

Reengineering Education and Classroom Learning for 21st Century Innovation Economy In India – Develop Human Potential than Human Resources



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India must convert its youth into a skilled workforce. More than 500 million Indians are younger than 25. By 2050 India is expected to overtake China as the world's most populous nation, and over the next five years will be responsible for nearly a quarter of the increase in the world's working-age population. Already, India has almost a third of the available labour supply in low-cost countries. These figures represent an enormous competitive advantage for India in its emergence as an innovation economy, including as a supplier of skills to the world. However, the widespread perception that it has unlimited employable human resources has changed.

India has a growing shortage of skilled workers—caused largely by workforce development and education systems that do not respond adequately to the economy's needs. To fully unleash its potential, India must address three constraints that prevent many of its workers from acquiring the skills needed to contribute to the innovation economy:

1. Inadequate delivery of basic skills to both formal and informal sectors;
2. Underinvestment in enterprise-based training and inadequate quality of vocational education and training;
3. And insufficient transfer of market-relevant knowledge creation skills at the higher education level, particularly by universities not in the top tier.

To increase productivity in both the formal and informal sectors, increased efforts are needed to combat illiteracy and provide basic skills. India's high illiteracy limits the population's capacity to acquire the basic skills needed for an innovation economy and curbs the productivity potential of the informal and lower-skill sectors. Reading and writing skills are low even among the literate population. Low worker education contributes to low firm productivity. The country has taken significant steps to reach its high enrolment rate of 94 percent in elementary education, though quality continues to suffer. In contrast, secondary education (grades 9–12) enrolment remains low, at 38 percent.

This low secondary education enrolment creates a bottleneck impeding the supply of students for tertiary education. A focus on memorization, use of out dated curricula, and chronic teacher absenteeism have led to an education system that does not prepare students for a market that increasingly rewards problem solving, communication skills, teamwork, and self-learning. Despite a variety of programs to develop skills in the informal sector, the resources directed to the sector are not aligned with its size and the diversity of skills needed.

India's higher education system needs to produce more scientists, engineers, and other Masters and PhD graduates with skills matched to the needs of the innovation economy. Universities are the cradle for sustained creativity and innovation. But India's demand for highly educated, skilled workers outstrips its supply. The high demand is fuelled partly by India's popularity as an R&D destination for multinational corporations luring away domestic talent, and partly by the blossoming of India's IT and ITES sectors. To maintain its share of global knowledge services, India will need 2.3 million knowledge professionals by 2010. Instead, it may face a deficit of up to 0.5 million workers.

Despite the prestigious standing of several Indian institutions of higher learning, the education system's output remains uneven. Quality training continues to concentrate on islands of excellence: 80 percent of doctorates in engineering are awarded by 20 leading institutions, and 65 percent of doctorates in sciences come from 30 institutions.

India produces fewer than 7,000 PhDs a year in the faculties of science, engineering, and technology. The lack of skilled researchers and knowledge creators is manifested in low output of high-quality scientific research. Furthermore, weak links with industry have created a mismatch between the needs of the market and the skills of the highly educated

workforce. Only 10–25 percent of general college graduates are suitable for employment. In addition, India has a small number of high-quality management programs, and even they are inadequate to support the growing need for management and supervisory skills in both knowledge-intensive and lower-skills sectors.

Unfortunately, too many educational institutions continue to segregate academic and technical skill instruction and provide students with only limited opportunities to explore career options and participate in work-based learning activities developing the skills. Some educational institutions are reluctant to promote career exploration and career-oriented education, because they believe these practices discourage students from pursuing higher education.

The trends are clear and profound:

- ❖ India's population is growing and becoming more diverse.
- ❖ More children are enrolling in our nation's schools, increasing the pressure on the capacity of schools and straining the resources of qualified teachers.
- ❖ Too many adults are entering the workforce with poor basic academic and workplace skills, far from the high level of technical skills required for employment.
- ❖ The "Digital Divide," the documented inequity of access to computers and the Internet for certain groups, threatens to exacerbate the economic disparities that already exist based on education and other factors.

These trends present the Indian education and training systems with an enormous challenge: To expand the capacity to help learners, both young and old, attain high levels of academic and technical skills achievement.

If Indian companies cannot fulfil their requirements for technical jobs with qualified workers, ultimately India's economic competitiveness will suffer.

There is an urgent need for graduate students to be made aware of opportunities and pathways into occupations. One of the major obstacles to preparing for a career is a lack of knowledge regarding the skills required for jobs and how those skills can be acquired.

To address this need, our efforts is to guide students and educational institutions and organizations to increase careers and their skill requirements. There are obvious advantages that could result from such a awareness campaign — particularly for underserved populations with our knowledge sharing efforts.

In a large and diverse nation like the India, there are youth and adults in many different places and circumstances who may be interested in joining the govt. and private workforce, but they do not know how.

Individuals exploring options within the job market want to know about specific opportunities within their knowledge, skills and attitudes. Additionally, they need to know what skills, knowledge, aptitudes, and experience are required to perform different types of jobs. Finally, job seekers need to know the steps in education, training, and the job searching techniques required to secure an job.

Multiple skills are required for the formation of human capital. Besides of intelligence and language skills, motivation, self-regulation and social integration play an important role. The formation of cognitive skills depends on self-regulatory, non-cognitive skills and vice versa and may vary between individuals and throughout the life span. Skill formation continues from birth until old-age and feedback effects between families, schools, peer groups and the labour market are important for individual development. The formation of skills is a cumulative, synergetic process which is affected by the environment, genetic endowments and both formal and informal investments in education.

As you begin this process of education and training, remember that acquiring new job skills is not a once-in-a-career event. As technology continues to change and evolve, every one of us needs to make learning a lifetime habit.

Actions needed are the following:

- Use innovative approaches to improve the quality of primary and secondary education.
- The government should revamp the primary and secondary education system by modernizing curricula and creating a more flexible, market-responsive education system. New approaches must be experimented with to address existing problems.
- Strengthen basic skills for the informal sector.
- The government should continue to invest in programs that combat illiteracy. It also should facilitate transfer of skills to the informal sector by supporting NGOs that provide training to meet the needs of the informal economy.
- These skills include training instructors, developing curricula, and encouraging external financing of informal training programs.

Enterprises need stronger incentives to invest in worker training and in vocational education and training that better meet market needs. Indian employers' underinvestment in worker training places India at a competitive disadvantage. A firm's capacity to create or absorb knowledge depends on the skills and training of its workforce. Yet only 16 percent of Indian manufacturing firms provide in-service training, either in-house or external—compared with 92 percent in China.

New communication technologies, together with the explosion of graduate labour, enable TNCs to locate more of their R&D in low-cost locations. In auto design, research and production, there is a growing tendency to exploit the lower labour costs of scientists and engineers in China and India and to engage in joint ventures with local elite universities. The globalisation of high skills is also being used by Western TNCs to speed up the process from 'innovation to invoice' by using 24 hour design teams, where projects follow the sun, moving from one time zone to another at the end of the working day. This process has been extended beyond manufacturing to the service sector, where high end work in financial services, including consultancy, is now moving to low cost locations, especially India.

Recommendations follow:

1. Strengthen enterprise-based training.
2. The government should help ensure that the benefits of in-service training are widely recognized by enterprises while also providing strong financial incentives—such as matching funds—for firms to invest in such training.
3. Improve vocational training. India's vocational education and training systems have been unsuccessful in producing graduates able to meet market needs, particularly because of a lack of interaction with industry in curriculum development.
4. Aligning these systems with market needs requires restructuring—including private participation in the management of systems, curriculum development, and system financing; and stronger performance incentives for vocational education and training institutions.

Every Indian graduate student needs to acquire higher levels of education and training to succeed in today's and tomorrow's economy. As the digital revolution unfolds, we realize that job security cannot be dependent upon a academic qualification, certificate and individual identity.

Job security rests on the skills, knowledge and attitude you carry with you

— your **“employability skill,”**
“employability profile,”
“career readiness,”
“career management,”
“professional readiness”
and **“work readiness”**.

That is why we hope you see it in your best interest to take an active role over your own skills, knowledge and attitude development while learning at the educational institutions. Of course, you will need to make sure you have the solid **“employability skill,” “employability profile,” “career readiness,” “career management,” “professional readiness” and “work readiness”** demanded by 21st Century high performance companies.

You may also find it necessary to upgrade specific technical skills based on your personal likes, aptitudes, and job market opportunities. You can tap into a wide variety of resources to develop your skills. Skill development centres, One-Stop Career Centres, and skill-based centres can help you access career planning tools, employability profile, as well as the employability skills, technology skills, and other educational courses you will need.

Canada rules that all new cellphones must be unlocked: Canada's wireless regulator has decreed that all new smartphones must be sold unlocked and ordered carriers to unlock devices for free. The telecom users in the country had to pay nearly \$50 to unlock cellphones when switching operators as the devices were locked by the carriers. The move was prompted by public criticism on the unlocking fees.

Startup aims to impregnate 40-yr-olds with "designer babies": US-based startup Darwin Life aims to help women aged over 40 get pregnant with "designer babies". The treatment is called 'spindle nuclear transfer', often referred to as a three-parent-baby technique, and it is outlawed in the United States. Company's Founder John Zang has said that the firm will offer the service only overseas for now..

Amazon will be 1st company worth \$1 trillion: E-commerce giant Amazon would beat Apple and Google to become the first company with a \$1 trillion market cap, New York University professor Scott Galloway has said.