Knowledge Management in Indian Higher Education – a Critical Analysis

Parveen K. Bangotra, Dr. Bhupinder P S Chahal

Abstract

Knowledge Management, the concept was born in 1990s out of widespread adoption of Internet. Internet made it possible to transfer data, retrieve and process it at the speed of light. Suddenly the transfer of knowledge across the globe was so quick & easy that it was essential to manage it. Suddenly, the relevance of Knowledge Management was more than ever before and world over the Knowledge Management movement had started. A separate area of management that is Knowledge Management was born.

Educational Institutes, especially the Higher Educational Institutes are considered to be the mother source of dissemination of knowledge and generation of new knowledge. According to Metaxiotis and Psarras(Metaxiotis & John Psarras, 2006), all over the world, there are three major missions of universities and all three are Knowledge Management centric:

Teaching – to prepare students to become successful lifelong learners,

Research – to expand the frontiers of human knowledge and to promote creativity, and

Service – to participate in outreach activities that serve the local, national, and international communities.

Knowledge Management in Indian Higher Educational Institutions is a matter of debate. Using available secondary data, research paper aims to:

- Examines the applicability of the concepts of knowledge management to higher education institutions in India;
- Identify facilities, systems or projects which contribute to knowledge management in higher education such as libraries, MIS etc. and,
- Find challenges associated with the creation of a knowledge environment in higher education.

Key Words: Knowledge Management; Knowledge Sharing; Higher Education; Information Technology

Introduction- India's Higher Educational Sector

About Education and Knowledge, First Prime Minister of Independent India, Pandit Jawaharlal Nehru had said, "For growth of our country, only science education and pursuit of knowledge can help solve our problems of poverty, of superstition, of vast resources going waste, of a rich country inhabited by starving people. By enabling a renewed, re-energized education sector, we have the potential to transform our country into true knowledge power and realize a future of prosperity and growth."(Subodh Mahanti, 2013).

According to eminent economist and chancellor (Meek, 2003), University of California, Cark Kerr, "On a global scale, wealth and prosperity have become more dependent on the access to knowledge than the access to natural resources."

In the new globalised economy, business organizations face new challenges because of the new kind of business environment which is complex by nature and requires dynamic & innovative approaches to face competitions of the globalised economy. Since the institutes of higher education are the feeders to these business organizations, these challenges get transferred backward to the Higher Educational Institutes. It becomes responsibility of Higher Educational Institutes to adopt newer and innovative approaches in their academic and administrative operations, all focussed to enhance the skills of the student community that is capable to handle challenges of modern globalised economy.

Specific to India, since economic liberalization of 1991, India has become fastest growing economy in the world with 150 million people in the age group of 18-23 and a sizable talent pool qualified and educated human resources. However, it has been realised that along with quantity, quality education is the need of the hour. It has been realised that it is the quality of education that prepares one for all pursuits of life and in the absence of an acceptable level of quality, higher education becomes a mere formalism devoid of any purpose or substance.

Subsequent to economic liberalization of 1991 (Price Water House Cooper, 2012), India's aspiration of Quantity & Quality of Higher Education led to opening up the education to private sector. Growth is phenomenal especially during 2004 to 2012. The number of Universities has increased from 27 in 1950 to about 700 in 2012 while the number of colleges has increased from just 578 in 1950 to more than 35,000 in 2012.

Currently, India has third largest higher education system in the world in terms of enrolments, after China and US. Govt of India spends around 3.8% of its GDP on Education and according to 2011 census, the total literacy rate is 74.04% compared to the world average of 83.4% in the year 2008 (Deloitte Touche Tohmatsu, India, 2012).

Globalised economy needs different skill sets amongst its employees and the Indian population has started appreciating the value of education and there is an increased willingness to pay for quality education. Quality Education is the Key Word. Quality of Academic and Administrative functions of Higher Educational Institutes can be improved by dealing with uncertainties. One of the modern day strategic tools to deal with these uncertainties is the KNOWLEDGE MANAGEMENT.

Through the systematic Acquisition, Creation, Sharing and use of Knowledge, an institute can develop, renew and exploit their knowledge based resources such that they can proactively adapt to external changes and attain competitive success.

Knowledge Management- a Strategic Philosophy

Historically speaking, in the early 1980s, a number of Management Theories were evolved around Knowledge Management including Peter Drucker's Information and Knowledge as Organizational Resources. Peter Drucker predicted that the major changes in society would be brought about by information.

2191

He argues that knowledge has become the central, key resource that knows no geography (www.nwlink.com, 2016). According to him, the largest working group will become what he termed "Knowledge Workers."

However, it was 90's that the area of Knowledge Management came under focus out of widespread adoption of Internet. Internet made it possible to transfer data, retrieve and process it at the speed of light. Since data is one of the important sources of Knowledge, it was essential to manage it. Suddenly, the relevance of Knowledge Management was more than ever before and world over the Knowledge Management movement had started. A separate area of management that is Knowledge Management was born.

What constitutes knowledge is a complex phenomenon and therefore there is no single definition of Knowledge Management. However, in 1998, Davenport (Davenport, T. H. & Prusak, L., 1998)gave a definition i.e. "Knowledge management is the process of capturing, distributing, and effectively using knowledge."

Gartner Group (www.kmworld.com, 2016) further modified it by defining Knowledge Management as "A discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. These assets may include database, documents, policies, and previously uncaptured expertise and experience in individual workers."

In 2003 (Bergeron B., 2003)defined Knowledge Management as ".. a business optimization strategy that identifies, selects, organizes, distils and packages information essential to the business of the company in a way that improves employee performance and corporate competitiveness".

What Constitutes Knowledge?

What constitutes Knowledge is quite complex. According to Collins English Dictionary "Knowledge is the facts, feelings or experiences known by a person or group of people" However, academics have debated the meaning of "knowledge" since the word was invented. Typically, Knowledge is derived from information but it is richer and more meaningful than information. Some experts include wisdom and insight in their definition of knowledge.

Based on its intrinsic characteristics, Knowledge can be classified as Explicit Knowledge & Tacit Knowledge (B R Senthil Kumar, Dr. M Thiagarajan, Dr. P. Maniiarasan, J Prasanth, G. Abhilesh, D Srinvasan , 2013).

Explicit knowledgeis the knowledge that can be articulated into formal language, including grammatical statements (words and numbers), mathematical expressions, specifications, manuals, etc. Explicit knowledge can be processed by a computer, transmitted electronically, or stored in databases. This is easily accessible and can therefore be reused to solve problems. Examples include formulas, equations, rules etc.

Tacit knowledge is personal knowledge embedded in the minds of people within an organization. It involves experiences, personal beliefs, perspective, insight and craftsmanship. Tacit knowledge is hard to articulate with formal language (hard, but not impossible). It contains subjective insights, intuitions, and hunches. Before tacit knowledge can be communicated, it must be converted into words, models, or numbers that can be understand.

Knowledge Creation

Due to the complexity of the ways in which an individual represents its knowledge, it is not easy to capture knowledge in its entirety. In many cases, the knowledge representation stays within the creator, in which case the "flow of knowledge" stops.

A Knowledge Management System may be as simple as a story telling or as complex as a million-dollar computer program, to capture a snapshot of the person's knowledge representation. In the case of a story, the knowledge representation is passed onto others by means of a verbal snapshot. In the case of a computer program, it resides in a database that may be utilized by others. It is only a "snapshot" as further experiences and learning within the creator may change the knowledge representation, while the static snapshot remains the same. In addition, it is only a partial snapshot as the full context of the original knowledge source is almost never fully captured.

From the two kinds of Knowledge, i.e. Explicit Knowledge and Tacit Knowledge, (Nonaka, I. & Takeuchi, H., 1994)created four modes of knowledge creation or conversion.These are as given in Figure 1 below:
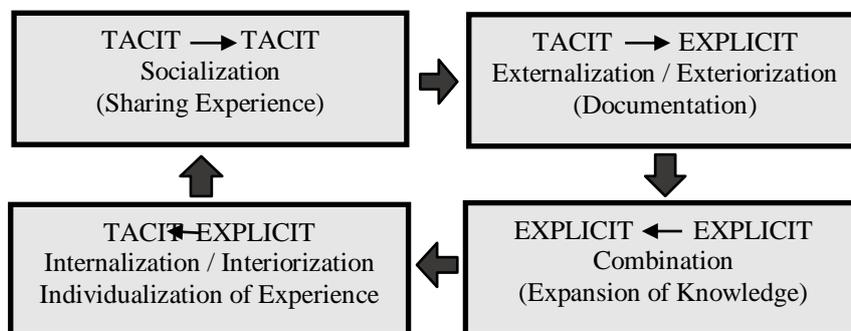

Figure 1 : Knowledge Conversion

Adapted from: (Nonaka, I. & Takeuchi, H., 1994) **: Dynamic Theory of Knowledge Creation.**

Socialization: From Tacit Knowledge To Tacit Knowledge
Since knowledge is a creation of human brain, new knowledge begins as Tacit Knowledge. This is knowledge transfer from one brain to another without being written down or recorded. According to (Nonaka, I. & Takeuchi, H., 1997) "Knowledge is created only by individuals. An organization cannot create knowledge without individuals". Individuals acquire tacit knowledge through shared experiences such as shared mental models and technical skills. This also includes observation, imitation, and practice. However, "sharing experience" is the key, which is why the mere "transfer of information" often makes little sense to the receiver.

Externalization or Exteriorization: From Tacit Knowledge To Explicit Knowledge:
Exteriorization means to bring out. This process requires individuals to share their knowledge with others through dialogue and self-reflection. After acquiring tacit knowledge, individuals "try to rationalize and articulate the world that surrounds them. Tacit knowledge is made explicit so that it can be shared by others to become the basis of new knowledge such as concepts, images, and written documents"(Nonaka, I. & Toyama, R., 2003). Exteriorization or Externalization is the quintessential process of articulating tacit knowledge into

2193

explicit concepts through metaphors, analogies, concepts, hypothesis, or models or mostly in language. Codification and documentation of the Tacit Knowledge into Explicit Knowledge is the underlying statement.

Combination: From Explicit Knowledge To Explicit Knowledge:

This is expansion of knowledge. In this mode, the articulated knowledge is collected, processed, reconfigured, and disseminated among members of the organization as new explicit knowledge. Combining the articulated tactic knowledge, concepts and documentations are created and then distributed. In this process, individuals exchange and combine knowledge through media, such as documents, meetings, and conversations. At times, information is reconfigured by such means as sorting, combining, and categorizing. Formal education and many training programs work this way.

Interiorization or Internalization: From Explicit Knowledge To Tacit Knowledge:

This is closely related to "learning by doing." In the Interiorization or Internalization process, newly created explicit knowledge "is applied and used in practical situations through action, practice, and reflection so that it becomes knowledge of one's own (Nonaka, I. & Toyama, R., 2003)". In the process, the explicit knowledge is converted into new tacit knowledge by the individuals using it. In so doing, individuals acquire new tacit knowledge which can be used as feed stock in a new socialization process for another round of knowledge creation.

From Interiorization or Internalization to Socialization and so on, the continuous cyclical process of knowledge sharing and thereby creating new knowledge goes on and on.

Knowledge Continuum

According to (Cleaveland, H., 1982)Knowledge is gained through a continuum of Context i.e. Experiences and Understanding.

Representing Understanding on the X-axis and Context i.e. Experience on the Y-axis, the continuum depicts the buildup of Data to Information; Information to Knowledge; and Knowledge to Wisdom.
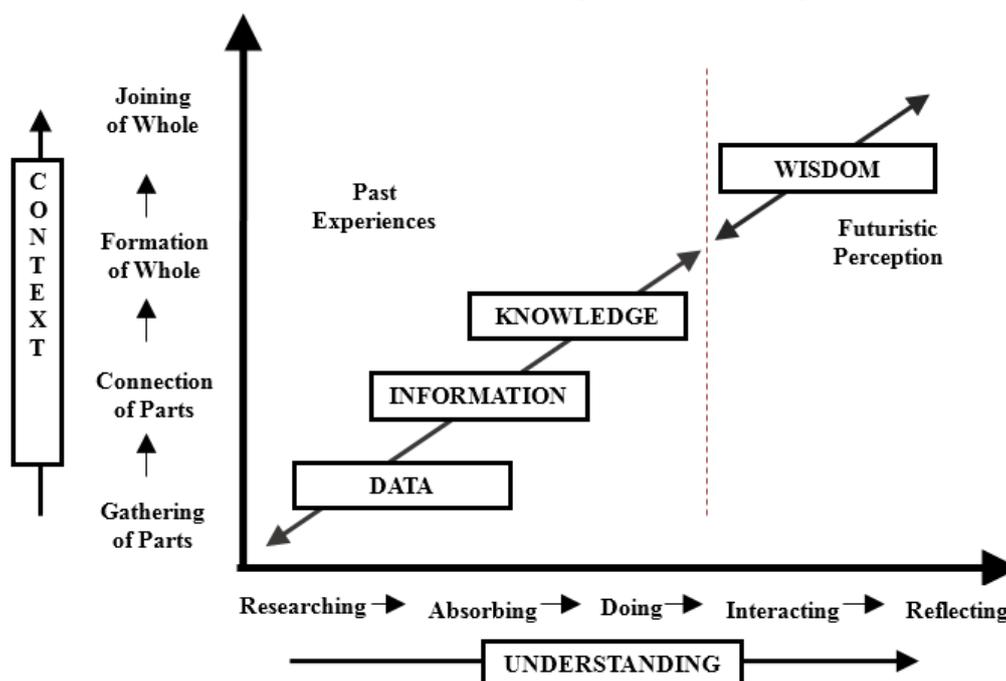

Figure 2 : Adapted from (Cleaveland, H., 1982)

- Data comes about through research, creation, gathering, and discovery.

- Data is turned into information by organizing it so that we can easily draw conclusions. Data is also turned into information by "presenting" it, such as making it visual or auditory.

- Knowledge has the complexity of experience, which come about by seeing it from different perspectives. This is why training and education is difficult - one cannot count on one person's knowledge transferring to another. Knowledge is built from scratch by the learner through experience. Information is static, but knowledge is dynamic as it lives within us.

- Wisdom is the ultimate level of understanding. As with knowledge, wisdom operates within us. We can share our experiences that create the building blocks for wisdom, however, it need to be communicated with even more understanding of the personal contexts of our audience than with knowledge sharing.

Data and information deal with the past. They are based on the gathering of facts and adding context. Knowledge deals with the present. It becomes a part of us and enables to perform. However, when we gain wisdom, we start dealing with the future as we are now able to vision and design for what will be, rather than for what is or was.

Knowledge Management & Higher Education
In spite of there being no agreement on one definition of Knowledge Management, Knowledge Management remains a key area of study for benefits, so crucial in the Globalised Knowledge Economy. World over, the Higher Educational Institutions and R&D Establishments are considered the major source of Knowledge, its creation and dissemination. Therefore, the topic of Knowledge Management is area of concern and focuses with many universities globally.
Govt of India, driven by the success of Indian Software professional, burgeoning young population and global focus on knowledge economy; recognised the importance of Knowledge Management and initiated several actions / programmes to bring about Knowledge Management in the Higher Educational Institutions.

Knowledge management draws from a wide range of disciplines and technologies. Some Major areas in Higher Education and R&D Institutions are:

- Cognitive science
- Expert systems,
- Artificial intelligence and knowledge base management systems (KBMS)
- Computer-supported collaborative work (groupware)
- Library and information science
- Technical writing
- Document management
- Decision support systems
- Semantic networks
- Relational and object databases
- Simulation
- Organizational science

2195

- Electronic publishing technology, hypertext, internet, help-desk technology
- Performance support systems

Relevance with Academic & Research Activities.

While the area of Knowledge Management is applicable to almost all fields, academic institutes are considered to be the mother of Knowledge Management because institutes create knowledge in the form of documents, procedures, results as well as in the form of experiences, judgements, thoughts, views and perceptions that every individual carries in his/her brain. With an effective Knowledge Management System in place, one can be sure of continuity and availability of this information in manner that accelerates the institutional decision making capabilities.

Institutes are in the knowledge business where Research and Curriculum development are some key issues and where huge transfer of knowledge takes place from between teachers to students, teachers to teachers, students to teachers and student to student. Relevance of Knowledge Management in the Higher Education lies in the fact that students as carriers of knowledge management have the potential to spread this in whichever field they opt as their career.

A key issue today for the institutes is the employability of their students. Main asset which determines the employability of the student is the Knowledge. It is in this area that Knowledge Management has a key role to play.

Knowledge Management of academic and administrative processes of teaching, examination, evaluation, admissions, counselling, training, placements can be very useful in building systems that are continuously improving.

With the Govt of India opening up their doors for Foreign Universities, the importance of Knowledge Management is even more because some of these universities would come up with more experience and expertise in the area of Knowledge Management.

It is therefore important that the area of Knowledge Management is critically analysed, gaps ascertained, models build up for identified gaps and evaluated specifically in the area of Higher Education and Research.

Conclusion:

Successfully implemented, Knowledge Management will have Repositories, Portals, Decision Support Systems related to various areas that can be beneficial to students, staff, researchers, parents and society as a whole. Following are some of these benefits:

Benefits to Student Community

- More knowledge means more power. Students can expect better placements through Knowledge Management.
- Student would get improved Services Capability though the use of Knowledge Management System portal/repositories.
- Improved responsiveness and communication capabilities.

Benefits to Universities / Institutes

2196

- By incorporating lessons learnt from experience of colleagues, student evaluations and student feedback, efficient & responsive system can be put in place.
- Leveraging of previous research can result in quick turnaround time for research and facilitation for interdisciplinary research.
- Enhanced faculty development efforts.
- By identifying and leveraging best practices and monitoring, better curriculum can be worked out.
- Better & Efficient Administrative Services
- Better compliance with administrative policies.
- Faculty & staff get improved Services Capability though the use of Knowledge Management System portal/repositories.

Benefits to Society
- Overall better services for students, parents and thereby society can be provided though appropriate Knowledge Management Portals & repositories.
- Better placements of students can lead to better society.
- Quick turnaround time for research and facilitation for interdisciplinary research can lead to better society.
- Knowledge Management enabled universities /institutes are an asset for the society.

References

1. B R Senthil Kumar, Dr. M Thiagarajan, Dr. P. Maniiarasan, J Prasanth, G. Abhilesh, D Srinvasan . (2013, March 01). Enhancement in Higher Education with Knowledge Management. *International Journal of Science, Engineering & Technology Research*, pp. pp.569-573.

2. Bergeron B. (2003). *Essentials of Knowledge Management.* USA: John Wiley & Sons, Inc.

3. Cleaveland, H. (1982). Information as Resource. *The Futurist*, pp.34-39.

4. Davenport, T. H. & Prusak, L. (1998). *Working Knowledge: How Organizations Manage What They Know.* Harvard: Harvard Business School Press.

5. Deloitte Touche Tohmatsu, India. (2012). *Indian Higher Education Sector- Opportunities Aplenty, Growth Unlimited.* India.

6. Meek, V. L. (2003). *Market Coordination, Research Management and the Future of Higher Education in the Post Industrial Era.* Australia: University of Australia.

7. Metaxiotis & John Psarras. (2006). Knowledge Cities: Answer to the Needs of Knowledge Based Development. *VINE, Volume 36, Issue 01*.

8. Nonaka, I. & Takeuchi, H. (1994). A Dynamic Theory of Organizational Knowledeg Creation. *Organization Science*, Vol. 5(1) PP 14-37.

9. Nonaka, I. & Takeuchi, H. (1997). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation,.* New York: Oxford University Press.

10. Nonaka, I. & Toyama, R. (2003). The Knowledge Creating Theory Re-visited: Knowledge Creation as a Synthesizing Process. *Knowledge Managment Research & Practice*, Vol 1(1), PP 2-10.

11. Price Water House Cooper. (2012). *Taking Stock: A Sector Wide Scan of Higher Education in India.* India.

12. Subodh Mahanti. (2013). A Perspective on Scientific Temper in India, . *Journal of Scientific Temper*, Vol. 01, pp 46-62.

13. www.kmworld.com. (2016, June 01). *http://www.kmworld.com/Articles/Editorial/What-Is-.../What-is-KM-Knowledge*. Retrieved from www.kmworld.com: www.kmworld.com

14. www.nwlink.com. (2016, May 02). *http://www.nwlink.com/~donclark/knowledge/knowledge_typology.html*. Retrieved from www.nwlink.com: www.nwlink.com

Authors:

1. First Author, Parveen K Bangotra is an Electronics Engineering Graduate with MBA and more than 25 years of Technical and Administrative experience in Industry and R&D organizations. He has published many a papers in the technology and academic areas. He is presently pursuing his PhD in the area of Knowledge Management from Chandigarh University, Mohali, Punjab, India.

2. Second Author,Dr. Bhupinder P S Chahal is an Associate Professor in the University Business School of Chandigarh University, Mohali, Punjab, India. With a doctorate in the area of use of Telecom Infrastructure for Marketing, Dr. Chahal is an authority in the area of e-commerce and has a large number of papers published in the area of Management, Export / Import, Economics etc.