ST. XAVIER'S COLLEGE

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END SEMESTER MINOR PROJECT LITERATURE REVIEW

ON

गुरुशिष्य –"Where Everyone Learns!" (CSC-404)

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2. LITERATURE REVIEW

2.1 Background and Research

Knowledge is one of the most important assets of a school organization and is critical for school sustainability. Sallis and Jones defined knowledge as "information in use, and the interaction of information with the human mind, which gives it meaning and purpose." Knowledge is constructed through an "accumulation of facts, procedural rules or heuristics through our daily experience and study" [1]. Knowledge management in Education is a monograph that makes eminent sense- a wonderful combination of good intuition, practical know-how, and a feel for what might be best described as a set of emerging theories focusing on the effective management of knowledge in educational institutions. Along the way, Knowledge Management in Education supplies us with a framework for understanding how good assessment practice, in fact, depends on effective information management [2].

Knowledge management series is a four-part series that will focus on the need and opportunities of KM in the education sector; process of applying KM through a knowledge audit; the common difficulties and limitations regarding the implementation of knowledge management into an education institutions' organizational cultures and the recommendation and next steps are reviewed and discussed. Organizations are starting to understand and appreciate knowledge as the most valued asset in the emerging competitive environment. The objective of Knowledge Management (KM) is to improve the quality of the contributions people make to organizations by helping stakeholders to make sense of the context within which the organization exists, to cooperate and share what they know and learn, and to effectively challenge, negotiate and learn from others [3,4,5].

In knowledge management education, people will understand knowledge itself. Learning becomes a dynamic, multidimensional, integrated, interactive process and knowledge is managed efficiently and effectively in school, in college and university, on the job, in our personal lives and in the community. Education based on a practical theory will become infinitely less controversial than education based on abstract theory. Debate over education as a true profession will cease to exist [5].

The research highlights the fact that helps the system to maintain the valued learning that facilitates the system to generate an innovative model which provides the solution in developing knowledge quality culture in academia. This study focuses to signify the relationship among knowledge and quality learning culture in higher education system and to introduce innovative qualitative knowledge of quadrant model that identifies the different phases to implement the qualitative knowledge strategies among higher institutes in the developing countries such as Pakistan, Sri Lanka etc[6].

2.2 The Origins and Development of Knowledge Management

Though Knowledge Management had earlier antecedents, the concept of Knowledge Management (KM), as we now know it, evolved as a concept in the late 1980s. The term originated in the consulting community. It arose from the merger of two factors: the recognition of the importance to an organization of its information and knowledge assets, and from the emergence of the Internet and the almost immediate recognition of the utility of the Internet as an information and knowledge sharing tool, particularly for geographically dispersed organizations. KM has gone through four stages:

(1) An emphasis upon the new technology and upon the development of "best practices" or "lessons learned".

(2) An increased recognition of human and cultural factors, and upon the development of "communities of practice" to facilitate the sharing of information.

(3) An increased recognition of the importance of designing the systems for retrievability, and the importance of data design and structure, including taxonomy development and utilization.

(4) An emphasis upon extending KM systems beyond the parent organization to include, for example, vendors and suppliers, customers, users, alumni, etc.

KM has exhibited remarkable staying power and growth in a fashion that is dramatically different from all other business enthusiasms of the late 20th century.2.3 Tools used [7].

2.3 Tools Used

2.3.1 NetBeans

NetBeans is an open-source integrated development environment (**IDE**) for developing with Java, PHP, C++, and other programming languages. NetBeans is also referred to as a platform of modular components used for developing **Java** web applications. NetBeans is coded in Java and runs on most operating systems with a Java Virtual Machine (**JVM**). NetBeans IDE modules include NetBeans Profiler, a Graphical User Interface (GUI) design tool, and NetBeans **JavaScript** Editor [8].

2.3.2 Java

Java is a programming language and computing platform first released by Sun Microsystems in 1995. There are lots of applications and websites that will not work unless you have Java installed, and more are created every day. Java is fast, secure, and reliable [9]. The Java Plug-in software is a component of the Java Runtime Environment (JRE). The JRE allows applets written in the Java programming language to run inside various browsers The Java Plug-in software is a component of the Java Runtime Environment (JRE). The Java Plug-in software is not a standalone program and cannot be installed separately [10].

Java is used quite extensively to create web applications, and it is done using the Java Enterprise Edition. The Java EE stack includes a standard MVC-framework, Java Server Faces (JSF), which gives you a well-designed abstraction of the complexity of a web application. Java is used in java web app development via the java enterprise edition J2EE, a java technology for developing dynamic web applications.[11]

2.3.3 Java Development Kit:

The Java Development Kit (JDK) is an implementation of either one of the Java Platform, Standard Edition; Java Platform, Enterprise Edition or Java Platform, Micro Edition platforms released by Oracle Corporation in the form of a binary product aimed at Java developers on Solaris, Linux, Mac OS X or Windows. The JDK includes a private JVM and a few other resources to finish the

development of a Java Application. Since the introduction of the Java platform, it has been by far the most widely used Software Development Kit (SDK)[12].

2.3.4 Mysql

MySQL is a Relational DataBase Management System (RDBMS). MySQL operates using client/server architecture in which the server runs on the machine containing the databases and clients connect to the server over a network. It uses SQL server(This is an engine which provides access to your databases), Client programs for accessing the server and client library for writing your own programs [13].

Many researchers have invested efforts into investigating the factors affecting implementation of KMS of firms. However, their proposed factors are slightly different from each other such as: strategic relevance of IT, installed user-centric technologies, and the levels of IT investment (Ryan & Prybutoka, 2001); technological factors including relative advantage, complexity, and compatibility, organizational factors including management support, company structure, and corporate culture, environmental factors including competitors‟ pressure and requirements from business partners (He & Wei, 2004); organizational IT competence, KMS compatibility, KMS complexity, KMS relative advantage, lack of cross department interaction, the opinion and behaviour of top management, and the “Guanxi” and “Renqing” culture (Lee et al., 2009). Some others suggested different factors by using different methods, such as: ease of use, value and quality of the knowledge, system accessibility, user involvement, integration, top management support/commitment, project manager and team skills, and incentives (Nevo & Chan, 2007); perceived usefulness, perceived ease of use, and compatibility affecting KMS intention (Kuo & Lee, 2011); culture, senior managers, teamwork, empowerment, performance measurement, training, involvement, information system, benchmarking, and knowledge (Heaidari, Moghimi & Khanifar, 2011); Technology innovation including perceived benefit, complexity and compatibility, Organization in terms of sufficient resources, technology competence, top management support, organization culture, and Environment in terms of competitive pressure (Wang & Wang, 2016) [14].

2.4 Related Projects

2.4.1 Moodle

The modern developing economical structure is characterized by the increasing value of the notion of knowledge management (KM), which, replacing the more traditional factors, is addressed as one of the most significant concerns of almost any large organization. The use of up-to-date knowledge is of high strategic importance and is required for innovations development as well as for providing internal changes in organizations. Speaking about managing knowledge, it is reasonable to consider the two elements, without which KM performance will be meaningless: the tools which 50 Mariia Rizun assist the process of KM and the people, who apply knowledge with the help of these tools [15].

KM systems for workers at educational institutions, we can choose the open-source learning platform Moodle (further – "Platform"). Moodle is a free and open-source software learning management system. Developed on pedagogical principles, the Platform is used for blended learning, distance education and other e-learning projects in schools, universities, workplaces and other sectors. The Platform is used to create private websites with online courses for educators and trainers. Moodle is an acronym for Modular Object-Oriented Dynamic Learning Environment [16].

Moodle in particular provide a very good tool for knowledge management in education. Moodle can be used as a tool for capturing teachers' explicit and tacit knowledge, for knowledge sharing, especially when deployed collaboratively or across multiple institutions, for knowledge creation: through the development of knowledge artefacts by learners and teachers, but also through datamining and qualitative analysis, particularly when combined with MISs and as a tool to facilitate organizational learning, including use as a vehicle for CPD.[17]

2.4.2 ProProfs

ProProfs, founded in 2010 and headquartered in Santa Monica, CA, is a cloud based and SAAS ("software as a service") company. Its services are offered both on a freemium and subscription basis. The company's software products include a quiz, survey, online course creation tool as well as a knowledge base software. ProProfs also provides an LMS Software that supports reporting features. The company's tools are used for business, education, e-learning and other industries [18].

ProProfs is a powerful online platform designed to effectively organize and distribute knowledge, enrich the collective experience and improve accessibility and searchability of information. It ensures centralized access to all files and documents, facilitates the onboarding process of new hires, improves productivity and increases the output. Cloud-based platform with easy access from anywhere and anytime and support of word docs, PDFs, e-books, excel sheets, Prompt import and export of files, Version history, Efficient Google-like search are features of ProProfs [19].

2.5 Discussions on Knowledge Management

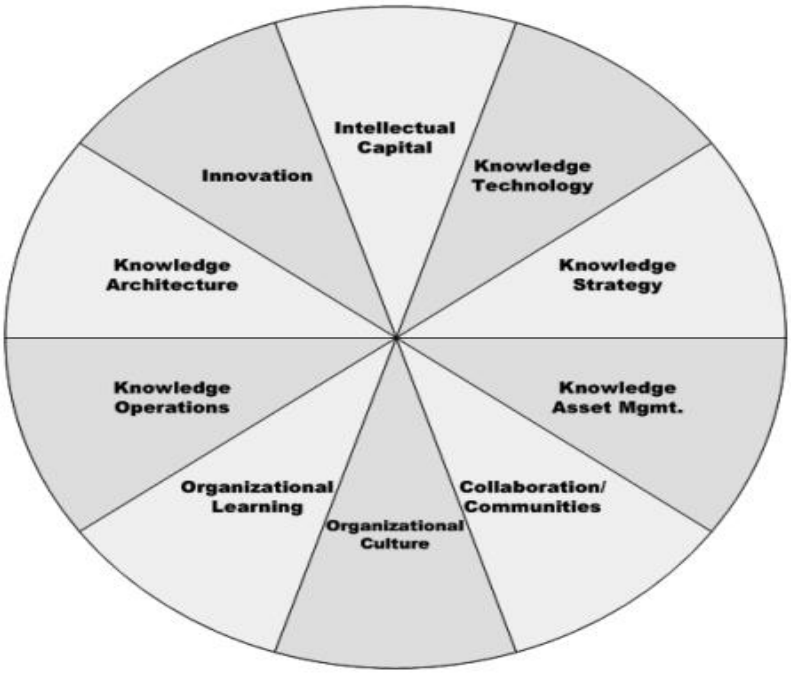

Fig 1: Ten facets of knowledge management [20]

KM technologies focuses primarily on the hard aspects of knowledge work. This includes building applications, delivering technology solutions, the seamless integration of knowledge technologies into the business context, the configuration of virtual environments and applications to support knowledge workers wherever they are working, and the development of technologies to support knowledge creation, capture, exchange, discovery and preservation. Organizational Learning includes capabilities that support a learning organization, including organizational learning, group learning, individual learning, situational learning, lifelong learning, learning in virtual environments, instructional design, and problem solving methodologies. [21]

Biloslavo and Trnavcevic (2007) expressed the importance of KM in higher education; similarly Dawson (2000) expressed term as "KM is especially important for organizations, comprised of experts where success depends upon generation, utilization and uniqueness of knowledge base. It would seem to be appropriate to consider higher educational institutions as organizations comprised of experts who contribute to knowledge base [22].

Internationalization of higher education, lifelong learning, and paradigm shift from teaching to learning, new technologies and globalization are the key factors in developing knowledge management. KM manages huge data systematically and therefore it will be a powerful tool to enhance productivity and reduce cost in the collection of a huge volume of data. It is very difficult to record tacit knowledge created by institutional staff. Many a times staff leaves the Institute and his knowledge goes along with him. If KM practice is being operated in an institute as a continuous activity then only the generated knowledge could be captured and recorded as well preserved for future use. Similarly inspecting officers while visiting and assessing the gradation of the institution's educational development and contribution reviews all tacit and explicit knowledge of past years, and in such practices KM plays a vital role [23].

Knowledge is the key for decision making and strategy creation. Knowledge should transfer into an action but unfortunately it does not happen always. In order to sustain in competitive world all educational institutes should implement effective tools for knowledge management. Barbara Friehs (2000) mentioned following assignments for effective KM:

- Mobilize the hidden implicit/tacit knowledge

- Integrate knowledge from organization and make it accessible to all
- Identify the missing knowledge
- Create new knowledge
- Make knowledge more accessible and usable
- Create knowledge sharing culture to experiment and learn
- Evaluate and reflect learning processes [24].

2.6 Future directions on Knowledge Management

Regardless of the contribution of numerous authors on knowledge sharing and transfer, there's still much to be explored. Knowledge sharing and transfer have been studied mostly in developed countries; studies in the same context can be conducted in developing countries. There is little evidence of research regarding knowledge sharing and transfer in the education sector; therefore, this sector can be explored further. The role of affective and cognitive trust in sharing and transferring knowledge can be explored further. The role of social media and web 2.0 technological tools can be explored in promoting knowledge sharing and transfer. Online knowledge sharing and transfer in different cultural contexts and organizations can be studied. Knowledge sharing and transfer across hierarchical levels in an organization can be explored. In this regard, the impact of organizational politics on knowledge sharing and transfer can be revealed. Attitude and behaviors of knowledge sharers and receivers can be studied particularly in a political environment. What problems an organization is likely to face if knowledge is not shared or transferred within organization and its subsidiaries, across the globe, can be studied in detail. The impact of national culture can be studied in the context of knowledge sharing and transfer. Knowledge sharing and transfer also depend on the individual characteristics of the knowledge sharer and receiver. This concept can be investigated further. Communication is assumed to be the facilitator of knowledge sharing and transfer. However, communication quality and quantity that are necessary to facilitate knowledge sharing and transfer can be studied. Furthermore, various formal and informal communication tools, at organizational level, can be investigated. [25]

2.7 Barriers to Knowledge Management and Sharing

Lack of trust among individuals is the biggest barrier that inhibits sharing of knowledge with others in the organization. Lack of incentives and rewards systems can hinder knowledge sharing and transfer, and motivation plays an important role for the knowledge sharer. Organizational culture has been recognized as a significant barrier to knowledge sharing. Power distance and individualism / collectivism are two of Hofstede's cultural dimensions that are important factors affecting knowledge sharing and transfer. Hofstede's cultural dimensions have been studied extensively in China. A culture of high power distance, low individualism, higher masculinity, and high uncertainty avoidance acts as a barrier toward knowledge sharing and transfer in Chinese organizations, as it prevents individuals from risk-taking and experimentation. When it comes to transferring knowledge across a dissimilar culture, openness to diversity comes into play. When there is lack of time and workload is heavy, sharing and transfer of knowledge become difficult. Researchers have identified heavy workload as the major reason for having limited or no time for knowledge sharing. Lack of technology hinders the successful sharing and transfer of knowledge, which confirms it as a barrier. Other identified barriers include: change in technology, lack of discussion boards, lack of resources; uniqueness of knowledge which has been studied as a significant related variable of partial knowledge sharing; lack of appropriate systems and an absence of coordination; lack of attention and appreciation, and fear of being foolish; ambiguity in the content and context of knowledge, along with the uncertainty; degree of tacitness in regard to knowledge sharing with social web tools; and lack of socialization among colleagues.[26]

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