

Applying Analytic Hierarchy Process for Analyzing the Role of Managerial Skills in Developing of Organization Learning in Physical Education Organization: A Conceptual Model

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Abstract. Today, efficient skill, up to date knowledge and ongoing learning are prominent properties in macro management of sport organizations. The purpose of present study was to apply analytic hierarchy process for analyzing the role of managerial skills in developing of organization learning in physical education organization and presenting a conceptual model. It was correlative study. Data collection was done through field study. Population composed of experts employed in physical education organization (300) and sport management professors (10). There were 126 subjects as sample selected by systematic sampling. Instrument was Organizational Learning Questionnaire developed by Marquardt, Managerial Skills Questionnaire and AHP Questionnaire developed by authors. The reliability was desirable (Cronbach α of Organizational Learning Questionnaire=0.97, Cronbach α of Managerial Skills Questionnaire=0.96). Significance of hypotheses was measured by Spearman Correlation and stepwiseregression. Moreover, AHP was used to analyze dimensions of organizational learning through Expert Choice 11 software. Results showed that conceptual skill ($r_{ho} = 0.391$), human skill ($r_{ho} = 0.428$), and technical skill ($r_{ho} = 0.364$) were related significantly to organizational learning ($p < 0.01$). Triplet managerial skills explained a high variance (0.428) in organizational learning. Especially, conceptual skill (Beta = 1.002, $p < .001$) had the strongest statistically significant effect on organizational learning. Sport management professors voted Organizational culture as the highest priority (average weight = 0.4096) between the dimensions of organizational learning. It was concluded that organizational learning specially the dimension organizational culture was prominent in efficiency and productivity in physical education organization.

Keywords: Learning organization; Conceptual skill; Human skill; Technical skill; Analytic hierarchy process (AHP)

1. Introduction

A savant promises effectiveness in organization. In the environment of competition, competition privilege is dependent on technology-based thinking. Technology changes static state into alteration consequently alteration into dynamic organization (learning organization). In other words, learning is the original foundation of competition privilege. Learning makes change. Organization should accustom to change and the changes become positive [1]. According to Katz's theory, a successful manager has triplet managerial skills (conceptual, human and technical). The deficiency of each skill loses the chance of being successful manager and generally successful organization. Managerial skills are required to implement quintuplet functions of management (planning, organizing, directing, controlling, evaluating). In modern organizations, successful manager can hardly be imagined without basic skills [2]. Organizational learning is a process including a set of actions resulting in staff learning. It composes of certain organizational behaviors applied in learning organization. In such organizations, condition of learning is provided for all members and they regard to implement what is learnt [3]. morales, Lorens Montes and VerduJover (2007) explain organization learning as organizational capability in order to retain and improve function through experiences. The capability is the acquirement and productivity of explicit knowledge in order to share and use knowledge in organization [4]. Marquardt (2002) declares that learning is major subsystem of learning

organization occurring in individual, team and organizational levels. Organizational learning expresses the capability of thinking and productivity development. The commitment towards organizational learning causes ongoing improvement all over the organization. Learning organizations focus on nature of systems, principles and properties of organization and collective entity which learn and produce. However, in organizational learning, how learning happens in organization is considered [5].

Jerez Gomez, Cespedeslorte, and Valle Cabrera (2005) enumerate four conditions to create and develop capability of organizational learning. First, manager of organization should support organizational learning and associated programs. Second, collective conscience is required to consider organization as a system also shared vision is vital among staff in organization. In other words, staff should consciously perceive the whole of organization and its problems generally. Third, organization should develop organizational knowledge, transmit and integrate individual acquired knowledge. Fourth, not only adaption for environmental changes are demanded to make learning as a source of competitive privilege but also generative learning is needed. Generative learning is worthier than adaptive learning [6]. Adaptive learning is only to adapt forenvironmental changes but generative learning is to change environment through alteration of values and beliefs. Generative learning is due to open mind and experimental behavior. Robbins and Decenzo (1998) said that conceptual skill is related to coordination of all activities and benefits in product and service organizations. There is association between human skill with working with others, conception and motivating individuals [7]. Technical skill is associated with application of tools, programming, and essential techniques in a technical field. Belzer (2001) describes technical skills as missing link necessary in achievement [8]. Baum, Locke, and Smith (2001) categorized managerial skills into general and specific categories. General category composes of decision-making, conceptual abilities, effective information processing, leadership, presentation and supply, and proper application of concepts and power. These skills can change into specific especially technical skills [9].

Asadi, Qanbarpour, Qorbai, and Doosti (2010) studied the relationship between organizational learning and organizational function among experts in physical education organization in Iran. They found that there was significantly positive relationship between continuous learning of individual level and organizational function. Moreover, there was significantly positive relationship between other dimensions of learning (group learning, empowerment, relation in system, strategic leadership) and organizational function. The founding emphasizes on the significance of organizational learning in different levels (individual, group, organizational) as an influencing factor to increase functional level of experts in physical education organization [10]. Afshari, Honari, and Qafoori (2010) examining the triplet managerial skills (technical, human, conceptual) of managers in physical education organizations in state universities in Iran. There was difference between attitudes of triplet skills in managers in physical education organizations. Moreover, there was difference intriplet skills based on views of sport management professors and managers in physical education organizations [11].

Herrera (2007) examined organizational learning in American industrial firms. Controlling tasks and results can be improved by planning vocational tasks of individuals so that learning results and organizational empowerment increase. Also, ongoing learning greatly affects organizational performance of employees [12]. Michna (2009) studied the relationship between organizational learning and SMEs performance in Poland. 11 empirical dimensions of organizational learning were identified and defined. The empirical research showed that sales and employment growth was most dependent on the following dimensions: dialogue and empowerment of the employees, collaboration, team learning, and leaders' attitudes. Organizations reaching a higher level of organizational learning probably achieve higher performance [13]. Jamali, Sidani, and Zooey (2009) investigated learning organizations in two divisions of bank and technology in Lebanon. Both of them were learning organization although technology had higher learning for different occupational nature, structure, and environment. Strength and weakness of both divisions were studied too. Both enjoyed individual and organizational strength [14]. However, empowerment and planning system of shared learning were weak in organizational levels. Overall, it focused on theory or vision of appropriate systems. Huusko (2006) examined the lack of skills as an obstacle in teamwork. In this paper two well-known concepts of management and leadership – the idea of Katz – were addressed. Teamwork was studied through fair leadership and required skills. Suitable structure was studied to change traditional and modern team leadership. Essential managerial skills – the idea of Katz: same human skills for same teamwork in all managerial levels – were considered. Fair teamwork requires managerial skills resulting from assigning responsibility to individuals of team. Managers and leaders with effective human skills and communication motivate team to accept responsibilities. Individuals learn skill during teamwork. It

is provided under flexible organizational structure which managers assist to increase team skills and empowerment by shifting off responsibility [15]. Unger, Rauch, Frese, and Rosenbusch (2009) found slightly significant association between human capital with achievement of managers and entrepreneurs. Dimensions of knowledge and skill were associated more than education and experience [16].

Service environments are basically differed from production environments. Service environments are human based but production environments are technology based. Being human based causes more interactions in service environments. Examining organizational learning in sport organizations displays the role of interactions through which knowledge is transmitted better. Moreover, managers should know priorities of dimensions related to organizational learning to succeed in organization. AHP was used to prioritize dimensions of organizational learning based on attitudes of sport management professors. Furthermore, managerial skills were examined because election of top managers -in accordance with skills appropriate in service organizations- has been topic of scientific sport meetings for a long time. The structure is traditional in physical education organizations. They are required to change into learning organizations. Certain skills are devoted to hierarchy of management in organization subsequently organizational learning is planned in line with skills.

In sum, significance of managerial skills is essential in modern competitive environments. Also, organizational learning should be regarded by managers to create more efficiency and effectiveness (i.e. supplying more service and production to satisfy customers). Consequently, present questions were expressed: is there relationship between triplet managerial skills (conceptual, human, technical) and organizational learning in managers of physical education organization? Do triplet managerial skills predict organizational learning in managers of physical education organization?

2. Methodology

It was applied-correlative study. Data collection was done through field study. Population composed of experts employed in physical education organization (300 individuals: official, treaty, contractual) and sport management professors (10). Experts of physical education organization evaluated triplet managerial skills and organizational learning. The number of sport management professors was few because the criterion selection was the sport management professors who had the degree of doctorate in sport management and planning and experience of top management in sport organizations specially physical education organization. The sport management professors prioritized and weighted the organizational learning indexes and elements. There were 126 subjects as sample selected by systematic sampling. Instrument was questionnaire. There were 130 questionnaires distributed and 128 ones returned and usable. Managerial Skills Questionnaire was used which developed by authors. Participants responded to 30 items using a 5-point Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree). It composed of three dimensions including conceptual skill, human skill, and technical skill.

Table 1. Guideline of comparisons

Significant degree of pair comparison	Similar prioritized	Similar to moderately prioritized	moderately prioritized	moderately to much prioritized	much prioritized	much to very much prioritized	very much prioritized	very much to immeasurable prioritized	immeasurable prioritized
Numerical code: priority of number to letter	1	2	3	4	5	6	7	8	9
Letter code: priority of letter to number	A	B	C	d	e	f	g	H	i

Organizational Learning Questionnaire was used which developed by Marquardt. Participants responded

to 31 items using a 7-point Likert Scale ranging from 1 (strongly disagree) to 7 (strongly agree). It composed of seven dimensions including shared vision (4 items), organizational culture (4 items), team learning (4 items), knowledge sharing (4 items), systems thinking (4 items), participative leadership (5 items), developing employee competency (6 items). AHP Questionnaire composed of seven dimensions of organizational learning based on Marquardt’s questionnaire. It was pair-wise comparisons which provided a 7×7 matrix. The instruction of answering questionnaire is according to row and column. If the comparison is column/row, immeasurable equals 1/9. Otherwise, the comparison is row/column, immeasurable equals 9/1. Following table was considered to solve complexity of answering questionnaire. Priorities are labeled with numeric codes (1 up to 9) & corresponding letter codes (a up to i).

Ten university professors including experts of sport management confirmed the validity. There was a pilot study to measure reliability. Thirty subjects answered the questionnaire. The reliability was desirable (Cronbach α of Organizational Learning Questionnaire=0.97, Cronbach α of Managerial Skills Questionnaire=0.96). Descriptive statistics (tables, mean, standard deviation, frequency, and graph) was used to categorize data. Normality of data distribution and significance of hypotheses were measured by Kolmogorov-Smirnov test, Spearman Correlation, and stepwise regression. Moreover, AHP was used to prioritize and weight dimensions of organizational learning through Expert Choice 11 software.

3. Results

Firstly, descriptive statistics are considered. Then, inferential statistics are followed.

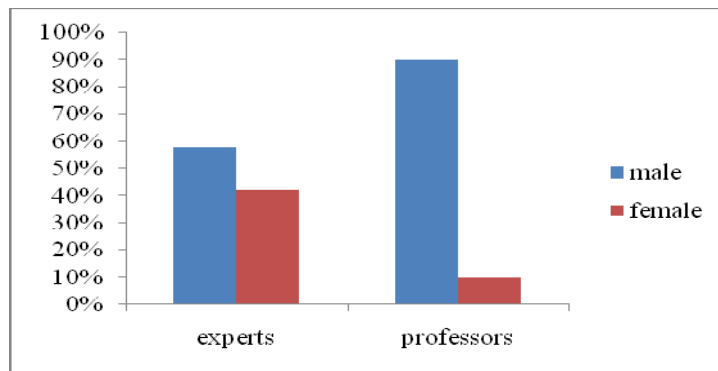


Figure 1. Frequency percent of sport management professors and experts employed in physical education organization based on gender

According to figure 1, the overall sample of experts employed in physical education organization (128) was 74 males (58%) and 54 females (42%). The overall sample of sport management professors (10) was 9 males (90%) and 1 females (10%).

Figure 2 shows distribution of frequency percent of experts employed in physical education organization based on educational certificate.

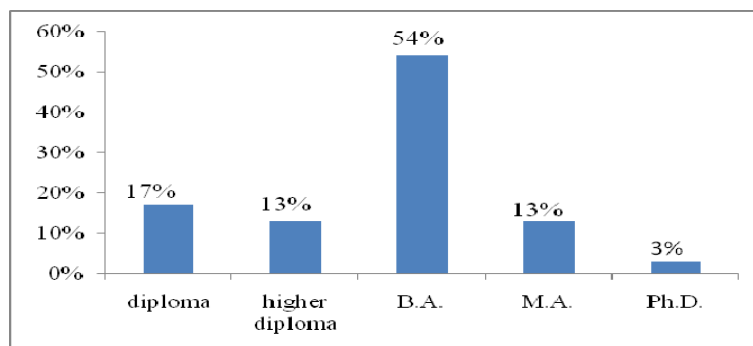


Figure 2. Frequency percent of experts’ educational certificate employed in physical education organization

Figure 2 presented that educational certificate of experts employed in physical education organization. There were 17% diploma educated, 13% higher diploma educated, 54% B.A. educated. 13% M.A. educated, and 3% Ph.D. educated. As previously considered, all the sport management professors had the degree of doctorate.

Table 2 shows distribution of frequency and frequency percent of sport management professors and experts employed in physical education organization based on length of service.

Table 2. Length of service devoted to sport management professors and experts employed in physical education organization

Range	professors		Educational activities		Experts			
	Managerial position frequency	percent	range	frequency	percent	range	frequency	Percent
5-10 years	3	30	10-15 years	2	20	5-10 years	38	30
11-15 years	1	10	16-20 years	4	40	11-15 years	34	26
16-20 years	3	30	21-25 years	2	20	16-20 years	43	33
21-25 years	3	30	26-30 years	2	20	21-25 years	13	10
Total	10	100	Total	10	100	Total	128	100

As presented in table 3, there were 60% of professors experienced in managerial position over 15 years and 40% experienced in educational activities over 20 years. There were 30% of experts experienced between 5-10 years, 26% experienced between 11-15 years, 33% experienced between 16-20 years, and 10% experienced between 21-25 years.

Table 3 presents the relationship between managerial skills (conceptual, human, technical) and organizational learning according to attitudes of experts.

Table 3. Relationship between managerial skills and organizational learning (n = 128)

	correlation
conceptual	0.391**
human	0.428**
technical	0.364**

Notes. dependent variable: organizational learning; * = p<0.05, ** = p<0.01

Table 4 presents the relationship between managerial skills (conceptual, human, technical) and dimensions of organizational learning (shared vision, organizational culture, team learning, knowledge sharing, systems thinking, participative leadership, developing employee competency) according to attitudes of experts.

Table 4. Relationship between managerial skills and dimensions of organizational learning (n=128)

	Correlation (r _{ho})						
	shared vision	organizational culture	team learning	knowledge sharing	systems thinking	participative leadership	developing employee competency
Conceptual	0.473**	0.33**	0.28**	0.494**	0.412**	0.277**	0.212*
Human	0.534**	0.249**	0.312**	0.558**	0.414**	0.281**	0.177*
technical	0.424*	0.192*	0.099	0.418**	0.213*	0.283**	0.389**

Notes. * = p<0.05, ** = p<0.01

Table 5 and 6 demonstrates the prediction of organizational learning from managerial skills (conceptual, human, technical).

Table 5. Model summary

type	N	R	R ²	p
stepwise	128	0.654	0.428	0.001

Table 6. Stepwise regression predicting organizational learning from managerial skills

	B	SD	Beta	t	Sig.
Constant	0.795	0.385		2.064	0.041
Conceptual	1.298	0.236	1.002	5.509	0.001
Human	0.648	0.212	0.529	3.064	0.003
technical	0.18	0.207	0.118	0.872	0.385

Notes. dependent variable: organizational learning

Figure 3 shows that AHP was used to prioritize and weight dimensions of organizational learning

through Expert Choice 11 software.

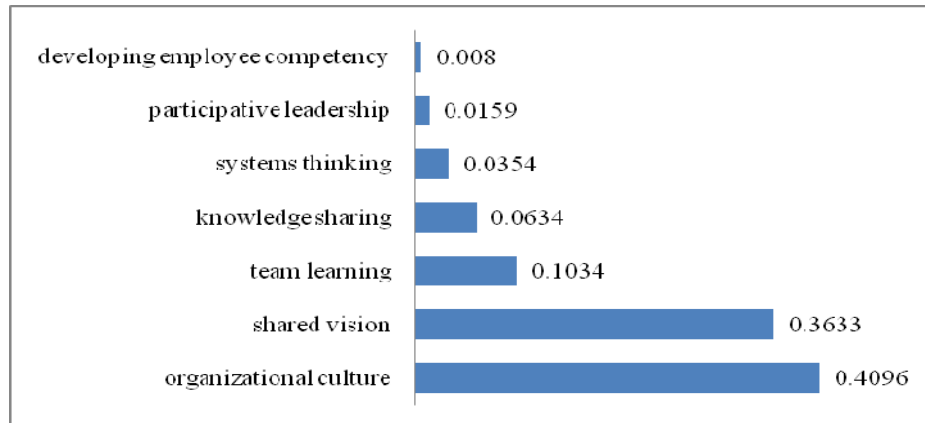


Figure 3. Output of Expert Choice 11 showing organizational learning dimensions based on AHP

4. Conclusion

The purpose of study was to analyze the role of managerial skills in developing of organization learning in physical education organization. There are several problems in organizational learning of sport organizations in Iran. Subsequently, production and industrial organizations regard organizational learning systematically to promote productivity and production.

Conceptual skill was related significantly and positively to organizational learning according to attitudes of experts. It means that identification of organizational goal and plan, development of strategy, and perceptual capability affected organizational learning. The result is in consistent with founding of Kiaeei (2009) and Laura and Tzoumpa (2008) Long term strategies develop organizational learning and change organization into learning organization. Understanding problems is one of prominent aspects of conceptual skill to develop organizational learning. Considering the relationship between conceptual skill and organizational learning, conceptual skill can develop learning organization efficiently [17 & 18].

Human skill was related significantly and positively to organizational learning according to attitudes of experts. It indicates that sense of responsibility towards others, teamwork, and recognition of positive and negative performance of staff affected organizational learning. The result is in consistent with founding of previous research [11, 15, 17, 19 & 20]. Nearly all studies confirm the effect of human skill on efficiency and effectiveness. El Sabaa (2001) believes that human skill of project managers highly affects management method [21]. Moreover, Huemann (2010) did a case study of a telecommunication company. Human resource and service management is essential to modify official structure into practically commercial company. Regarding shared vision, team learning, sharing knowledge, and participative leadership as aspects of organizational learning, human skill (communication and team involvement) influences manager's success organizational achievement, effectiveness, and productivity [22].

Technical skill was related significantly and positively to organizational learning according to attitudes of experts. It means that knowledge of instructions and rules, official work, financial affairs, and doing work on time affected organizational learning. The result is in consistent with founding of Afshari et al. (2010) and in contrast with founding of Kiaeei (2009). The contrast is due to different level of managers in two studies [11 & 17]. In present study, first-line managers included 49% of managers. It might lead to significance of hypothesis. Top managers are responsible of planning and development of strategies to change organization into learning organization. Therefore, conceptual skills are significant in management. Sharing knowledge along all organizational levels and manager's knowledge of staff's affairs increase performance level and effectiveness. Especially knowledge and experience of sport management develop effectiveness and efficiency in sport organizations. Belzer (2001) describes technical skills as missing link necessary in achievement [8].

A stepwise regression model was employed to assess the effects of managerial skills (prediction) on organizational learning (criterion). In general, managerial skills were related significantly to organizational learning. The three managerial skills accounted for 0.428 of the variance in the organizational learning. Conceptual skill had the strongest statistically significant effect on organizational learning. The result is in consistent with founding of Kiaeei (2009). Conceptual skill development especially in top management

increases development of strategy and principles of organizational learning such as participative leadership, systems thinking, and developing employee competency. Conceptual skill is focused on top management. Top managers consult in planning and decision-making with first-line and middle managers. Conceptual skill improves decision-making capability and problem solving. Gilsing and Guysters (2008) believe that consecutive achievements come from research and knowledge followed by novelty in organization. Also, top managers of physical education organization require conceptual skill to develop principles of organizational learning [23].

Then, we prioritized and weighted dimensions of organizational learning through sport management professors' insights. Seven dimensions of organizational learning developed by Marquardt were analyzed based on AHP. The first priority belonged to organizational culture. Other priorities were shared vision, team learning, knowledge sharing, systems thinking, participative leadership, developing employee competency respectively. The results were in consistent with previous studies [24 & 25]. Successful organizations benefit positive and strong culture because positive and strong organizational culture provides more staff's participation, agreement on strategic points, efficiency, and productivity [26]. Also, guidance and participation of employees develop their skills resulting in organizational efficiency and productivity. Consecutive achievements are as a result of novelty creation in organizations [23].

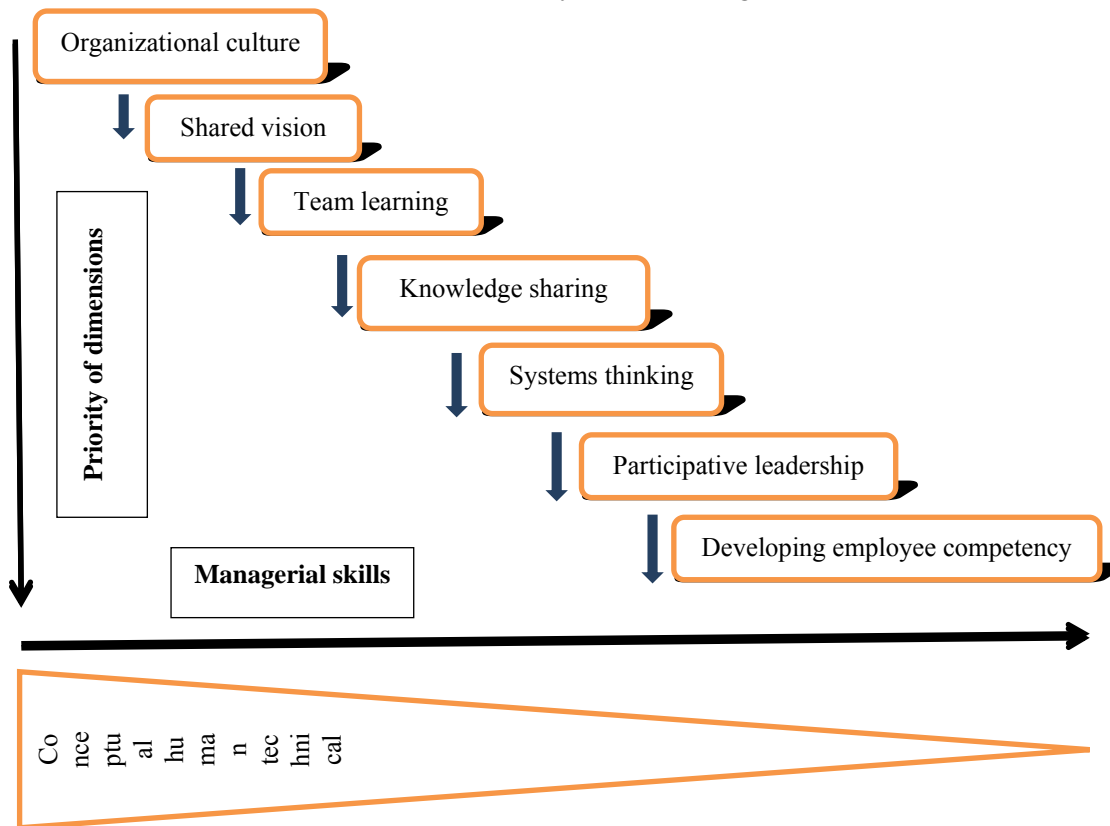


Figure 4. Mixed model of managerial skills and organizational learning focused on AHP

As observed in figure 5, it was mixed model of managerial skills and organizational learning according to priorities. Organizational culture was the major dimension to be considered in organizational learning. Therefore, it was placed at first stair. Organizational culture is a guideline for staff to work. Organizational culture is common conception of organization observed in all members. It presents current fixed characteristics which differing organization from others. Orthner, Cook, Sabah and Rosenfeld (2006) emphasize the harmony between organizational culture and organizational learning. Other priorities of organizational learning were shared vision, team learning, knowledge sharing, systems thinking, participative leadership, developing employee competency respectively. Strong culture, shared vision, and teamwork develop and scout employee competency. Consequently, organizational efficiency is provided [27]. In other part of model, managerial skills were allocated. It is great to enjoy distinctive skills and merge them in different applications. Managers often know their tasks and devoted skills however they do not succeed to execute them properly. In other words, skill and knowledge are not sufficient but self confidence is also

required to do work. The model presented role of managerial skills to create learning organization. Different level managers should plan to implement each dimension of organizational learning. Top manager is the principle role because his major skill is conceptual followed by human and technical. Conceptual skill had the strongest statistically significant effect on organizational learning. It was shown in continuum. Therefore, managers need conceptual skill, human skill, and technical skill respectively. From other hand, participative leadership provides share insight between managers and staff leading to teamwork. So, different level managers can implement dimensions of organizational learning and observe more efficiency and effectiveness of staff. According to problems, barriers, and weakness of organizational learning in physical education organization, exact planning is required to promote employees' learning [24]. Managers can develop physical education organization effectively through shared culture in learning organization and other principles of learning organization [25]. Planning human force is improved by managerial skills. Furthermore, well leadership, conceptual skill, and human skill develop culture of learning organization. Priorities of organizational learning assist managers to organize according to hierarchy. It leads to expense and timesaving. Top managers can consider skills of managers to elect them. Finally, they can consider conceptual model to plan and decide better.

5. References

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