

Investigation of Knowledge Management Practices among academicians at Bahagian Teknologi Pendidikan Negeri (BTPN) Selangor and MARA Higher Education Institute: A Comparative Study

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Abstract

The aim of this study was to investigate the knowledge management practices among academicians that focus on higher education and school organization. This paper focused on MARA organizations and Bahagian Teknologi Pendidikan Negeri (BTPN) Selangor. The study looked at the activities and programs conducted in both organizations in implementing knowledge management in their respective organizations. The study methodology using qualitative that was conducted by interviewing academicians consisting of lecturers, teachers and those who have more than 10 year experiences in the academic field as well as observation and documents review. The results showed that the practice of knowledge management, knowledge management tools and techniques and the sharing of knowledge that run between the two organizations through the comparison that has been made.

Keywords: Knowledge, Knowledge Management Practices, Organization Learning, Knowledge Management Process

1.0 Introduction

The world now has shifted from depending on the physical and material resources to the world of information and knowledge. In any organization, dependence on knowledge is very important because it is regarded as the intellectual capital of the organization. Knowledge is the perception drawn from the experiences, thoughts, direct perception and learning. Knowledge management involves site-valuable knowledge and then stored, categorized and organized knowledge in order to be a reference to others. Organizations placing reliance on their employees as owners and practitioners of knowledge that can be exploited and manipulated through processing process in order to achieve organizational goals that have

been set. Conceptually, knowledge management can be linked to all efforts to develop knowledge as an important element in the process of integration of man (the owner and practitioner knowledge), processes related care and information and communication technology (ICT). Among the factors that are critical to the success of KM in the organization is the existence of a culture of knowledge and KM-enabling the organization. KM-friendly national culture will also be better. The work of the present project focuses on the culture and investigate the characteristics of what constitutes a KM culture. Organizational culture is created from the basic assumptions and beliefs that are shared by members of the organization. It was found to operate unconsciously and it defines the organization views itself and its environment. It involves values, principles, unwritten rules, norms, and procedures used in the organization.

1.1 Background of study

Majlis Amanah Rakyat (MARA)

Majlis Amanah Rakyat (MARA) is one of the organizations that contribute to meet the manpower in technical fields in Malaysia. MARA which is under the Ministry of Rural and Regional Development to meet the needs of the workforce through skills and Technical Division (BKT). BKT is one of the areas that were placed under the MARA Education Sector. BKT operates 10 stores Kolej Kemahiran Tinggi MARA (KKTM) and 13 Institut Kemahiran MARA (IKM) throughout Malaysia. Academic path starting from Maktab Rendah Sains MARA (MRSM) right up to pre-university level in MARA College, Semi-professional Professional College and Kolej Poly-Tech. TVET education path starting from certificate level in GIATMARA and Institut Kemahiran MARA (IKM). Next to Diploma up to the rank of Doctor of Philosophy (PhD) was started in Kolej Kemahiran Tinggi MARA (KKTM), German-Malaysian Institute (GMI) and Universiti Kuala Lumpur (UniKL) that in principle, these institutions are the backbone of education MARA. In this study, Kolej Kemahiran Tinggi MARA (KKTM) Kemaman, Institut Kemahiran MARRA (IKM) Bintulu selected as the organization of higher education in the MARA as a case study.

Bahagian Teknologi Pendidikan Negeri Selangor or Education Technology Division Selangor (BTPN Sel)

Bahagian Teknologi Pendidikan or Education Technology Division Selangor (BTPN Selangor) is a center of the teacher for the State in providing advisory services related Frog VLE, PPS and Schools Smart. Cells Bank under the auspices of the Ministry of Education.

Educational Technology Division (BTP), formerly known as the Distribution Services Division of Education until 1988, when its functions expanded to include services and resource center in accordance with the position and role as a body that coordinates all programs and activities related to educational technology. Starting with just four main functions, namely audio-visual services (in the 50s), radio broadcasting services to schools (the '60s), Education TV broadcast services to schools and educational resources. In 2002, BTP has grown into 11 sectors and eight (8) core when the use of educational technology focuses on the implementation of ICT in teaching and learning and school management. Capacity building and improvement of management quality instructional technology culture through education becomes an important mission of BTP.

Its role now is not only coordinate but encourages the integration of various media and technology education planned to strengthen the teaching and learning process in line with the motto "Technology for Smart Education". Services available at the BTPN Selangor is recorded copies, borrowing books and workshops related to the smart school like Frog VLR, media foundation courses 35 hours (for the teacher resource centers).

1.2 Problem statement

Learning organization is a system that interdependent and interact within the components that are contained therein for the purpose of learning. The learning process that is integrated into the daily work seeks to produce changes to knowledge, trust and behavior. Furthermore, the learning will strive to improve the organizational capability to move forward and competitiveness.

According to Muhammad et al., (2011), an excellent achievement in an educational organization requires the support of a process that is known by them to achieve success. KM focuses on the process and the impact on academic achievement in the field of higher education has been emphasized by many empirical studies. It is clear what the problem is one that is recognized on the process of managing knowledge in educational institutions effectively. Efforts to identify the practice of knowledge in the education sector will respond to the success of an educational organization that manages its internal knowledge. The purpose of the study is to advocate in determining the extent of knowledge management practices carried out in the two educational organizations surveyed.

The main objectives of this study are:

1. To investigate on the existence of the KM practices involving the academic staff in academic institution which include knowledge acquisition, utilization and distribution;
2. To compare the existence of KM tools and techniques, and KM sharing practices between BTPN Selangor and MARA focusing on IKM Bintulu and KKTM Kemaman processes for the group of academician.

2.0 Literature Review

2.1 Knowledge and knowledge management

Knowledge generally is a familiarity, awareness, or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquire through experience or education by perceiving, discovering, or learning.

However, within the scope of knowledge management, a variety of perceptions and ideas of the researcher explains the meaning of knowledge. According to Ryle in his study explaining knowledge in a few category. First, referring to a knowledge gained through understanding the concepts and framework referred to as the 'know how'. Peter Senge describes knowledge as a capacity for action, which refers to the understanding of the facts and procedures required to perform or execute something. Secondly, the codification of knowledge also refers to factual knowledge based on prior experience that is also referred to as tacit knowledge is 'knowing that'. Third, knowledge codification refers to the 'factual knowledge is required knowledge', and this knowledge can be tacit or explicit. Fourth, knowledge also refers to the 'social knowledge of networks' that indicating the peoples known. Generally, knowledge refers to 'knowing who' as well as cultural knowledge facilitating the meaning, which in common parlance referred to as 'knowledge of meaning'.

Authors and researchers in their article and study have emphasized the importance of knowledge that give high impact to the organization. For example, Peter Drucker in his study has revealed knowledge as a vital resource to the organization just another resource like labor and capital. Toffler while also confirming knowledge as the highest quality power. Meanwhile, the researcher who introduced the SECI Model in creating a knowledge transfer through the process of tacit and explicit knowledge Nonaka and Takeuchi focus on how Japanese organizations leverage knowledge assets to achieve competitive advantage and industry leadership.

The paradox of knowledge management is that we are trying to manage what cannot be managed. The nature of knowledge and the diversity of knowledge classification must be understood before it is managed. Davenport defines knowledge as experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information.

In the organization, knowledge does not necessarily reside in documents or repositories but also in organizational routines, processes, practices and norms of work. Thomas Davenport et al describes a comprehensive definition of knowledge management and organizational implications. Knowledge management is about the exploitation and development of knowledge assets within an organization that aims to achieve the objectives of the organization. Knowledge managed include explicit knowledge, tacit knowledge and documented; and subjective knowledge. Knowledge management is concerned with identifying, sharing and creation of knowledge in the operation and organization norm of work. Knowledge management also need the support of technology as an enabler to the implementation of the creation and maintenance of knowledge repositories and for cultivating and facilitating knowledge sharing and learning organization. Successful organizations in the implementation of knowledge management sees knowledge as an asset in turn develop norm and value of the organizations that support the creation and sharing of knowledge.

2.2 Roots of knowledge management

Knowledge management implementation in an organization is based on the goals, objectives and strategic planning. Therefore, knowledge management should be in line with the requirements of the organization so that the implementation of knowledge management affects the value and achievements of the organization. The tracing of the roots helps to understand the perspective of which knowledge management has or can have implementing in the organizations.

The illustration below explains the roots of knowledge management that is organization's business process and function based:

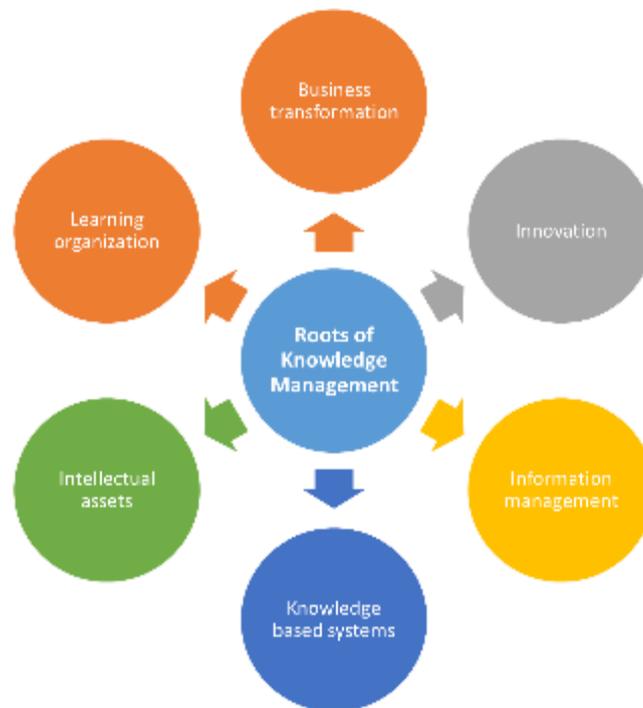


Figure 1: Roots of Knowledge Management

Based on the following illustration, below is a description of each of the roots of knowledge management:

i) Business transformation

Organizations respond to various changes in the market through a transformation process such as the restructuring of business processes. This is because the business transformation act as a catalyst for knowledge management.

ii) Innovation

One of the method of knowledge creation in organizations is through creativity and innovation. Innovation in the organization can increase increment changes to existing products or processes, while the radical changes that are different from the original process and product changes. Radical changes will give a new dimension to the existing knowledge base and incremental changes affect the change in perception and a line of thought that leads to knowledge and new insights.

iii) Information management

Information is the core of knowledge management. The information combined with experience will create new knowledge. Therefore, proper management information system can generate an effective knowledge management system in the organization.

iv) Knowledge based systems

Technology is an enabler for the implementation of knowledge management. Through the system that developed in the organization will facilitate and accelerate the implementation of knowledge management in the organization so that knowledge can be leverage by the organization as a whole. Therefore, these systems will underlie effective knowledge management.

v) Intellectual asset

Intellectual assets are located in each of experts and skilled workers in the organization through the process of working experience and tacit in nature in a relatively long period. This knowledge should be documented clearly and managed so that this knowledge can be leverage by organizations to achieve competitive advantage.

vi) Learning organization

If an organization in accordance with the norms that qualify as a learning organization, then it becomes a starting point to the nature of knowledge management as a learning organization with a knowledge management practices indirectly.

2.3 Knowledge management and Learning organization

The nature of knowledge management (KM) and organization learning (OL) have in common makes it difficult to distinguish the concept. This statement was supported by Farr (2000) stated organizational learning and knowledge management overlap with each other and gain maximum yield when used together.

Duncan and Weiss (1978) defined learning as a process in which knowledge constitute both input and output. Senge (1992) defines LO as an organization that continuously improve their ability to make decisions in accordance with the achievement of the organization, where the way of thinking expansive new and nurtured, collective aspirations is set free, and where people in the organization continually learn to learn together.

Meanwhile, definition for KM as explained by Birkinshaw (2002) is a set of techniques and practices that facilitate the flow of knowledge into and within the firm. In the organization, the creation of knowledge is dependent on the organization's understanding of how organizations learn. Taking into consideration the views of the researcher on the OL, OL can be summed up as a trigger to KM. OL is about managing the learning process in the organization, while KM is concentrating on the development and use of knowledge to benefit the organization.

It has established the fact that the ability of an organization is dependent on the ability to learn and gain new knowledge of the organizational environment. Thus, it seeks to change the existing knowledge in the larger environment to live within the core knowledge in the organization. According to Firestone and McElroy (2004) stated, organizations create knowledge through knowledge life cycle. Through the cycle or the knowledge management process, determine the organization generate knowledge and adapt to the current environment.

2.4 Knowledge Management Process

Knowledge is an asset to the organization that developed over time through actions by individuals that are absorbed into the organization. Therefore, organizations need to identify two types of knowledge that is tacit and explicit knowledge and develop a process for managing the assets of the organization otherwise known as KM process.

In the table below is the organizational model is the surrounding characteristics and KM process. The phases of KM process described by Magnier-Watanable and Senoo. According to them, the organizational characteristics include the structure (vertical and horizontal), the form of affiliation (individual and collective), the relationship type (systematic and ad hoc), and strategy (reactive and innovative). Meanwhile, KM process consists of the following

stages which is acquisition (focused and opportunistic), storage (private and public), diffusion (prescriptive and adaptive), and application (exploitation and exploration) of tacit and explicit knowledge in order to support the innovative organizational process.

Organizational Characteristics							
Structure		Affiliation		Relationship		Strategy	
Vertical	Horizontal	Individual	Collective	Systematic	Ad hoc	Reactive	Innovative
Focused	Opportunist	Private	Public	Prescriptive	Adaptive	Exploitative	Explorative
Acquisition		Storage		Distribution		Use	

Figure 2: Knowledge Management Model

Each of the characteristics of the organization affects directly to one of the four phases of the KM process. The success of KM implementation is dependent on the ability of the organization to promote knowledge continuously from receipt of knowledge in the original subject to storage as memory organization, namely through the process of acquisition, storage, distribution, and use of the knowledge. Here is a description of the four steps outlined in the KM process.

i) Knowledge acquisition

According to Gold et al (2001) and Huber (1991), the acquisition related to the intra-organizational process in facilitating the creation of tacit and explicit knowledge which is begin with individuals and integrating the organizational level as well as the identification and absorption of information and external knowledge source. Another literature mentioned that acquisition is the creation of knowledge within the organization through the process of learning and the acquisition of external knowledge and experience derived from the actions of the organization's operations and norm of work. Acquisition is the creation of knowledge within the organization through the process of learning and the acquisition of external knowledge and experience derived from the actions of the organization's operations and norm of work.

Accumulation of experience through regular organization has developed tacit knowledge. The process of accumulation experience called as cumulative enables organizations to develop innovation and enhance organization performance and technology advanced (Anand et al, 2010 & Teece, 2007). The creation of knowledge also occurs when the process of identifying solution on issues. Nonaka & Takeuchi (1995) point out the creation of knowledge developed through interaction between individuals whether physical or virtual interaction within the organization that stimulates the creation of knowledge. Thus, four major issues in the knowledge acquisition process is organizational learning, absorption of knowledge, creative process and transformation of knowledge.

ii) Knowledge storage

Knowledge storage step refers to the process of formation of organizational memory, which is the official knowledge stored in the system physical memory and knowledge informally

retained as the values, rules and beliefs related to culture and organizational structure. In this process, organizations need to develop a repository of knowledge (Grant, 1996) to support the creation and development of knowledge through the provision of physical location and social context.

Lin (2007) explains that knowledge is the storage process involves organizing, structuring, data storage and lastly combine knowledge to facilitate future use. Therefore, the information technology (IT) act as enablers of KM process running three applications that are encoding and knowledge sharing, creation of corporate knowledge directories and the creation of a network of knowledge.

iii) Knowledge distribution

Knowledge distribution refers to the information and knowledge from different sources can be shared and ultimately drive the creation of new knowledge, understanding and information (Huber, 1991). However, according to Lee & Yang (2000), sharing process prosecute organizations to create an environment of sharing that are most effective way to disseminate best practices and knowledge through a systematic transfer approach.

There are four methods to transfer knowledge as suggested by Levine & Prietula (2012) as follows:

- a) Self-learning – knowledge acquired through manual reports of the organization that containing relevant information.
- b) Interaction and social life – Occur by doing interactions between individuals as well as social life perspective.
- c) Performative relations – Specific knowledge exchange in a group that is coming from communities of practice (CoP) that are dominating specific knowledge.
- d) Exchanges with others organization – Acquire knowledge transfer and partnerships with outside organizations.

iv) Knowledge use

Knowledge use refers to the ability of individuals within an organization to locate, access and use information and knowledge stored in the organizations memory system formally or informally (Zack, 1999).

Knowledge must be use as the basis for development through integration of new knowledge, innovation, creation and decision-making. The use of knowledge is categorized into three approaches emphasize the form of use of knowledge either exploration or exploitation, dynamic capacity of the organization to rebuild skills in a learning process and lastly knowledge retrieval and transformation of knowledge in the organization.

3.0 Methodology

This case study using qualitative approach. According to Creswell (2012), the study provides an opportunity to reassess practices and answer questions. In the real world, many things are not explained power buffer with reference to numerical data as in the quantitative assessment. There are special cases that require careful observation depth. A qualitative

approach selected for this study involves the quality of something that focuses on the internal aspects that cannot be measured directly (Abu Hassan, 2011).

The researcher believes qualitative approach through a case study to describe the practice of knowledge within the organization is appropriate for the data to be obtained will answer the questions raised. Data were collected through interviews conducted with senior functionaries in academia as a lecturer, teacher and experienced academics, through observation and also through the analysis of relevant documents.

In this study, the group targeted was drawn up under the auspices of the organization of schools Ministry of Education and higher education organizations MARA under the ministry of rural and regional progress.

Studies in higher education organization that KKTM Kemaman, Terengganu, researchers conducted interviews with all technical instructor as a sample of respondents and in IKM Bintulu, researchers targeted academics who served ten years on the respondents.

Whereas, in the BTPN Selangor, circulation questionnaire to 52 respondents among the teachers carried out by the researcher to get the data. According to Mohd Majid (1993), the questionnaire is more practical and effective for large populations because of the ability of a questionnaire with a sample size that will greatly improve the resolution of the next budget and statistical sampling error.

Respondents from these two organizations are among academic staff to obtain feedback on practices a setup knowledge in their respective organizations. All the collected data has been copied, collated and analyzed.

4.0 Findings

Based on the case studies that have been conducted by doing comparison between two organizations, namely the State Educational Technology Division (BTPN) Selangor and Majlis Amanah Rakyat (MARA) specific to the technical and skills institution that Institut Kemahiran MARA Bintulu and Kolej Kemahiran Tinggi MARA Kemaman, the findings were divided into three KM practices, tools and knowledge sharing culture.

As an educational institution, both these institutions have the characteristics of the process of knowledge creation indirectly. Moreover, found the process of knowledge creation has occurred and practiced by employees. KM tools also exist indirectly. However, the culture of sharing knowledge into the issues and challenges to both the educational institutions.

4.1 KM Practices

KM practices are exposed to the three categories as knowledge acquisition, knowledge utilization and knowledge distribution (Darroch, 2003; Janz & Prasarnphanich, 2003; Tiwana, 2003). Here is a comparison of KM practices that exist in both the educational institutions.

Table 1:

KM practices in BTPN Selangor and MARA

<i>KM practices</i>	BTPN Selangor	MARA
Knowledge acquisition	Brainstorming, learning & idea capture, learning reviews, storytelling, knowledge cafe	Collaborative learning, best practices benchmarking, coaching and mentoring, industry exchange knowledge and experiences
Knowledge utilization	Innovation development, learning modules	Innovation development, talent and skill development, syllabus development of education
Knowledge dissemination	Knowledge base, blogs, social network services, collaborative virtual workspace, training	Virtual workspace (BCOS System), documentation (instructional material, andragogy, training, pairing and mentoring teaching system

Based on the table above, it can be noted that the findings of which there are similarities in current practice. KM practices in these institutions has occurred as a famous model in the field of knowledge management SECI model introduced by Nonaka & Takeuchi (2005). KM practices in this socialization process has taken place, externalization, combination and Internalization of knowledge has resulted in a process to utilize the knowledge that is created can be exploited, used and disseminated throughout the institution that ultimately impact the value and achievements.

KM practices that have existed in both these institutions have to walk with both ICT driven and non-ICT driven. Information technology is only an enabler for knowledge management implementation. Knowledge management can be performed either with or without ICT tools. However, the world today is in need of ICT as an enabler to facilitate and accelerate knowledge created, used and disseminated.

4.2 Knowledge management tools and techniques

Communication can be the most effective way to learn from experience 'first hand' and gain the knowledge that are needed. Following a series of tools and techniques, illustrate how knowledge management allows employees of both organizations to interact and generate new knowledge.

Table 2:

KM tools and techniques

BTPN Selangor	MARA
Brainstorming	Brainstorming
Learning ideas capture	Learning ideas capture
Virtual work spaces	Peer Assists
Physical work spaces	Learning Reviews
Blogs	Virtual work spaces
Knowledge cafe	Physical work spaces
	Knowledge assessment
	Social network services

KM tools from the table above, can be seen brainstorming and idea capture learning tools and technique is used. Then, it can be assumed that the educational institution will use the methods of brainstorming and idea capture learning to develop new knowledge and solve an issue or problem.

In addition, virtual workspaces and physical workspace is the tools and techniques used for knowledge creation, utilization and used. However, from the above table can be considered knowledge assessment is used as a technique for assessing the suitability of knowledge within the institution.

4.3 Knowledge Sharing Practices

Based on the findings of case studies, problems and challenges in implementing the knowledge sharing in terms of people and technology as follows:

Table 3:
KM sharing comparison

BTPN SELANGOR	MARA
<p>People: Weak it skills Less motivation Lack of understanding</p> <p>Process: Overload records Duplicate data</p> <p>Technology: Insufficient computer laboratory Inadequate ICT resources</p>	<p>People : Felt position threatened Paranoia attitude Less motivation Lack of awareness and understanding</p> <p>Process: Duplicate data Untraceable records</p> <p>Technology: Unstructured networks Not centralized database Lack of Appropriate technology</p>

The main goal of knowledge sharing within an organization is to deliver the right knowledge to the right people. Thus, the three main things that influence the success of sharing knowledge is people, process and technology. Technology plays a key role as an enabler to ensure that knowledge can be share and transfer quickly and effectively. This leads to the impression to the institution in problem solving and decision-making process. However, in order to nurture and develop a culture of sharing is not a short process; it requires strategic planning and structured framework and practical to implement.

5.0 Discussion and Recommendations

Tiwana (2000), says that the ability to create and maintain a value greater than the efficiency of the core business. In this study, the two organizations have run education knowledge

management, but the constraints faced in sharing information and knowledge technologies must be addressed so that there is more systematic and organized for easy future.

In this study, knowledge management practices are carried out in both of these organizations, but it is not adequate to meet the knowledge process. What is the program available as well as the activities carried out is a good thing in educational organizations. However, the constraints of implementation to share knowledge makes it not fully utilized

Human factors, process and technology is crucial in the success of the practice of knowledge practiced within the organization. The proposal to examine the importance of these factors contribute to the success of knowledge management is shown in the diagram below.

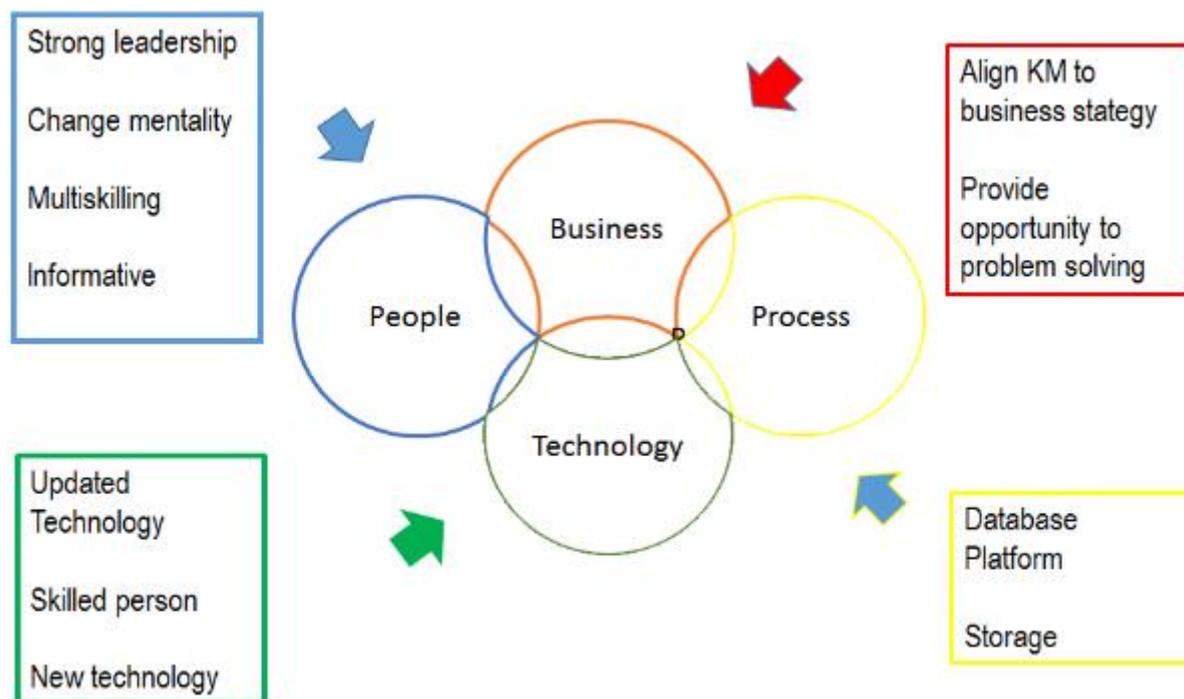


Figure 4: Practical Knowledge Management Framework: Aligned to Business, People, technology and Process

6.0 Conclusion

This study focuses on the investigation of the KM process in two public learning organization that is by doing a comparison. KM processes investigated indirectly opened up to the researcher to investigate the culture of sharing knowledge among academicians as well as teachers in school. The continuation of this study is proposed KM strategy in learning organization and best practices that can be implementing to address the problems and barriers to the sharing of knowledge culture among academicians.

The importance of a process not identified in this study. For future research, it is important to ensure that the interests of any process that exists in the organization. This is because; the importance of a process can determine the importance of knowledge associated with the process that could influence competitiveness and value to the organization. Awareness and better understanding towards knowledge management is important to determine which process should be improved, routine and repeatable process. The findings are useful for organizations to improve the understanding towards knowledge management concept and

to foster a culture of sharing knowledge among academicians who ultimately have an impact on the development of a better society.

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