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Investigating the feasibility of using the national integrated system of continuing education in the management of training courses for inductees (physicians and medical–related professions) of Urmia University of Medical Sciences

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Abstract

General Department of Continuing Education of the medical community in order to promote health, through continuing education to all graduates of the medical community, and development of continuing education policies of the medical community in order to support inductees and develop standards of continuing education of the medical community and accreditation of continuing education centers to improve the quality of continuing education is doing its job and in this regard, it has launched an integrated system of continuing education of the medical community. The purpose of this study was to investigate the views of the participants of these programs about the feasibility of using the national integrated system of continuing education in the management of training courses for inductees of Urmia University of Medical Sciences. The present study is a descriptive-survey study that was performed on 367 physicians and medical related professions from July 2018 to October 2018. Data collection tool was a standard questionnaire whose validity was confirmed by face validity and its reliability was confirmed by Cronbach's alpha (0.846). The research data were analyzed using descriptive and inferential statistics by SPSS software. The results showed that the national integrated system of continuing education has provided the satisfaction of the training courses of the inductees (physicians and medical related professions) of Urmia University of Medical Sciences and the *planning* variable with an average rank of 3.91 and the *quality status of face-to-face education* variable with an average rank of 2.81 had the most and the least impact on the integrated system of continuous education, respectively. In terms of the overall capabilities of the software, the lowest score was related to the *distance education* item. In the designed software, despite the fact that special mechanisms have been installed so that the user can make the most use of the educational environment during training, but there are shortcomings in this system, positive opinions about the efficiency, function and designing of the system were evaluated as optimal, and in terms of *educational organization* and *planning*, the system was optimal for the respondents.

Keywords: National Integrated System of Continuing Education, Planning, Quality Status of Face-to-face Education

Introduction

Considering the importance of the role of human resources as a strategic resource in societies and organizations and the introduction of human resources as the main effective factor, addressing the factors affecting the performance of human capital in organizations and especially in medical universities is important. The continuing education offices throughout the country are a subset of the educational vice chancellors of medical universities, whose mission is to design, plan and manage the implementation of continuous education programs for all inductees in medical universities. And there are skills that technologists identify and discuss and teach as basic medical sciences, principles of clinical medicine, and preventive care.

The inductees of continuing education since 1991 include graduates of medicine, dentistry, pharmacy, professional doctorate and specialists in laboratory sciences, medical diagnosis and doctorate of health sciences that later according to the instructions for continuing education of medical related professions included nursing, midwifery, audiometry, optometry, laboratory sciences, physiotherapy, speech therapy, occupational therapy, radiology technology, bachelor's and master's degree in pharmacy and master's degree in dentistry that have been announced since March 2007 and the time of inclusion of the above-mentioned persons is from the time of notification. Since 2012, other fields of medical sciences and basic sciences have received continuing education in all activities after graduation to maintain acquired skills and improve the quality and quantity of new scientific materials and skills that in the medical community can lead to quality and quantity of services provided in the field of health. Therefore, continuous education of the medical and paramedical community is one of the important goals of the Ministry of Health and Medical Education. From 2012, other fields of medical sciences as well as associate degrees can voluntarily participate in the relevant programs and receive a certificate. Necessary information will be provided in the next steps and it will be mandatory to obtain continuing education points. Continuous education programs in medical universities are presented in the following four forms (General Department of Continuing Medical Education, 2000).

A- face to face programs, including conferences, seminars, congresses, symposiums and workshops

B- Short-term professional training courses

C- Codified programs

D- online or distance programs

E- Tutorial articles and electronic and virtual education (Moradi, 2011).

The history of the office of Retraining and In-Service training goes back to the time when the Ministry of Health was in charge of the country's health and medical and paramedical education was in charge of the Ministry of Culture and Higher Education. With the expansion of the Ministry of Health at that time and the feeling of great need for medical personnel, especially paramedics in various categories and facing the shortage of trained personnel in paramedical fields, educational and research complexes were established in the former Ministry of Health. In each of the provinces of the country, along with the regional health organizations of the provinces, an educational and research complex was established to meet the training needs of employed personnel and training of middle-class personnel and short-term training courses according to the needs of health centers (Jafari et al., 2008).

Considering the integration of medical and paramedical education in the Ministry of Health and the formation of the Ministry of

Health and Medical Education and the formation of medical universities and the integration of educational and research complexes of the Ministry of Health in medical universities and the approval of new organizations of the Ministry of Health, medical treatment and Education, Office of retraining and In -Service Training in the new organization of Deputy Minister of Education has been predicated and has been in charge of the previous duties until 1989, and during this time it was renamed the Office of Retraining and Free Education. In the previous year, the lack of a comprehensive inspection and control system for training and performance of Physicians and medical related professions was a weakness for the university because physicians and medical related professions could not be inspected, so the Ministry of Health sought to compensate for this weakness by launching a comprehensive system that monitors physicians' performance continuously and to provide and hold the necessary training at appropriate times.

After the successful launch of the continuing education system of the whole country (www.ircme.ir) and the need to implement online or distance learning programs and due to the existing vacuum in the field of implementing virtual programs after consultation and cooperation with some medical universities in the country, the Technical and Engineering Company of *Creative Thinking Writers* designed and implemented a virtual education system in the country. Thus, all continuing education centers can use this system to present their program and hold an online exam after obtaining a license to run their online or distance learning programs.

Continuing education is a very important part of the working life of the medical community and its impact on improving the quality of medical services is known in the world. The challenge for continuing education centers is to move from CME to CPD. Continuing education is a very complex process (Grant, J. 2002).

The United States formally introduced CME in 1920, and in 1934 it was first compulsorily taught in the field of urology. Academy of family physicians is launching a scoring system for Medical continuing education (CME) and in 1981, Accreditation Council for Continuing Medical Education(ACCME) is established for the internal and external accreditation of CME activities. Since 1990,external activities and accreditation of external education have been considered.

Along with the United States, CME and CPD activities are on a large scale, and the country's accreditation system is one of the strongest in the world. CME is mandatory in 11 of the 27 EU member states; in other countries, participation is voluntary, but many incentives are designed to participate in CME programs.

In Australia and New Zealand, faculty members and specialists are in charge of CPD. Participation in the programs is voluntary, but physicians need to provide a ceiling of points to renew their licenses.

There is not much evidence on how CME is performed in Africa, Asia, Latin America, and the Middle East, but it is more or less considered in all countries (Davis et al., 1999).

Continuing education of all activities after graduation is to maintain the acquired skills and improve the quality and quantity and learn new scientific content and skills that in the medical community can lead to the improvement of quality and quantity of community health services. Continuous education programs consist of the following 5 types of activities:

1. Seminar, Congress, Workshop, Conference
2. Short professional training courses
3. Codified programs
4. Educational and research activities
5. Self-study

The first type of continuous education programs include seminars, congresses, workshops and conferences

1.Conference (Congress)

Formal meeting consisting of experts and experienced people in which the results of

research and studies conducted on a specific scientific topic are presented in the form of articles, lectures and posters and is repeated periodically from 1 to 5 years. The duration of the congress is 3 days or more, and it is necessary to form a number of specialized committees to hold each congress.

2.International Conference(International Congress)

It is attended by the presence of prominent foreign professors and researchers (in addition to having the definitions of the National Conference).At least 20% of the papers presented at the international conference are the result of research conducted in other countries.

3. Symposium (seminar)

Meetings and gatherings whose purpose is to express new scientific knowledge, exchange experiences and update information in order to find a solution and solve the professional problems of the participants and they are organized in the form of lectures, roundtables and question and answer sessions. Its duration is at least 2 to 7 days.

4. Preparation (conference)

Meetings and gatherings that are organized for discussion and consultation in a specific field. Experts express their views on important issues and problems through lectures, question and answer sessions, roundtables and interesting case reports. These meetings can be held during the day or as periodic meetings. If these meetings are held periodically, they are referred to as periodic conferences.

5. symposium

In order to teach specialized and sub-specialized scientific issues on a specific topic in the form of lectures, working groups, discussions and presentations. In the symposium, each of the speakers will discuss a specific aspect of the topic, the audience are experts. The duration of the symposium is usually 1 day.

6. Workshop

It is a program that is held to strengthen the professional skills of the participants. And participants consult and exchange their ideas, experiences and views in small groups and it is usually formed in a few days and up to a week.
The second type of continuing education programs, short professional training courses is a program that aims to teach new skills and strengthen previous professional skills, and at least one-half of the course hours are held clinically and practically.
The third type of continuing education programs, is codified programs; the program that is designed to remind previously learned correctly, to increase scientific skills in diagnosing, treating and preventing diseases based on scientific principles mentioned in official university textbooks(Do's of learning of any discipline's text books) that has been developed for the employees of non-educational and research centers by special specialized committees in the General Department of Continuing Education of the medical community in the relevant field and to solve the professional problems of learners in small groups based on panel implementation – Questions & Answers - Case Report, visits, practical work, playing educational videos and.. Useful hours of the program should be 25 hours (1 hour 1 point, 25 hours 25 points).
In the fourth type of continuing education programs, educational and research activities, the amount of points that are awarded to the inductees of continuing education according to the regulations on how to allocate points to educational and research activities is considered as educational and research activities.
Self-study which is the fifth type of continuing education programs, is a learning process in which the learner and the teacher are one. In this process, the goals, topics and content of learning and its method are clear to the learner. The learner has complete freedom in choosing

the teaching time, teaching space, educational assist tools and its planning. Self-study assessment can be done by the learner or anyone who is familiar with the learning process and its process and objectives.

The types of self-study programs are summarized as follows:

1. Written (books and publications….)

2.Audio-visual (tape, software, educational videos, etc.)

3. Scientific and practical activities in scientific and research centers, clinics and hospital wards with scientific and educational value (Dargahi et al., 2017).

Continuing learning is also referred to as "learning over a lifetime", "lifelong learning", and "continuous learning". What is continuing learning? Is it a method or a tool? Is it a destination or a process? And finally, what is its scope? In answer to these questions, it should be said that continuing learning has a generality that includes all levels and stages of age and seeks to relate learning environments outside the school with the learning environment inside the school and break down artificial boundaries of learning. Continuing learning means that any environment is potentially a learning environment, and as a result, school is no longer a unique place of education. "Continuing education has a comprehensiveness that includes all components and elements of education. This type of education is not a special educational system, but a context on which any comprehensive educational plan is created, so it should be the basis for the development of each component of the educational system "(Ebrahimzadeh, 1997).

The real nature of this type of education is to train the human being to learn how to express his intentions and thoughts, how to question the environment, and to reveal his true personality as much as possible. Man is an imperfect being who will flourish only with an education aimed at continuing and comprehensive learning. In this regard, education that is created and expanded based on the philosophy of continuing education, will consider the realization of existence and prosperity of all potential abilities of human existence. In a definition of continuing learning, Gross (1981) writes, "Continuing learning is a growth that a man himself determine its direction, that is, understanding oneself and the world and acquiring new skills and abilities. The only real wealth one will not lose is investing in oneself. Continuing learning means joy and happiness in how to work with objects, joy of awareness of some new beauties of the world, the pleasure of making something alone or with others "(Farjami, 1993).

Edgar Four, the chairman of the International Commission of the Development of Education, has not neglected the subject of continuing learning after completing his research report in the valuable book 'Learning to Live". This report in its own time (1972) had the valuable advantage of demonstrating well the concept of lifelong learning in a situation where the traditional education system faced many challenges; a concept that, after a quarter of a century, remains the core and challenge of education. Jacques Delor, former chairman of the International Commission on Education for the 21st Century, published a report entitled "Learning, the inside Treasure " (1996). He introduces the four pillars of education so that none of the human talents that lie like a treasure inside every human being will be left unused and activated. These foundations are:

Dimensions of continuing learning

1.Learning to know

2. Learning to do

3. Learning to live together

4. Learning to live

Whitehead who sees the world as boundless, believes that man is a living being, and that education must necessarily motivate and guide his "self-learning." He must take advantage of all the opportunities provided throughout life and, as a process, transform man from one state to another and from limited "beings" to infinite "becomes." Continuing learning is self-reliance, lifelong learning and self-study. Students should be trained to get used to

reading and consider it one of their most basic needs. Continuing learning is in fact a commitment to self-study. As a result, continuing education is neither a method nor a tool but a general process and the spirit of education is learning and consequently training (Mehrdad et al., 2015).

Research Methodology

The statistical population of the present study consists of physicians and medical related professions working in Urmia University of Medical Sciences. According to the obtained statistics, the number of employees working in Urmia University of Medical Sciences is 7439 people in 2018. The sample size has been calculated through Cochran's formula (Azar and Momeni, 2002). The following Cochran formula has been used to calculate the statistical sample size:

$$n = \frac{\frac{t^2 pq}{d^2}}{1 + \frac{1}{N}\left(\frac{t^2 pq}{d^2} - 1\right)}$$

$$\frac{\boldsymbol{number\ of\ employees}}{\boldsymbol{Number\ of\ total\ employees}} \times \boldsymbol{sample\ size} = \frac{\boldsymbol{n}}{\boldsymbol{N}} \times \mathbf{367} \cong \boldsymbol{x}$$

Library resources, articles and websites and required books were used to collect information on the theoretical foundations and literature of the research, and a questionnaire was used in the field method to collect data and information for analysis.

It should be noted that this questionnaire is standard and translated only into fluent Persian and based on existing studies, the reliability of the questionnaire (α = 0.94) has been determined. This questionnaire had 30 questions, of which 3 questions were related to the identity information of the participant and the other 27 questions were related to the evaluation of usability and satisfaction (in 5 sections of comments, 6 questions related to working with the system, 4 questions were about screen, 6 questions were about set of terms and information of system, 6questions were about the learning capability of the system and 5questions about the general capabilities of the system. Each question had an answer with a score of zero to nine, with the number zero indicating the lowest level of capability and satisfaction and the number nine indicating the highest level of capability and satisfaction (zero to two points at the poor level, three to five at the intermediate level, six to eight at the level Good and not classified at a high level) was completed by each user and provided to the researcher. In the present study, to determine the validity of the data collection tool, face or symbolic validity such as a standard questionnaire was used.

Cronbach's alpha method was used to estimate the reliability of the questionnaire. Based on this method, using SPSS statistical software, the reliability of the questionnaire was 0.846. In order to analyze the data obtained from the questionnaires, descriptive and inferential statistical methods were used. Kolmogorov-Smirnov was used to find out whether the distribution of variables was normal or not. Considering that the result of this test indicates the normality of data distribution, Pearson correlation coefficient (determining the existence of a relationship) was used. Then, structural equations (path analysis) were used to investigate the effect between variables in statistical analysis.

Results:

Out of 367 inductees, 149 males (40.6%) and 218 (59.4%) were females. The age of the participants in the study was considered in 4 groups (20 to 29 years, 30 to 39 years, 40 to 49 years and more than 50 years). The first group (20 to 29 years) with a frequency of 21 (3.3%) had the lowest frequency and the third group (40 to 49 years) with a frequency of 232 (62.2%) had the highest frequency. The inductees were 123 (33.5%) general physicians , 57 (15.5%) specialists, 102 (27.8%) nurses and 85 (23.2%) paramedics.

Table1. analysis of sample's age

Participant's age	frequency	percent
20-29 years	12	3/3
30- 39 years	67	18/3
40 – 49 years	232	62/2
More than 50 years	56	15/3
total	367	100

The inductees included 123 general physicians (33/5%), 57 specialists physicians(15/5%), 102 nurses (27/8%) and 85 paramedics(23/2%).

Table 2 - General points related to the system feasibility evaluation questionnaire

Variable	Minimum	Maximum	Mean	Standard deviation
General function of the system	1	9	8/12	0/63
The difficulty of working with the system	1	9	8/25	0/81
How do you feel about working with system	1	9	8/26	0/75
General system design	1	9	8	0/54
Continuous work with system	1	9	7/75	0/81
System setup capabilities	1	8	6/75	0/75
The readability of the letters on the screen	1	8	6/26	0/40
Easily perform tasks using specific phrases in the system	1	8	8/75	0/51
organizing information	1	9	8	0/54
sequence of display pages	1	9	8/75	0/83
Use of terms in the system	1	9	7/5	0/75
a set of terms related to working with the system	1	9	7/5	0/54
place of the messages on the screen	1	9	7/75	0/75
messages to record the necessary data	1	9	8	0/40
system messages regarding the completion of tasks	1	9	8/5	0/51
system error messages	1	9	8/25	0/51
learning to work with system	1	9	8/75	0/51

find system properties through trial and error	1	9	8/5	0/63
remembering names and using system capabilities	1	9	9	0/40
perform tasks quickly and easily	1	9	7/25	0/75
guide messages on screen	1	9	8/5	0/51
system usage guide	1	9	8/75	0/51
system speed	1	9	5/75	0/51
System availability	1	9	9	0
number of system capabilities	1	9	5/75	0/75
correction of user errors when entering numerical and alphabetical data	1	9	7/25	0/75
design fits to different users	1	9	7/56	0/52

Table3.Descriptive statistics of the current situation in research variables

variables	Obtained Mean	Standard deviation	skewness coefficient	kurtosis coefficient
designing	6/46	1/53	-0/535	1/096
planing	6/64	1/56	-0/460	2/978
organizing	6/49	1/50	-0/841	-0/140
Management requests	4/62	1/67	0/595	1/675
Quality status of face to face education	6/25	1/66	-0/724	-0/663
Quality status of distance or online education	6/44	1/57	-0/435	0/648

According to Table 3, which shows a report on the status of research variables, among the research variables, the lowest average is related to the *organization* variable and the highest standard deviation is related to *management requests*. According to the findings of the above table, The lower the amount of skewness and kurtosis and tends to zero, the more normal the data will be, and also if the value of skewness coefficient is between minus one and positive one and for Kurtosis between minus five and positive five, the data is almost normal(Ghasemi, 2010). The above table confirms the normality of the research data. To further investigate the normality of the statistical population, Kolmogorov-Smirnov test (K-S) was used. According to the analytical results of a single test, with a significant level (sig <0.05), the designing of national integrated system of continuing education in the training courses of the inductees (physicians and medical related professions) of Urmia University of Medical Sciences is at the desired level. considering the difference between means (1.164) and the confidence

interval (1.338, 0.990), it can be said that because the low limit and high limit is positive, the observed mean is larger than the mean of the population, so the quality status of face to face education in the national integrated system of continuing education in the training courses (physicians and medical related profession) of Urmia University of Medical Sciences is at the desired level. In the obtained analysis, the level of significance was less than 0.05 (sig <0.05), ie the *management requests* provided the national integrated system of continuing education in the training courses of inductees (physicians and medical related professions) of Urmia University of Medical Sciences and because according to the difference between the means (-1.546) and the confidence interval (-1.724, -1.868) it can be said that because the lower limit and the upper limit are positive, the observed mean is larger than the mean of the population, so the *quality situation of distance study* of the national integrated system of continuing education in the training courses of inductees (physicians and medical related professions) of Urmia University of Medical Sciences is undesirable. Considering the difference between the means (-1.546) and the confidence interval (-1.522, -1.691) it can be said that because the lower limit and the upper limit are positive, the observed mean is larger than the mean of population, so the quality state of distance study in the national integrated system of continuing education in the training courses of the inductees (physicians and medical related professions) of Urmia University of Medical Sciences is undesirable. Considering the difference between the means (1.400) and the confidence interval (1.000, 1.240), it can be said that because the lower limit and the upper limit are positive, the observed mean is larger than the mean of the population, so the national integrated system of continuing education satisfaction of the training courses of the inductees (physicians and medical related professions) of Urmia University of Medical Sciences is at the desired level. The Friedman test has been used to examine the priority of the indicators of the national integrated system of continuing education satisfaction of the participants.

Table 4 - Friedman test

national integrated system of continuing education	Mean rank	Friedman statistics	Freedom degree	Significance level
designing	3/41			
planning	3/91			
organization	3/62			
Management requests	2/92	116/250	5	0/000
Quality status of face to face education	2/81			
Quality status of distance education	3/33			

Table 6 shows the impact of each variable on the overall variable (national integrated system of continuing education). Accordingly, any variable that has a higher mean rank has a greater impact. In the present study, the *planning* variable with a mean rank of 3.91 and the variable of *quality status of face to face education* with a mean rank of

2.81 have had the most and the least impact on the integrated system of continuing education, respectively.

Confirmatory factor analysis technique using LISREL software was used to determine the appropriate pattern of indicators of the national integrated continuing education system. Significance coefficient of designing, planning, organization and quality status of face to face education that is more than 1.96 shows that this relationship is significant; Therefore, it can be concluded that the appropriate model of indicators of the national integrated system of continuing education, which has resulted in the satisfaction of the training courses of the inductees (physicians and medical related professions) of Urmia University of Medical Sciences, has indicators of designing, planning, organization and quality status of face to face education.

Conclusion:

Regarding the general capabilities of the software, the lowest score was related to the distance study item. In the designed software, despite the fact that special mechanisms have been installed so that the user can make the most use of the educational environment during training, but there are shortcomings in this system, there are positive and desirable opinions about the efficiency, function and design of the system, and in educational organization and planning, the system was desirable in the opinion of the respondents, which contradicts the results of Borji and Moatarri's research.

In the present study, physicians and medical related professions considered short-term face to face programs to be more effective than distance programs. However, with the increase in facilities, the time spent to earn a continuing education score increases, which is probably due to the limited training programs for specialized and sub-specialized groups which causes the participants of specialized and sub-specialized categories to travel to provinces other than their place of work, and indicates the priority of using e-learning for this group. However, the results of the present study indicate that more than half of inductees in continuing education of face to face system did not consider continuous education programs as just a waste of time, which was statistically significant with the number of people who agree and this indicates the desirability of face to face courses.

Most of the respondents rated management in critical situations and the power of communication and cooperation in the workplace as low. Improper interaction between management and members creates a turbulent psychological atmosphere for skills acquisition.

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