

# Knowledge Management in Public University: Empirical Relationships Between Learning Organization and Knowledge Management Process of Tacit Knowledge

**Kalsom Salleh**

*Faculty of Accountancy and Research Management Institute, Universiti Teknologi MARA, Kalsom816@yahoo.com*

## ABSTRACT

Universities have long been recognised as avenues for teaching and learning, research and discovery, as well as providers of services to the society through the application of knowledge. To strive for academic excellence, it is imperative for public universities to become a learning organization (LO). This can be done by integrating the conceptual relationship between learning organization and knowledge management process (KMP) to enhance the academic excellence of the public universities. Hence, this paper attempts to develop an empirical research model which examines the relationship between learning organisation and knowledge management process of tacit knowledge in a public university in Malaysia. The objective of this research project is to empirically investigate the conceptual relationship between the seven dimensions of the LO and the transfer process of tacit knowledge through knowledge management (KM) concept. A survey questionnaire was employed as the main instrument to collect data from the academicians in this university. The empirical findings of this study provide an initial step forward in identifying the significant conceptual relationship between the relevant dimensions of a learning organisation and the effective knowledge management process of tacit knowledge which can drive the future value for academic excellence of a public university.

**Keywords:** Learning Organisation, Knowledge Management Process, Tacit Knowledge, A Public University

## I. INTRODUCTION

In order to become a research university and a world class university, many public and private universities in Malaysia have invested enormously in intangibles such as human capital and research and development

which can create and increase their intellectual assets.

To strive for academic excellence, it is imperative for a public or private university in Malaysia to become a learning organization (LO). This can be accomplished by adopting the knowledge management process (KMP) for knowledge transfer of tacit knowledge to drive its future value of academic excellence of the university.

Therefore, the purpose of this replication study from Watkins and Marsick (1993; 1996) and Hernandez (2000;2003) is to develop an empirical research model which can identify the ways in which the seven dimensions of the LO can have impact on the transfer process of tacit knowledge of the selected public university in Malaysia. This selected case study of a public university in Malaysia is the new centre of academic and research excellence and expected to become a world class university by 2020. It needs to undergo the transformation process into a LO by adopting the KMP of tacit knowledge for its future value driven of academic excellence.

Hence, the objective of this research paper which adapts the studies of Watkins and Marsick (1993:1996) and Hernandez (2000) is to empirically investigate the conceptual relationship between the seven dimensions of the LO and the transfer process of tacit knowledge through knowledge management (KM) concept to drive the future academic excellence of the selected public university in Malaysia.

The motivation of this study and its expected contribution is to develop an integrated conceptual model of LO and KM in the context of a public university in Malaysia which can be used as replication studies in the future for other different public and private universities in Malaysia and in other countries.

## II. LITERATURE REVIEW

Literature review for this research paper reports only the working definitions and specific information pertaining to the subject matter of the study.

LO is defined by Watkins,1996 (p.32) as one in which learning and work are integrated in an ongoing and systematic fashion to support continuous improvement at the individual, group and organizational levels. In other words, learning takes place in the individuals, teams and organization and even the communities with which the organization interacts. LO is said to be about increasing an organization's problem solving capability and about changing behaviour in ways leading to improved performance at the individual, team and organizational level (Buckler, 1998).

According to Watkins & Marsick (1993;1996), characteristics of an LO are the seven complementary action imperatives which are important in LO:

- 1) create continuous learning opportunities,
- 2) promote inquiry and dialogue,
- 3) encourage collaboration and team learning,
- 4) establish systems to capture and share learning,
- 5) empower people toward a collective vision,
- 6) connect the organization to its environment and
- 7) provide strategic leadership for learning

KM is defined as the process of capturing the collective expertise and intelligence in a LO and using them to foster innovation through continued organizational learning (Nonaka & Takeuchi, 1995; 1995; Quinn *et al.*, 1996; Davenport *et al.*, 1998, Meso & Smith, 2000). The ultimate goal of KM is to convert tacit knowledge (personal ideas and experiences) from individual knowledge to explicit organizational knowledge (documents, products and procedures) and utilized shared knowledge across organization effectively (Nonaka & Takeuchi,1995;Quinn *et al.*,1996; Davenport *et al.*,1998, Bennet & Bennet, 2003; Gupta *et al.*, 2000). Tacit knowledge transfer is the process by which tacit knowledge is moved and shared throughout organization through individuals and groups across various functions by personal, mechanical and electronic means (Hernandez, 2000; 2003).

The following are some previous empirical studies which have adopted Watkins and Marsicks' seven dimensions of LO to determine the conceptual relationship between LO and KMP to enhance the knowledge performance of business and non-business organizations and also the higher learning institutions.

For non-profit service organisations, McHargue (2003) examined the relationship between LO dimensions , company characteristics and financial, knowledge & mission performance. He has found out that all seven (7) dimensions were significantly correlated with knowledge performance. The embedded systems of LO components established the strongest relationship with knowledge performance.

Hernandez (2003) had identified the ways in which LO dimensions can impact the process of tacit knowledge transfer and the knowledge performance and finance performance within the private manufacturing organizations in Colombia, His study discovered that the positive structural relationship between the seven LO dimensions and the transfer process of tacit knowledge consecutively showed a positive influence on knowledge performance.

However, Kumar & Idris (2006) explored the relationship between LO dimensions, institutional characteristics and knowledge performance among private Higher Learning Institutions in Malaysia. Three dimensions of LO i.e. team learning, embedded systems and leadership showed the strong relationship for the knowledge performance

## III. RESEARCH METHODOLOGY

In this study, a survey questionnaire was used as the main instrument to collect data from all academicians employed by the selected public university in 2011. Questionnaires were posted to a total of 900 academicians from 26 faculties which are grouped for the three (3) clusters of programmes i.e. 1) science & technology, 2) business & management and 3) social sciences & humanities. Only 99 questionnaires were received and usable for analysis purposes.

A survey questionnaire was designed for this empirical investigation on the conceptual relationship between learning organization and KM in this

selected public university of Malaysia. In this study, the multiple question items in the questionnaire were adapted from literature review and past studies on the seven dimensions of LO and the transfer process of tacit knowledge via KM concept for the selected public university. Besides demographic data, two (2) main questions were developed in the questionnaire. The first question concerns the perception of respondents on the seven complementary action imperatives in the LO. The second question is regarding the perception on the level of the tacit knowledge (expertise, ideas, experiences, etc.) being shared/disseminated and documented for information accessibility and usability. A seven-point scale from '1' to '7' was used for all these two questions for respondents to indicate the level of importance of the multiple question items of the identified research variables. The Likert - point scale is used ranges from "1" is for almost never, "2" is for seldom, "3" is for occasionally, "4" is for not sure, "5" is for frequently, "6" is for usually and "7" is for "almost always".

LO dimensions and KMP variables of tacit knowledge were also incorporated into the two main questions of the questionnaire. These items were adapted from those developed by Watkins and Marsick (1993; 1996) and Hernandez (2000). A final list comprising 42 LO dimensions and 12 KM items on the transfer process of tacit knowledge were deemed relevant and valid to the future value of the selected university's academic excellence.

Statistical Package for Social Sciences (SPSS) version 20 was employed to analyse the data collected.

#### IV. DATA ANALYSIS AND RESULTS

The Cronbach's Alpha is computed to verify the reliability of the data collected and the study variables of this empirical research. According to Sekaran (2000), the closer the Cronbach's Alpha to 1, the higher the internal consistency reliability. The Cronbach's Alpha coefficient for each research variable of this study is presented in Table 1.

Table 1: Coefficient of Cronbach's Alpha

Variables	Number of Items	Cronbach's Alpha Coefficients
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Learning Organization Dimensions	42	0.974
1. Create continuous learning	5	0.767
2. Promote inquiry and dialogue	7	0.899
3. Team learning	6	0.907
4. Embedded Systems	6	0.886
5. Empowerment	6	0.900
6. System connection	6	0.922
7. Leadership	6	0.943
KM Process of Tacit Knowledge	12	0.943

The demographic questions for this study consist of the gender of the respondents, the levels of academic qualification and the cluster/type of faculties in the university. As for the gender of the respondents, about 56% of the respondents are females. Only 44% of the respondents are males.

Table 2 reveals the academic qualification of the respondents. The majority (53.53%) of the respondents holds a Masters degree and 34.34% have a Doctoral degree. Most of the respondents (88%) are highly educated and thus, their responses are useful and relevant to the study.

Table 2: Academic Qualification of Respondents

Current Position	Number	Percentage (%)
Doctorate Degree (PhD)	34	34.34
Masters Degree	53	53.53
Professional Degree	5	5.05
Degree	3	3.03
Not Stated	4	4.04
Total	99	100

In terms of working experience, most of the respondents (66%) have worked in the university for 20 years or less. Only 15% have worked between 21 to 25 years and 14% have worked between 26-30 years. However, 5% did not state their working experience.

The majority (56%) of the respondents are from science and technology faculties while the remaining respondents (21%) are attached to the business and management faculties and 21% are from the social sciences and humanities cluster.

The main objective of this paper is to investigate the effect of seven dimensions of the LO on the transfer

process of tacit knowledge which are deemed important in influencing and improving the academic excellence from the conceptual relationship perspective of LO and KM in this selected public university in Malaysia.

The following statistical analysis such as factor analysis and standard multiple regression analysis are used to extract the valid factors and to investigate the relationships between LO components (independent variables) and KMP of tacit knowledge (dependent variables).

Table 3 shows the summary of factor analysis results, with factor loadings and Cronbach's alpha scores to justify that the variables and measures in this study were reliable for multiple regression analysis for hypotheses testing.

**Table 3: Summary of Factor Analysis Results, Factors and Cronbach's Alpha Scores**

Factors	Items	Factor Loadings	Eigen value (%)	Cronbach Alpha
<b>LO Dimensions</b>	KMO = 0.899, Sig. = 0.000, Eigenvalue = 71.6%			
Leadership	8	0.612 – 0.792	49.28	0.951
Team Learning	7	0.593 – 0.764	5.233	0.915
Empowerment and System Connection	8	0.521 – 0.737	4.462	0.934
Promote Inquiry and Dialogue	6	0.509 – 0.707	3.727	0.881
Embedded System	4	0.512 – 0.668	3.123	0.862
Create Continous Study	3	0.661 – 0.730	3.105	0.744
<b>KM Process</b>	KMO = 0.917 Sig. = 0.000, Eigenvalue= 72.7%			
Tranfer of Tacit Knowledge	12	0.870 – 0.710	72.7	0.944

Standard Multiple Regression Analyses was used for finding the relationship model between LO components and the KMP of tacit knowledge. This statistcial technique also helps to identify the significant LO components that could contribute to the KMP of tacit knowledge of the selected public university. Table 4 shows the summary of regression results for this empirical research model on the relationship study between LO Components and KMP of tacit knowledge of the selected public university.

**Table 4: Summary of Regression Result: Relationship Model of LO & KMP of Tacit Knowledge**

MODEL	LO Components and KMP of Tacit Knowledge
Standard Multiple Regression Result	<b>R<sup>2</sup> = 0.726</b> F = 40.599 Sig. = 0.000***
<b>LO Components</b>	<b>B = Beta Coefficients</b> <b>P = P-Value</b>
Leadership	B = 0.311 <b>p = 0.004***</b>
Team Learning	B = - 0.125 p = 0.192
Empowerment and System Connection	B = 0.191 <b>p = 0.093*</b>
Promote Inquiry and Dialogue	B = 0.140 p = 0.112
Embedded System	B = 0.387 <b>p = 0.000***</b>
Create Continous Study	B = 0.040 p = 0.590

**Note: Supported Hypotheses in boldface type:\*\*\*p<0.01, \*\*p<0.05, \* p< 0.1**

## V. DISCUSSION AND IMPLICATIONS

The regression model in Table 4 shows the value of R-Square is 0.726. This indicates that the regression model for LO components explains 72.60% of variances in the KMP of tacit knowledge. Two (2) LO components i.e. leadership and embedded system have emerged as highly significant components and one (1) LO component i.e. empowerment and system connection as moderately significant component in explaining the effective transfer process of tacit knowledge in this selected public university. This regression result implies that leadership roles in promoting new learning opportunities, coaching programmes and empowerment together with the embedded system of needed information and the shared tacit knowledge are of great importance in dealing with the conceptual relationship of LO and KM in the public university.

In comparison with research findings of LO dimensions and knowledge performance in private higher learning institutions in Malaysia (Kumar & Idris,2006) and the findings of this study, it showed that the leadership and embedded systems are the most significant LO dimensions for KM

implementation strategies in the public and private universities in Malaysia.

## VI. CONCLUSION

The following items of KMP of tacit knowledge in a public university are equally importance in this integrated model such as knowledge sharing when developing new ideas, dissemination of new ideas/methods for solving complex problem, cross-functional teams, database technology and recognition given to the value of new ideas.

Leadership, embedded system and also empowerment with system connection are among the significant LO components that are regarded as paramount importance to the integration concept of LO and the KMP of tacit knowledge for the future value of academic excellence of this selected public university in Malaysia.

This finding appears to be consistent with the integration study of LO dimensions and KM process of tacit knowledge carried out by Hernandez (2003). Hernandez (2003) had discovered that the structural relationship between the seven LO dimensions and the transfer process of tacit knowledge showed a positive influence on knowledge performance of the manufacturing organizations.

As this study is preliminary in nature and based on respondents' perceptions obtained from the survey questionnaires, interviews are to be conducted by the authors in the final phase of this research project to examine further the significant relationships of LO dimensions and KM process of tacit knowledge for the organizational performance of a public university. A more in-depth study is necessary as Connelly et al. (2011) state that employees hide their knowledge or are unwilling to share their knowledge even when organizational practices are designed to facilitate the knowledge sharing culture. In addition, future studies should increase the number of respondents and cover other public universities too. Comparative studies between public and private universities as learning organizations can also be conducted in the future.

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