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Role of higher education in skill development program in India

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ABSTRACT

The Education system for a just and sustainable world is not a high priority but indeed, it is the people coming out of the world's best colleges and universities that are leading us down the current unhealthy, inequitable, and unsustainable path. Higher education is generally organized into highly specialized areas of knowledge and traditional disciplines. Designing a sustainable human future requires a paradigm shift toward a systemic perspective emphasizing collaboration and cooperation.

Keywords: Higher, Education, Ngo, Learning, System, Pedagogy, Thinking, Static, Dynamic

INTRODUCTION:

Higher Education's Role

The change in mind-set necessary to achieve this vision is a sustained, long-term effort to transform education at all levels. Despite the efforts of many individuals and groups within the formal educational system, education for a just and sustainable world is not a high priority. Indeed, it is the people coming out of the world's best colleges and universities that are leading us down the current unhealthy, inequitable, and unsustainable path. Only a few architecture schools have made sustainable design a foundation of education and practice. The same is true in the education of virtually every intellectual discipline and profession. The greatest evidence of the need to transform education is the state of the world and the tremendous effort being made by thousands of nongovernmental organizations (NGOs) and schools in environmental and sustainability education to "fix" the traditional educational system. Why is this case? Several structural aspects of the current system contribute to the problem. Interactions between population, human activities, and the environment and strategies, technologies, and policies for a secure, just, and an environmentally sustainable future are among the most complex and interdependent issues with which society must deal. These issues cross over disciplinary boundaries.

Higher education is generally organized into highly specialized areas of knowledge and traditional disciplines. Designing a sustainable human future requires a paradigm shift toward a systemic perspective emphasizing collaboration and cooperation. Much of higher education stresses individual learning and competition, resulting in professionals who are ill prepared for cooperative efforts. Learning is fragmented, and faculty, responding to long-established incentives (e.g., tenure, research) and professional practices, are often discouraged from extending their work into other disciplines or inviting interdisciplinary collaboration.

As a result, much higher education curricula tends not to ask students to challenge the following common assumptions:

- Humans are the dominant species and separate from the rest of nature.
- Resources are free and inexhaustible.
- Earth's ecosystems can assimilate all human impacts.
- Technology will solve most of society's problems.
- All human needs and wants can be met through material means.
- Individual success is independent of the health and well-being of communities, cultures, and the life support system.

The kind of education we need begins with the recognition that the crisis of global ecology is first and foremost a crisis of values, ideas, perspectives, and knowledge, which makes it a crisis of education, not one in education.

Higher education institutions bear a profound, moral responsibility to increase the awareness, knowledge, skills, and values needed to create a just and sustainable future. Higher education plays a critical but often overlooked role in making this vision a reality. It prepares most of the professionals who develop, lead, manage, teach, work in, and influence society's institutions, including the most basic foundation of K–12 education. Besides training future teachers, higher education strongly influences the learning framework of K–12

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education, which is largely geared toward subsequent higher education.

Higher education has unique academic freedom and the critical mass and diversity of skills to develop new ideas, to comment on society and its challenges, and to engage in bold experimentation in sustainable living. Why, then, is it so averse to risk and difficult to change? Because the change sought is a deep cultural shift— the most difficult to achieve—but one of the most important leverage points for institutional transformation. Leo Tolstoy provides some insights into the difficulty of relinquishing the inner realities required for such a change:

I know most (people), including those at ease with problems of the greatest complexity, can seldom accept even the simplest and most obvious truth if it would be such as would oblige them to admit the falsity of conclusions which they have delighted in explaining to colleagues, which they have proudly taught others, and which they have woven, thread by thread, into the fabric of their lives.

Higher Education for the 21st Century

What if higher education were to take a leadership role, as it did in the space race and the war on cancer, in preparing students and providing the information and knowledge to achieve a just and sustainable society? What would higher education look like? The education of all professionals would reflect a new approach to learning and practice. A college or university would operate as a fully integrated community that models social and biological sustainability itself and in its interdependence with the local, regional, and global communities. In many cases, we think of teaching, research, operations, and relations with local communities as separate activities; they are not, see below figure 1.

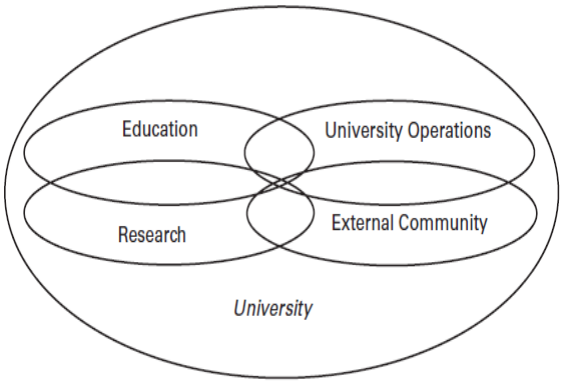

Figure 1: General Practice of Higher Education

Because students learn from everything around them, these activities form a complex web of experience and learning see below figure 2.

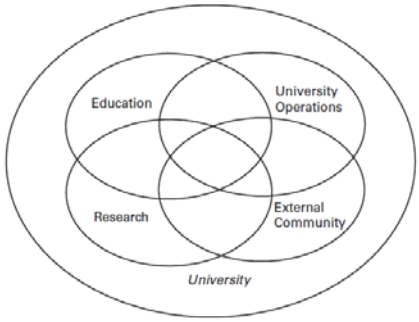

Figure 2: Higher Education Modeling Sustainability as a Fully Integrated System.

All parts of the university system are critical to achieving a transformative change that can only occur by connecting head, heart, and hand.

"However well-intentioned, formal education cannot compete with the larger educational effects of highways, shopping malls, supermarkets, urban sprawl, factory farms, agribusiness, huge utilities, multinational corporations, television and non-stop advertising that teach dominance, speed, accumulation and self indulgent individualism". To graduate students who can overcome this larger, pervasive form of learning, the educational experience of graduates must reflect an intimate connection among curriculum:

(1) Research interest area or field

(2) Understanding and reducing any negative ecological and social footprint of the institution

(3) Working to improve local and regional communities so that they are healthier, more socially vibrant and stable, economically secure, and environmentally sustainable.

Just imagine if, in the 21st century, the educational experience of all students is aligned with the principles of sustainability. To achieve this, the content of learning will require interdisciplinary systems thinking, dynamics, and analysis for all majors, disciplines, and professional degrees. This kind of thinking is critical to addressing environmentally sustainable action on local, regional, and global scales over short, medium, and intergenerational time periods. Education would have the same "lateral rigor" across, as the "vertical rigor" within, the disciplines. Compartmentalized knowledge without connection to larger system interactions results in viewing many interdependent challenges as separate, hierarchical, and competitive.

The net results are often unintended narrow, ineffective solutions, or worse, more harmful to people and the environment in another place or another time. For example, a Toyota Prius is a gasoline-electric hybrid vehicle that uses one-quarter of the gasoline and emits one-eighth of smog producing emissions of sports utility

vehicles and light trucks. Without larger systems thinking, driving a Prius would seem like a good environmental solution. However, it would not reduce traffic. Nationally, vehicle miles of travel have risen 70 percent from 1980 and some recent studies in 68 cities demonstrate that 90 percent of the increased capacity of urban highways is used up within five years. Driving a Prius does not reduce noise or safety problems, reduce paving over of green space or sprawl, or help with the social justice problems of poor people without access to jobs in the suburbs and exurbs (areas beyond urban suburbs that are subject to rapid development) that are not served well by public transportation. Indeed, if everyone drove a Prius, many of these problems could be made worse because people would feel they were doing a good thing driving this environmentally friendly car. The larger issue is to think upstream about how to solve all these problems in a systemic way and reduce the need for driving. A better solution provides people access to jobs and activities while minimizing the adverse health, ecological, and social footprint.

Understanding how the natural world works and learning how to have human technology and activity mimic and live within the limits of natural systems are crucial to education for citizenship in the 21st century. Imagine if all students knew how to operate on renewable energy and eliminate the concept of waste by making every waste product a raw material or nutrient for another species or activity or return it into the cycles of nature.

The process of education will emphasize active, experiential, inquiry-based learning and real-world problem solving on the campus and in the larger community. It is widely known that for long-term retention of knowledge, skills, and values, we retain 80 percent of what we do and only 10 to 20 percent of what we hear or read. For example, as part of the curriculum, the learning experience for students would include working on actual, real-world problems facing their campus, community, government, and industry. The process would also increase group work and learning so graduates will be able to collaborate effectively on complex problems as future managers and leaders.

Skills Development in India

India is home to the world's largest youth population, with more than 50 percent of India's population under 25 years of age, and over two-thirds under age 35. This demographic dividend presents a tremendous opportunity for India to become a global economic leader, and create new and diverse investment opportunities for the world. Investing in India's youth will enable India to realize its full potential and further strengthen India's leadership in promoting global economic prosperity and democratic stability. This landscape presents promising opportunities for knowledge sharing and public-private partnership

Need for skills development program

Skills and knowledge are the driving forces of economic growth and social development for any country. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of world of work. As India moves progressively towards becoming a 'knowledge economy with skill' it becomes increasingly important that the country should focus on advancement of skills and these skills have to be relevant to the emerging economic environment and society.

In order to achieve the twin targets of economic growth and inclusive development, India's Gross Domestic Product (GDP) has to grow consistently at 8% to 9% per annum. This requires significant progress in several areas, primary education system, and higher education system, including infrastructure development, agricultural growth coupled with productivity improvements, financial sector growth, and a healthy business environment, ably supported by a skilled workforce.

Reach, Scale and Speed knowledge

Technology has multiple points where it can impact and change the face of Indian education. The first among them is reach. 70 per cent of India is categorised as rural - primarily due to infrastructure. Digital infrastructure that works differently can be effectively deployed. This can be seen by the unprecedented penetration of mobile telephones. The physical requirements can be limited and can be non-linear in its capability to expand. If our education system transforms itself to be available in digital formats, and thereby lends itself to grow with digital infrastructure, reach may not be as insurmountable. Technology can be effective in addressing the large scale that is required for the Indian education sector. Be it the simultaneous access to millions of students or continuity in terms of engagement across formats, technology can be a big enabler for students.

It can also create **"super faculty"** where a good teacher can reach out to thousands of students as against few tens in the traditional format. Also, as proved in the 'Tutor Vista' model, many teachers can work effectively in addressing the needs of the student community. Similarly, the scale for customized assessment of millions of students, maintaining student records, etc. can be possible with technology. Also, the speed at which these need to execute is almost impossible without technology. Today, from a central unit, it possible to reach thousands

of destinations across India (which otherwise would have taken months) through satellite- based classrooms. Another fundamental change has been the disintermediation of the value chain in education which possible through technology. This disintermediation has helped a host of service providers to play an active role in education. Faculty, curriculum, assessment and certification are some of the key elements technology could help address effectively in skill development:

Requirement of Faculty Position for skill development

The issue of quantity and quality of faculty need to be addressed with immediacy for skill development. The commitment to the teaching profession seems to be waning as quality talent is usually attracted to corporate jobs which typically are better paymasters. For example, India's premier engineering institutes, IITs, suffer from around 41 per cent shortage in faculty. According to norms set by the Human Resource Development Ministry, IITs should ideally have a teacher-student ratio of 1:10, but they are struggling with a 1:17 ratio. Incentives such as better pay, research opportunities and technology-enabled infrastructure could turn the tide.

Curriculum, Content and Pedagogy System for skill improvement

While content is often talked about, it should be looked at as a part of curriculum and not in isolation. Conversion of content, primarily into books, research articles and even classroom sessions have been mostly successful, and they been done keeping in mind the fundamental shift required in this new format of learning. We need digital curriculum and not just digital content. Given India's size and diversity in terms of geography, culture and language, the issue of access could be addressed with digitisation.

For example, adoption of flipped classroom concepts could revolutionise the way learning happens in the classrooms with flip teaching, the students study themselves initially, either using video lessons prepared by the teacher or third parties. Students collaborate on-line and apply the knowledge by solving problems and doing practical work in the classrooms. Teachers act as guides rather than someone who gives 'lectures' - which students receive passively.

Assessment and certification program for skill development

An integral part of education is the need for assessing learning outcomes which help determine the quality of education, and many a times this can be also a critical input to the next stage. It is a key part of any education system and often is seen as the fruit of all labour. There could be a significant change in this process due to the disintermediation. Technology can make it possible to have teachers and assessors as distinct entities, enabling them to scale up in what they are doing. Today, in India, around 14 million students in higher education appear for approximately 200 million examinations at various levels, each year.

With increase in the number of students pursuing higher education, enrolments are expected to grow at a CAGR of 8.5 per cent, according to the National Institute of Science Communication and Information Resources. As the number of students taking entrance examinations is growing substantially each year, conducting them at such a large scale is proving to be a challenge for the authorities. Here, technology plays a critical role as online assessment helps simplify the lengthy examination process and can to be faster, more efficient, accurate and fair. Using technology to conduct examination also helps authorities to curb cheating and any sort of other malpractices. Automating the examination process can also result in reducing dependency on the university administration and staff which not only helps them cut costs but also lowers manpower requirements. Online assessments can act as a boon for students who wish to appear for multiple entrance exams within a similar time period as it saves them the trouble of waiting or travelling to multiple locations. Increasingly the industry seems to be realising the dividends that continuous professional education can pay, thus not only creating but also expanding the market for life-long learning in India.

CONCLUSION:

There is a big need for investments for millions of students in India. Given the role of technology and the increasing internationalization of higher education, the time is opportune for both India and the U.K. to complement each other; one with the kind of resources it has and the other with the young population that needs to be educated. U.K. is an important partner in India's higher education growth story and there is need for enhanced engagement if it is to play a pivotal role in the big opportunity that India has to offer, which could potentially transform the international higher education landscape. The opportunity comes with a time stamp though. We need to act now.

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