Impact of Knowledge based economy on curriculum

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Abstract
This paper is an integrated approach to examine the impact of a knowledge based economy on curriculum. It discusses a generic profile of an effective knowledge worker and how countries are responding to the challenge. The few features of curriculum and pedagogic models are highlighted based on a case study of teacher education in India. It shows how the institution builds its new curriculum model on the strength of its existing system. To meet the desired educational outcomes, it complements curriculum changes with a pedagogic approach that transforms the role of teacher to facilitators of learning.

Keywords: Knowledge, economy and curriculum

Introduction
Knowledge has always been an essential force in economic development. But in today’s increasingly knowledge-based world, more and more countries are embracing knowledge and innovation-related policies to spur growth and competitiveness. At the same time, because their institutions are weak, many developing countries are struggling to find ways to produce relevant knowledge and transform it into wealth, as well as to adapt and disseminate existing knowledge for their development. The central role of knowledge and innovation in economic growth is widely acknowledged in advanced countries, and the experience of those that have championed this new paradigm has led to the coining of the expression “knowledge based economies”

Since the invention of the transistor, an increase in computer speed and processing power has facilitated other technological leaps. As we probe more deeply into the understanding of time, life, matter, and energy, all these technological changes tend to converge in a way that transforms the entire economic and social system. Technical advances permeate our daily lives. Rapid advances in telecommunications and transport have accelerated globalization, creating a new playing field for worldwide competition with considerable opportunities for agile countries.

Knowledge based economy as the Foundation of Development
Simple exposure to knowledge, while necessary, does not ensure its effective use. One must be able to select the right form of knowledge, master its application, adapt it to specific circumstances, keep up with changes, and make improvements. Basic features of knowledge based economy are as follows:

• **As the Driver of Competitiveness and Productivity:** Knowledge is special because it is difficult to obtain, whether through creation or purchase. Unlike information, knowledge involves combinations of facts that interact in intangible ways. Because it is difficult to obtain, it constitutes an entry barrier to growth. Knowledge influences competitiveness, economic growth, and development.

• **As the Facilitator of Welfare and Environmental Stewardship:** Knowledge improves nutrition, cures epidemics, and protects against natural dangers. Knowledge nurtures. The “green revolution” is a striking example. Knowledge cures. The production, dissemination, and application of knowledge in the health arena have had tremendous implications for the well-being of individuals.

• **As a protector:** The December 2004 tsunami that struck coastlines on the Indian Ocean, killing hundreds of thousands of people, showed the importance of knowledge and information dissemination in mitigating the effects of natural catastrophes.
Effective satellite and early-alert radio systems—such as those monitoring the Pacific Rim—could have prevented many deaths. It has been decided to establish such a system by 2010 (UNESCO 2005).

**As the Enabler of Institutions and Governance:** Knowledge is also crucial in the policy-making process. Such knowledge can be acquired through dissemination activities, study tours, experiments, and so on.

**Impact of Knowledge based Economy on Curriculum**

Education is seen as a preparation for life. It is also meant for the growth and development of the society. To aid education reach all categories of people in this country, updating of knowledge based economy is needed. Besides, for any curriculum plan or innovation to become fully meaningful, it must be adequately implemented as per the new knowledge being produced in global context. The way and manner it is implemented influences the degree of success.

It is observed that the problem of our education system is not planning but implementation. The task of curriculum implementation therefore is not a simple one. This is because enough knowledge is being produced but how it is to be used and when it is to be used is not known even to the experts. Knowledge based economy as a matter of fact plays an important role in curriculum implementation. Teachers in teaching learning process cannot operate well without knowledge management.

Knowledge-based education is a method of teaching that focuses on what students can actually do after they are taught. All curriculum and teaching decisions are made based on how best to facilitate the desired outcome. This leads to a planning process that is different from the traditional educational planning. The desired outcome is first identified on the basis of knowledge based economy and the curriculum is created to support the intended outcome.

Learning outcomes are to be clear, observable demonstrations of student learning that occur after a significant set of learning experiences. They are not values, attitudes, feelings, beliefs, activities, assignments, goals, or grades, as many people tend to believe. Typically, these demonstrations, or performances, reflect three things: (1) what the student knows; (2) what the student can actually do with what she knows; and (3) the student's confidence and motivation in demonstrating what she knows.

Differently from one case to another, countries have promoted some reforms in the education systems, to support scientific research and innovative climate. In this new knowledge economy some international organizations (WTO, World Bank, UNCTAD, etc.) try to estimate the competitive position of the world and / or large multinational corporations. It may be inferred that the competitive position of a country or global companies, i.e. competitive advantage today rely increasingly more on the ability to acquire, exploit and commercialize knowledge.

In Fig.1 two indicators provide an overview on access, use and degree of diffusion of knowledge in major developed countries of the world:

**Content indicated in Fig. 1 is as follows**

- Knowledge Index assesses a country's ability to generate, adopt and diffuse knowledge, that shows the potential of a given country on the exploitation of this resource (it is calculated as a simple arithmetic average of performance score country / region for major pillars, such as education, innovation and use of information and communication technology - ICT).

- Knowledge Economy Index indicates the extent to which socio-economic environment of a country favors the creation and exploitation of knowledge for economic development; He is a composite indicator which is calculated as the average performance scores of a country / region for the four pillars of the knowledge economy (institutional framework conducive to knowledge, education and human resources, innovation and ICT). Each of these four "pillars" has a methodology for evaluation and elements which are included for the determination (eg. the institutional framework is based on the tariff and non tariff barriers, regulatory quality in economic life and rule of law).
Educators are likewise concerned with capturing knowledge, codifying it, transferring it, determining the roles and skills of teachers and students, and increasingly-leveraging technologies to support education. Curriculum, in the field of education, generally encompasses both what to teach and how to teach it, although these two aspects may be given different emphasis. Curriculum can also be paraphrased as a set of learning goals for students. From a broad view, curriculum management (CM)-the task of designing and delivering education-is a knowledge management task.

For those in the practice of education, curriculum has various connotations. For central and state governments, the curriculum typically means the range of courses that will be required and offered at schools and through which students will earn grades and diplomas. For a school district or campus administrator, the view of the curriculum is more detailed and typically includes a scope and sequence for each subject or course offered. For a classroom teacher, the view of the curriculum is more detailed still, breaking a semester or years’ syllabus into weekly or daily lesson plans. From a pure information-science viewpoint, curriculum is information about how to know what needs to be known. None of these views of a curriculum expressly articulate the ultimate purpose of the learning goals. Curriculum does not justify itself; presumably other forums exist to examine and decide why students should have a particular curriculum. Rather it is product of knowledge based economy.

Conclusion
Curriculum is becoming an increasingly important task in primary, secondary, and higher education. Due to increasing emphasis on knowledge based economy, curriculum development has also become an important task in world all over. Knowledge management, collaborative work, artificial intelligence, and decision support techniques are promising avenues for increasing the effectiveness of curriculum that has impact of knowledge based economy in educational institutions. From the above discussion it can be concluded that five knowledge management principles are required for curriculum development in the realm of education:
1. Foster awareness of the value of the knowledge sought and a willingness to invest in the process of generating knowledge based economy.
2. Identify key knowledge workers who can be effectively brought together in a fusion effort for curriculum development that is based on new knowledge.
3. Emphasize the creative potential inherent in the complexity and diversity of ideas.
4. Make the need to knowledge generation clear so as to encourage, reward, and direct it toward a common goal.
5. Introduce measures and milestones of success that reflect the true value of knowledge based economy.

Still, the irony is that it seems to never be finished. Perhaps, as more of last century’s lessons transfer to the education sector, we will start to hear and see “reform” replaced with “management”—and used in the same way as “knowledge based economy.”

References