Organizational Learning, Learning Organization, and its effects upon Productivity

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Abstract

Learning organization is an organization that constantly extends its capacities for its future creativity. This phenomenon has been introduced during last 20 years and its aim is to enable organizations’ managers and employees to resist to turbulent commercial environments and organizational competitive superiority and dynamism. In these organizations, delegation of authority, group and team work, and cooperative management, innovation and creativity, and other clear characteristics are emphasized, which have been discussed in this article in details. Another important concept dealing with learning organization is organizational learning. Organizational learning is a process of performances’ improvement through more knowledge and understanding. Learning organization is the product of organization learning.

In present study, in addition to an introduction of learning organization, different definitions of learning organization and organizational learning, differences and various dimensions for each, characteristics of learning organization, and model learning are discussed and finally the relation between learning organization and productivity is mentioned.

Keywords: Learning organization, Organizational Learning, Model Learning, Productivity.
Introduction

Organizations around the world are complicated. Today, they should have the ability for adapting to continuous transformations for achieving for success. Constant development of sciences and techniques and more complex social, cultural, and economic conditions, and society necessitates posing new and various thoughts, lack of environmental confidence, lack of certainty and world’s many changes and challenges to build an organization with teachable power self-updating and get equipped with required techniques and strategies, and can adapt to its fast changes and react to environmental stimuli timely, and survive through obtaining wide knowledge in a dynamic and active way in the area of organization’s improvement and development. Today, managing such organizations is considered as the greatest challenge for management. Among modern concepts considered for the effect of mentioned changes and transformations are learning organization and organizational learning.

It is attempted during present study to offer a brief introduction and analyzing of different dimensions of mentioned concepts and to discuss its applied aspects.

Significance of learning organization

In spite of a various and complicated setting upon which an organization is working, necessity of capable sources for surviving an organization is a definite fact. Besides changing environmental factors, persistence, development and dynamism of organization are subject to wide knowledge and awareness. Lack of confidence due to increasing environmental changes (including economic, social, political, scientific, cultural, etc.), increasing people’s needs and expectations cause making a new model called, “learning organization”. Such organizations consider “learning” as the most appropriate way for keeping life, durability, and development of organization. Therefore, by appearing new and modern organizational era, only those organizations having big thoughts (without respecting surface size) are functionally successful and surpassing in competition and dynamic and effective within organizational and management system. In addition, learning organizations as a destination for this organizational system are rooted in environmental fast and extreme changes and evolutions, which indicates its significance. (Alhosseini, 2001, 257)

Definitions of learning organization

1. A learning organization is an organization, in which members constantly improve themselves to the way of realizing goals and ends they wish to reach for. New models for developing domain of thinking are appeared, the space for collective idealism exists, and finally it is an organization that members constantly are trained how to learn collectively. (Bahramzadeh, 2000, 59)

2. Eligible organizations will be learning organizations. These organizations make opportunities for enacting responsibilities. They learn from experiences, take risks, and are satisfied with obtained results and learned lessons (Charles Handy). (Talebi, 2002, 15).

3. Learning organization is an organization, in which learning is a usual need of employees and besides emphasizing to learn how to learn, attract, and distribute new knowledge, creating and producing new and required information and knowledge would be done, and all of these sciences are reflected in behaviors and performances (Ghahremani, 2004, 10).

4. Learning organization is an organization with ability for making, obtaining, and conveying knowledge, which adjusts its attitude so that it reflects new knowledge and perspectives. (Love and Irani, 2000, 7).

Definition of organizational learning

- Organizational learning is the process of detecting and correcting errors (Love &Irani, 2000,10)
- Organizational learning means people’s learning inside the organization. Organizational learning is applied to explain specific kinds of activities within organization (Rahnavar, 1999, 11).
Organizational learning is the process of obtaining knowledge, distributing information, and organizational memory, which adapt itself successfully to changing circumstances. In this area, the challenge is doing tasks to learning and learning to do tasks (Schermerhorn, 1998, 172).

Organizational learning refers to a body of processes that lead to management and training practices, hence it can be used for building a learning organization (Love and Irani, 2000, 10).

Differences between learning organization and organizational learning

Learning organization is an organization, in which it can help improving organizational learning through making structures and strategies (Dugson). Learning is a dynamic process, which gradually changes from individual learning to organizational learning. Due to organizations’ need for adapting to environmental changes, the concept learning organization is becoming increasingly popular. As learning is vital for individual’s development (development), it has high importance to organizations. Organizational learning is more than total learning capability of individuals (Dags, Fayolvolayts), it means that organization doesn’t lose its learning capability by leaving the organization. Organization learning and learning organization are not synonymous concepts (Johns & Hendry). It must distinguish between organizational learning as individual and intra-organizational groups’ learning and learning organization learning meaning organization’s learning as a general system. T sung states that sometimes organizational earning and learning organization are applied vice versa. He regards the concept organizational learningfro describing specific kinds of activities processing within the organization, while learning organization refers to a specific kind of organization. In other words, it can be said that learning organization the product of organizational learning. (Rahnavard, 1999,11).

Mc Gill, et al distinguished between learning organization as empowerment in gaining insights and understanding of experiences through experiment and experience, and also an tendency towards assessing failures and achievements (HeidariTafreshi et al, 2002, 225).

Aspects and characteristics of learning organization

In learning organization, all components are interrelated and bound together deeply, so that Peter Drucker analogizes these organizations as an orchestra that each person plays his own instruments but the main point is that all of players are profoundly related to and directed by the conductor, whose result is a rhythmic song.

The nature of today’s learning organizations is the same, which are working and developing with wide staff from different cultures such as companies of IBM and Microsoft. Among other characteristics of learning organization is fluidity of information fluidity within these organizations. This fluidity causes increasing knowledge and development of human resources management. Through improving staff knowledge, the level of organizations’ intelligence would be increased and their productivity would be promoted.

On the other hand, in these organizations, due to continuous training and delegation of authorities, staffs promote information and their capabilities through establishing various teams and group discussions. A very strong culture is governing in the organization, which provides a common ideal and perspective among human resources and organization.

Such a common ideal or perspective won’t be made within an organization but in the light of strong organizational leadership. In this state, organizational general strategy is a shared one. It is arranged from bottom to the top, information is flowing in an open way, and all of parts are interacting together reasonably through obtained information and high capabilities.
A learning organization provides learning opportunity for all of its members. Learning organizations are constantly increasing their capabilities for making their future.

Also, following characteristics can be mentioned for learning organizations.

1. Learning organizations are constantly spending their capabilities in making better future.
2. They learn new methods and forget older one for implementing tasks.
3. They are not disappointed against problems and offer new ideas.
4. They facilitate learning for all of members and convey it continuously.
5. They encourage group learning. Gardner and Juller believe that employees who work through group working enjoy much more of working. Because instead of being a sole listener, they participate actively in the process of learning and consider themselves responsible for their learning.
6. Learning organization are creators of new perspectives.
7. Learning organization is a place; in which individuals regularly increase their capability in creating whatever they desire to create. Also they learn new models of learning and how to teach (train).
8. Learning organization conduct methods of implementing tasks.
9. They pay attention to employees’ training and it must be noted that they are always interested in learning.
10. They emphasize upon risk-taking and avoid blaming.
11. They make a comprehensive communication with employees and provide them with timely required information.

12. They teach employees to improve their power of objective decision-making.

13. Learning organization welcome new ideas.

14. Learning organization introduce regulations and circulars quickly.

15. Learning organization knows its clienteles and makes communication with them directly.

16. Learning organization offers positive feedbacks to the employees constantly and minimizes punishments.

17. It considers knowledge and understanding as main parts of employees’ professional development.

18. They check and consider files in the least time.

19. They strengthen satisfaction and pride of employees.

20. In order to avoid egocentricity, power is distributed in the organization in a relatively reasonable manner.

21. It relies on documentary information not on presuppositions and whimsicality.

22. They learn from previous their and others’ experiences and value failures.

Five disciplines (Peter Senge)

Peter Senge describes five disciplines dealing with making a learning organization including:


1. Personal mastery: This discipline is enthusiasm. It is a reasonable image of consequences expected by individuals to be reached. Personal mastery is beyond acquired skills and power of competition, though it can be built on two bases. The meaning of mastery is to have a creative attitude to the life and living creatively not passively. Personal mastery is one of basic parts in a learning organization. Those individuals with significant capabilities show specific characteristics. They have special feelings, which acts based on surface goals and aims. To these persons, the end of goal is more than a simple desire and attraction to achieving for an ideal.

They consider present realities as their friends not enemies, they have learned how to align with change flow, understand it well, not resist against it. Their deep curiosity is the result of desire better and deeper receiving and understanding realities. They have a sense of belonging to others and feeling responsible for their life. They see themselves within a huge flow, which although no having control upon it individually, they can have effect upon it, consequently they consider an independent identity or themselves. They don’t sacrifice anything completely for some other thing. People with brilliant individual abilities are continuously learning. They never stop, no end cab satisfy them completely. Perhaps, lexical meaning of personal mastery makes a misunderstanding that there is another concept following it. But it must keep in mind that it a process to obtain abilities and mastery. It refers to those features that are not present in the individual, so it’s not ceased to previous knowledge and continues through life. Such a person is concerned about ignorance and ability and he constantly is learning and eliminating weaknesses. Therefore, besides having self-confidence, he is accompanied with them.

2. Mental models: mental models are the discipline for skills of deliberation and reviewing. Managers must know that only model of reality to them is selected and formed based on some assumptions. Otherwise, they are not able to make a comprehensive image of their surrounding environment. If it occurs, it would be clear that they couldn’t to obtain required skills for researching and reviewing others’ visions and attitudes so that there would be a big obstacle on the way of their own actions and thoughts. The role of mental model, which in fact form our cognition is
not lower than empirical sciences in management anymore. Mental models are not considered absolutely wrong or right. These models are actually created for simplifying complicated issues. Based on this, problem appears when they unconsciously are considered as bankrolls for actions and attitudes. In other words, a model built for interpreting and simplifying phenomenon is considered as an objective fact and no attempt is done for correcting it. A model which is not put to test won’t change. While, world is ever-changing and solidity about mental models leads to increase of gap between our vision and reality.

Productivity

Productivity is more appropriate utilization of human and material resources continuously. Productivity refers to constantly implementing actions and tasks in a suitable and correct way.

Efficiency and effectiveness are two major components of productivity. In other words, it is the skill for optimal utilization of resources (human resources, machineries, material, etc.), hence it equals “doing things right”.

Assessing performance efficiency through measuring the proportion of actual outputs (including goods and services) to applied inputs (human and non-human). Also, efficiency is defined as proportion of applied resources to planned resources for utilizing and proportion of performance to performance standard. Effectiveness is regarded as an index for reaching to organizational goals. In this respect, in must be careful in defining goal so that it may be determined neither non-objective nor unachievable, and neither simple nor too available. Effectiveness is defined as “doing things right”. Effectiveness of performance is to measure outputs based on the level of realizing goals (Ahmadi, 2000, 62).

Higher and more appropriate utilization needs continuous change, evolution, and progress including gradually and jumpingly.

Also changing and evolution are considered as nature and identity of learning. It is necessary to develop culture and concepts of productivity to found change and evolution as values in the society. In that time, organizational learning would be necessitated at individual, group, and organizational levels and also in regional and national sectors.

Types of organizational learning

Argyris and Schon have proposed three types of learning or in other words three levels of learning:

1. Single-loop learning: it occurs when errors are detected and corrected on the field of goals and organization’s current policies. It is also called by Senge as adaptive learning and as lower learning by FayolVolys and non-strategic learning by Mason.

2. Double-loop learning: it happens when organization detects and corrects errors and questions current norms, policies, and goals, and finally corrects and adjusts them. This type of learning is described as generative learning by Senge and higher learning by FayolVolys and strategic learning by Mason.

3. Three-loop learning (secondary learning): it occurs when organizations learns how to perform single-loop and double-loop learning. In other words, three-loop learning is the ability of learning for learning. Two previous types of learning won’t happen if organizations are not aware that learning must happen. In means that having awareness about styles, processes and structures of learning is the prerequisite for learning improvement (Rahnavard, 1999, 12). Three-loop learning is also called as [learning to learn][ultra-learning]. At this level, organizations learn how to learn (HeidariTafreshi et al, 2002, 228).

4. Types of organizational learning (Morgan, 1997, 87)

   Level 1: process of feeling, checking, and observing environment

   Level 2: comparing this information to applied norms

   Level 2 a: process of asking “which applied norms are appropriate?”
Level 3: process of starting appropriate actions (morgan, 1997,87)

Dimensions (principles) of learning organization

Senge proposed five major disciplines for building a learning organization, which here are discussed as dimensions of learning. All of five disciplines should be considered as a related and connected whole. As shown in the figure below, team learning is the precondition of systematic thinking. Learning would happen at individual/team level when mental models are built and shared models are formed, and whenever individual, team, and organizational insights are connected, learning would be more accelerated (Rahnavard, 1999, 16). Principle of learning organization (rahnavard, 1999, 16).

Major components of learning organization system are as follows;


1. Self-development (Personal Mastery): it is personal thinking and self-development of employees in the organization with people in the society, which would be identified and performed through ethical, religious, and moral aspects and also through responsibilities. Applying principles of taking pledge of self-purification, meditation, calculation, and continuity are among main ethical principles for personal development. The importance is so high that Islam messenger considers development of ethical munificence for man’s well-being as the aim of his raising to divine mission. Therefore, understanding indices for assessing self-development are vital.

According to conducted studies, some of self-development indices are as follows;

- Making self-confidence or believing in one’s own capabilities
- Willing to accept responsibilities
- Taking advantages of failures and mistakes as a suitable chance for improving performance attitude
- Taking advantages of opportunities as a chance
- Offering and receiving feedbacks
- Documenting, reviewing, and sharing experiences
- Taking advantages from customers’ comments
- Paying attention to individual differences

2. Mental models: they indicate the way of attitude or perception of a person towards himself or environment (other people, communities, and natural phenomena) that is rooted in the past with a body of person’s experiences and believes.

The way of our attitude towards other countries would be effective in making communications and relations with them. The way of our attitude towards globalization would be effective on speed and quality of interior products and services. Therefore, it is necessary for development of people to change the way of their attitude towards issues or phenomena into another way. Positive mental state may lead to a successful performance and personal development. Negative state of mind is the cause of his failure and decadence.

Features of dynamic mental model are as follows;

1-2- To review and correct mental values and norms
2-2- Applying related mechanisms of negotiation and agreement instead of strict controlling
3-2- To build system and structure of creativity and innovation
4-2- To obtain sagacious experiences
5-2. To offer various solutions through Delphi and brainstorming techniques etc.

3. Team learning: based on reason, judgment and nature, human beings are societal creatures. Doing group actions leads to satisfaction and improving quality of products and services. On the other hand, development of peoples’ thinking and behavior in the groups, organizations, and communities is indebted to interaction, consultation, cooperation. Intellectual, individual, personal, and competency differences and also a coherent combination of these different parts lead to evolution and development of the group. Learning or improvement of productivity at group level is more effective than learning at individual level, due to group dynamism. Group exercises and group research indicate group dynamism. Group learning starts with talks and evolved with group working. It is necessary for improving productivity to base and develop culture of group working, culture of talking or culture of group learning (consultation). A group move may lead to improving productivity or increasing quality and quantity of products and services. In addition, it provides satisfaction of persons within the group and customers, which leads to mental health of employees.

Features of learning and group working are as follows;
1-3. Tend to review one’s performance by other persons and groups
2-3. To have partnership in determining policies and plans
3-3. Having customer-focused interaction among organizational units and out of organization about quality, time, budget, and intellectual ways
4-3. To investigate environment continuously in group meetings
5-3. Free and open discussion of employees and managers
6-3. Utilizing groups of quality promotion
7-3. Applying floating and flexible work models for recruitment
8-3. Applying new models for team, project, matrix, and cellular (modular) organizing

4. Collective idealism: Idealism is among distinctive features of men towards other creatures. An ideal is the end of heart and soul’s desires and dreams. Individuals can have a common and shared image within an organization or a community, which can be considered as dream of desire of all of members. Having an ideal is so important to improving productivity that many scholars locate it next to the action. It means that having an ideal and action are two conditions of productivity.

Ideal- Action= lack of productivity (lack of success) with emphasis upon lack of efficiency
Action-Ideal= lack of productivity (lack of success) with emphasis upon lack of effectiveness
Ideal+ Action= productivity (success and interactive performance)

Features of shared (common) ideal (vision) are as follows;
1-4. to determine needs and prioritizing them based on goals and ideals of organization and community
2-4. To pay attention to group knowledge for determining organizational policies
3-4. To build and convey vision and view of managerial unit to other employees of the organization

5. Systematic thinking: it is the most important component as an effective leverage for organizational learning or improving productivity for individuals, organizations, and communities. Applying systematic thinking and attitude may bring on huge developmental evolutions in the man’s life. In contrast, lack of applying systematic thinking causes huge problems and misadventures. Problems such as environmental pollution, nature destruction, overheating of the earth due to thinning the Ozone layer, more development and centralization of men in major cities with great environmental problems and different kinds of contaminations, diseases, and traffic, developing destructive weapons, wars, and moral violence and social corruptions are among consequences of no applying such a thinking by people.
6. Features of systematic thinking are as follows;

1-5- to offer services to the society and customers through a customer-focused system
2-5- To pay attention to communications and developing human resources
3-5- To regard feedbacks of previous activities
4-5- To consider overall and specific attitudes at the same time
5-5- To pay attention to quality and quantity simultaneously
6-5- To obtain information about economic, social, and universal circumstances and to investigate their effects upon current activities and plans
7-5- To attract, assign, and promote qualified persons in managerial positions (Ahmadi, 2000, 64-68)

Building a learning organization

Outlook of all of learning organization is to reach for a desirable and ideal success; hence it is necessary to such organization to (Askari, 2004, 36-37):

1. To recognizing goal: first step in building a learning organization is to recognize the goal because any practical action before identifying the goal leads to failure.

   Goal is a shared or common vision among people working in an organization, which is obvious at all levels and senior managers of organization are responsible for making sure about developing it.

2. Presence of intellectual leaders: presence of intellectual leaders is important because without an undertaking leader to learning, the organization won’t be successful. The learning organization needs a thinker and change creator to achieve whatever is agreed by all. While learning organization is a knowledge maker and creative, the leader should act in such a way that it makes creativity within the organization.

3. Presence of learning and creative employees: The required condition of learning organizations is learning employees and managers. In the learning organizations, people should be aware about their abilities and improve and develop them.

4. Delegation of authorities to employees and training them:

   In the learning organizations, authorities are delegated to a high extent, people are respected and they are considered to be trustworthy.

   Also, a space for their progress is provided, based on individual’s abilities, and his talent towards learning, his development is chosen and trained. These organizations put huge investment in training. To train employees for understanding kind of activity and delegation of authorities to them for decision making causes a sense of ownership by employees and be proud to work in the organization. Learning organization causes increase of individual’s responsibility towards organization, and in terms of emotions and feelings, he comes to a state that he won’t hesitate in attempting for appointed goals and struggles with any problem.

5. Complete partnership in information: people are provided with official data (information) about budget, gains, and expenditures. Every individual have freedom to exchange information with other individuals within organization.

6. Having a dynamic model: learning organization should be equipped with some mechanisms to identify its mental models towards issues, and evaluate then constantly. Therefore it is needed for a successful organization to have realistic and objective mental models, update them with information and try to keep their dynamism and flexibility.

7. Applying knowledge and experience: learning organization applies a combination of knowledge and experience to make better decisions, because applying knowledge in organizational decision-making gives lower speed, accuracy, and costs to the organization. Also applying experiences makes those decisions realistic, objective and coordinated with effective environments upon the organization. In learning
organizations what is required for learning are knowledge and experience. Experience is used in applying previous findings. In these organizations, people should satisfy successful choices for future with the help of their own knowledge and profession and also by utilizing their experiences they can reach to intellectual and reasonable decisions. (ibid, 37).

Strategies of developing learning organization

The most important strategies for developing learning organization are as follow;

1. To organize a comprehensive and long-term plan of transition from current organization to a learning organization
2. To arrange short-term goals and policies, so that their realization needs continuous employees’ training and learning
3. To reorganize organizational tasks and activities so that training and learning are considered to be the main element for all of positions, qualifying conditions, and job descriptions.
4. To assign the responsibility of training and improvement of human resources to the most informed and experienced and interested senior managers of organization.
5. To provide scientific and research hardware and software and to supply legal, cultural settings and making needed stimulation for scientific utilizing.
6. To implement training accurate and continuous assessments to identify shortcomings of employees at all of organizational levels.
7. To provide a wide variety of individual and group learning opportunities in the forms of conventional and distance training courses.
8. To make effective and constant communications about making decisions for administrative and recruitment practices for all of employees and also about their training and learning state.
9. To develop and extend types of consultative and leadership solutions and guidelines for all of organizational groups and individuals.
10. To design utilization of appropriate motivational mechanisms and policies so that highest awards are devoted to the highest level of learning and the highest learned.
11. To establish an active feedback system able to quick and accurate identify defects and offer appropriate and on-time information to make required changes and corrections (HeidariTafreshi et al, 2002. 249-250).

Learning organization and productivity

The important point about learning organization and model learning is team learning, which is realized through having a shared vision and cooperation of organization’s members so that it helps efficiency and productivity of organization through applying higher models. Model learning is one of main principles of learning organization, through which knowledge of organization’s members is transformed into a coherent body of knowledge, and an organization would be built with the capabilities of making, attracting, and transferring knowledge and this vision (insight) is reflected in its behavior changing. Model learning first builds personal knowledge through personal development and then makes this knowledge with partnership of collective organization’s members, subsequently the learning organization would be built.
The relation between learning organization and productivity

(Alvani, 2003, 15): As we know that the main element in learning organization is presence of shared vision among organization’s members to integrate their scattered knowledge and apply it in organizational goals that finally leads to productivity and promotion of organization. The figure above shows that how building a shared vision among organization’s members leads to a comprehensive partnership and team learning as higher models for resisting against current damages of organization, it means that organization’s improvement leads to productivity. (Alvani, 2003, 14-15)

Rey Stata noted that people’s learning and organizations is a usual and stable source for competitive profitability that increases organizational efficiency. Learning helps individuals to see their future and understand it and take it and apply it in realizing organizational goals. Respecting definition of effectiveness “the level of attaining determined goals” increases the effectiveness of organization. As we know, two main dimensions of productivity are efficiency and effectiveness, efficiency + effectiveness = productivity. Therefore, learning organization leads to improving productivity through applying learning at the level of individual, group, and organization. Developing learning culture increases number of beneficiaries significantly, especially organization’s customers. Hence, learning organization can fulfill satisfaction of many customers and would be effective on increasing and improving productivity. Moreover productivity is of learning organization’s goals. These organizations react quickly towards complex and dynamic environment and it can be stated that learning is a conscious attempt of organization to keep and adjust its power of competition, productivity, and innovation within unclear environments. Productivity is an issue that all of organization are seeking for it and try to build and improve it in the organization, hence they can access to the competitive advantage through desirable and appropriate productivity. Productivity of materials, equipment, and machineries has no certain limitation and it plays a role in organizational productivity, however what has no definite extent is human capital. Among factors, which lead to sustainable productivity in human capital is training, learning, delegation of authorities, cooperative management, and group and team working. These elements are basic and major factors of learning organization. Therefore, by strengthening and improving skills, creativity, motivation, and loyalty of employees learning organization through training and learning, delegation of authorities, cooperative management, and group and team working, learning organization causes improvement of productivity.

Conclusions

In today’s ever-changing world, if organizations suffice to their previous information, they won’t survive. The key to solving organizations; problems is learning. Those organizations would be successful that learn and move more quickly than others. Today, globalizing actions and practices, high expectations of clientele, competitive pressures are the signs that necessitate learning. Developmental, dynamic, and desirable organizations are learning organizations. They create opportunities for enacting responsibilities, learn from experiences, take risks, and are satisfied with obtained results and learned lessons.

Respecting what discussed above, it can be summarized that changing an organization into a learning organization requires at least what are listed before;

1. Try to understand organizational learning as a scientific and theoretical basis for considered issue
2. Respect principles of organizational learning and train it accurately to the employees and organization’s groups
3. Design and explain appropriate models of organizational learning respecting kind of organization and based on goals, tasks, and its performance
4. Respect all of learning organization bases as system-oriented and determine the place of each component and their interactive relations for realizing goals

If managers in the country can keep themselves close to learning organizations, and recognize cultural, economic, technological, and social problems in action and try to solve them, they definitely would be able to make an
evolution in current organizational trainings and make a big step in developing productivity and improvement of organization.

Finally it can be stated that not only learning organizations can take advantage of successes but also of their failures.

References


4. Alvani, S. Mehdi. (2003), Training (instructor) Organizations and Learning Organizations, seasonal scientific, professional magazine of management and development, no.18, Tehran, publications of institute of management training and researches

5. Alvani, S. Mehdi. (2003), Model learning, seasonal scientific, professional magazine of management and development, no.16, Tehran, publications of Tabriz institute of management researches and training, center of state management training

6. Bagramzadeh, Hossein Ali. (2000), Organizational Learning and Systematic Thinking, scientific, research magazine of management, no.44, Tehran, Organization of publications of ministry Islamic culture and guidance


8. Rahnavard, Farajollah. (1999), Organizational Learning and Learning Organization, seasonal scientific-applied magazine of state management, no.47, Tehran, center of state management training


11. Talebikadooe, Fazlollah. (2002), Learning Organization, Evolutionary, Dynamic, and Desirable Organization, scientific, research magazine of management, no.63-64, Tehran, Organization of publications of ministry Islamic culture and guidance

12. Askari, Ahmad. (2004), Building the Learning Organization, scientific, research magazine of management, no.91-92, Tehran, Organization of publications of ministry Islamic culture and guidance


15. Ghahremani, Muhammad. (2001), Learning Organization, scientific-professional magazine of management and development, no.9, Tehran, publications of institute of management training and researches