

Bologna education reforms: Lessons for Indian knowledge economy

Reformas educativas de Bolonia: lecciones de economía del conocimiento para la India

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Received: 31/08/2019 • Approved: 17/12/2019 • Published 28/12/19

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ABSTRACT:

European educational transformation post-Bologna reforms have a plethora of learning experiences for India in its quest for being a leader in the global knowledge forum. The paper analyses the Bologna Process reforms and attempts at development of a similar educational internationalization framework for Indian system. The pre-requisites for a knowledge economy and how the Bologna reforms confirms to all these. Most importantly it is relevant for India to model its own higher education after Bologna reforms.

Keywords: Bologna Education; Reforms; Indian Knowledge Economy

RESUMEN:

La reforma educativa europea después de las reformas de Bolonia tiene una gran cantidad de experiencias de aprendizaje para la India en su búsqueda de ser un líder en el foro mundial del conocimiento. El documento analiza las reformas del Proceso de Bolonia y los intentos de desarrollar un marco de internacionalización educativa similar para el sistema indio. Los requisitos previos para una economía del conocimiento y cómo las reformas de Bolonia confirman a todo esto. Lo más importante es que la India modele su propia educación superior después de las reformas de Bolonia.

Palabras clave: Bolonia Educación; Reformas; Economía india del conocimiento

1. Introduction

The global order is now that of knowledge-based order (Machulp, 1980; Castells, 1988, 2010; Drucker, 1992; Mokyr, 2002). Consequently, pressure is exerted from various spheres towards a transformation of institutions to cater to the same. Consequently, not only education system and universities as important sphere of public policies but the national policies, in general, are affected directly by these transformation trends. Education policy is an important part of the national policy framework since it constitutes an important segment of national welfare systems (Hokenmaier, 1998; Plumper and Schneider 2007). Europeanization, internationalization and globalization demands from higher education have compelled Europe to converge higher education efforts of the national systems to cooperate coordinate policies in an effort towards knowledge economy (Etzkowitz, H., & Klofsten, M., 2005). The efforts towards integration in the form of Bologna process has been massive and the impact grand (Witte, 2006; Reichert, 2010). However, the principal question is whether the Bologna declaration and Bologna process are adequate strategies towards the knowledge economy and whether it can be modeled after by the higher education systems elsewhere. Lisbon Strategy declared the seriousness with which the EU must pursue its goal towards knowledge economy. Two salient features of Indian higher education in the current decades are the simultaneous increase in the supply of students as well as an increase in demand for students and scholars in higher education institutions (Altbach *et al*, 2009). It is essentials for national growth and development through innovation (Lundval *et al*, 2002). India and China are now the biggest representatives of the developing world that epitomize 'massification' of higher education (Banya, 2005; Saxenian, 2005). India is in the path of advancement proved by the large number of students each year, the number doubling from 4.9 million in 1990 to 9.4 million in the same decade (The Economist, Sep, 2010). There has been a series of prolonged discourses on the deteriorating quality of higher education because of crowding (Aggarwal, 2009; Altbach and Knight, 2007). However, there is also the advantage of a collection of world-class elite institutions of higher education (such as Indian Institute of Technology (IITs), Indian Institute of Management (IIMs), Indian Institute of Science (ISC), National Institute of Technology (NITs), All India Institute of Medical Science (AIIMS), and the like that not only produce skills as well as world class research and innovation, linking India to global economy, but also sets standards for future of higher education for the country (Bhattacharya and Sharma, 2007). In addition, India is also currently boasting of a booming private sector in the area of higher education (Saxenian, 2005; Chacko, 2007; Jayaram, 2004). Now the universities not only have shifted to being privately owned instead of being completely state enterprises, they have also started pro-profit streams such as computer skills and accounting that pioneer innovations in education.

The effect of globalization on scientific knowledge is continuously felt in varying degrees of intensity in different countries and institutions of higher education, and India is no exception (Palliwal, 2006). First, as a consequence of business and economy being internationalized, employment works as a homogenizing factor even in most diversified cultures. International student mobility is an important channel through which high-skilled immigrants arrive (Suter and Jandl, 2006; Ritzen and Marconi, 2011). It initiates the exchange of products and services as well as ideas and knowledge (Chiswick, 2011) Secondly English is being promoted as the language of universities across the globe for publishing and citation.

Two approaches were developed by academics and experts to explain the need for an expansion of higher education, to which a third is now added. Though Asian countries have long realized the value of education, the human investment as a development of economic thought has boosted national investments in education in the region. Theodore Schultz's theory confirming the earlier works of Adam Smith and Alfred Marshall concluded that national investment in education of citizens gives the same rates of return or even more as compared to investment in physical capital. [3] Educational analysts argue that there was a sea change in the third world countries after the introduction of human capital thought. As Patel (1985) notes the human investment philosophy brought 'educational miracles' in filling the north-south divide in Asian countries including India and between 1950 and 1997 the enrolment rate had increased phenomenal 65 percent (1.1 million to 35 million students) [4]. The second approach is the social development approach pointing at the need for inclusion for national development. In both approaches expansion of higher education was perceived to be of importance as policy targets. A third source was the comparative studies in higher education that international organizations like OECD and UNESCO made. These studies not only showed the difference that expansion of education could make in national and social development but also facilitated an exchange of experiences (Hackl, 2001) the manpower approach and the international economic debates together were already strengthening the economic dimension of higher education. These debates, approaches and reforms put an end to the time when higher education was seen primarily as a part of national culture (Giroux, 2002). Despite massive expansion in this period the national systems remained conservative and nations kept their particularities (Teichler, 1999).

2. Methodology

The methodology adopted in this study is secondary data analysis. The paper is a descriptive one. 57-articles and the secondary data therein were thoroughly analyzed to carry out the study.

3. Results

The results of the paper are the narrative discussions and recommendations enumerated below in a thematic manner.

3.1 Europeanization, internationalization and globalization of higher education

When higher education is discussed at a supra-national level, three terms most frequently used seem to be internationalization, globalization and Europeanization (Teichler, 2004). These terms referring to the policy directions in higher education also point to the trends in national education policy. All these terms refer to education policy direction moving away of a national policy system to a long-distance transport of knowledge with more complex settings and a multitude of actors to play a role (van der Wende, 2001). However, there are a few differences in the uses of these terms, especially in their basic meaning. Van Vught, van der Wende, and Westerheijden (2002) differentiate globalization and internationalization: "In terms of both practice and perceptions, internationalization is closer to the well-established tradition of international cooperation and mobility and to the core values of quality and excellence, whereas globalization refers more to competition, pushing the concept of higher education as a tradable commodity and challenging the concept of higher education as a public good." [5] Internationalization addresses to increased cross border activities in higher education whereas, globalization assumes that borders and national systems in higher education will get blurred or disappear due to increased cooperation among actors at multi-level that are transnational in nature. Europeanization is a regional version of globalization and internationalization at different point of time. Internationalization as a term in higher education is in relation to physical mobility of staff and students, research collaborations and cooperation on the academic front and also knowledge exchange and transfer of training to an international basis (Teichler, 2004). Europeanization is used for referring to cooperation and mobility, convergence and integration of structures, substance and contexts or even to segregate different regions of the world such as "fortress Europe" (Teichler, 2004). Globalization is generally discussed in relation to market oriented completion and trans-national education and also in relation to commercial transfer of knowledge and training (Sadlak, 2001). Since the 1990s, globalization as a term has replaced internationalization in Europe and elsewhere similarly driven by World Trade Organization (WTO). In the General Agreement on Trade in Services (GATS) negotiations benefits of higher education are seen more as private and therefore GATS phrases on educational services say that services in higher education can be organized into commercially competitive services. This implies that free market on higher education is to be allowed under GATS at an international level (Council for Trade in Services Secretariat, 1998). This pushes the national higher education policies to increase competition, thus boosting tension in fields such as quality assurance and degree recognition. And despite European nations still having a hold on education are geared towards the forces of globalization post Bologna process. Policies which are seriously geared up to globalization process consequently focus on entrepreneurial activities such as generating income from institutional exchanges and international collaborations on study programs, research activities and so on. Though critics of globalization show how the process especially the WTO negotiations are detrimental to the higher education systems [6] especially in small countries and universities bringing world-class universities in western industrialized countries to the fore front, the truth is that it is a process that cannot be denied either.

Concerning internationalization of higher education, it can be reminded that higher education institutions have always been international than any other institutions because knowledge that is imparted in universities have cross border implications. Knowledge generation, storage and transmission are universal without being bound by national or regional boundaries. Again cross border collaborations in universities have long been associated with quality as is the systematic collection of information from all over the world. Phillip Altbach in a report to the UNESCO World Conference on Higher Education note that,

"Universities have always been affected by international trends and to a certain degree operated within a broader international community of academic institutions, scholars, and research. Yet, 21st century realities have magnified the importance of the global context. The rise of English as the dominant language of scientific communication is unprecedented since Latin dominated the academy in medieval Europe. Information and communications technologies have created a universal means of instantaneous contact and simplified scientific communication. At the same time, these changes have helped to concentrate ownership of publishers, databases, and other key resources in the hands of the strongest universities and some multinational companies, located almost exclusively in the developed world." (Altbach, Reisberg and Rumble, 2009: 7) [7]

Though internationalization of higher education refers to a broad range of international dimensions, there is a common pattern: First and foremost are student, teacher and academic staff mobility [8]. Second is the recognition of degree achievements in one's country in other countries of destination. Third are the other modes of transfer of knowledge such as media and international patents. Though printed modes of transfer of knowledge is more traditional, now there is bombardment of other media of transfer of knowledge through which internationalization of higher education also takes place. Forth is the international orientation and attitudes of actors of higher education. Two other themes that are loosely related to the phenomenon of internationalization are the similarity or heterogeneity of national education systems. For example, in EU the national education systems are varied and mobility is valued as receiving contrasts. On the other hand, Bologna Declaration called for convergence of the education systems of the nation-states to facilitate intra-European mobility of students. Internationalization is looked upon as an answer to reviving education systems to bring it closer to a global system. Despite questions on quality improvement, management of higher education institutions and quality of research and study programs, efficiency of utilization of resources, etc, and the internationalization of higher education is considered the most important reforms process. These are a few processes of internationalization in higher education.

3.2. The bologna process

The expression 'Bologna Process' (BP) refers to multi-national reforms and changes currently undertaken by European states, with varying scope and pace, in order to implement the goal of creating a barrier-free European Higher Education Area (EHEA) characterized by 'compatibility and comparability' between the higher education systems of the signatory states (Papatsiba, 2006). It is an intergovernmental rather than supranational process, EU being merely one of the stakeholders though an important one. The process was signed by 29 European countries' education ministers (only 15 member countries at the time. Now there are 47-signatory countries) for converging (and not merely harmonizing) higher education structures throughout Europe.

The Magna Charta Universitatum and the Sorbonne Declaration are considered to be the precursor of the Bologna declaration and had all the elements of it ready. Magna Charta Universitatum framed in 1988 by 430 European university representatives proclaimed the constitutive concept of a university by affirming the principles of institutional autonomy, academic freedom, unity of research and teaching, adherence to common European traditions and values and stressed the importance of role of university in bringing about social change and international society (Charta, M. 1988).

Exactly ten years after the Magna Charta Universitatum, Sorbonne declaration was signed in May, 1998. Higher education structure in Europe was to be harmonized which will enhance the free movement of students and teachers and the free choice of study and programs. The declaration deals with two issues: one, an open European area for higher learning and secondly international recognition of degrees and attractiveness. Bologna Process is based on all these principles and more as a reform process. It is followed by follow up group (FuG) that makes assessment of its adherence by the EU member states every year. Many countries have not been able to comply with the date for the completion of the Bologna Process. However, member states are fast moving towards accepting the reforms process into their national education system thereby moving from a vastly diversified education system in Europe to a more internationalized and standardized norms across the continent. The sequence of events in the process of convergence of European higher education till now are as follows: Magna Charta Universitatum (1988), as the foundation stone of European dialogue on higher education; the declarations of Sorbonne (1998) and Bologna (1999); as well as communiqués of Prague (2001), Berlin (2003), Bergen (2005), London (2007), Leuven/ Louvain-la-Neuve (2009), Budapest declaration (2010) and Bucharest (2012). The Bologna Process had evolved over these six series of follow up programs that were developed every alternate years starting from 2001. The document thus passed through six meetings and developed communiqués through these communiqués. Every 2-year thus the Bologna Process has a new secretariat and the results are reflected in different action lines that define the scope of the Bologna Process.

It was initiated with the objective of building the European Higher Education Area (EHEA) by means of comparable and compatible academic standards across all of Europe by the year 2010. The process is working towards the adoption of the three-cycle degree system, quality assurance and the recognition of qualifications and periods of study, across European universities. While the geographical as well as a conceptual framework of Bologna process has increased over the years, so has its significance.

European national education ministers meet biennially with consultative members to review progress reports and action lines, or the goals of the process and agree on agenda for the next biennium. Between biennial meetings primary responsibility rests with a Bologna Follow up Group (BFUG) chaired by country that has rotated into the presidency of the EU. The BFUG organises conferences and seminars calls for national reports, inventories actions to date, and assist the ministers in framing the communiqués that characterise as well as summarise the results of the biennial meetings. Day to day operations is managed by the secretariat provided by the nation that will host the next biennial meeting.

The core goal of Bologna was the creation of an open European higher education area by 2010. The process defined the means of achieving this end via policies and joint measures at the national levels with coordination and implementation via the establishment of objectives and benchmarks. The action lines in the Bologna Process have evolved over time from the initial communiqués.

A few basic reforms brought in the Bologna Process that constituted the spine of the reforms:

1. **Comparable degrees:** stemming from the Magna Charta and Sorbonne declaration it is realized that to truly internationalize European education, degree structure must be standardized to make it readable and comparable across European higher education area. The "recognition of Qualification" was signed by signatory nations in the Lisbon convention to fulfill this objective.
2. **Two-tier structure of degrees:** the higher education degree structure is now standardized to include a two-tier cycle of bachelors and masters (BA/MA) degree (of three years and two years respectively) with the option of a three-tier of PhD.
3. **Credit transfer:** ECTS (European Credit Transfer System) is a Bologna outcome that makes curriculum designed according to attainable credits. Transferable credits make academic mobility viable and allow more diversified learning programs and course structures. They are also used for lifelong learning and exchange programs apart from regular degree programs.
4. **Mobility:** Academic mobility, also a spin-off from Magna Charta and Sorbonne, is intended as the main focus of Bologna process. It calls for academic mobility of students, faculty, scholars and staff in the EHEA. Funds are created under multiple heads to make mobility a possibility.
5. **Quality Assurance:** Bologna reforms also call for quality assurance through European agency called European Network of Quality Assurance (ENQA) which works in collaboration with European Association of Institutions of Higher Education (EURASHE), National Unions of Students in Europe (ESIB) and European University Association (EUA).
6. **Increasing competitiveness and attractiveness of European higher education:** this is another important goal of Bologna Process. The means to do so is to follow the other norms as well as *Erasmus mundus* as scholarship programs. The follow up groups and trends reports every year demarcate steps to be taken by European universities to increase visibility and attractiveness for international scholars. The idea is to show case the best universities in Europe and create an international market for European education product and services.

The main areas covered by Bologna Process are the comparability of degree structures; adoption of 2-main cycles as undergraduate/graduate and masters/ PhD (3+2+3); credit transfer systems as ECTS; mobility of students, teachers and research scholars; cooperation in quality assurance; European dimension in higher education in inter-institutional coordination and cooperation, curriculum convergence etc. The Bologna Process recognises that to achieve these objectives, it requires a transparent system that allows signatory countries to understand each other's educational systems and specific courses of study. It is important to appreciate that the main purpose of the Bologna Process is not about conformity and a uniform curriculum but rather about harmonisation and clarification of the complexities of the varying higher education systems. Bologna process brings a convergence between EU strategies for higher education and strategies to promote EU's competitiveness as a KBE (Fairclough & Wodak, 2008). It is the most thoroughly discussed and profound set of reforms in European higher education ever. With the aim of creating a "European Higher Education Area" the Bologna action lines objectives in its policy initiatives include: setting up of a comparable and compatible degree structure across Europe, establishing credit system throughout EU, promoting student as well as teacher mobility, inclusion of community in higher education, promoting attraction of EHEA, promoting European cooperation in quality assurance and Life Long Learning.

3.3. Significance and implications of bologna process

1. **Student Centered education:** The idea of student-centered learning first time floated through Bologna process. Though the result in implementation is mirrored as slow development in this regard, there is undoubtedly a beginning observed. Student centered learning in place of teacher centered teaching was seen as an integral step in the reform agenda at the second step. The Bologna Process is committed to improving the quality and access of education with a focus on student-centered learning and a fundamental interest in the individual students' learning success. The implications and significance of Bologna declaration and Bologna process lies in the fact that it came as a contradiction to the traditional resistance of the member states to any harmonization policy on education (Hackl, 2001).
2. **Mass education instead of elite education:** The importance of Bologna process also lies in the fact that it was the first effort towards developing higher education in a massive way at a European level. It is argued by many that this initiative signals a turning point in the development of European higher education (Haug, 1999) [9]. It is indeed an unprecedented momentum especially for education since it had hitherto been national and conservative in its orientation (Furlong & Oancea, (2005; Papatsiba, 2006).
3. **Three tiered uniform structure:** The Bologna Process introduced the three-cycle degree structure; three-tiered progression of Bachelor's, Master's, and doctoral degrees. These qualifications, now European-wide framework, will define qualifications in higher education according to level of complexity and difficulty with the support of Dublin descriptors and in line with complementary Lifelong Learning initiatives. This standardization and harmonization policy has been a much awaited change in Europe since national education systems prior to Bologna Process were different from each other in terms of its organization and structure that it was difficult to compare and became a hindrance in students' mobility across Europe.
4. **Quality assurance:** The Bologna Process has initiated multiple improvements in quality assurance both within higher education institutions and in its external dimension. Common standards have been developed for quality assurance processes and a European network of quality assurance agencies has been established. External quality control, common quality assurance standards, guidelines and comparability across Europe have become focus for higher education institutions and national education policies. The European Standards Guidelines (2005) and European Register for Quality Assurance (2008) have resulted in regular quality reviews and more demanding than some well established quality assurance agencies of the world.
5. **Expansion of reforms:** Bologna has initiated profound changes in the higher education systems not only among its signatory countries but also in number of other countries despite persistent concerns about the speed and quality of the translation of the Bologna goals at the university grass-roots (Reichert & Tauch, 2005; Caddick, 2008). Over the past five years, therefore, the Bologna Process has had a decisive impact on almost all aspects of higher education in Europe (Keeling, 2006).
6. **Attitudinal change towards higher education:** Because of the reform agendas, there is a slow but gradual change in attitude of higher education institution and actors involved in higher education as well as people of Europe in general. Due to the Bologna process there is a change in curricular designs and teaching-learning method. Institutions are interested in tallying and matching their study programs to the learning outcomes specified in the agenda, at the same time assessing their effectiveness and competencies to promote the same. The enthusiasm is reflected in the institutions' general tie up with the industry to check regularly the effectiveness and competency of their curriculum to the employability of the students.
7. **Institutional Change:** curricular reforms till the end of the deadline of 2010 had not yet been complete. The process is still going on with many countries remaining superficial in the institutional change. Though the expectation at the first place was to increase the international attractiveness by means of flexible curriculum and improvement of competences and skills, this has yet not been achieved. The reforms are initiated in different nations and institutions differently ranging from superficial to more ingrained reforms. Many countries have taken the Bologna process as an opportunity to bring out wide range of changes in their education system which they were unable to do earlier. As the *Trends* studies have shown (Reichert and Tauch, 2005; Crosier *et al.*, 2007), many institutions have actually adopted the reforms as an opportunity to address a range of changes which they had not been able to promote as easily without such external pressure.
8. **Professional orientation of higher education:** The reforms agenda has increased the professional orientation of the European higher education due to its emphasis on relevance of higher education to labour market and employability. Professionally oriented institutions of higher education such as vocational training and professional colleges and technical institutes have gained higher position. Due to focus on innovation in both Bologna process and Lisbon strategy, universities and colleges that were traditionally focusing only with teaching learning activities have now pushed their limits to cater to R&D activities.

3.4. Lessons for India and rationale for learning

India has extraordinary potential to be a knowledge superpower in near future. It is endowed by a "demographic dividend" as the age structural transition is dominated by youth population. In this regard, higher education plays a central role in leading towards reaching this potential to be a knowledge superpower by being the harbinger of technological development and innovation. It also has pool of human capital. India also strong and substantial educated Diasporas abroad. Second premise is that for leading the global knowledge scenario and for its repercussions for individual citizens' advancement higher education must be brought to the forefront on the national policy agenda.

It was in 2005 that the World Bank report on India as a knowledge economy declared that India has reached an optimum level to transit to knowledge economy. Since the ample work force in subsistence and non productive sectors can be shifted and used in knowledge intensive productive sectors or even in converting non-productive sectors to knowledge intensive productive sector. India has many advantages in its transition to knowledge economy. First India has a huge pool of talent, an English speaking skilled workforce, especially in different sciences. It may well facilitate the international exchange of ideas, knowledge, goods and services, and capital to a greater extent (Chiswick, 2011). Secondly, India is a democratic country with the largest democratic market in the world. Third India also has a large (skilled and educated) Diaspora that creates knowledge linkages and networks. Fourth, all the institutions of a free market economy such as well developed financial sector and a dynamic private sector are present in almost all economic activities. Fifth, the infrastructure in science and technology is also well developed and is diversified. Finally, in recent years, there has been huge development in information and communication technology in which India has truly become a world leader in software services. With these advantages India can become a knowledge based economy thereby improving its economic growth and social development while enhancing its competitiveness in the global market. The Planning Commission's report on 'India as Knowledge Superpower: Strategy for Transformation' (2001) and 'India Vision 2020' seek ways to address the knowledge economy issue within India, specifically focusing on building up a guided approach for smooth transition to knowledge economy. However, till now in the year-2014 this transition to knowledge economy has not been achieved.

There are four pillars on which knowledge economy stands: (i) a strong economic and institutional regime, (ii) a skilled and educated work force, (iii) an efficient innovation system, and (iv) a dynamic information infrastructure. To strengthen its position as a knowledge economy, India has to strengthen each of these pillars through strong reforms in these sectors.

For creating a knowledge economy, it is essential to have a skilled workforce to develop, generate, transfer, disseminate and apply knowledge effectively. India has world's youngest workforce with a median age way below that of China and OECD countries. The Registrar General and Census Commissioner of India (RGCCI) projection of population of India show an increase of population from one billion in 2011 to 1.400 billion in 2026. In the first quarter of 21st Century, the share of workers in the age group of 15 to 59 in total increase would be 83 %. India is endowed with the 'demographic dividend' which means that India has a higher group of working population as a portion of larger population which leads to low dependency ratio and a higher benefit to competitiveness and growth. This is a huge advantage for India considering the fact that Western developed nations is suffering from aging population which is affecting their economic growth and productivity reversely. Half the population of India was younger than 25 in 2010. It will change to half the population being under 28 in 2030, making India a very young country for the next 20-years.

India will have enough manpower to fulfill its domestic needs as well as export to fill the gap created in the global market due to aging. It remains a challenge for India to impart proper training for skills development. Government of India among many proactive steps has also demarcated a few significant sectors in which skills training mechanism are to be developed at a regular basis.

According to a report by Federation of Indian Chambers of Commerce and Industry (FICCI) on skill development and training of workforce, out of twelve million workforces entering into labour market each year in India; majority of which are unskilled, and the skill capacity is merely only four million. This means India needs to develop its skill development capacity through education to produce trained human capital. Without planned efforts towards increasing the skills training capacity, there is a threat of demographic dividend turning out to be demographic burden (Bose, 2007). For any government at the centre or in the states, it is a real challenge to absorb the vast masses of unemployed and poor quality employable youth. This is going to affect productivity of labour and also threaten law order. Hence there is a dire need for increasing the employability of the youth as well as to create and enhance skill level for the youth through skill training. Ironically India faces the coexistence of huge unemployment along with huge skills shortage at the same time. NASSCOM-McKinsey & Company Report (2013) also apprehensive of a huge skills shortage in future lest the training capacity is increased in both IT related and BPO related skills in India. The World Bank while projecting prospective high economic growth in countries maintains that India's Total Factor Productivity is at a stage where it can be harnessed to give effective results for its human capital by applying its knowledge resource (World Bank, 2003). The current century demands a current set of skill competencies which were hitherto non-existent. Fostering such skills in the institutions of higher education as well as vocational training centre is important for all countries including India. However, such an effort demands an open, flexible and creative education from basic to tertiary level. Additionally to help the citizenry continuously upgrade their existing skills level, it is essential to have a strong lifelong learning system in place. India still has large dropout rates at all levels of education, i.e. about 104 million children out of school. Female participation in secondary and tertiary level is much lower. Powerful missions in the forms of total literacy campaign and girl child education have made deep impacts, however efforts need to be further made to enhance educational attainment a reality. India has a large pool of doctors, engineers, scientist, and highly educated people who have made it globally. However, to be continuously relevant for the global need for human capital, India needs to revamp its education specially to cater to the needs of the industry to create an effective pool of knowledge workers. For this the industry university and the government have to work in coordination.

It is well known by now that India lacks world-class universities and colleges of international ranking to meet the demands of its vast youth population. Research universities to cater to the needs of KBE are rare instances baring few institutions such as Tata Institute of Fundamental Research, All India Medical Sciences, IITs or few more institutes funded by the central government. No other top notch universities or research institutes undergo research activities capable of guiding India's route to KBE through innovation. For its preparedness for knowledge economy, India's investment in terms of capital and human resources requires careful planning and strategy. Few problems that mar India's higher education system includes lack of accountability, favoritisms in admission and recruitment thus compromising meritocracy, resource crunch, lack of initiatives, lack of research culture etc.

3.5. Higher education in India and lessons from bologna

Higher education plays a central role in knowledge economy because of its ability to generate skilled work force that is essential for the economy to generate new technology, transfer technology and apply it for domestic purpose as well as to codify knowledge to be transmitted and utilized. Therefore, it is essential for a nation to stand on a strong footing of higher education if it were to transit to a knowledge economy. In this context strengthening higher education system and institution is so crucial for India. With a strong demographic advantage of majority of the population in generative age, it is imperative that they are imparted with the right skills to make use of this advantage.

A lesson from Bologna Process is the comparability and **compatibility of degree system** across the continent. India is a vast country with different parallel forms of degree structures for different domains such as engineering education, medical, management, poly-techniques etc. Also within higher education degrees for humanities and sciences different states or regions which has to be standardized. The evaluation of efforts made by students for engineering and medical needs to be standardized and made uniform. Across the nation degree structures must be uniform and confirm to international standards.

One typical feature of Indian higher education is a large number of public and private institutions. There has been a tremendous growth of infrastructure of higher education in recent times. The total number higher education institutions have increased manifold from 30 in the 1950-51 to 764 in 2012-13. There are about 18,500 of institutions of higher education in India including twenty central universities, 215 state universities; over hundred deemed universities, five institutions of national importance and over 17,000 degree colleges. According to UGC Summary Report (2013) the number of universities has increased to 634 and affiliated colleges have increased to 33,000. Gross enrolment in universities reached 17 million pupils excluding the enrolment in technical diploma and vocational training.

Among institutions of higher education in India the share of state universities is the highest (46 percent). Private universities constitute the next highest of 21 percent. About 20 percent constitute deemed universities. Institutes of national importance such as IITs, IIMs, and IIS etc form six percent of the breakup while central universities form seven percent. Most of the developed nations have private sector investing hugely on higher education. In USA 1835 universities out of 2466 are private universities. Similarly in Japan 553 universities out of 726 are in the private sector. China has 800 private universities (World Bank, 'Higher Education in Developing Countries, Promises and Perils'). In India private sector

was allowed into education only recently for sufficing in three fronts access, quality and equity. At present private sector is gradually increasing its presence in higher education looking lucrative.

Another typical feature of Indian higher education is its enrolment rate. Indian Gross Enrolment Ratio (GER) in higher education crossed the level mark of 15 percent during the eleventh plan period though it is much behind in the world average of 27 percent and other emerging economies such as China (26 %) and Brazil (36 %). Current GER is at 19.4 percent (2014) and UGC has launched huge student aid programs to boost the enrolment rate to 30 percent by 2020. However, it can now be called mass system than elite system where only a small elite section opts for higher education.

Total enrolment in higher education which was merely 0.21 million in 1950-51 is at 22 million in 2012-13. However gross enrolment has increased from 0.40 % in 1950-51 to 19.4 percent in 2012-13 (UGC, Higher Education at a Glance, 2013). The number of higher education institution has increased to 46,430 showing a 9.6 % growth per annum. Number of Central Institutions of higher education has grown with 51 new institutions being set up in the eleventh plan. The gross enrolment ratio in higher education which was merely 9.52 in the year 2000 has risen to 24.76 in 2012 which is a huge leap. Enrolment in tertiary level (public and private, full and part time) of 9,404,460 (in the year 2000) has shot up to 28,525,722 (in 2012). The number of internationally mobile tertiary students in 2012 has risen to 31,475 from 6,988 in 2000. The expenditure in higher education as part of GDP is very low in India. The public spending is merely one percent of the GDP which is why many private universities come up to fill the gap. There was an increase of 60 percent growth in private universities during the period of 2007 & 2012. The number of private institutions was 18,145 in 2007 which increased to 29,662 in 2012. India's expenditure in tertiary education as percentage of total educational expenditure was 20 percent in 2000, and increased to 37 percent in 2012, showing greater importance attached to higher education in recent years.

However, when it comes to measure quality there is hardly a systematic institution to follow. To keep quality of higher education in check a quality assurance system needs to be in place. One of the major lessons for India to learn from the Bologna Process is to develop a **quality assurance system** for a large and diverse higher education system. The European Higher Education Area or all the 47 countries that have ratified the Bologna Process have a common quality assurance system in place that ensures a minimum quality. India in similar lines has to develop an internationally recognized quality assurance system if it were to be recognized for its knowledge economy. This will not only enhance the value and attractiveness of Indian Universities in the global education market but also have immense effect on innovation and R&D. When Indian universities are compared with others in terms of research active area, Indian universities fall much behind. Even within Asia Chinese Universities have much more active research oriented universities than Indian counterparts. UNESCO carried out a survey of universities and found that most Asian universities are merely medium to low research oriented. As can be seen in the table the number of universities with wide research range is nil in India. "Wide" range is defined by the same report ("Higher Education in Asia: Expanding Out, Expanding Up, the rise of graduate education and university research", UIS Publishing) when a university's research areas exceeds the threshold in at least 100 niche areas. "Medium" is defined when exceeding the threshold in 50-99 areas and "Narrow" is defined as less than 50 areas. Research which is an integral part of higher education is measured by the R&D expenditure as part of GDP. According to a report released by National Science Board in February 2014, India lags far behind in the scientific research and development spending in which USA leads. The global R&D expenditures totaled an estimated 1,435 billion USD in 2011 from which India spent only 24 billion USD. At 208 billion USD expenditure China's R&D expenditure is world's second largest. Out of global Gross Expenditure on R&D (GERD) of 1.6 trillion USD, India's share is only 3 percent and five times behind China.

Another take away for India from Bologna is the **mobility structures** that have been the spinal cord of Bologna Process reforms. Across India mobility of students, teachers as well as staff and researchers must be encouraged and made possible through comparable and compatible degree structures. E.g. students doing engineering can take a few courses under specific universities for short or long term course on subjects of humanities that will count in their final degree. This way not only inter-disciplinarily is encouraged but quality research can be promoted. Secondly, students can opt for specific course from particular college or university of choice. Faculty can be borrowed from different places for specific courses who can teach at various places simultaneously. Exchange of courses, twin degrees, franchise branches of universities of repute etc. are particular spin offs from mobility.

From the EU higher education reforms India also has to learn the lesson of improving the attractiveness of its higher education in the global arena by **internationalizing higher education**. Whereas India is one of the largest source countries for international students, it hardly stands as an attractive destination for international students. By making its universities competitive and improving the research and development India has a chance to sell its education product in the global market with equal competitiveness as do countries like the USA, UK, Canada, Australia and New Zealand. China and India are on the top five lists for both Canada and the US in terms of sources for highly-skilled and professional immigrants and temporary migrants. Given what has been happening in China and India, it is not surprising that their citizens are well prepared for, and fit into, the employment needs of the globalizing economy in North America and Europe. China and India possess rapidly growing economies of their own and a burgeoning highly educated middle-class, and are among the largest source areas for talent-exportation in recent years. In the US migrants from these two countries alone count for more than 25% of all international students in 2006, 40% of all employment-based immigrants and 60% of all H-1b visa holders in the early 2000s (Saxenian, 2005). Likewise, between 1997 and 2006, a quarter of all immigrants to Canada came from China and India, and in 2006, the 41,457 students from these two countries account for 26% of the total stock of international students in Canada (Citizenship and Immigration Canada, 2006).

Higher education can be a major source for revenue for India. Especially at a time not long ago when the students of western world were looking for new avenues for valuable and cheaper alternative for higher education owing to increase in fees for international students, Indian higher education could be a major foreign exchange earner. Though Indian Universities do not feature in the world's top universities list, yet India has many great institutions of higher education that have world class standards. Higher education sector is experiencing good growth in recent times. In fact since the last five decades the sector has transformed from a preserve of elites and upper caste to be accessible to all and sundry. It is now a global industry with more than ten millions of students enrolled each year. The newly elected government in India now is keen on bringing the Foreign University bill to the front as a priority commitment. The bill presented by the previous government in the year 2012 could not be passed earlier because of lack of support in the *Rajya Sabha* (Upper House of Indian Parliament) where it was introduced. Now when the bill is passed in both the houses it will allow top Ivy League Universities into Indian land to set up branch campuses here. The foreign university bill regulates the entry of universities abroad into India through branch campuses and franchises. This is expected to alleviate the problem of shortage of institutions of higher education to cater to the population. Other logic given for this is to stop brain drain and retain skills within India. Students going abroad for study generally stay back for a long term career in the destination countries such as USA, UK, Canada or Australia. In fact the 'stay rates' are increasingly getting higher of late as the developed world is incentivizing such moves to fill their 'demographic cliff' (Phillip Altbach, 2013). However, at the time of its introduction in the parliament it was felt that allowing foreign universities will make many substandard universities open their campuses in India and compete with Indian Universities.

Like the Bologna Process's efforts to establish the EU as **knowledge based economy** through its higher education system, India has to proceed to make a case for stronger tertiary education for a knowledge based economy. Constitution of National Knowledge Commission was one of the attempts towards reaching knowledge economy. The NKC was constituted in 2005 with a three years period till 2008 for functioning. It was constituted with the task of assisting the Prime Minister in transforming the knowledge landscape of the country. It guides policies in certain key areas that affect India's transition to knowledge economy. Since its formation, it has presented about 200 recommendations. Among its numerous recommendations one is setting up of a regulatory body for higher education called (Independent Regulatory Authority for Higher Education in India) under which all other higher controlling bodies such as University Grant Commission (UGC) and All India Council of Technical Education (AICTE) etc would function (NKC, Report to the Nation, 2009). Since knowledge institutions are crucial to India's leadership in the global arena the eleventh five year plan therefore regarded education as a key administrator for knowledge growth. Few recommendations by NKC were: e-governance for better service delivery, vocational learning and skills development, national skills development fund, Virtual Skill Development Resource Network, National Database for Skill Deficiency Mapping, national innovation policy etc. Especially in the sector of higher education the commission recommends a quality improvement in overall educational institutions, establishment of 30 new universities, IITs and IIMs and other institutions of national importance mostly in states where there is deprivation, establishment of fifty new universities with integrated and interdisciplinary courses etc. For attaining excellence in existing universities the commission recommends reforming existing universities, restructuring undergraduate colleges, promoting quality by application of information disclosure laws, improving infrastructure etc. Drawing attention to the crucial role that the governance structure plays in higher education, the commission recommends few changes to allow for rapid growth of these structures. It surfaces the idea of appointment of the directors/vice chancellors of central universities and institutes of

national importance (IITs, IIMs, IISERs and AIIMS) to be made by a Search Committee that is independent of ministries. It would have an independent chair with few members all of whom are to be appointed carefully to ensure wider inputs from academia. It also recommended for the appointment of heads of institutions much ahead of vacancy arising for a smooth functioning and transition.

India's effort in internationalization of its higher education has been low. The only sphere has been liberalization of foreign exchange for those who want to study abroad and a few exchange programs on the lines of Erasmus. Public universities are yet to take advantages of these exchange programs, most of the benefitted are the private players in India. Whereas for the EU most universities that come for exchange programs are public universities. This is true even for the collaborative programs in research and development. This makes it difficult at the operational level due to differences in mode of operation. From Indian side there is no coherent strategy to monitor the involvement of public universities in collaborative as well as exchange programs thereby leading to inefficiency in assessing quality of the institutions coming in for collaborations. Currently many of the European institutions of higher education operating in India are not among the ones known for their high standards and quality.

4. Conclusions

Knowledge as a factor of economic growth and development has created altered political and social structures globally. Contribution of higher education to this altered form is immense especially in the form of internationalization of higher education. With changing paradigms of knowledge economy the education and training needs are changing world over. The crisis of developing countries as India is the dire need for expansion with quality assurance and inclusion to do away with persisting inequalities. In the global knowledge economy education is a global product and therefore while planning for tertiary education, India has to modify its structures so as to improve its value for global market. India is gradually turning towards exporting its higher education product. Each year the number of students seeking admission into Indian universities is increasing. Internationalization carries ample significance for both individual institutions as well as the national education policy in India. Therefore, student mobility in both directions must be emphasized by institutions as well as policy makers.

India's position in the global scale with regard to knowledge economy is low and needs to be strengthened. Despite producing a large number of educated mass every year, India's score in all the indicators in Knowledge Assessment Methodology is low. India's progress towards knowledge economy requires an ensured basic primary education for all its citizens. Over 30% of the people currently are illiterate and 4.5 million students are keeping out of school. Despite a high potential for enhancing efficiency of all sectors and increasing productivity in them, an under utilization of knowledge resources in sectors as agriculture, small industries, health care etc has marred this increase.

Towards these ends India has a lot to learn both from success of the Bologna Process as well as from the challenges that it faces in Europe. Few of its successes that can be adopted by Indian policy agenda are: integration of higher education for a large region, improving mobility, improving comparability and compatibility of degree structures, increasing internationalization etc. However, since Indian already has a strong traditional tertiary education system, it remains to be seen how well this can be fitted into a already dominant structure. The advantage will be the fact that Indian education structure is similar to that of the UK which is not far from the US system. The lag will be implementation at the state level management practices in existing universities, colleges and other research institutions.

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3. Adam Smith in his book 'Wealth of Nations' argues that trained and educated man is comparable to expensive machines and that the time and money spent on educating and training a man can be reimbursed from the application of his trained skills. Alfred Marshall regarded training and education as a requisite national investment that gives huge return. Theodore Schultz's work later known as human capital theory not only had a profound impact on the developing as well as developed nations in preparing their national development agenda, but also created a new area of enquiry called human capital development.
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