

Challenges in Knowledge Management in Higher Education Institutes in Mongolia: A Report on Secondary Survey

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The knowledge management-is a very clever term to describe a very simple subject – Bill Gates

ABSTRACT:

Exponential increase of the knowledge base of people at large and dynamics of the modern market is mounting pressure on organizations whether corporate or academic institutions to meet their needs and demands. Increasing expectations of the consumers are forcing the corporate world to use untrendy approaches. Professionals must not only have new ideas, but it is also necessary that they know and are able to use the experience of the organization, to improve work quality and productivity. Higher Education Institutions (HEIs) are the knowledge suppliers to corporate world and so have the responsibility to provide workers with effective knowledge base.

This article is an attempt to understand the current status and development of the education sector in Mongolia, impact of Knowledge Management (KM) on the country's economy and the challenges in implementing the best knowledge practice in Higher education sector. *Informational society* has already changed the status of higher education institutions where as *Knowledge society* is influencing the creation of new type of schools –innovation schools. Nowadays a high school is a center of science and innovations development, where nonstop learning, or life-long learning is taking place. Although in Mongolian higher education context, knowledge management is still at nascent stage but this article is a proactive approach to give an effective direction to HEIs to be ready to face the challenges.

KEY WORDS:

Dynamic Model, Knowledge Society, Knowledge Economy, Knowledge Acquisition, Knowledge Dissemination.

2. EDUCATION IN MONGOLIA DURING THE TRANSITION PERIOD:

Improving the efficiency and effectiveness of education through “rationalization and decentralization” (Weidman, 2002) was the almost important goal of educational reformation. Similar changes were introduced in other transition countries (Bray and Borevskaya, 2001).

Higher education in Mongolia has come through a long way by significant philosophical and pedagogical paradigm shift during that time, including the privatization of higher education institutions and the introduction of tuition fees [1]. Ref [1] accepts that the Education Ministry did not have the required capacity to implement the reforms to fulfill their full potential. In addition, the reforms introduced during this period were mostly ad-hoc and donor-driven. These factors resulted in slow implementation and revision of the reform items [9].

The problem of financing education cannot be overlooked during this period. In 1990, education received the largest share of the government expenditure (18.5 percent, as calculated by the Asian Development Bank, 2008) and the education sector employed more than 10 percent of the workforce [12]. This level of expenditure and labor was perceived as being too high and was heavily criticized by international financial organizations (World Bank, 2002). Then, between 1990 and 1992 real expenditure on education declined by 56 percent. This can be attributed to severe inflation [12].

During the initial stage of the transition, access to education declined rapidly. The GER for primary education fell significantly and recovered only in the 2000s. Enrolment among boys was affected more than among girls, due to the increased need for boys to work, in rural areas, to support their families.

At present the education system in Mongolia consists of preschool education, primary education, lower secondary education, upper secondary education, tertiary education, technical and vocational education provided at upper secondary and tertiary levels, and non-formal education, including adult literacy and lifeskills programs. Primary education and lower secondary education comprise “basic education”, which is free and compulsory for all children. Prior to the transition, Mongolia had a 4-4-2 system, enrolling 8-year-olds in a four-year program of primary education, followed by a four-year lower secondary education program and a two-year upper secondary education program. In the 2004/5 academic year, the education cycle was increased from 10 to 11 years (5-4-2) enrolling 7-year-olds in primary education, and then increased to 12 years in 2007/8 (6-4-2) enrolling 6-year-olds, bringing the Mongolian education system in line with the international standard. There is a plan to further reform the education system to a 5-5-2 system in the 2012/13 academic year which has been implemented. Higher education consists of colleges, universities and institutes offering diplomas of higher education (three years), bachelor's degree (four years) and post graduate degrees (master's degree – two years, doctoral degrees – three to four years).

In the beginning of the movement towards democratic system, there were only 14 state-owned (public) higher education institutions (HEIs). Once the government authorized the establishment of private HEIs, this figure went up to 146 HEIs, including 42 public and 99 private HEIs, and five branches of foreign universities by the end of 2009. Moreover, the number of students increased from about

1. INTRODUCTION:

The higher education sector in Mongolia has been experiencing substantial changes since the start of the transition of the economy from controlled economy. Prior to this, the sector was reserved for a limited number of students, but due to government focus on education, this sector expanded rapidly, while the curriculum became more diverse. In addition, alternative funding, mostly from student fees, was introduced and all public and private higher education institutions (HEIs) are now free to collect fees based upon their business model.

This has led to an exponential increase in the number of HEI students. According to UNESCO Report (2009), in 2008, enrolment in HEIs (universities, colleges and post-secondary technical institutions) was 160,000, double as compared to the number in 2000. In 2011, the gross enrolment ratio for higher education was 57 percent (World Bank Report, 2012), which is considerably higher than the average for developing countries. There are currently debates in Mongolia on

- If higher education should be regulated through an accreditation system,
- If expanded higher education is simply deferring unemployment, and
- If higher education has become a business.

In light of the above, this study will focus on the issues of Knowledge Identification, Knowledge creation, Knowledge Dissemination and Knowledge Management in HEIs. In particular, this study will examine (1) the existence or magnitude of Knowledge, (2) perceptions of Knowledge Management (Students, faculties and employers) and (3) policy adopted by HEIs in Knowledge Management.

20,000 to nearly 164,700. In SY2009/10, about two thirds of higher education students were enrolled in public HEIs. There were about 7,200 teachers in SY2009/10, indicating an overall average student–teacher ratio of about 23:1. Over the last decade, the number of HEIs offering doctoral (and lower) degrees has remained static, the number offering master's (and lower) degrees increased, and the number offering only bachelor's degrees declined. The number of students enrolling in private HEIs has been rising compared to enrollment in public HEIs.

Table 1 Number of students in Academic Institutions by their classifications

Сургалтын байгууллагын ангилалаар Classification of educational institutions	мян хүн /thous. persons				
	Хичээлийн жилээр By academic years				2012/2013 2011/2012 %
	2009/2010	2010/2011	2011/2012	2012/2013	
Бүгд	841.1	850.5	890.6	897.9	100.8
Үүнээс: Эмэгтэй	438.2	440.8	458.5	462.0	100.8
Бүгдээс:	From total:				
Цэцэрлэгт*	109.5	122.1	164.3	181.0	110.2
Үүнээс: Эмэгтэй	55.1	61.6	81.7	90.0	110.2
Ерөнхий боловсролын сургуульд**	522.1	512.2	505.4	496.1	98.2
Үүнээс: Эмэгтэй	262.6	257.3	253.5	249.0	98.2
Мэргэжлийн сургалт-үйлдвэрлэлийн төвд	44.7	46.1	48.1	45.2	94.0
Үүнээс: Эмэгтэй	21.0	20.4	21.7	20.6	94.9
Их, дээд сургууль, коллежид***	164.8	170.1	172.8	175.6	101.6
Үүнээс: Эмэгтэй	99.5	101.5	101.6	102.4	100.8

(Source: Monthly Bulletin Statistics Dec. 2012)

Note: * Included the children who are attending early childhood education facilities.

** Excluded number of pupils studying in evening classes and externate classes in GER.

*** Excluded the students who are studying abroad.

The above table shows that there is a considerable decrease in the number of female students in vocational schools and in HEIs during the period 2012-2013. This is attributed by the changing lifestyle in rural areas. In rural areas male family members were encouraged to stay at home while female members were financed to pursue their higher education.

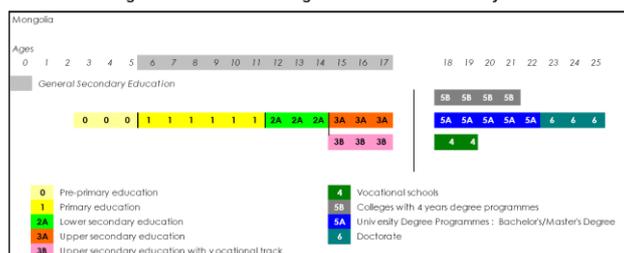
2.1 THE STRUCTURE OF EDUCATION IN MONGOLIA:

The new 12-year education structure was introduced into schools in September 2008 with the aim of bringing Mongolia closer to international standards and norms. Tertiary education is offered in three general types of institutions:

- universities with full 4-year degree and postgraduate programs,
- colleges with 4-year degree programs only, and
- technical and vocational schools with 2-year training programs.

The structure of Mongolia's formal education system is shown in Figure 1.

Figure 1: Structure of Mongolia's Formal Education System



Source: Government of Mongolia, Ministry of Education, Culture, and Science. 2010. Education Sector Master Plan of Mongolia (2009–2015).

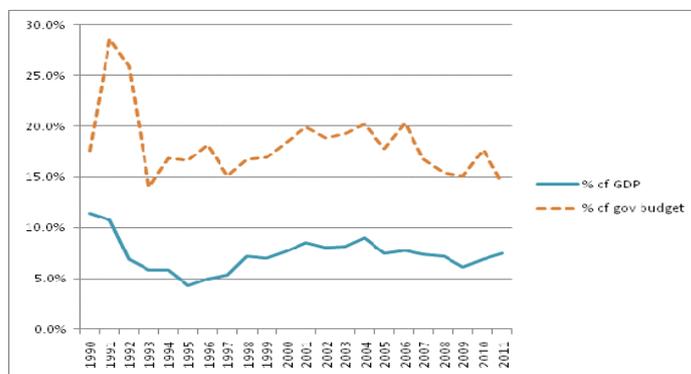


Figure 2 Education budget (%) as share of GDP and of total budget, 1990-2011

3. KNOWLEDGE MANAGEMENT:

As discussed above, the process of Knowledge Management is classified into four groups; Knowledge Identification, Knowledge Creation, Knowledge Dissemination and Knowledge Management. The following section will through light on all these in Mongolian context considering the present status and the future options.

3.1 KNOWLEDGE IDENTIFICATION:

It is suggested [3] that before investing heavily in the development of new capabilities, companies should know what knowledge and expertise exist both inside and outside their own walls. Many large companies lose track of their internal and external data, information, and capabilities. Inadequate transparency leads to inefficiency, inappropriate decisions, and redundant activities. Restructuring, downsizing, and reengineering activities have increased this organizational opacity in many cases by destroying effective informal networks. Effective knowledge management creates sufficient internal and external transparency and supports employees in their knowledge-seeking activities.

One way to increase internal knowledge transparency is by creating knowledge maps, which support systematic access to parts of the organizational knowledge base. Today's advances in the field of information technology enable radical new ways of accessing the internal electronic knowledge base and of connecting various types of data. And the dramatic development of the Internet will revolutionize our use of and access to information. But no purely technological approach will solve transparency problems.

Knowledge management must integrate human beings, and human beings should not externalize their knowledge in computer systems, but need personal contacts and discussions. To enable these talks between knowledge suppliers and knowledge demanders, the knowledge management system must include opportunities for personal contact.

In Mongolian context, the biggest state owned University Mongolian University of Science & Technology has 19 branches with their own areas of studies but they all lack in identifying the existing knowledge and there is great deal of repetitive works. Lack of a common platform for knowledge identification for students and faculties makes it a herculean task to capture tacit knowledge to be used by all those who are using their time in exploring the existing knowledge.

3.2 KNOWLEDGE ACQUISITION:

In this article three main sources of knowledge to acquire are suggested as a sustainable strategy:

- Knowledge held by internal stakeholders (mainly students and faculties)
- Knowledge held by external stakeholders (mainly other academic institutions, R&D firms and corporate)
- Knowledge held by employers

Gilbert further adds that integrated knowledge management is both; investment in the future (potential Knowledge) and investment in the present (directly usable knowledge). Also it supports in management decision making process.

There is an opinion [5] that the conception of knowledge creation as a cycle process is crucial for understanding and construction of the models and management of real educational projects. He urges that the knowledge creation process consists of cycles with demand and supply side as illustrated in the following diagram:

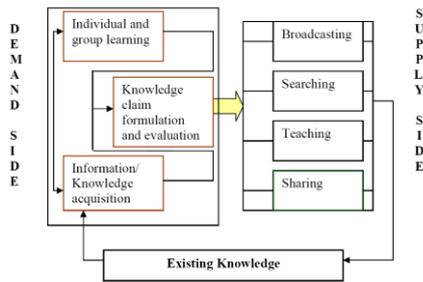


Figure 3 Knowledge Creation Cycle

Ref [5] further adds that in developing many educational programs the main attention is paid to the supply side which includes activities such as: Broadcasting, Searching, Teaching and Sharing.

These activities are under the control of teachers and it means that the conception of the whole educational process is made from the point of view of teachers.

At the Knowledge Advantage Conference held in November 11-12, 1997, Dr. Ikujiro Nonaka gave a presentation where he expressed that within an organization there are five enablers for knowledge creation: Vision, Strategy, Structure, System & Staff

Nonaka's lecture can be summarized as true knowledge - actionable understanding - comes from gut-level, commitment and belief. Therefore, building and conveying knowledge requires shared emotion, feeling, mental models, experiences, and what he called "empathy space." Ref [11] developed a Knowledge Pentagram based on *i*-System (5 I components) as illustrated hereunder:

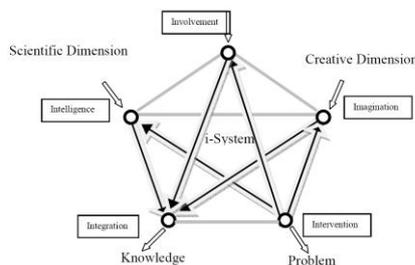


Figure4 i-System

They described the 5 *i*-system as follows:

1. **Intervention:** First identification of problem situation.
2. **Intelligence:** The necessary data and information are collected, analyzed and a model for simulation and optimization is built.
3. **Imagination:** Creating new ideas on new or existing things.
4. **Involvement:** Raising the interest and passion of ourselves and other people.
5. **Integration:** Integrating various types of knowledge, validating the reliability and correctness of the subsystems 2-4.

In case of higher education, the integration of all above models need to be integrated into one with a room to modify according the country or societal needs and should be implemented.

3.3 KNOWLEDGE DISSEMINATION:

Scottish Higher Education Funding Council in 2001 through Knowledge Transfer Grant Circular Letter HE/24/01 defined Knowledge Transfer as the term used to describe the ways in which Colleges and Universities use their knowledge, ideas, skills, expertise and assets to bring benefits to the economy and society in general, whether this is at local, national or international level.

Among the many models derived for Knowledge Dissemination classified into four main groups [7]:

- 1) The RDD (Research, Development, Diffusion) models,
- 2) The problem-solving models,
- 3) The linkage models, and
- 4) The social interaction models.

3.3A DETERMINANTS OF KNOWLEDGE TRANSFERS IN EDUCATION:

A study [2] suggests three main categories of determinants of the knowledge transfer process in education:

- The determinants related to the transferred knowledge attributes,
- Those related to the characteristics of actors involved in the knowledge transfer process (i.e., researchers, linkage agents and practitioners), and
- The determinants related to the transfer mechanisms

3.3B BARRIERS IN KNOWLEDGE DISSEMINATION:

Lack of time is connected to a variety of causes-from the tight scheduling of research contracts, to institutional demands on time, to the lack of sufficient time to prepare proposals and manage projects, so that dissemination is squeezed out.

Ref [8] identified other barriers in Scottish context which is equally valid in Mongolian context. These are Lack of trust and anxiety about intellectual property, overproduction of poor quality publications, the gate keeping functions of editors of high impact journals, need to focus on generating knowledge, and absence of interest in, or knowledge about dissemination.

3.4 KNOWLEDGE MANAGEMENT:

This notion of Knowledge Management is also supported by the Mongolian MECS that, almost all the universities today focus on how to increase the students' quality and skills through university and industry collaboration. Changing nature of work increases the need for 21st century skills preparation.

By the internationalization of curricula and offering relatively high quality programs to the students this sector is becoming global with a great pace.

The demand for Academic sector is sandwiched between the demand from industry and demand from the society. Corporate want flexible and adaptable knowledge workers. Universities also expected to produce people who can lead, who can produce new knowledge, who can see new problems and imagine new ways of approaching old problems.

The roles of Universities encompass beyond this and they are striving in preparing the students who are able to respond the needs of future which cannot be imagined in the present context.

In Mongolia, Knowledge Management System is at nascent stage but now HEIs have slowly started realizing that KMS could play an important role in their organization which helps them to improve the quality of education and will pace up the speed of economic growth of the country.

According to Tajuddin [10], the first act of KMS is to overhaul the educational curricula towards a more human and humane oriented strategies that would benefit the greater masses. This is also supported by Sallis and Jones as they insisted that there is as much

need for KMS in HEI. The opinion of Kidwell is not different as they urge that HEIs are suitable places to apply KMS practices to support their functional and operational processes.

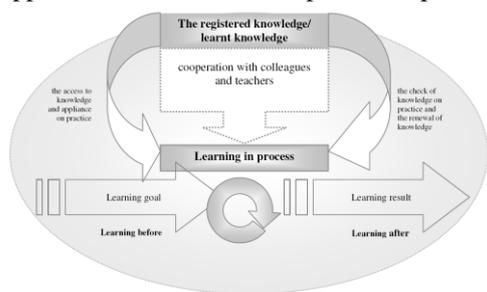


Figure 5 Holistic Model of Knowledge Management (Source: Sedziuviene N. , Vveinhardt J. 2008)

The main parts of this model become three blocks, in which the logics of non-stop learning: "learning before", "learning during the process", "learning after" is projected.

4. CONCLUSION:

From the discussion it is blatant that Knowledge Management System in Mongolia is still at nascent stage where HEIs are striving at the stage of knowledge identification. Knowledge Creation and Management will follow the suit.

The role of a HEIs in modern informational society requires a new innovative view into knowledge management and creation of a knowledge management system for HEIs. Knowledge management combines the parts of organization into one unity: processes, people, and technologies. Knowledge is that basis on which the competitive advantage of the organization is being built. Knowledge becomes valuable not because of the information it carries, but the actions and ability to take the step.

In a non-standard situation the actions require processes and phenomena require the understanding of their interrelation. This gives the basis to conclude that the function of knowledge management has become knowledge control—the entity of processes and technologies, aiming to find out, create, spread, process, preserve and present for the usage inside the organization. In scientific literature the process of knowledge management is studied well enough and is described from the aspect of clear, obvious and formalized knowledge processes. The main tool of such knowledge management becomes the nets of informational technologies, first of all internet.

To exchange not obvious knowledge, the special social nets are required and they are not well studied.

Need of Further Study & Discussion:

This area is such a vast in depth & wide that it needs a lot of further studies to reveal many unfolded fact. At the outset, the country needs to conduct a survey on Match-Gap Analysis. This analysis (Match-Gap) is basically to find the gap between Demand & supply of Knowledge workers. This analysis is to assess the current postsecondary education talent supply based on education program completion, which is then compared to the demand for occupations that align to postsecondary programs. In other words: this gap analysis helps to determine if post-secondary education output is meeting (or exceeding) the occupation demand needs of a given region or state. This is fundamentally different then what some call an "education gap analysis" which assesses and evaluates the skill gaps of a student or workforce.

Another major area of a great concern is to develop a model to exchange not obvious knowledge (tacit knowledge) on a common platform to be and hence a further study is suggested.

At this moment the researcher is poised to develop an effective model suitable to the existing environment of Mongolian HEIs and the report will be published shortly.

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