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The Model Development of Evaluating the Effectiveness of Short and Medium Term Training Courses in Mazandaran University of Medical Sciences

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Abstract

Purpose: This present study is dealing with presenting a model for evaluating the effectiveness of short and medium-term training courses at Mazandaran University of Medical Sciences.

Methodology: In this research, a quantitative research method was used. The statistical population consists of specialists and university administrators and staff of the Medical Sciences Organization in Mazandaran Province. The purposive sampling method was applied in the qualitative phase; moreover, the proportional stratified sampling method was used in the quantitative phase. Furthermore, the data collection was done through field interviews and researcher-made questionnaires. The collected responses were analyzed by using descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (correlation and independent t-tests) using SPSS and Lisrel.

Findings: The main components of short- and medium-term university courses consist (effectiveness and efficiency, job satisfaction, motivation and morale, planning and goal setting, managerial skills, institutionalizing organizational goals, managerial communication skills, and finally emphasis on education and development).

Conclusion: In addition, according to the results, in rating, the short-term and medium-term dimensions of university courses, among all the institutional and operational levels, the factors (the effectiveness and efficiency, job satisfaction, motivation and morale, planning and goal setting, managerial skills, institutionalizing organizational goals, managerial communication skills, and the emphasis on education and development) were respectively rated as the most and the least significance in short- and medium-term university courses.

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1. Introduction

Evaluation is a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards (Royse, 2015). It can assist an organization, program, design, project or any other intervention or initiative to assess any aim, realisable concept-proposal, or any alternative, to help in decision-making; or to ascertain the degree of achievement or value in regard to the aim and objectives and results of any such action that has been completed (Rossi, 2019). The primary purpose of evaluation, in addition to gaining insight into prior or existing initiatives, is to enable reflection and assist in the identification of future change (Levin et al., 2017). Evaluation is often used to characterize and appraise subjects of interest in a wide range of human enterprises, including the arts, criminal justice, foundations, non-profit organizations, government, health care, and other human services (Issel et al., 2021). It is long term and done at the end of a period of time. Infact evaluation is the structured interpretation and giving of meaning to predict or actual impacts of proposals or results (Mertens, 2019). It looks at original objectives, and at what is either predicted or what was accomplished and how it was accomplished (Hickey, 2021). So evaluation can be formative that is taking place during the development of a concept or proposal, project or organization, with the intention of improving the value or effectiveness of the proposal, project, or organisation (Joshua and Browning, 2021). It can also be summative, drawing lessons from a completed action or project or an organisation at a later point in time or circumstance. Evaluation is inherently a theoretically informed approach (whether explicitly or not), and consequently any particular definition of evaluation would have been tailored to its context the theory, needs, purpose, and methodology of the evaluation process itself. Having said this, evaluation has been defined as:

- A systematic, rigorous, and meticulous application of scientific methods to assess the design, implementation, improvement, or outcomes of a program. It is a resource-intensive process, frequently requiring resources, such as, evaluate expertise, labor, time, and a sizable budget,
- "The critical assessment, in as objective a manner as possible, of the degree to which a service or its component parts fulfills stated goals" The focus of this definition is on attaining objective knowledge, and scientifically or quantitatively measuring predetermined and external concepts.
- "A study designed to assist some audience to assess an object's merit and worth" In this definition the focus is on facts as well as value laden judgments of the programs outcomes and worth (Linfield and Posavac, 2018).

Also, Effectiveness is the capability of producing a desired result or the ability to produce desired output. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep, vivid impression (Clarke et al., 2021). Efficacy, efficiency, and effectivity are terms that can, in some cases, be interchangeable with the term effectiveness. The word effective is sometimes used in a quantitative way, "being very effective or not very effective". However, neither effectiveness, nor effectively, inform about the direction (positive or negative) and the comparison to a standard of the given effect. Efficacy, on the other hand, is the extent to which a desired effect is achieved; the ability to produce a desired amount of the desired effect, or the success in achieving a given goal (Muhonen et al., 2021). Contrary to the term efficiency, the focus of efficacy is the achievement as such, not the resources spent in achieving the desired effect. Therefore, what is effective is not necessarily efficacious, and what is efficacious is not necessarily efficient (Liu et al., 2021). Other synonyms for effectiveness include: clout, capability, success, weight, performance. Antonyms for effectiveness include: uselessness, ineffectiveness (Alhadabi et al., 2020).

Simply stated, effective means achieving an effect, and efficient means getting a task or job done it with little waste. To illustrate: suppose, you build 10 houses, very fast and cheap (efficient), but no one buy them. In contrary to building 5 houses same budget and time as 10 houses but you get all 5 sold and the buyers are happy (effective). You get the desired result selling your houses and happy cusomers (effect) (DeWitt, 2017). The different usage of Effectiveness are

- In mathematics, effective is sometimes used as a synonym of algorithmically computable,

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- In group theory, a group element acts effectively (or faithfully) on a point, if that point is not fixed by the action,
- In physics, an effective theory is, similar to a phenomenological theory, a framework intended to explain certain (observed) effects without the claim that the theory correctly models the underlying (unobserved) processes,
- In heat transfer, effectiveness is a measure of the performance of a heat exchanger when using the NTU method,
- In medicine, effectiveness relates to how well a treatment works in practice, especially as shown in pragmatic clinical trials, as opposed to efficacy, which measures how well it works in explanatory clinical trials or research laboratory studies,
- In management, effectiveness relates to getting the right things done. Peter Drucker reminds us that "effectiveness can and must be learned",
- In human–computer interaction, effectiveness is defined as "the accuracy and completeness of users' tasks while using a system",
- In military science, effectiveness is a criterion used to assess changes determined in the target system, in its behavior, capability, or assets, tied to the attainment of an end state, achievement of an objective, or creation of an effect. While combat effectiveness is: "…the readiness of a military unit to engage in combat based on behavioral, operational, and leadership considerations. Combat effectiveness measures the ability of a military force to accomplish its objective and is one component of overall military effectiveness" (Donohoo, 2016; Mehta et al., 2019; Jokisch et al., 2020).

Human resources are considered as the most valuable organizational capital. Since human beings are the main axis of alteration in organizations, extensive measures are provided in leading organizations to promote human resources. Education, research and groundwork for creativity and innovation are the main instruments for improving human resources (Kalita, 2021). Human resource training is a stimulus for social evolution and which can prepare individuals for job mobility and help them to flourish their talents and establish of a wide range of ideas and skills necessary to create a new and developed society (Torres et al., 2021). In other words, in this volatile world, it seems crucial for any organization to have competents, well-trained worrkers to succeed. Organizations require an internal change to adapt to the environment. It is mandatory for managers to take training staff into consideration so as to implement any desirable changes in the organization (Cheng et al., 2007).

Since the education is regarded as the main layout of any economic, social and cultural development in terms, universities and educational institutions have a great role in development (Climent and Cabrillana, 2012). Research indicates that education affects attitudes (Sahinidis and Bouriss, 2008), staff performance (Cheng et al., 2007), creativity and innovation (Baridi, 2005), and staff productivity and performance (Fitzgeral, 1992). Therefore, effective training can lead to superior organizational function and also pave the way for staff growth. In-service training (short-term and medium-term) is one of the most significant organizational training since job needs and environmental conditions are constantly changing; moreover, this training can help individuals to adapt to environmental alterations. In fact, the main purpose of in-service training is to coordinate the needs and interests of individuals with the needs and purposes of the organization to promote the performance of individuals in the workplace through the continuous acquisition of knowledge, skills and attitudes (Shojae et al., 2017).

In other words, most organizations fail because they neglect staff training and development. Moreover, the main purpose of training is to improve individual and organizational performance (Isiaka, 2011). Indeed, to acjieve organizational goals, I won't be enough to train and conduct training courses. "A comprehensive and through evaluation can reveal how effective the trainings are for the staff. Evaluating the conducted courses can show how effective the provided trainings have been in obtaining the desired goals" (Damavandi and

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Elzami, 2013). Research on the effectiveness of training indicates that encouragement and training programs enhance creativity and improve staff skills. Thus, there is potential for creativity among all individuals, and training paves the way in identifying and fostering creativity and promoting staff (Shojae et al., 2017). Eserye defines evaluation as a final step in the training process with the goal of improving training or judging the value and effectiveness of training programs (Eserye, 2002).

There are various models to assess the effectiveness of training. The most well-known and widely used models in evaluating the effectiveness of training are Kirk Patric, Philips model, Sullivan model, London Business School model, capability-based model, a training model based on performance evaluation (Khak Tarik and Azimi, 2007). However, the most common model used in classifying evaluation of training is the Kirk Patrick four-level model (Collins, 2008). Kirk Patrick model was applied to evaluate the effectiveness of training in many studies such as Ghahremani (2001), Bahmani (1996), Mahmoudi Omarabadi (2009), Abbasian et al. (2008), Enayati (2009), Commer (2002), Kerzner (2006), Winkel (2002), Hosseini and Rivera (2001) and Rivera and Paradise (2006).

In the late 1950s at the University of Wisconsin in America, Donald Kirkpatrick published his proposed model in four articles in the Journal of Education and Development entitled "Techniques for Evaluating Curricula". Patrick's justification for presenting and developing the model was the ambiguity of the term evaluation. Patrick's model combined different stages, criteria, and evaluation models that had accumulated over the years (Kirkpatrick and Kirkpatrick, 2007). The Kirk Patrick model enjoys an appropriate adaptation to assess technical communicational products and services in organizations (Bucur et al., 2015), for instance, evaluating the learning outcomes in higher education (Praslova, 2010). These models are usually used for professional training and the training evaluation of short-term courses (Cioca et al., 2011). It is also a suitable model to assess the outcomes of innovative training and education in organizations (Moldovan, 2015). This assement model is bottom-up, which means it is more difficult to move from the feedback level to the outcome level becomes more difficult. In other words, the evaluation complexity at higher levels is more difficult and requires a greater deal of time (Moldovan, 2016). In addition, at higher levels, this model provides more valuable information. The first two levels of evaluation take place within the training environment while the last two levels are measured in the workplace. Kirk Patrick defines evaluation as determining the effectiveness of a training program; moreover, he divides the evaluation process into four the level or step (reaction, learning, behavior, and outcomes).

Teodoreanu (2013) believed that achieving sustainability needs a modification in the way people think and behave in society. Consequently, it entails a transition towards sustainable lifestyles, consumption and production patterns. Education and learning at all levels and in all social contexts can contribute to this fundamental transformation. "There is no power stronger than education to change and promote human rights and dignity, eradicate poverty and to develop sustainability. Also, education can help us to create a better future, bring more equality and social justice, and encourage more respect for cultural diversity and international solidarity and common responsibility. Moreover, education must find a way to meet such challenges", said Bokova, the general director of UNESCO. The purpose of education in an ever-changing society needs to be reconsidered in light of changing perspectives on sustainable social and human development. This new view of sustainability must consider the economic, environmental and social dimensions of human development and how they relate to education. Based on Sterling (2003), in order to achieve this goal, educational policies need to be reconstructed; furthermore, convergence and integration should be created between systematic and ecological ideas. He also believes that we need to move from the current level of education to future educational methods, which is sustainable education (Grecu and Ipina, 2014).

Hence, the only rationale behind establishing sustainable education was to address social, environmental and economic challenges using progressive innovations. Indeed, sustainable education is seeking for a way to tackle today's challenges. In Iran, there is a dire need of designing sustainable education. Also, since Mazandaran University of Medical sciences has long had an obsession regarding a sustainable education and

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the current educational courses for the employees are constantly inefficient with no applicable educational model to assess the educational efficacy, the university is seeking for a way to set an appropriate layout to offer novel educational methods in order to achieve sustainability in general, and sustainable education in particular. Thus, the present study, based on sustainable thinking, aims to set a layout to organize the activities pertaining to sustainability in MUMS by developing and implementing an appropriate model of assessment for short, and medium-term educational courses based on sustainable education. To fulfill the goal, primarily, it is essential to determine the most basic aspects of sustainable education, and prioritize the dimensions and criteria of sustainable education so as to design an appropriate model for sustainable education. Then, based on this model, the fundamentals of sustainable education in state and private institutions, particularly those in MUMS can be established and implemented. Besides, the study will determine whether the new proposed model is capable of precisely evaluating the effectiveness of educational courses in MUMS.

Sustainable education plays a powerful role in learning and teaching in the 21st century. Sustainable education is a "research system integrity" that mixes the best current methods of learning and teaching and content learning, main skills and mental habits needed by students so that they can dynamically contribute to a sustainable future. It can also be conceptualized as an interactive learning process that familiarizes all stakeholders of an institute or university with the knowledge and thinking methods that society needs responsible citizenship to gain sustainability (Clioud, 2016). In other words, sustainable learning is a learning process that develops learners' capacity and ability to review, discuss, propose different solutions to a problem, and enables them to select the right solution (Merck and Beermann, 2015). According to some studies and documents in national and international levels, the most prominent characteristics of sustainable education are as follows: interdisciplinary and holistic learning, critical and creative thinking, various educational methods, collaborative decision making and appropriate indigenous information. In a study, the features of sustainable education are enumerated as follows: interdisciplinary and intradisciplinary curriculum, fostering environmental literacy, fostering critical thinking and systems thinking skills, using exploratory and collaborative teaching-learning approaches (Amaral; Martins and Gouveia, 2013). A study analyzing the content of the sustainability reports form several universities indicated that despite its significance of the educational aspects in the university system, there has been studies to sufficiently examine and research this important dimension. As a result, special instruments (AISHE[1] and STAUNCH[2]) were developed to evaluate sustainability education in university curricula. Therefore, the present study aims to answer this question: "Can the development of this new model accurately evaluate the effectiveness of training courses in Mazandaran University of Medical Sciences?"

2. Methodology

The current study is descriptive in terms of purpose. However, in terms of research type, it has been conducted through mixed research, i.e. qualitative and quantitative. In exploratory designs, a measurement tool is usually developed through qualitative research. To do so, the main components of the studied phenomen were determined by collecting and analyzing qualitative data. These components were considered as the desired dimensions to develop data collection instruments. Therefore, in order to design a model to analyze the effectiveness of short-term and medium-term training courses at Mazandaran University based on the exploratory plan (quantitative and qualitative), the following steps were taken: First, a number of experts in the field of research (consisting of supervisors and advisors), familiar with the use of short-term and medium-term training courses, were selected. The criteria and components of the appropriate models were identified and selected by the cooperation and consensus of these people. Secondly, the different models of training courses, especially the use of short-term and medium-term training courses that have been applied in previous foreign research to manage training organizations were examined. Moreover, their strengths and

۱. Auditing Instrument for Sustainability in Higher Education

۲. Sustainability Tool for Auditing Curricula in Higher Education

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weaknesses were identified. Based on the selected criteria and components, an integrated model was presented to use short-term and medium-term training courses at Mazandaran University. Third, the selected factors and components were categorized and grouped. Each of the above steps was carried out in several stage. Besides, thematic interview methods were used to achieve a possible decision.

The statistical population in the qualitative dimension of the present study included experts and managers of Mazandaran University of Medical Sciences (20 people). Moreover, a field method (interview and questionnaire) was applied to collect qualitative data. In other words, following an interview with a number of experts, they were offered factors which were conducted by using the thematic analysis method (coding). After collecting and extracting the interview codes (open coding, selection code and pivot code), the components and variables were identified.

The present study consisted all staffs of the Medical Sciences Organization in Mazandaran Province, 790 people, 289 of whom were selected as a sample from this community by using Krejcie Morgan table. In addition, it is mixed research in terms of data collection, the subject under study, and the purposes of study. In the current study, an integrated exploratory design has been applied. The qualitative data preceded the quantitative data collection. In data analysis, descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (correlation and independent t-groups) were used through SPSS and Lisrel.

3. Findings

In the qualitative section, first, the components of short-term and medium-term training courses were extracted by using the thematic analysis method. The final themes of short-term and medium-term training courses were presented, consisting of 8 organizing themes and 61 basic themes, which are as follows:

- Effectiveness and efficiency: 7 basic themes.
- Job satisfaction: 6 basic themes.
- Motivation and morale: 8 basic themes.
- Planning and goal setting: 10 basic themes.
- Skills for performing the managerial tasks: 6 basic themes.
- Institutionalizing organizational goals: 10 basic themes.
- Management communication skills: 6 basic themes.
- Emphasis on education and development: 8 basic themes.

Table 1. Themes, organizer and basis of short-term and medium-term training courses

Basic themes		Organizing themes	Themes
Alterations in an individual's behavior regarding the type of service	1	Effectiveness and efficiency	Effectiveness of short-term and medium-term training courses
Aligning the activity with the set goals	2		
Changes in the behavior of staffs and organization	3		
Making changes in the behavior of staffs and the organization	4		
The effect of the training course on the quality of work	5		
Aligning our activities with the set goals	6		
Personnel move towards the goals of the organization automatically and even without an observer	7		
Satisfactory in the organization	1	Job satisfaction	
Job Satisfaction	2		
Staffs act spontaneously and motivated	3		
Effect of the behavior and performance of staffs	4		

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Feeling satisfied	5	
Educational content as concise and useful as possible	6	
Staff confidence	1	Motivation and morale
motivating	2	
Participating in training classes	3	
It is effective since most courses are in the form of tests	4	
Content tailored to the field of work	5	
Not having an equipped electronic system like the Internet	6	
Holding workshops by experts in any specialized field (using the country's top instructors) to enhance the motivation of staff in order to participate in courses	7	
Holding training workshops (expertly-oriented, active and dynamic) instead of training classes or providing booklets	8	
Higher confidence-Higher motivation-Increased work skills	1	Planning and goal setting
Flourishing of their talents and their staffs	2	
Training after a while effectiveness	3	
Actual follow-up to check staff learning level	4	
Holding classes	5	
Use the staff incentive system with different titles based on the space available in that work environment	6	
Creating real motivation in staffs	7	
Lack of incentive system	8	
Lack of proper follow-up on the outcome of training in staffs	9	
Enhancing client satisfaction	1	Managerial task skills
Having a collaborative vision and shares their thoughts with the staff	2	
Promoting the physical, social, and even spiritual mental health of the organization and the people	3	
Their good thoughts for improving the organization	4	
Methods of holding training and using the reward and incentive system in the training program	5	
Holding in-service courses and using the capacity of universities and teachers in the summer for staffs and increasing their capabilities	6	
In-person training	1	Institutionalizing organizational goals
Less virtual training	2	
More face-to-face training	3	
Specialized staff of face-to-face and practical training courses	4	
The type of training should be from the staff survey	5	
Very detailed and long educational content or unrelated to the individual's field of work	6	

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Holding short and limited training courses (maximum one week to two weeks to one month)	7	
Using more experienced professors	8	
Better time planning	9	
Lack of motivation of staff to take classes seriously	10	
Staffs do not participate in training after night work.	1	Managerial communication skills
Each course repeats each course	2	
Updating the educational calendar.	3	
Number of practical training	4	
Staffs should be surveyed for training courses	5	
Monitoring personnel in indirect ways (such as the method of doing work and skills in managing critical situations in the workplace)	6	
Keeping a few things in mind will definitely increase awareness	1	Emphasis on education and development
Sustainability of education	2	
The content should be short, concise and useful, and the electronic context should be appropriate	3	
Decreasing staff workload and specializing activities	4	
Determining the time and allocating appropriate space to the classrooms	5	
Total increase in the quantitative and qualitative level of classes	6	
Using the country's top instructors and raising the quality of classes	7	
Holding training workshops instead of one-way training classes	8	

The results of the questionnaire among the staff of the Medical Sciences Organization in Mazandaran were analyzed hierarchically. The results indicated that, according to the views of members of the Mazandaran Medical Sciences Organization, short-term and medium-term training courses consist 8 main components. The components and sub-components are illustrated in the following diagram:

[DOR: 20.1001.1.26453460.2021.4.4.14.1]
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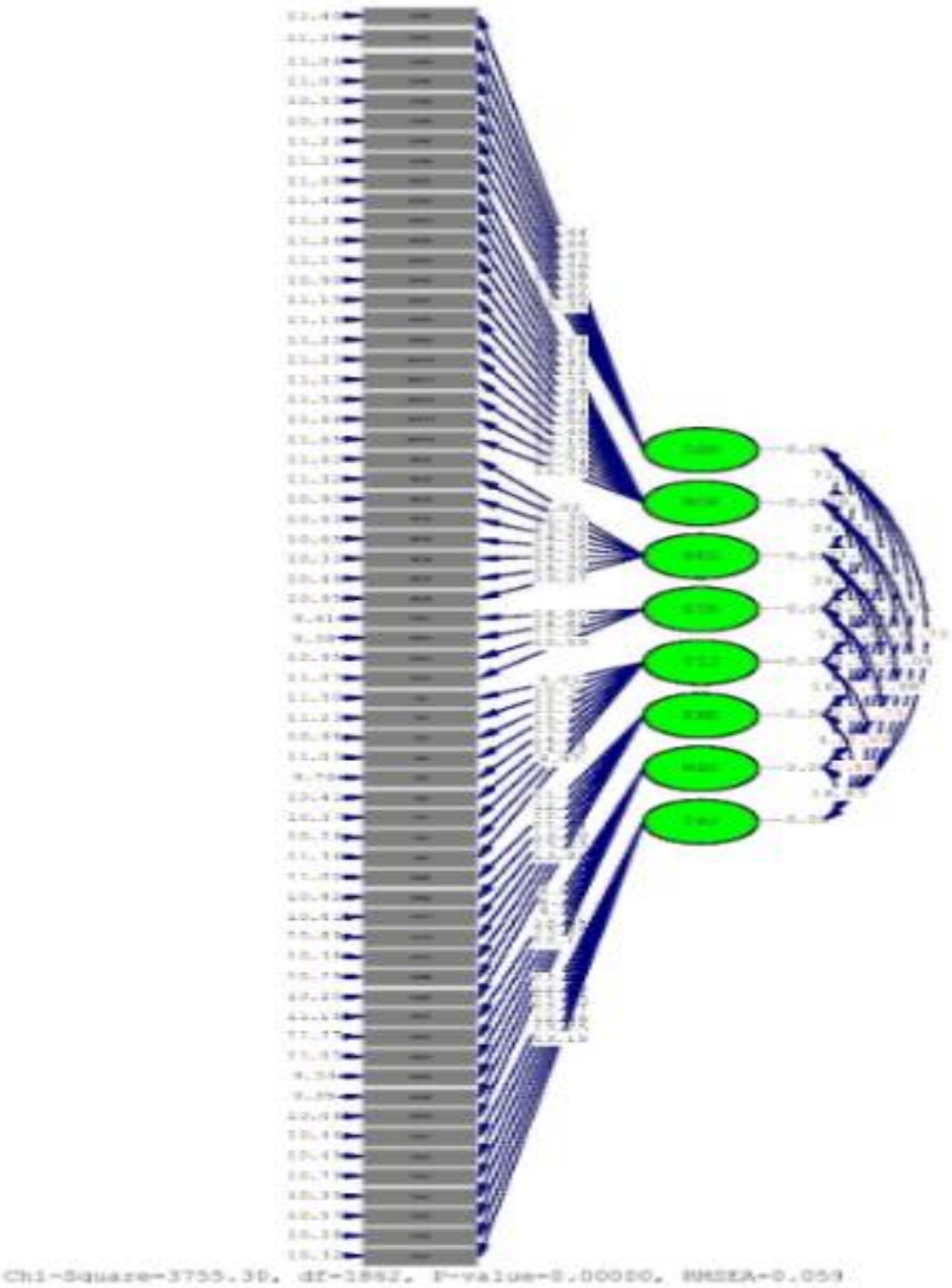

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Figure 1 shows second-order confirmatory factor analysis for variables (effectiveness and efficiency, job satisfaction, motivation and morale, planning and goal setting, managerial skills, institutionalizing organizational goals, managerial communication skills, and finally emphasis on training and development) in the estimation position of the t-test. In addition, the indicators of goodness of fit are given in Table 3. The estimation results indicate the suitability of the model.

Table 2. Good fit indicators for model values

Row	Fitting criteria	Index	Dimension	Desired limit	Result
1	Relative Chi-squared	$x^{2/df}$	01/2	>3	Good fit
2	Root of the mean squared approximation	RMSEA	059/0	>1/0	Very good
3	Root of the residuals	PMR	075/0	About zero	Very good
4	Normalized fit index	NFI	94/0	<90/0	Very good
5	Normed fit index	NNFI	97/0	About one	Very good
6	Comparative Fit Index	CFI	97/0	<90/0	Very good
7	Relative Fit Index	RFI	94/0	<90/0	Very good
8	Additional fit index	IFI	97/0	<90/0	Very good
9	Fit Index	GFI	91/0	<90/0	Very good
10	Adjusted Fit Index	AGFI	98/0	<90/0	Very good

In this section, research hypotheses are calculated by applying the Pearson correlation test.

Form of correlation tests: There are significant relationships between the dimensions of short-term and medium-term training courses (effectiveness and efficiency, job satisfaction, motivation and morale, planning and goal setting, managerial skills, institutionalizing organizational goals, managerial communication skills, and finally emphasis on training and development) from the perspective of staff members of Medical Sciences Organization in Mazandaran Province. To this end, the results of Pearson correlation coefficient significance test are illustrated in Table (2).

Table 3. Pearson correlation matrix between dimensions of short-term and medium-term training courses

Variable name	1	2	3	٤	5	6	7	8
Effectiveness and efficiency	1	-	-	-	-	-	-	-
Job Satisfaction	**861/0	1	-	-	-	-	-	-
Motivation and morale	**624/0	**731/0	1	-	-	-	-	-
Planning and goal setting	**623/0	**703/0	**719/0	١	-	-	-	-
Managerial task skills	**502/0	**471/0	**251/0	**0.387	1	-	-	-
Institutionalizing organizational goals	**648/0	**617/0	**423/0	**0.460	**604/0	1	-	-
Emphasis on education and development	**245/0	**236/0	**153/0	0.100	**213/0	**242/0	1	-
Managerial communication skills	103/0	*122/0	**114/0	0.089	065/0	100/0	611/0	-

** Significance at the level of 0.01 (two-domain test)

* Significance at the level of 0.05 (two-domain test)

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According to the table, as the significance level in all relations is less than the error rate (0.05), null hypotheses are rejected at the 95% confidence level. Moreover, hypothesis one is confirmed. That is, according to the staff of Mazandaran universities, there are significant relationships between the dimensions of short-term and medium-term training courses (effectiveness and efficiency, job satisfaction, motivation and morale, planning and goal setting, managerial skills, institutionalizing organizational goals, managerial communication skills, and finally emphasis on training and development.) The positive sign of correlation coefficients in the table above also indicates a direct relationship between the variables. In this section, in addition to the correlation, t-test is used to determine the differences and rank the variables. To this end, the results of t-test on research hypotheses are shown in Table (3).

Table 4. T-test results of short-term and medium-term training courses

Rank	Standard coefficient	T - Value	Predictive variable	Criterion variable	Test result
First	95/0	90/11	Effectiveness and efficiency	Short-term and medium-term training courses	H0 Rejected
Second	97/0	06/11	Job Satisfaction	Short-term and medium-term training courses	H0 Rejected
Third	83/0	68/10	Motivation and morale	Short-term and medium-term training courses	H0 Rejected
Fourth	74/0	31/9	Planning and goal setting	Short-term and medium-term training courses	H0 Rejected
Fifth	77/0	39/8	Managerial task skills	Short-term and medium-term training courses	H0 Rejected
Sixth	53/0	55/6	Institutionalizing organizational goals	Short-term and medium-term training courses	H0 Rejected
Seventh	95/0	42/3	Emphasis on education and development	Short-term and medium-term training courses	H0 Rejected
Eighth	95/0	17/2	Managerial communication skills	Short-term and medium-term training courses	H0 Rejected

Based on the table above, as the significance level in all tests is less than the error rate (0.05), null hypotheses are rejected at the 95% confidence level; moreover, hypothesis one is confirmed. That is, the dimensions of short- and medium-term training courses (effectiveness and efficiency, job satisfaction, motivation and morale, planning and goal setting, managerial skills, institutionalizing organizational goals, managerial communication skills, and finally emphasis on training and development) are significantly different from each other.

4. Discussion

All the attempts made in the process of conducting research work are in fact to gain the desired results and suggestions for further research. The main purpose of the research is to find a solution to the existing problems that are the researcher's concern to conduct a study. Sometimes these problems, seemingly small and insignificant, waste a lot of money and energy in society and decrease efficiency and effectiveness and fail to achieve the desired and valuable results. These problems as well as their solutions can be predicted and

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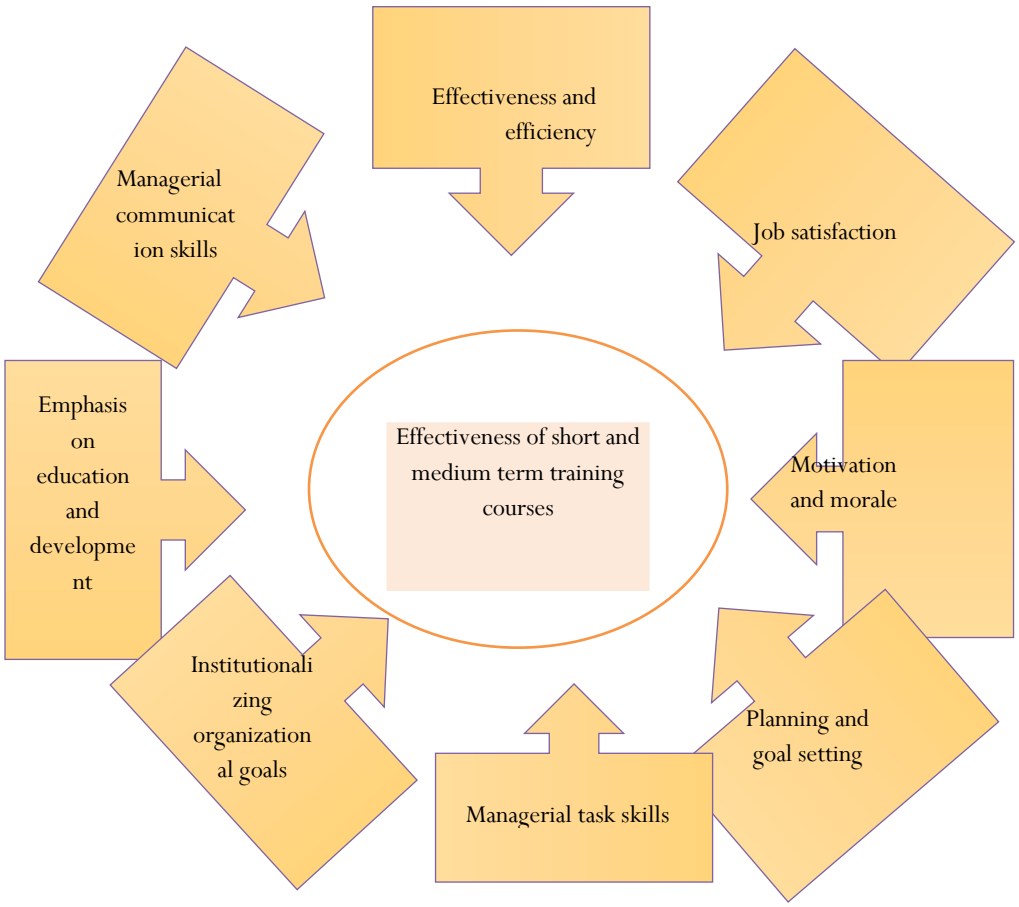
prepared through research. Also, appropriate measures can be taken to ultimately enhance the efficiency and brig about positive results.

Therefore, regarding the importance of the subject, this study investigated the presentation of a model for using the effectiveness model of short-term and medium-term training courses in Mazandaran University of Medical Sciences, which are discussed and concluded according the research findings:

To test the first test hypothesis, using an appropriate structural model is significant, and the significant coefficients between effectiveness and efficiency and short-term and medium-term training courses are equal to 11.90. According to the second hypothesis, job satisfaction is regarded as a variable influencing short-term and medium-term university courses. The test for the third hypothesis test is motivation and morale as a variable influencing short-term and medium-term academic education. The test for the fourth hypothesis, is planning and setting goal as a variable which influence the short-term and medium-term academic education. The fifth hypothesis test is managerial task skills as variables which can have some impacts on short-term and medium-term academic education. The sixth hypothesis test is institutionalizing organizational goals as a variable that can influence short-term and medium-term academic education. The seventh hypothesis test is the emphasis on education and development, as a variable affecting short-term and medium-term academic education. The eighth hypothesis test is the emphasis on management communication skills and it is a variable affecting short-term and medium-term academic education.

Based on the findings of the current study, the designed model of this research can be used in short-term and medium-term university courses.



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Conceptual model of research

According to this model, the most important factors affecting short-term and medium-term training courses in Mazandaran University of Medical Sciences are effectiveness and efficiency, job satisfaction, motivation and morale, planning and goal setting, managerial skills, institutionalizing organizational goals, managerial communication skills, and ultimately the emphasis on education and development. The above model has scientific innovations according to research findings. In this model, the short-term and medium-term training courses in universities are explained in comparison to other existing models by drawing the key components. This model provides a better understanding of environmental factors, paves the way, and facilitates the conditions for further review and a more realistic analysis of short- and medium-term university courses by providing analytical frameworks.

Hereby, we are grateful to all university administrators and staff in Mazandaran University of Medical Sciences because of their wholehearted support for data collection, for short-term and medium-term training courses at Mazandaran University of Medical Sciences, and for the necessary coordination. Moreover, we express our gratitude to all participants in the study for their collaboration in conducting this research. In addition, this article is the result of a dissertation by a Ph.D. student in Public Management majoring in Human Resources.

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