Investigating the Learning Organization’s Characteristics of Distance Education System in Iran

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Abstract
Nowadays, higher education institutes encounter new challenges like any other organizations and are required to conduct fundamental revisions and transformations in order to survive and act in conformity with the environment. Employing Learning Organization’s characteristics can be considered as a solution to tackle the issue of environmental pressure in the universities. The present research was conducted by applying Senge’s Learning Organization model on the basis of five disciplines which are consisting of personal mastery, mental models, shared visions, team learning and systems thinking at Payame Noor University of Mashhad. The research population included the whole full-time faculty members of Payame Noor University of Mashhad in2011. The survey was carried out on the faculty members’ viewpoint and the required data was assembled through a standard questionnaire consisting of forty questions based on Likert Scale. Descriptive and inferential statistical methods applied to assess the data. The obtained results indicate that the disciplines of personal mastery, shared visions and systems thinking are at an average level in distance education; however, mental models level is lower than average and the team learning is at a higher level.

Keywords: Learning Organization, personal mastery, mental models, shared visions, team learning, systems thinking

1. Introduction
In developing countries, higher education institutes are of considerable importance. Not only these institutes are responsible for educating the elites and determining an index for a society with technical skills, but also they are the most significant institutions which affect the cultural, political and ideological affairs.
Due to the fact that no revolution will happen in the society without the help of higher education institutes, educational institutions and universities can be considered as learning organizations.

Higher education, as the most considerable capital of creating and developing knowledge, is of significant importance in the enhancement of the countries (Sukirno & Siengthai, 2011). Nowadays, universities have gone beyond their traditional role and are on their “Third Stream” or “Third Mission”. Third stream activities are revenue-raising activities that academics undertake alongside their more traditional work of teaching and research (Rossi, 2010).

Iran is one of the developing countries which is in paucity of researching in the field of education system; therefore, it is recognizable that there are lots of insufficiencies and inadequacies in the aspects of management, administration and education (Attafar & Bahrami samani, 2008). One of the most substantial requirements for improving our country’s science and technology is making an innovative and self-reliant education and research system. Education system should be capable of providing the infrastructures of augmenting science and knowledge in accordance with the different classes of society’s requirements and priorities. It can be regarded as the innovation engine of entrepreneurship and economic enhancement (Jamalzadeh et al., 2011).

In this new era of uncertainty, rapid change and complexity, all organizations must be altered into learning organizations; therefore, the institutes can learn from their successes and mistakes better and faster to survive and retain in the new competitive environment. Many changes should take place in all institutions in terms of becoming learning organizations (Marquard, 1996) Organizations learn only through individuals who learn. Individual learning does not guarantee organizational learning. But without it no organizational learning will definitely occur.

Due to the above-mentioned reasons and to accelerate the process of enhancement in the country, the 20-year development plan of Islamic Republic of Iran has considered knowledge as the axis of improvement. This development plan consists of three components of knowledge, technology and mastery which are regarded as the main value-added principles. The first part of the fourth economic, social and cultural development plan of Islamic Republic of Iran has been allocated to the knowledge-based growth of the national economy and the fourth part of the plan has been allotted to the knowledge-based development (Hasanzadeh, 2007).

Considering wide changes in knowledge management around the world and in the structure of higher education, and also owing to the sustainable development plans of Islamic Republic of Iran, it is essential for Payame Noor University, as the biggest Government University of Iran, to define its role and assist the 20-year economic development of the country. Regarding the adverted reasons, Payame Noor University should be considered as a learning organization. Hence, the goal underlying the present study is to specify how much the disciplines of learning organization (personal mastery, mental models, shared visions, team learning and systems thinking) are applied by Payame Noor University of Mashhad on the basis of Peter Senge’s model. In the first section of the research, learning organization and its dimensions have been analyzed. Then, review of literature and research questions have been noticed. Next section has been assigned to the research methodology and findings, and the conclusion and some practical suggestions have formed the final section.

2. Learning Organization

Learning organization is defined as a place where knowledge is fully utilized, capacity is expanded, behaviour is changed and competence is gained (Liao et al., 2010). According to Peter Senge, learning organizations are organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together (Kiedrowski, 2006). According to Marquardt (1996), a learning organization is a system-linked organization which learns powerfully and collectively and is continually transferring itself to better collect, manage and use knowledge for corporate success. According to Gephardt (1996), learning organization is an organization which is capable of accepting new patterns, useful revolutions and innovative techniques and ideas, and can manage them on the application of modern facts. This organization will be able to change and amend the performances, structures and job environments at the right moment and align them in the direction of the organization’s profit (Nafukho, 2009).

2.1. Learning Organization’s Characteristics

Considering the mentioned qualities of learning organization, five following characteristics seem to appear in most learning organizations:

1. Individual, collective and organizational learning are of considerable importance
2. Knowledge management which comprises a range of strategies used in an organization to create, distribute, refine, share and apply the retrieved knowledge
3. Organizational revolution in direction of organization’s goals, culture, strategies and structures
4. Electronic applications such as information systems, learning technologies and electronic support systems
5. Empowerment of managers, employees and customers (Attafar & Bahrami Samani, 2008).

2.2. Learning Organization’s Disciplines

What has become increasingly essential to almost every organization is that how they can change into a learning organization. To reply this question demands for paying attention to the learning organization’s disciplines. Senge (1990) has illustrated the critical significance of learning organization through five following principles which are known as Fifth Discipline:

1. Personal Mastery: is organization members' commitment to continuous learning and their permanent support for any experience of development and progress
2. Shared Vision: is an image about the employees' expected future and practical principles and methods to get to this future.
3. Mental Models: reflects the individual's mentality that coerces him to act, forming his perspective, decisions and actions.
4. Team Learning: teams mobilize their energy and action to get to an ability and insight more than the sum of members’ talents.
5. Systems thinking: is a method of thinking in which the superiority of whole over part is confirmed.

Senge (1990) presents the above-mentioned five disciplines in the form of a coherent set of theory and practice, emphasizing the discipline of ‘systems thinking’ as the central feature of his approach. He has named his fifth discipline as systems thinking since it is the conceptual cornerstone of his approach that integrates the other disciplines.

3. Literature Review

Agaoglu (2006) conducted a research in Anadolu University under the title of “The reflection of learning organization concept in the universities”. The findings of this study indicate that there are both appropriate culture and structure to change the adverted university into a learning organization, and most of the lecturers have a shared vision of the university as a learning organization.

In the research done by Turkington (2004) under the title of “The Catholic education office (CEO) Sydney as a learning organization and its perceived impact on standards”, the achieved findings showed that the CEO Sydney exhibited many of the characteristics of a learning organization with particular strengths in ‘continuous Improvement of Work’, ‘Systemic Thinking and Mental Models’ and ‘Shared and Monitored Vision/Mission’.

Kelly (2000) investigated a research in Pennsylvania under the title of “Senge’s learning organization concepts applied to one vocational school faculty”. The findings of this study were satisfactory in the dimensions of personal mastery, mental models and team learning in the examined university.

Attafar and Samani (2008) did a descriptive survey which was titled as “the investigation of learning organization’s characteristics in government and non-government universities of Shahrekord”. The results indicated that usage level of personal mastery in the non-government university was higher than the average level but in the government university, it was at average. The usage level of mental models was lower than average in both universities. The usage level of shared visions, team learning and systems thinking was higher than average in the non-government university and lower than average in the government university.

Another research which was done by Ghadamgahi and Ahanchian (2005) under the title of “the investigation of the schools’ status in Mashhad on the basis of learning organization’s characteristics (Peter Senge’s model)” demonstrated that different disciplines of personal mastery, mental models, shared visions and team learning were weakly supported in these schools and were not in an apposite status, and systems thinking discipline was the only characteristic which was moderately supported by the data.

Mehtari Arani and Shahsavari (2010) conducted a descriptive survey titled as “the assessment of learning organization application at the Department of education in Isfahan City”. The results of this survey exhibited that personal mastery was in an appropriate level at the department of education in Isfahan city. But, other disciplines of mental models, shared visions and team learning were weakly supported in this department.
Nouri (2007) did a research under the title of “the assessment of the faculty members’ viewpoints of Orumieh University based on learning organization’s dimensions”. The achieved data indicated that there was a significant difference between faculty members’ viewpoints and the existing status of the university from the dimensions of leadership, plan, assessment, information, innovation, invention and administration.

Damirchi (2002) appraised the learning organization’s characteristics at Shahid Beheshti University in a research titled as “The investigation of the faculty members’ viewpoints of Shahid Beheshti University based on learning organization’s disciplines”. The results showed that the disciplines of personal mastery and mental models were at a higher level than other disciplines in the different faculties of Shahid Beheshti University. Systems thinking, shared visions and team learning were not in a suitable status. The retrieved findings also indicated that the faculty of education provided more learning than the faculties of law, mathematical and administrative sciences. The faculties of sciences and economics sciences were at the same level of learning.

In a study, which was done by Mahmoud Zadeh (2005) under the title of “The assessment of different provinces’ readiness to implement learning organization’s characteristics at their education system in Iran”, it was clarified that the education system of Iran is ready to alter into a learning organization. In other words, the principles of personal mastery, mental models, team learning through dialogue and discussion, and systems thinking are strongly supported by the education system of Iran and are at an appropriate level. But, the discipline of shared visions is at an approximate low level between the employees and should be improved.

4. Research Questions

The present study seeks to respond to the following question:

To what extent are the learning organization’s disciplines applied in Payame Noor University of Mashhad?

The adverted question has been stated through five sub-questions which are as follows:

1. To what extent is the discipline of ‘personal mastery’ applied in Payame Noor University of Mashhad?
2. To what extent is the discipline of ‘mental models’ applied in Payame Noor University of Mashhad?
3. To what extent is the discipline of ‘shared visions’ applied in Payame Noor University of Mashhad?
4. To what extent is the discipline of ‘team learning’ applied in Payame Noor University of Mashhad?
5. To what extent is the discipline of ‘systems thinking’ applied in Payame Noor University of Mashhad?

Owing to the fact that the faculty members’ specialization and scientific grade can affect their perspectives on the matter of learning organization’s disciplines’ status, two other sub-questions have been proposed as following:

6. Is there any significant difference between the faculty members’ viewpoints of Payame Noor University of Mashhad in the departments of humanities, engineering and basic sciences about the status of learning organization’s disciplines?
7. Is there any significant difference between the faculty members’ viewpoints of Payame Noor University of Mashhad in various scientific grades (professor, associate professor, assistant professor and instructor) about the status of learning organization’s disciplines?

5. Research Method

The present research is applied and the method which has been chosen, considering the research nature and objectives, is descriptive survey.

Due to the fact that the data has been assembled from participants during a specific period of time, the retrieved data is cross-sectional.

5.1. Research Population and Statistical Sample

Target population of the research was consisting of the whole faculty members of Payame Noor University of Mashhad (N= 52) during the academic year 2011-2012. Considering the limitation on the number of faculty members of Payame Noor University of Mashhad, the whole faculty members have been regarded as the target population of the research; therefore, the method which has been applied is census.

5.2. Measurement tools and statistical techniques

Data was assembled through a questionnaire which was consisting of two parts. Demographic questions were asked in the first part which included age, work experience, gender, degree, scientific grade and department. Second part of the questionnaire was consisting of four sections which were designed on the basis of five-point Likert Scale.
These four sections were in the field of five disciplines of ‘personal mastery’ (included 12 questions, from 1 to 12), ‘mental models’ (6 questions, from 13 to 18), ‘shared visions’ (7 questions, from 19 to 25), ‘team learning’ (7 questions, from 26 to 32) and ‘systems thinking’ (8 questions, from 33 to 40). The descriptive statistics’ methods such as mean, standard deviation, variance and percentage calculation and also inferential statistics (T test and variance analysis) have been applied to analyze the achieved data.

5.3. Validity and Reliability of Measuring Instruments

To validate the research questionnaire, variables were chosen on the basis of literature review of the research, experts’ opinions and rudimentary sampling. Hence, a rudimentary questionnaire was designed under the supervision of five professors. After making a few alterations, the questionnaire was distributed between ten participants of the target population. And finally, some slight revisions were made to approve the validity and reliability of the questionnaire and the prepared questionnaire was distributed between the whole target population. There are some methods to assess the reliability of the measurement tool; one of which is Internal Consistency. Internal consistency is usually measured with Cronbach’s alpha and the least amount of it can be 0.7; therefore, the reliability of this research tool which is 0.93 would be the indicator of good internal consistency of the questionnaire. Cronbach’s alpha coefficient has been indicated for every discipline of learning organization in Table 1.

Insert table 1 here

6. Research Results

Before analysing the data, respondents’ demographic characteristics were described according to table 2. Then, the research questions were assessed through inferential statistics.

Insert Table 2 here

6.1. The First Sub-question

To what extent is the discipline of ‘personal mastery’ applied in Payame Noor University of Mashhad?

Insert Table 3 here

The results of table 3 indicate that calculated T-value is more than the table error level (5%), but it would not be a significant difference considering the respondents’ mean (2.92) and the target population mean (3). Therefore, the amount of ‘personal mastery’ application is at an average level in Payame Noor University of Mashhad.

6.2. The Second Sub-question

To what extent is the discipline of ‘mental models’ applied in Payame Noor University of Mashhad?

Insert Table 4 here

The results of table 4 indicate that calculated T-value is more than the table error level (5%), and considering the respondents’ mean (2.65) and the target population mean (3) there is a significant difference. Therefore, the amount of ‘mental models’ application is at a level lower than average in Payame Noor University of Mashhad.

6.3. The Third Sub-question

To what extent is the discipline of ‘shared visions’ applied in Payame Noor University of Mashhad?

Insert table 5 here

The results of table 5 indicate that calculated T-value is less than the table error level (5%), and considering the respondents’ mean (3.15) and the target population mean (3) there is a significant difference. Therefore, the amount of ‘shared visions’ application is at a level higher than average in Payame Noor University of Mashhad.

6.4. The Fourth Sub-question

To what extent is the discipline of ‘team learning’ applied in Payame Noor University of Mashhad?

Insert table 6 here

The results of table 6 indicate that calculated T-value is more than the table error level (5%), but it would not be a significant difference considering the respondents’ mean (2.82) and the target population mean (3). Therefore, the amount of ‘team learning’ application is at an average level in Payame Noor University of Mashhad.
6.5. The Fifth Sub-question
To what extent is the discipline of ‘systems thinking’ applied in Payame Noor University of Mashhad?

Insert table 7 here

The results of table 7 indicate that calculated T-value is more than the table error level (5%), but it would not be a significant difference considering the respondents’ mean (2.87) and the target population mean (3). Therefore, the amount of ‘systems thinking’ application is at an average level in Payame Noor University of Mashhad.

6.6. The Main Research Question
To what extent are the learning organization’s disciplines applied in Payame Noor University of Mashhad?

Insert table 8 here

The results of table 8 indicate that calculated T-value is more than the table error level (5%), but it would not be a significant difference considering the respondents’ mean (2.89) and the target population mean (3). Therefore, the amount of ‘learning organization’s disciplines’ application is at an average level in Payame Noor University of Mashhad.

6.7. The Sixth Sub-question
Is there any significant difference between the faculty members’ viewpoints of Payame Noor University of Mashhad in the departments of humanities, engineering and basic sciences about the status of learning organization’s disciplines?

Variance analysis test was applied to compare faculty members’ viewpoints of Payame Noor University of Mashhad in different departments about the status of learning organization’s disciplines.

Insert table 9 here

The results of table 9 indicate that calculated F is less than 0.05 in all six variables; therefore, there is no significant difference between the faculty members’ viewpoints of Payame Noor University of Mashhad in the departments of humanities, engineering and basic sciences about the status of learning organization’s disciplines.

6.8. The Seventh Sub-question
Is there any significant difference between the faculty members’ viewpoints of Payame Noor University of Mashhad in various scientific grades (professor, associate professor, assistant professor and instructor) about the status of learning organization’s disciplines?

Variance analysis test was applied to compare faculty members’ viewpoints of Payame Noor University of Mashhad in various scientific grades (professor, associate professor, assistant professor and instructor) about the status of learning organization’s disciplines.

Insert table 10 here

The results of table 10 indicate that calculated F is less than 0.05 in all six variables; therefore, there is no significant difference between the faculty members’ viewpoints of Payame Noor University of Mashhad in various scientific grades (professor, associate professor, assistant professor and instructor) about the status of learning organization’s disciplines.

6.9. Ranking the learning organization’s disciplines on the basis of Friedman Test
Freidman test was applied to rank the learning organization’s disciplines in Payame Noor University of Mashhad. Table 11, which includes the results of this ranking, indicates that there is a significant difference between the disciplines. Owing to the fact that P-value or significance level is less than 0.05, the observed differences are not accidental. ‘Share visions’ has been known as the most significant and ‘mental models’ has been considered as the least significant disciplines.

Insert table 11 here

7. Conclusion
Although it was 20 years ago that Peter Senge proposed the Learning Organization Model, this concept is still noteworthy. Considering the fact that the application of learning organization disciplines can be beneficial in non-government institutes to promote their performances, universities can also apply these characteristics to operate more successfully in this competitive environment. Applying the vision of learning organization in the universities,
the processes of decision making and managing will be more flexible and compatible with the environment; therefore, people become more willing to learn both individually and collectively. So, instructors can both teach in such a learning organization and also continue learning. This way, they can have a part in managers’ decision making, authority and power. In this process of continuous change, managers have a fundamental role, since they accompany with their employees and learners to achieve a shared vision to see the same goal and move in the same direction. They can encourage innovation capability of the members and detect and remove the obstacles. In a learning university, the members are promptly exposed to new knowledge; they enhance their creativity and concentrate on the organization’s aims.

The obtained results indicate that based on Senge’s model, the learning organization’s characteristics are at an average level in distance education in Iran. Due to the fact that the institutes of higher education are naturally learning organizations, and have education, research and administrative functions, the above-mentioned learning organization model is not appropriate for these institutes.

Studying different disciplines of learning organization indicated that the disciplines of personal mastery, shared visions and systems thinking were at the average level in distance education in Northeast of Iran. The findings of Attafar and Samani’s (2009) research in the government and non-government universities of Shahrekord showed that the application level of ‘personal mastery’ was at an average level.

Another research which was done by Ghadamgahi and Ahanchian (2006) demonstrated that systems thinking discipline was the only characteristic which was at an average level in the schools of Mashhad. Findings of the studies which were conducted by Mahmoud Zadeh (2005) and Kelly (2000) indicated that the disciplines of personal mastery and systems thinking were at the opposite level in the institutes they had observed.

The achieved data clarified that the discipline of shared visions was strongly supported by Payame Noor University of Mashhad and was higher than the average level. The findings of this part of the research were similar to the results of studies done by Agaoglu (2006) and Turkington (2004).

The present study showed that the discipline of mental models was at a level lower than average in Payame Noor University of Mashhad. The results of this study were in common with the researches which were done by Attafar and Samani (2008) and Mehtari Arani and Shahsavari (2009).

8. Recommendations

Considering the studied significant disciplines and owing to the fact that suggestions should be in accordance with the findings of the research, the following suggestions have been proposed to achieve an opposite level of readiness to implement learning organization model in Payame Noor University of Mashhad. It is worthy of attention that these suggestions are the results of a research project and we hope that they can be useful for the interested people, researchers, professors and programmers at Payame Noor University as the biggest government university of Iran.

- Managers and faculty members should take training courses on learning organization and emphasize on continuous learning in the way that learning culture becomes internalized.
- The climate of dialogue, openness and trust should exist in the university and people should be confident that they can share ideas. This way, instructors and employees can also participate in managers’ decision making.
- Universities require a systemic approach to confront with their adversities; therefore, a systemic model is needed to dissect the events in whole departments of the university as a learning organization.
- Regarding the significance of knowledge, managers should appraise their employees based on their knowledge. Employees should be aware of the fact that their promotion is dependent upon their knowledge. Therefore, the system of rewarding should be amended into a knowledge-based system, and learning and giving new ideas should be the basis of rewarding in the universities.
- The achievement of the University’s goals should be possible through the continual development of shared understandings, dialogue, negotiation, practices, commitments and relationship between managers, faculty members and employees.
REFERENCES


### Annexure

<table>
<thead>
<tr>
<th>Discipline</th>
<th>No. of questions</th>
<th>Sample size</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal mastery</td>
<td>12</td>
<td>52</td>
<td>0.79</td>
</tr>
<tr>
<td>Mental models</td>
<td>6</td>
<td>52</td>
<td>0.85</td>
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<tr>
<td>Shared visions</td>
<td>7</td>
<td>52</td>
<td>0.80</td>
</tr>
<tr>
<td>Team learning</td>
<td>7</td>
<td>52</td>
<td>0.81</td>
</tr>
<tr>
<td>Systems thinking</td>
<td>8</td>
<td>52</td>
<td>0.84</td>
</tr>
</tbody>
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Table 1: Cronbach’s alpha coefficients

### Table 2: respondents’ demographic characteristics

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Sample size</th>
<th>Scientific Grade</th>
<th>Marital status</th>
<th>Gender</th>
<th>Degree</th>
<th>Department</th>
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<tr>
<td></td>
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<td>Gender</td>
<td>Degree</td>
<td>Department</td>
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<tr>
<td></td>
<td></td>
<td>Prof.</td>
<td>Population mean</td>
<td>Respondents’ mean</td>
<td>Standard deviation</td>
<td>Standard error</td>
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<tr>
<td>Frequency</td>
<td>52</td>
<td>S.</td>
<td>4.53</td>
<td>3.08</td>
<td>0.52</td>
<td>0.727</td>
</tr>
<tr>
<td>Percent</td>
<td>7.7</td>
<td>13.5</td>
<td>55.8</td>
<td>23</td>
<td>17.3</td>
<td>82.7</td>
</tr>
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Table 3: the amount of ‘personal mastery’ application in Payame Noor University of Mashhad

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Sample size</th>
<th>Population mean</th>
<th>Respondents’ mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>T-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental models</td>
<td>52</td>
<td>3</td>
<td>2.65</td>
<td>0.52</td>
<td>0.727</td>
<td>- 3.343</td>
<td>0.02</td>
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Table 4: amount of ‘mental models’ application in Payame Noor University of Mashhad

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Sample size</th>
<th>Population mean</th>
<th>Respondents’ mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>T-value</th>
<th>p-value</th>
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<tr>
<td>Shared visions</td>
<td>52</td>
<td>3</td>
<td>3.15</td>
<td>0.52</td>
<td>0.721</td>
<td>2.170</td>
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Table 5: amount of ‘shared visions’ application in Payame Noor University of Mashhad

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<thead>
<tr>
<th>Discipline</th>
<th>Sample size</th>
<th>Population mean</th>
<th>Respondents’ mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>T-value</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Team learning</td>
<td>52</td>
<td>3</td>
<td>2.82</td>
<td>0.70</td>
<td>0.981</td>
<td>- 1.763</td>
<td>0.84</td>
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Table 6: the amount of ‘team learning’ application in Payame Noor University of Mashhad
### Table 7: the amount of ‘systems thinking’ application in Payame Noor University of Mashhad

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Sample size</th>
<th>population mean</th>
<th>Respondents’ mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>T-value</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Systems thinking</td>
<td>52</td>
<td>3</td>
<td>2.87</td>
<td>0.67</td>
<td>0.931</td>
<td>-1.342</td>
<td>0.185</td>
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### Table 8: the amount of ‘learning organization’s disciplines’ application in Payame Noor University of Mashhad

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Sample size</th>
<th>population mean</th>
<th>Respondents’ mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>T-value</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Learning organization</td>
<td>52</td>
<td>3</td>
<td>2.89</td>
<td>0.50</td>
<td>0.697</td>
<td>-1.483</td>
<td>0.144</td>
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### Table 9: the comparison of faculty members’ viewpoints of Payame Noor University of Mashhad in different departments about the status of learning organization’s disciplines

<table>
<thead>
<tr>
<th>statistical indices</th>
<th>Humanities</th>
<th>Engineering</th>
<th>Basic sciences</th>
<th>Variance analysis (F)</th>
<th>Significance level (P)</th>
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<tbody>
<tr>
<td></td>
<td>M</td>
<td>S</td>
<td>M</td>
<td>S</td>
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</tr>
<tr>
<td>Learning organization’s disciplines</td>
<td>2.86</td>
<td>0.52</td>
<td>2.84</td>
<td>0.48</td>
<td>3.03</td>
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<tr>
<td>Personal mastery</td>
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<td>0.53</td>
<td>2.79</td>
<td>0.50</td>
<td>3.14</td>
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<tr>
<td>Mental models</td>
<td>2.63</td>
<td>0.78</td>
<td>2.50</td>
<td>0.78</td>
<td>2.94</td>
</tr>
<tr>
<td>Shared visions</td>
<td>3.14</td>
<td>0.55</td>
<td>3.09</td>
<td>0.45</td>
<td>3.29</td>
</tr>
<tr>
<td>Team learning</td>
<td>2.74</td>
<td>0.72</td>
<td>2.89</td>
<td>0.70</td>
<td>2.82</td>
</tr>
<tr>
<td>Systems thinking</td>
<td>2.82</td>
<td>0.70</td>
<td>2.90</td>
<td>0.62</td>
<td>2.88</td>
</tr>
</tbody>
</table>

S = variance, M = mean

### Table 10: the comparison of faculty members’ viewpoints of Payame Noor University of Mashhad in various scientific grades about the status of learning organization’s disciplines

<table>
<thead>
<tr>
<th>statistical indices</th>
<th>Professor</th>
<th>Associate professor</th>
<th>Assistant professor</th>
<th>Instructor</th>
<th>Variance analysis (F)</th>
<th>Significance level (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>S</td>
<td>M</td>
<td>S</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>Learning organization’s disciplines</td>
<td>2.58</td>
<td>0.42</td>
<td>2.92</td>
<td>0.61</td>
<td>2.87</td>
<td>0.49</td>
</tr>
<tr>
<td>Personal mastery</td>
<td>2.72</td>
<td>0.48</td>
<td>2.98</td>
<td>0.61</td>
<td>2.85</td>
<td>0.48</td>
</tr>
<tr>
<td>Mental models</td>
<td>2.62</td>
<td>0.15</td>
<td>2.85</td>
<td>0.96</td>
<td>2.58</td>
<td>0.64</td>
</tr>
<tr>
<td>Shared visions</td>
<td>2.71</td>
<td>0.36</td>
<td>3.12</td>
<td>0.77</td>
<td>3.18</td>
<td>0.47</td>
</tr>
<tr>
<td>Team learning</td>
<td>2.32</td>
<td>0.95</td>
<td>2.73</td>
<td>0.80</td>
<td>2.81</td>
<td>0.70</td>
</tr>
<tr>
<td>Systems thinking</td>
<td>2.43</td>
<td>0.84</td>
<td>2.85</td>
<td>0.69</td>
<td>2.90</td>
<td>0.73</td>
</tr>
</tbody>
</table>

S = variance, M = mean
<table>
<thead>
<tr>
<th>Freidman Test</th>
<th>Discipline</th>
<th>Mean</th>
<th>Mean of ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Personal mastery</td>
<td>2.92</td>
<td>3.60</td>
</tr>
<tr>
<td>Chi square test</td>
<td>Mental models</td>
<td>2.65</td>
<td>2.63</td>
</tr>
<tr>
<td>Degree of freedom</td>
<td>Shared visions</td>
<td>3.15</td>
<td>5.04</td>
</tr>
<tr>
<td>p-value of the test or sig</td>
<td>Team learning</td>
<td>2.82</td>
<td>3.07</td>
</tr>
<tr>
<td></td>
<td>Systems thinking</td>
<td>2.87</td>
<td>3.36</td>
</tr>
</tbody>
</table>

Table 11: ranking of the disciplines on the basis of Friedman test