



Int. J. New. Chem., 2021, Vol. 8, Issue 2, pp 181-197.

International Journal of New Chemistry

Published online 2021 in <http://www.ijnc.ir/>.

Open Access

Print ISSN: 2645-7236

Online ISSN: 2383-188x



Original Research Article

Effects of Knowledge Management (KM) in Chemical Industry and University by Learning Management System (LMS)

Maryam Mirzaei*

Department of Industrial Engineering, Tehran Branch, University of Payam Noor, Tehran, Iran

Received: 2020-02-09

Accepted: 2020-12-22

Published: 2021-06-01

ABSTRACT

Knowledge management in chemical industry is very important. Increasing globalization trends, information and Communication technologies developments including the network community expands, new media and educational innovations have enabled us to use technology to learn more as well as more efficiency and management on knowledge. Human capital plays an important and effective role in the productivity of organizations and therefore a significant share of the organization's resources is spent on training and development of human resources. But when human capital is to be exploited, it can be expelled from the organization for a variety of reasons (internal or external), and failure to record its experiences can cause irreparable damage to the organization. Knowledge management in the modern age has made dramatic changes in management disciplines. Knowledge management seeks to capture the knowledge, wisdom and value-added experiences of employees as well as to implement, retrieve and maintain knowledge as an organization's assets. Implementing and implementing a knowledge management system is one of the vital ways to record and refine and share the experiences of individuals in the organization. In this study, considering the positive and negative effects of the LMS learning system on learning, we examine its effects on knowledge sharing and then knowledge management. Using the questionnaire, we collect the data and analyze the effects by regression analysis.

Keywords: LMS, Knowledge Sharing, Regression, Knowledge Management.

Introduction

However, in recent years, knowledge management has become a familiar word for today's societies and industries, and knowledge management has gained popularity, especially in the education and business sectors but its effects on new educational systems has not been much studied. Systems such as the Learning Management System (LMS), which play an important role in learning employees and employees of corporations and industrial societies, and even banks and educational centers. The oil, gas and petrochemical industry is a specialized, experience-driven industry that considers human resources as the most important knowledge asset of the organization. Minimizing the cost and time in optimizing the performance of specialized activities, while achieving optimum quality, is a must for managers of these industries. Given the rapid advances in technology, geographical dispersion, diversity of equipment, and large numbers of employees in the oil, gas and petrochemical industries, knowledge management can play an important role in achieving the goals of the upstream and downstream industries. Many leading oil companies in the world, such as Shell, British Petroleum, Chevron, and others have now implemented knowledge management processes and solutions and institutionalized knowledge management teams in their organizational structure. Knowledge management covers a wide range of topics which knowledge sharing is recognized as one of the major areas of focus on knowledge management. According to Snowden's theory (2000), there are different meanings for knowledge management. Knowledge management is a consequence of reengineering and is a component of other management initiatives (Bergeron, 2003). Knowledge management is the development of knowledge processing at the organization level (Fireston, 2003). Knowledge management is the effective and efficient sharing of knowledge between members of an organization (Habibi, 1998). Knowledge management provides the insights, approaches, and insights of appropriate investments in data and information in the best use cases that are most needed (Radding, 1998). Knowledge management is a systematic and calculated business optimization strategy which helps to categorize and transmit information and improve competitive advantage (Bergeron, 2003). Knowledge management is: identifying, optimizing and active managing of intellectual capital.

Most people and organizations use knowledge management for the following reasons: Enhancing

collaboration - Improving productivity - Encouraging and innovating - Overcoming much information and delivering just what is needed - Facilitating proper knowledge flow from suppliers to recipients without limitation of time and space - Facilitate knowledge sharing among employees - Capture and record employees' knowledge before they leave the company, ensure that valuable knowledge is not lost when the employee leaves- Increase organizational awareness of knowledge gaps and capabilities and improving customer service (Mirzaei, 2019). Hoffman and his colleagues believe that knowledge management is the process of creating and sharing knowledge in a way that can be applied effectively in an organization (Hoffman et al, 2005). On the other hand, Gupta and others, define knowledge management as the process that helps an organization find, select, distribute and transfer the information and expertise needed for activities such as problem solving, dynamic learning, strategic planning and decision making(Gupta, et al, 2000). Knowledge management, on the other hand, is a strategy to create, access and support a critical source of knowledge (Meyer). According to the American Center for Quality and Productivity (APQC), knowledge management is a strategy designed to provide the right knowledge to the right person at the right time (chin - Tsang, 2009). Weig (1997) defines knowledge management as: Knowledge management involves activities to gain general insight and benefit from areas that need management attention and identifying prominent alternatives suggests ways to deal with them and guide activities to achieve the desired results(chan, 2007). Knowledge sharing can encourage the exchange and creation of knowledge within the organization to improve competitive advantages. Therefore knowledge management is an important business activity. The major problem facing organizations is that many staff are reluctant to share their knowledge with other members of the organization (Zawawi, 2011). Educational centers are one of the most dynamic and complex institutions and knowledge sharing is an important issue for them. One of these new approaches is the Learning Management System (LMS) for sharing knowledge and experience. LMS is a software that records and tracks the learning activity of the learner and is responsible for knowledge transfer and sharing. In this regard, we examine the effects of this system on knowledge management and vice versa.

History

In the 1980s, we saw the widespread development of knowledge-based systems that led to the

development of disciplines such as knowledge engineering and knowledge-based systems management. Today, knowledge management encompasses a wide range of disciplines and technologies such as, cognitive sciences, expert systems, firmware, library science, document management, decision support systems, rational bases, organizational sciences. In the middle of the year, the importance of knowledge became known as the property of competition among organizations, while classical economics was still deficient in its methods and methods of management, and for some organizations this was still neglected. Computer technology has made information startups with a great deal of weight, which makes a considerable difference in the scope of the computer, making it a part of the solution for knowledge management. Finally, a prominent example of web design over a decade helped shape the direction of knowledge management. In the year 9, the development of knowledge management systems came into being, using the work of artificial intelligence and smart systems to bring new concepts to the world as knowledge engineering, knowledge acquisition, knowledge based systems. Recently, the word knowledge management has been embedded in the dictionary. In 2008, he began work to prepare technology management based on a technology consortium of organizations in the United States, to announce his pioneering goal of making knowledge management as capital in organizations. Advertising and excitement around the LMS in its early days has now diminished somewhat due to the enormous opportunities, influence, and justice that ICT has given to contemporary organizations. ICTs have companies that can anticipate the superiority and investment in initiatives already. The reality of LMS requirements for contemporary companies for knowledge economies is fundamental. Huang argued that demand for knowledge workers would increase due to recent advances in practice and innovative research. Huang stated that this emerging need for intellectual capital led to an increase in the concentration of "knowledge-based companies." Firms typically try to leverage and use knowledge to improve productivity, effectiveness, or strategic capabilities. Many projects have been shared to improve the productivity of workers' knowledge and to ensure that knowledge is available in organizations and is available to individuals and teams. The knowledge that is often of the highest importance for competition is a combination of weaknesses and explicit and substantive elements. In this research, the impact of LMS application on knowledge management through questionnaire is designed and evaluated. In principle, the knowledge management system is the most important component of virtual education that can be used to control the process of learning and virtual

education.

Management of Scientific Assets

Knowledge management is a process by effectively integrating and sharing valuable business information, managing knowledge and human resources to maximize effectiveness. As a result, to help improve innovation, competitiveness, and sustainable development, it also covers new management methods and philosophies. In other words, organizational knowledge management is a tool that improves the competitiveness of the organization through the process of identifying and acquiring knowledge and its effective use. This strategy underpins the fact that in organizations and industrial units over time, in the course of business, much information and knowledge is exchanged and even accumulated, and this accumulation of information points to the need for scientific asset management and knowledge management. Knowledge management, on the other hand, shares this data with employees in industrial units, not only enhancing employee productivity and effectiveness, but also reducing production costs and services by forming a chain of consistent organizations with accurate and uniform information. In addition, knowledge is a source of innovation; organizational innovation is enhanced through the accumulation of knowledge and its sharing and contributes to better and faster business development. This knowledge can be summarized and managed at several levels: human resource knowledge (scientific knowledge of employees), mechanized knowledge (knowledge of organizational equipment), documentary knowledge (archived knowledge in written form) and automated knowledge (knowledge that Supported by computer programs.) With this introduction and introduction, we address the need for knowledge management in the electricity industry, a dynamic industry in which our country is excelling, and the importance of data management and science is very evident. Although knowledge management is important in all organizations and units of industry, in the infant and mother industries it is increasingly necessary. Technical knowledge management is a fundamental and emphasized strategy in every industry, especially the mother industry. In addition to improving the efficiency of the organization, this organizational strategy can be effective in increasing productivity, reducing production and service costs, and enhancing quality and innovation.

Knowledge Management in Petrochemical Industry

The knowledge assets of an organization drive the economic goals of an organization, whereby the firm can deliver superior solutions, products, and services and thus grow. These assets are produced by Expertise in the minds of individuals. There are two general policies to be taken against this asset; first, releasing the knowledge capital and continuing to generate it in high turbulence. As we only know, in our organization and in the minds of our colleagues, a high amount of valuable knowledge is produced and naturally lost over time. Second, knowledge capital management and the design of mechanisms to guide it in a specific direction with the aim of increasing the efficiency of the organization in the light of our own managed knowledge. The activities of industry management and engineering scientists in the last two decades, such as Sievby, Pursak, Wiig, Nonaka, Davenport, and others, have attracted the attention of big industries to these latent assets. Increasingly intangible, to the point where more than 70 percent of Fortune Listing companies now have KM mechanisms. A set of mechanisms, including software, bylaws, structures, processes of culture, and so on in major corporations such as British Petroleum, Shell, West Texas, GM, Ford, Tata, Exxon and the like in the KM field since about 15 years ago. Is. The industry of our country is not excluded from the rule of production of intangible knowledge capital, considering the path of development. A large body of experts and experts are being produced every day in our country's industry, which unfortunately lacks the knowledge management structures, has a short life span and is rapidly lost without the necessary efficiency. Based on this need, Petrochemical Research and Technology Company has started processes in the field of KM about three and a half years ago, the first of which has appeared in some time. The model implemented in these processes has been derived from extensive field research in Iranian and indigenous organizations. Strategy states what direction the organization is going in the future, so the effort to link KM programs to business strategy is a vital source of competitiveness for all organizations. Tivana (2000) rightly states that “knowledge drives strategy and guides knowledge management strategy”. A study by the American Center for Productivity and Productivity (APQC, 1999) concludes that organizations pursuing different KM strategies are more successful when the KM strategy employed is in line with their business strategy. Given these signs, it is important for telecommunications organizations that want to implement KM to ensure that knowledge strategies and programs are aligned with the company's goals and objectives.

Method

Value engineering can help bring, organize, and refine a large body of knowledge to the organization. The information gathered and the outputs of the value engineering study can be good sources for knowledge storage. Using external and internal experts, providing the right conditions for creativity to flourish, motivating for effective use of experience, diversity in team expertise, combined technical and managerial discussions, and other factors, improve information and increase its reliability. Pre-workshop reports, expert opinions, debates on the subject of value engineering study, and technical and managerial analysis are suitable pre-workshop outputs that can be used in a variety of formats such as written reporting, video and audio files storage and in the future. In the workshop, information such as the study framework, the system performance analysis diagram (which itself is the output of many years of experience and precision in the subject of study), the list of ideas in the creative phase that can sometimes be carefully documented as future capital, can be useful outputs for review in Knowledge management system. Of course, briefly and usefully, the final study proposals are of primary importance. Then there is the list of recommendations (ideas that do not fit into the study but increase the value of other projects in the organization or the intrinsic value of the organization) that can be of most value to the organization. The final report of the study, as a written document, also includes an important part of the summary of opinions, ideas and information exchanged during the study. Overall, in organizations, the combined use of value engineering as a short-term and rapid approach and a problem-solving / value-added approach, as well as knowledge management as a human capital-based capital system, can provide synergies to increase efficiency, productivity, and efficiency. Value utilizes two different short-term and long-term approaches and ensures higher profit by spending less resources (as only one of the indicators of development and success) in the organization. E-learning is nowadays one of the most effective tools especially for adult education and organizational staff. We can confidently say that such training is one of the best ways to realize the slogan of education all the time and everywhere. E-learning is more commonly known as organizational training because all employees in the organization can access it. This type of training can also quickly fill the scientific and skill gap of staff. E-learning is a crucial step that helps organizations and businesses compete in the new economic environment and be pioneer in the reduction of

macroeconomic spending, increasing the percentage of return on capital, and providing education when needed. Trainers use this software to study and learn and improve their knowledge level and create innovation and increase competitiveness and it is even more effective in listening to and managing the process of knowledge management and transferring customer and employee criticism. That's why the organization has to listen to the criticism of employees and use them as suggestions for improvement, If workers and employees are silent for fear of losing their jobs, one cannot hope for improvement in the organization, then we must implement systems in the organization that convey the voice of customers and employees to managers. Otherwise, competitors act superior to the organization, resulting in the absolute collapse of the organization (Akhondi, 2015).

In this paper, we examined the effects of the LMS system on knowledge management and knowledge sharing using a questionnaire. In this study, a traditional library method was used to review literature and research records and a sample of 100 students using LMS was used to collect research data and they have a questionnaire. Like spectrum was used to design the questionnaire to enable qualitative factors to be quantified and to enable statistical tests and analysis. Then, considering the regression analysis, we examined the effects on knowledge management and considered its side effects. SPSS software was used for statistical analysis and interpretation of the data. We plot the following causal graphs for this task: One of the statistical process control tools is cause and effect diagrams. This graph cannot be considered a statistical method. This chart helps you determine what to do to achieve the goal and what are the relevant factors. Especially if we keep in mind that it is easier for the general public to think with a diagram than to rely on it, it can also be used as a tool for discussion, which can be used to solve problems. There are objective and real problems that can be used to illustrate how to control, accurately explain the facts, control the process, and find causes and effects. In this article, we illustrate the causal relationships of the LMS learning tool with knowledge management and knowledge sharing.

Analysis

The components of the questionnaire include:

Table 1. Components of questionnaire

Variable	Number of questions
Understand ease of use	9
Understand the usefulness of use	11
motivation and intention of use	6
Knowledge transfer	5

Data Analysis Methods

Quantitative statistical analysis methods were used to analyze the questionnaire data. Initially, each of the questions relates to the transfer of knowledge and criteria stated in research related to learning management tested and examined and then a regression analysis is used to measure the impact of each criterion on response variables. Also, Cronbach's alpha method was used to measure the reliability of the research questionnaire. The result of the test was 0.916 indicating high reliability of the questionnaire. It should be noted that SPSS software is used for statistical analysis and interpretation of research data. Following is a table (2) related to the results of knowledge transfer, which is one of the components of the questionnaire.

Table 2: Results Related to Knowledge Transfer

	Average of answers	statistics value of t test	Sig (p-value)	Test result
Training through electronic software improves the level of achievement of training goals	3.4545	3.288	.002	Accepted
E-learning software is a way for scientific exchange between individuals	3.7576	5.496	.000	Accepted
Automation and the website serve as a source of communication to support knowledge transfer	3.4242	3.244	.003	Accepted
Knowledge transfer is encouraged and the transferor is rewarded with the learner	3.0303	.177	.861	Rejected
E-learning software is capable of transmitting educational material	3.5758	3.665	.001	Accepted

In the test output is shown by the test statistic value and p-value from the point of view of

students who use e-learning software, education through e-software enhances the achievement of educational goals. This software is suitable for scientific exchange and it is capable of transmitting educational material but from the respondents' point of view the knowledge transferor is not encouraged and the transferor with the learner is not rewarded. Understand ease of use: After testing each of the options for understanding the ease of use of e-learning software, see below:

All options are statistically accepted significantly. It is easy to access and browse content using the software only. The sig value is greater than 0.05 and this option is statistically rejected significantly. So it is not easy for respondents to access and browse content using this software.

Table 3. Illustrates this subject

	Average of answers	t test	Sig (p-value)	Test result
Using e-learning software will make learning easier	3.9394	7.220	.000	Accepted
How to search educational information with this software is easy	3.5758	4.177	.000	Accepted
The software increases the accessibility of educational resources quickly	4.0303	6.986	.000	Accepted
Course management through this software makes it easy to learn	3.9697	6.575	.000	Accepted
using proper graphics with this software makes education easy	4.1515	7.934	.000	Accepted
Access and browse content using this app is easy	3.1212	.680	.501	Rejected
Learning through this software is a fun experience	3.6364	3.799	.001	Accepted
Learning software should be accessible to everyone	4.1212	7.213	.000	Accepted

Understanding the Usefulness of Use

In Table 4, we have outlined options for understanding the usefulness of using e-learning software. All items are statistically accepted. Other than the option that the organization applies

the best learning approach so that there is no need to re-do anything that is significantly rejected and this is not accepted by the respondents.

Table 4. Understanding the usefulness of use

	Average of answers	T test	Sig (p-value)	Test result
I recommend learning through Illustrated Educational Software to others	4.0606	8.649	.000	Accepted
Virtual learning software provides continuous and continuous scientific learning.	3.9394	6.847	.000	Accepted
Learning through this software enhances the quality of learning	3.5758	3.413	.002	Accepted
Using LMS increases the opportunity for professors to improve quality	3.9697	9.514	.000	Accepted
Using LMS along with theoretical training is effective in promoting e-learning culture.	3.7273	5.488	.000	Accepted
The organization as a community focuses on enhancing learning and innovation values.	3.3939	2.342	.026	Accepted
Electronic software helps me to learn better	3.8182	5.815	.000	Accepted
Training through this software gives you a better understanding of the existing system and increases your confidence	3.7576	5.793	.000	Accepted
Learning through this software makes me enjoy learning and feeling more satisfied than usual	3.6061	4.942	.000	Accepted
The organization has adopted the best way of learning so that no further work is needed	3.1818	1.063	.296	Rejected
Using this software will focus more on users	3.3939	2.871	.007	Accepted

Motivation and Intention of Use

In the output of test related to the motivation and intention of use the e-learning software as seen in Table 5, from the students' point of view, teaching and learning through this software increases

the desire to learn other courses and it significantly increases the motivation for the relevant study studies (Sig value less than 0.05). People are encouraged to work together and share information. However, in the view of the respondents, management e-learning software does not tend to use and try new teaching methods.

Table 5. Motivation and Intention of Use

	Average of answers	T test	Sig (p-value)	Test result
Teaching and learning through this software increases the desire to learn other lessons	3.6970	5.498	.000	Accepted
E-learning software enhances the motivation of relevant study studies	3.7273	4.770	.000	Accepted
People are encouraged to work together and share information	4.0303	9.297	.000	Accepted
The organization has a systematic process for creating, storing and sharing knowledge	3.8182	5.815	.000	Accepted
Management tends to use and test new teaching methods	3.2727	1.659	.107	Rejected
E-learning software enhances learning motivation.	3.6970	4.726	.000	Accepted

Regression analysis and introducing effective factors on intention and motivation of use as well as knowledge transfer: Regression analysis is one of the most widely used methods in managerial and social studies. Regression analysis allows the researcher to predict the dependent variable (response) through independent variables and determine the contribution of each independent variable to the dependent variable explanation (Kalantari, 2004). Beta (β) values should be used to understand the significance and role of independent variables in predicting the regression equation. Since the beta (β) values are standardized, then the relative importance of the variables can be judged. In fact, the large beta (β) values indicate the relative importance and its role in predicting the dependent variable. It is important to remember that "B" coefficients are used to predict changes. However, beta coefficients (β) are used to measure the effect of independent variables on the dependent variable (Mansouri Far, 2008: 143). The general form of this model is

as follows:

$$Y = a + B_1X_1 + B_2X_2 + \dots + B_nX_n + e \quad (1)$$

Where Y is the dependent variable in which the knowledge transfer and intention to use as dependent variables are introduced in this study and the impact of other variables on them has been measured. In this article, the "Stepwise Step" method is used. So that after importing variables of understand the usefulness of use and understand the ease of use In the model, its impact on intention and motivation of use is measured as well as the impact of variables related to knowledge learning and on knowledge transfer. In this method, the independent variables are weighted to determine the relative contribution of each to the estimation of the dependent variable. After standardizing these weights or coefficients we can compare the relative importance of the independent variables listed in Table (6).

Table 6. Compare the relative importance of the independent variables listed

Model	R Square
Impact on intention and motivation of education	.636
Impact on knowledge transfer	.677

In the above table, the correlation coefficients between the dependent variable that is the intention and motivation of using E-learning software with the variable shows the usefulness of the use. It can be seen that the R Square indicates that about 636% of the motivation changes can be justified by changing the usefulness variable.

Table 7. the output of regression analysis in step wise method for variable of intention and motivation of use

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	Width of origin	.160	.485		.329	.744
	Understand the usefulness of use	.965	.131	.798	7.366	.000

The results of high regression analysis indicate that understanding the usefulness of using a learning management system influences the motivation and intention of educational organizations and students to use this system. Also understand the usefulness and ease of use on knowledge transfer (Table 8) is effective in the organization.

Table 8. Coefficients

Model	Not standardized coefficients		Standardized coefficients	t	Sig
	B	Error of model	B		
Constant	-0.235	0.553	0.770	-.426	0.673
Understand the usefulness of use	1.002	0.149		6.710	0.000
Constant	-0.655	0.522		-1.253	0.220
Understand the usefulness of use	0.577	0.203	0.443	2.840	0.008
Understand ease of use	0.519	0.185	0.437	2.803	0.009

a. Dependent variable: Knowledge transfer

Conclusion

The purpose of this study was to investigate and evaluate the impact of applying a learning management system on knowledge management and vice versa. Knowledge sharing is enabled as a continuous process is capable of applying knowledge affect the organization. To this end, the effects of the learning management system on knowledge sharing and then on knowledge management were investigated. After reviewing the literature on the subject and expressing the functions of knowledge management and knowledge sharing in related fields, Indicators for assessing the impact of learning management system on knowledge sharing and knowledge management determination and related questions in the form of a questionnaire and to give examples of statistical society to answer. The results indicate that understanding the ease and usefulness of using a learning management system affects the motivation and intention of employees to use this system. Understanding the ease of use of this system also affects the usefulness of the system. Finally, the learning management system is effective on knowledge transfer in the organization.

Recommendation

In order to implement the knowledge management system as an appropriate and successful approach for recording the experiences of individuals before leaving, it is recommended to:

- Developing a Knowledge Management Excellence Roadmap;
- Creating and enhancing the cultural context within the organization to share knowledge among staff;
- Strengthening ICT infrastructures and subsystems, without which the knowledge management system will fail;
- Reengineering existing information and structural systems;
- Implementation of News Forum Processes (to answer and solve different company problems);
- The need to establish and improve information and communication processes and systems to facilitate and expedite information;
- Establishment and utilization of the Open Knowledge Recording Center and implementation of mechanisms for applying the hidden knowledge of experienced personnel through

holding meetings, workshops, etc.

- Modeling and applying the experiences of successful companies in the field of implementing knowledge management in organizations and enhancing the collaboration and sharing of knowledge and technology with similar successful companies;
- Experience recording (answering the question of the most important project challenges and how to respond to them - best practices and appreciation of the best);
- Executive Approach to Managing Recorded Lessons by Unit;
- Financial support for knowledge behavior;
- Spiritual support for knowledge behavior (being introduced and appreciated);
- Develop project experience booklet (author of experience, title of experience, challenge and solution);
- Incorporate learning space for company receipts to record day-to-day lessons;
- Developing the decision making model of managers (from individual to collective and collective);
- Modeling Domestic Top Companies.

Reference

- [1] A. Akhondi, M. Mirzaei, *GMP Rev*, 18, 50 (2015).
- [2] KH. Kalantari, *Sharif Public*, 1, 169 (2003).
- [3] D. Snowden, *Liber knowl*, 1, 6 (2000).
- [4] S. Kumer, M. Ebrahimikia, M. Yari, *Int. J. New. Chem.*, 7, 74 (2020).
- [5] M. Dejene; K. Kedir; S. mekonen; A. Gure, *Int. J. New. Chem.*, 7, 14 (2020).
- [6] T. Bedassa; M. Desalegne, *Int. J. New. Chem.*, 7, 47 (2020).
- [7] A. Mohasseb, *Int. J. New. Chem.*, 6, 215 (2019).
- [8] E. Chan, E Yolande, D. Nevo, *Inform & manag*, 44, 597 (2007).
- [9] A. Habib, *Arg Publ*, 1, 30 (2008).

- [10] A. Zawawi, *Manag Sci Engin*, 5, 59 (2011).
- [11] K.M. Wiig, *Integ intellec cap knowl manag*, 30, 399 (1997).
- [12] E Reading, *Khome Public*, 6, 75 (1998).
- [13] M. M. Samimi, M. Azarbash; A. Samimi, P. Navidkia, *Concep impl of knowl manag in educ organiz*, 1, 79 (2017).
- [14] B. Gupta, L. Lyer, *Indust manag & pata sys*.100, 17 (2000).
- [15] H. Hoffman, M.L. Sheriff-k. *Jour of Knowl Manag*, 9, 93 (2005).
- [16] T. Huang Ting-Pang, *the Inter J of Hum Res Manag*, 22, 924 (2011).
- [17] M. Bertolt, K. Sugiyama, *J. Knowl Manag*. 2, 17 (2007).
- [18] M. Mirzaei, M. Seifi, E. Saifi, *knowl manag*, 1, 65 (2019).
- [19] A. Samimi, M. Azarbash, M. M. Samimi. *Rev the impl of KM with resp to its fun mod*, 3, 49 (2017).
- [20] Gu. Selvam, M.S. Murugesan, S. Uthaikumar, *Int. J. New. Chem.*, 6, 66 (2019).
- [21] M. Noormohammadi; M. Barmala, *Int. J. New. Chem.*, 6, 289 (2019).

How to Cite This Article

Maryam Mirzaei, “Effects of Learning Management System (LMS) and Knowledge Management (KM)” *International Journal of New Chemistry*, 2021, 8(2), 181-197; DOI: 10.22034/ijnc.2020.121481.1095.