (Redecker et al., 2010), Internet addiction (Yang and Tang, 2007), and the existing challenges as well as the gap in gaining digital skills and Internet access as a prerequisite for using social networking (Rezaei & Shobeiri, 2015) (Redecker et al., 2010). The research results of Rezaei and Shobeiri (2015) showed that despite the undeniable capacities of social networking, there was no relationship between their use and the environmental attitudes of students in Payame Noor University of Markazi province. Researchers have attributed this issue to not using the mentioned networks in environmental training to improve the environmental attitudes, and they have suggested conducting interventional studies on this subject.

Therefore, given the inadequacy of formal education in the present age and the necessity for the integration of informal and tacit learning (visual, auditory and written) with formal education, the need to examine the impact of social networking in training for the different target groups is prioritized.

According to the policies of the Government of the Islamic Republic to develop and replace the internal social networking, and the role that the Eitaa social network can play in environmental training, studying its role and capacity in environmental training to improve

the environmental attitudes of the various classes of society, including students seems necessary, because the environmental attitude of students, as the well-educated class of society who can serve as ambassadors of environmental training in the family, as well as representatives of different cultures and layers of community, is especially important in the society, and it is necessary for the formation of appropriate environmental training (Rezaei and Shobeiri, 2015). On the other hand, they will gradually acquire positions in the society that directly or indirectly can have consequences for the environment, such as teachers, lawyers, policymakers, scholars, etc. finally, they should also do their obligation for the global environment (Salehi et al., 2015). In other words, their behavior and attitude toward the environment should be in line with its preservation and sustainable development (Nath, 2011). The subject of this research was to examine the effect of the use of Eitaa as a native social network on improving the students' environmental attitudes and the three cognitive, emotional and behavioral dimensions. Although several studies have been conducted on the role of social networking in education and in some cases in environmental training, researchers in the investigation of internal and external history did not come across to a research that examines the impact of internal social networking and, in particular, Eitaa social network on the promotion of environmental attitudes with the semi-experimental and interventional approach. The importance of this research is that it has familiarized policymakers with environmental training through the use of Eitaa as one of the native social networking platforms based on information and communication technology in environmental training and promoting the environmental attitude of students as influential people in the society, and this research can be the basis for future similar studies on the impact of other social networks as well as different media and using their results to optimize plans in this area.

According to the importance of the issue and to implement the research process, the central

question of this research was designed as follows: what is the effect of the Eitaa social network on the improvement of the environmental attitude of students? According to the above question, the research subsidiary questions are formulated as follows in the form of the research goal: Does the use of the Eitaa social network in environmental training affect the cognitive dimension of students' environmental attitude? Does the use of Eitaa social network in environmental training affect the emotional dimension of students' environmental attitude? And does the use of the Eitaa social network in environmental training affect the behavioral dimension of students' environmental attitude?

2. RESEARCH METHODOLOGY

The present study is the type of applied researches regarding the purpose, and concerning the data collection tools, it is a semi-experimental study with pre-test, post-test type, and control group. The study sample consisted of 46 students of Payame Noor University of Markazi province that were selected by the convenience sampling method and were randomly divided into two control and study groups of 23 people. At first, the pre-test was given to both groups. Then, the necessary trainings based on the recommendations of the UN Environment Program (UNEP, 2015) and based on the conditions and culture of the country were presented in the form of sharing textual, visual and auditory posts in the created group of the Eitaa social networking application in the fields of recycling, systematic excretion of waste material, transportation behavior, energy consumption, environmentally-friendly purchasing, consumption pattern correction, water use management, tourism behavior and other related issues during the period from April 20 to June 20 of 2013. After two months, a post-test was given to the students to measure the impact of environmental training provided through Eitaa. The data collection tool was a researcher-made questionnaire, which items were arranged according to the recommendations of the United Nations Environment Program (2015) and survey of

the experts' opinions.

The validity of this questionnaire was quantitatively and qualitatively approved by a survey of 25 professors and faculty members of the majors of environmental education, educative sciences, psychology and social sciences; also in this process, some anticipated questions were removed, some items were added, and a few were merged. Cronbach's alpha method was used to confirm its reliability. In the quantitative study of content validity, the content validity method of Lawshe was used, and according to the number of responding specialists, the questions that their content validity rate was less than 0.37 should have been deleted (Ayre and Scally, 2013), that in this study, all of the questions with a content validity ratio of less than 0.45 were removed in order to increase the validity of the questionnaire. The students' environmental attitude assessment was evaluated through the questions of a questionnaire including 15 items with five spectrums of totally agree, agree, no opinion, disagree and completely disagree; also the Cronbach's alpha of this part of the questionnaire was 0.814. The emotional dimension of environmental attitude was evaluated through 17 items with the Cronbach's alpha of 0.816 and scale score of 1 to 5; the behavioral dimension of the environmental attitude of the sample group was evaluated through 21 items with Cronbach's alpha of 0.766 and scale scores of 1 to 4. The data were analyzed by using descriptive and inferential statistics method and SPSS software. The frequency tables of demographic variables and mean of the primary variables of the research were arranged in the form of descriptive statistics, and the research questions were answered with the investigation and descriptive deduction and by using the covariance analysis tests, paired t-test comparisons and Scheffe post hoc test. The Kolmogorov-Smirnov and Leon tests were also used to analyze the data.

3. RESEARCH FINDINGS

3.1. Descriptive analysis

Table1 shows the mean of the studied variables in the control group and Table 2 shows the mean of the variables in the study group.

Table 1. the mean of the three dimensions of environmental attitude in the control group

Stage	Cognitive aspect	Emotional aspect	Behavioral dimension
Pretest Mean	0.45	3.86	2.71
Standard deviation	0.15	0.37	0.28
Posttest Mean	0.50	3.94	2.87
Standard deviation	0.14	0.31	0.40

Table 2. the mean of the three dimensions of environmental attitudes in the Eitaa Group

Stage	Cognitive aspect	Emotional aspect	Behavioral dimension
Pretest Mean	0.32	3.75	2.74
Standard deviation	0.15	0.38	0.37
Posttest Mean	0.72	3.95	3.01
Standard deviation	0.12	0.31	0.34

3.2. Inferential analysis

Investigation of the Normality of observations: to investigate the normality of the comments, the inferential method of the Kolmogorov-Smirnov test is used as described in Table 3.

Table 3. the results of the significance level of Kolmogorov- Smirnov test for both the control and study groups

Group name	Test stage	Cognitive dimension	Emotional dimension	Behavioral aspect
Control group	Pretest	0.608	0.993	0.637
	Posttest	0.865	0.443	0.940
Study group	Pretest	0.093	0.811	0.798
	Posttest	0.636	0.962	0.947

Since the significance level of the test of variables is more significant than 0/05, the hypothesis of the normality of the observations is confirmed; so, parametric tests can be used to study the research questions.

3.3. Homogeneity analysis of variance
At this stage, Levin test was used to test the homogeneity hypothesis of variance to conduct the single variable variance test.

Table 4. Levine Test Results

Group	F	Level of significance
Control group		
Cognitive dimension		
Emotional dimension	0.578	0.452
Behavioral dimension	0.460	0.502
	3.641	0.064
Study group		
Cognitive dimension	1.575	0.217
Emotional dimension	1.675	0.203
Behavioral dimension	0.102	0.751

According to the level of significance obtained from this test based on table 4 that is greater than (0.05), the groups are not significantly different regarding variance and the assumption of equality of variance is observed to conduct the covariance test.

3.4. the investigation of Levine test to calculate the error resulting from the pre-test conduction

Since the pre-test can be one of the sources of making a mistake in the test results, the Levin's test results were used to check the significance of the error caused by the pre-test run.

Table 5. Levin Test Results

Group	F coefficient	Significance
Control group	1.79	0.097
Study group	1.22	0.288

According to the fact that the obtained significance level on the basis of the reflected results in Table 5 is higher than (0.05), the groups are not significantly different in terms of the variance, so the assumption of the equality of variance is observed to conduct the covariance test, and the resulting error of running pre-test or the confidence level of 0.95 was not significant.

3.5. Investigation of the effect of using Eitaa communication software on the improvement of students' environmental attitudes
Table 6 shows the results of the covariance analysis test:

Table 6. The results of covariance analysis for the three dimensions of environmental attitude

Variable	Sum of squares	Degree of freedom	Mean of squares	F coefficient	Significance	Level of effect
Cognitive aspect	1.539	1	1.539	82.779	*0.001	0.695
Emotional dimension	0.413	1	0.413	3.479	*0.040	0.094
Behavioral dimension	0.761	1	0.761	6.023	*0.019	0.137

Significant at the level of $P < 0.05$

Given that according to Table 6 the levels of significance of the test in all of the three variables of knowledge, attitude and environmental behavioral were respectively 0, 001, 0.040 and 0/019 and were less than 0.05, so there was a significant difference at the level of $P < 0.05$ between the three variables in the two stages of pre-test and post-test, which showed the effect of using Eitaa on all of the three dimensions and improvement of the environmental attitude of the students.

In table 6, the degree of freedom is equal to the number of groups minus 1 and the level of the effect means the extent of the effect of Eitaa on the indicators. It should be explained that the impact of training through Eitaa for each of the cognitive, emotional and behavioral dimensions of the environmental attitude of the study group was respectively equal to 0.695, 0.094 and 0.137 (Table 6). This indicates that respectively about 70, 10 and 14 percent of the variance of the

cognitive, emotional and behavioral dimensions of the environmental attitude of the study group can be explained explicitly by conducting the educational method (environmental training through Eitaa).

Afterward, the mean of all of the three dimensions of environmental attitude was investigated by the paired t-test, and the results are presented in Table 7. According to the fact that the level of significance was less than 0.05, and by comparing the mean of the two stages of pre-test and post-test, it was concluded that the mean of all of the three dimensions of environmental attitude in the post-test phase was higher than the pre-test.

Table 7. Comparison of the mean of control and study groups in two stages of pre-test and post-test

Variable	Factor	Pretest		Posttest		Paired t-test results	
		mean	Standard deviation	mean	Standard deviation	Statistic	Level of significance
Cognitive dimension	Eitaa	0.32	0.15	0.72	0.12	-9.10	*0.001
Emotional aspect	Eitaa	2.74	0.37	3.01	0.34	-2.45	*0.02
Behavioral as	Eitaa	3.75	0.38	3.95	0.31	-2.87	*0.04

pect Significant at the level of P <0.05

According to the estimation of the F ratio with the degree of freedom of 1 and the significance of this ratio, and for further investigation, the Scheffe post hoc test has been used.

Table 8.Scheffe pair comparison results in post-test

Group (I)	Group (J)	Cognitive dimension		Emotional dimension		Behavioral dimension	
		The mean difference	Level of significance	The mean difference	Level of importance	The mean difference	Level of significance
Control group	Study group	0.22	*0.029	0.09	*0.033	-0.14	*0.033

Significant at the level of P <0.05

According to the results of Table 8, and according to the fact that the level of significance was less than 0.05, and the mean difference between the two groups was negative, the mean of the Eitaa group is higher than the mean of the control group in all three variables.

4. DISCUSSION AND CONCLUSION

Today, virtual social networking has created new opportunities and challenges in different societies, and these technologies can be used for educational and professional purposes. In this regard, one of the essential areas influenced by these networks, including Eitaa, is the realm of new social movements, and in particular the related environmental activities. In this regard, the emergence and development of new media and social networks in many societies have also increased the possibility of the formation and implementation of social and environmental activists. According to the policies of the Islamic Republic of Iran about the development of social networking and internal messenger, the need for planning for their use in education, including environmental training, becomes a priority. In this research, on the basis of the results of the covariance analysis test, according to the fact that the significance level of the trial in all three cognitive, emotional and behavioral dimensions of the environmental attitude was 0.001 and less than 0.05 (Table 6), it was concluded that there is a significant difference between the three variables in the two stages of pre-test and post-test, which shows the effect of environmental training by using the Eitaa social network on all of the three dimensions and promotion of the students' environmental attitude. The comparison of the

mean of the two stages of pre-test and post-test showed that the mean of the variables in the post-test stage was higher than the pre-test in all of the three variables; the results of the Scheffe post hoc test indicated that the mean of the Eitaa group was higher than the mean of control group in all of the three variables; therefore, it can be concluded that environmental training through Eitaa has a positive and significant effect on all of the three dimensions of environmental attitude of students, especially cognitive dimension with the highest effect level. This part of the research results is in accordance with the results of Lee and McLuhan's research (2008), Robelia et al. (2011), Vigilance and Sabella (2011), Stanciu et al. (2012), Desai and Comat (2013), Zita (2014), Laclan et al. (2014), Mountains (2015), Satchel and Selene (2015), Rezaei et al. (2016), and Rezaei and Shobeiri (2017) on the role of virtual social networking in advancing environmental goals; also this part of research is not in accordance with that part of the research results of Rezaei and Shobeiri (2015), which did not find any significant relationship between the use of this network and environmental attitude of students, and this research contradicts and confirms that part of their research results regarding the necessity of conducting interventional studies and need of using the capacity of social networking in a targeted and planned way.

The level of the effect of training through Eitaa for each of the cognitive, emotional and behavioral dimensions of the environmental attitude of the study group was respectively 0.695, 0.094 and 0.137. This indicates that respectively about 70, 10 and 14 percent of the variance of the cognitive, emotional and behavioral dimensions of the environmental attitude of the study group can be explained explicitly by conducting the educational method (environmental training through Eitaa). The inequality of the level of the effect of environmental training through this virtual network on different dimensions of environmental perception can be seen as the nonlinearity of the relationship between the aspects of cognitive, emotional and behavioral attitudes of the environment because the

determinants of emotion and behavior are beyond cognition. Cognition is just one of the factors that shape feeling and affects behavioral intent, but the cognitive dimension is the first loop of the chain of the factors influencing environmental behavior, and it is essential because of its effect on other variables, such as emotion and willingness to behave. The results of this part of the research in the field of non-linear relationship between the cognitive, emotional and behavioral dimensions of environmental attitudes have confirmed Kurt Levine's theory of change in attitude. According to the results of this research, it seems that due to the lack of formal education in the age of communication, Payame Noor University, based on its obligation, can use the capacity of the Eitaa social network for implicit education of students to improve their environmental attitude; so by using the capacity of the educational planning professionals and continuity of the environmental training programs, it can lead the direction of these training from cognitive function toward the more effective of the emotional and behavioral dimensions of students. This proposal can be used by other universities and all institutions and responsible organizations of the country within the framework of their duties in the field of public environmental training.

Also, the significant capacity of social networking in education and promotion of environmental attitudes and other areas of human life reminds the necessity of the attention of policymakers of the information and communication technology to plan and supporting native social networking. On the other hand, due to the results of the research and the limitation of the impact of implicit education through the Eitaa network, it is recommended to the policymakers at Payame Noor University, as well as other universities and higher education institutions to consider formal and informal education, and take action on planning for the integration of environmental training in the curriculum and curriculum sections of different grades and various educational majors, prediction of general education units for students of all

majors, holding workshops, lecture programs and other instructional methods. In other words, they should use tacit training based on social networking technologies and social media, and formal and informal

environmental training together and in a complementary manner in the form of blended learning to play their role in the comprehensive environmental training programs.

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