

The study of learning high schools based on “Peter M. Senge” learning organization’s 5 disciplines

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Abstract: This study aimed to investigating the identifying of learning high schools based on “Peter M. Senge” learning organization’s five disciplines in view of high school teachers and managers in “Tabriz” city of Iran. The study method was quantitative- descriptive survey approach for studying among 115 high school teachers and administrators as sampled through systematic random sampling with using the “Marquardt” learning organization questionnaire for data collection. For analysis of data collected used some descriptive and inferential statistics techniques by using of SPSS software. The Results of findings showed that public high schools are low to owning five components of learning organization to become learning schools but only the two components consist of “personal mastery” and “system’s thinking” is applied. As a result this is not a strong indication for become learning school and since the school’s administrator performance and activities to creating positive organizational climate that encourages and support the teachers learning have positive effects on learning schools and thus teachers will be interested and motivated for collective and group learning.

Keywords: learning schools, learning organization, education system

I. INTRODUCTION

The increasing needs of the organizations including the clients, the conditions and the theories, and evolutions in organizational environments on the one hand and changes in needs for science, innovation and the staff motivation has proposed a new theory called “learning organizations”. In such organizations, unlike the traditional organizations, In addition employees and staff who do not resist change but also always trying to change their attitudes and adapting themselves to the environment. In fact learning organizations are altered models for the organizations and innovative way for thinking about organization in the age of knowledge (Leithwood et al, 1998).

Senge (1990) the one of the famous scholars and founder the “learning organizations theory” has been proposed five basic disciplines which include: personal mastery, mental models, shared vision, team learning, system’s thinking. The mentioned disciplines can be described as follows:

- Personal mastery: Personal mastery means that the individuals must exert the highest degree of mastery over others. They need a deep understanding of their goals and their ideals.
- Mental Models: These are deeply ingrained assumptions, generalizations, or even pictures and images that influence how we understand the world and how we take action.
- Shared vision: It means that all members agree to a plan for and understand it.
- Team learning: Team learning means that for achieving a goal all the members of the team agree to that and all collaborate to learn it.
- Systems thinking: System thinking is a discipline joining all other disciplines and makes them a framework for establishing Learning organization.

Therefore learning in an organization should not be viewed as an activity and cognitive definition. For understanding the concept we should search for the features through which the organizations could manage their activities for obtaining the required skills and could thoroughly understand Learning organization. Learning is an idea which is expected in all organizations so that the organizations may maintain themselves (Anderso, 2004). The learning principle is a guarantee for the survival of the organization. In fact without learning as a new idea cannot expect any organization to attain its goals and open new horizons of organizational activities for the organization (Lipshitz, 1996).

Thus on the whole we can reiterate that Learning Organization is one in which all members learn about new ideas and accept the responsibility for the development and sustaining development of the organization in organizational learning process. Organizational learning is achieved through sharing vision, knowledge, experience and mental models of the organization members (Annona and Foley, 2003). Organizational learning is based on knowledge and experience existing on the mind of the organization. It

depends on mechanisms like the policies, strategies, and models for storing knowledge, and the individuals and groups are agents through which organizational learning is accomplished (Beuger and Braun, 2006).

As educational organizations relying on human resources and collective interactions related to social foundations, schools have understood that in order to adjust themselves to increasing environmental changes and making structural changes in line with helping social institutions they have understood that traditional and rigid approaches will do nothing to assist them in doing their basic and renewing responsibilities. Since the modern world with its developments in different field calls for schools that believe in a change in traditional education and management methods, thus the establishment of the schools named “Learning Schools” is a necessity. In the model for learning schools there is the expansion of management concept in the field of educational management. It is assumed that through deliberating on school management methods on one hand and bringing about a change in the standpoint of the managers, teachers, students and all other members of the society we can lay the cornerstone for a more flexible innovative and learning-based structure (Giles and Hargreaves, 2006).

II. REVIEW OF LITRATURE

Williams (2006) in a study titled “the leadership of high school managers, practice and belief in learning organization” showed that each of the high school managers believed all five disciplines and they took advantage of these disciplines for the enhancement of the school under their supervision. They believed that in order to move towards learning community it is necessary to creating a leadership team at school and have teacher based changes. They also considered it necessary to have shared vision and creativity to make any change in the educational environments.

DuFour (2004) through the study of learning organization and the achievement of teaching staff in higher education showed that the teaching staff believed that their achievements were due to taking the advantage of learning organizations in their scientific activities.

Leithwood et al (1998) studied the characteristics of evolutionary management in schools and its impact on organizational learning in educational institutes and stated that the positive effect of this management style on the scientific achievement of schools was evident and too revealed that learning schools is able to comply with environmental changes and changing the managers attitudes toward changes.

Silins and Mulford (2002) in his studying the relationship between professional learning communities and student’s achievement in primary schools revealed the importance of professional learning communities so that in the successful primary schools the managers wished for their school to act at higher level as a professional learning community.

Ghadamgahi and Ahanchian (2007) in the study of learning organization specifications on “Mashhad” public high schools revealed that despite of determining the aims and goals at the central level of ministry of education, but the staff and the teachers do their best to achieve the goals and objectives. However the results are dissatisfactory. It means The educational leaders, in the light of their most important responsibilities try to establish a common ground which is accepted by all of the members in order to help them in doing their jobs ideally.

III. METHODOLOGY

The main poupose of the present study is surveying the public high schools in Tabriz city as the learning schools according to the “Peter M. Senge” five desciplines of learning organization from the viewpoint of 115 sampled high school teachers and managers. Also the instrument for data collecting in this study were the “Marquardt” learning organization questionnaire (2006) that distributed among research sampled members so that 110 of them was based to final data analysis by SPSS software. The reliability of the standard “Marquardt” questionnaire was 0.87 with calculated Cronbach’s alpha value. After description of findings, one main inferential data analysis method in this study was the “Binomial test” for comparing and inference the status of five learning organization disciplines includes P.M, M.M, S.V, T.L, and S.T. based on sampled teachers and managers responses.

IV. RESULTS AND DISCUSSIONS

Descriptive analysis of data showed that 110 selected sample members consist of 11 high school managers and 99 teachers in the sample schools also 46 Of whom were female and 64 were male. And also 4 of whom had PhD, 18 had M.A, 84 had bachelor and the other had lower academic degrees.

Also using descriptive indices like mean, and standard deviation of the sample group responses for analysis of all five learning organization components (disciplines) for high schools were examined using the questionnaire scales. As it is seen in table below the total mean is 72.43 and the standard deviation is 15.72

Table1: Descriptive analysis of all five components and their sub – indices based on responses.

components	Number of indices	standard deviation	Mean
Personal mastery	8	4.09	21.64
Mental Models	6	4.62	14.81
Shared vision	4	4.05	19.52
Team learning	5	4.87	13.08
Systems thinking	5	4.28	12.74
total	28	15.72	72.43

In this study for inferential data analysis in each of the five components was used the non - parametric binomial test. So to testing of all five components of the learning organization in schools based on collected data, the following two hypotheses for them will be examined below.

H₀: the status of each five component (P.M, M.M, S.V, T.L, and S.T.) not suitable. (H₀: p ≤ 0.6)

H₁: the status of each five component (P.M, M.M, S.V, T.L, and S.T.) is suitable. (H₁ p > 0.6)

The above two hypothesis (null and statistical) was examined at the %95 confidence level and taking into account the %5 error (α= 0.05). The test proportion (0.6) was calculated from the average of five point Likert scale values on the total numbers of indices based on sample data. Therefore the results of the two hypotheses are as follows.

H₀: P^{value} ≤ P (=0.6) → P^{value} (sig) > α (=0.05) → (H₀ accept) ≡ it means that the status of each five component not suitable for become a learning high school.

H₁: P^{value} > P (= 0.6) → P^{value} (sig) ≤ α (=0.05) → (H₀ reject) ≡ it means that the status of each five component is suitable for become a learning high school.

According the above values and result of established each two hypothesis so the Binomial test results for all five components are given in the table below.

Table2: Binomial test results for all learning school’s five components.

Personal mastery				
Test groups (P.M.)	N	Observed Proportion	Test Proportion	sig
G 1	81	0.8	0.6	.037*
G 2	29	0.2		
Total	110	1.0		
Mental models				
Test groups (M.M.)	N	Observed Proportion	Test Proportion	sig
G 1	74	0.7	0.6	.121*
G 2	36	0.3		
Total	110	1.0		
Shared vision				
Test groups (S.V.)	N	Observed Proportion	Test Proportion	sig
G 1	81	0.8	0.6	.037*
G 2	29	0.2		
Total	110	1.0		
Team learning				
Test groups (T.L.)	N	Observed Proportion	Test Proportion	sig
G 1	72	0.7	0.6	.141*
G 2	38	0.3		
Total	110	1.0		
System thinking				
Test groups (S.T.)	N	Observed Proportion	Test Proportion	sig
G 1	78	0.7	0.6	.104*
G 2	32	0.3		
Total	110	1.0		

According to the above results, thus for each of the five components two hypothesis can be made as the following.

1. For component of **personal mastery** the result of hypothesis test such that:

P^{value} (sig) = 0.037 < α (= 0.05) → H₀ (reject)

The above result means that this component had good status at learning schools according to the high school teachers and administrators survey.

2. For component of **mental models** the result of hypothesis test such that:

P^{value} (sig) = 0.121 > α (= 0.05) → H₀ (accept)

The above result means that this component hadn’t good status at learning schools according to the high school teachers and administrators survey.

3. For component of **shared vision** the result of hypothesis test such that:

P^{value} (sig) = 0.037 < α (= 0.05) → H₀ (reject)

The above result means that this component had good status at learning schools according to the high school teachers and administrators survey.

4. For component of **team learning** the result of hypothesis test such that:

P^{value} (sig) = 0.141 > α (= 0.05) → H₀ (accept)

The above result means that this component hadn't good status at learning schools according to the high school teachers and administrators survey.

5. For component of **system thinking** the result of hypothesis test such that:

$P^{value}(\text{sig}) = 0.104 > \alpha (= 0.05) \rightarrow H_0$ (accept)

The above result means that this component hadn't good status at learning schools according to the high school teachers and administrators survey.

Therefore, data analysis, hypothesis tests and the results in both tables 1 and 2 showed that except the two personal mastery and shared vision components, the other components are not in good status among teachers and managers.

V. CONCLUSION

According to the results and findings of the this study we concluding that participant high school teachers and managers in Tabriz city satisfactorily hadn't all of learning organizations characteristics and so these disciplines were not functional in their schools Although from the participants viewpoint the two personal mastery and shared vision were suitable. Also some participants showed positive signs of the foundations of learning schools. However, there is long distance to become learning school in the sampled high schools. But this is possible that by adopting the collaborative management style and create a collective learning environment can steps to create an atmosphere of creativity and learning in the school. Moreover the effective activities of efficient managers and school administrators to establishing the positive organizational climate will support and encourage the teachers' team learning for creating of learning schools. Thus fostering and promoting the five disciplines of learning organizations in schools to creating the learning school requires the climate of participation, collaboration consultation, collective learning, creativity and systems thinking among partners and teachers in high schools.

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