



Indian Higher Education – Envisioning the Future. Pawan Agarwal. SAGE Publications India (Pvt) Ltd, B1/I-1, Mohan Cooperative Industrial Area, Mathura Road, New Delhi 110 044. 2009. xxxiii + 488 pp. Price: Rs 895.

The framework of institutions of higher education in India is a maze. It is not easy to find out how many universities there are in various categories: central and state universities, publicly funded and self-financed (this category of universities has lately become an endangered category), deemed-to-be universities, institutions of national importance and private universities set up in different states of India. The same difficulty confronts one with regard to colleges, which fall into different types: constituent colleges, affiliated colleges, some of which are aided and some un-aided or partially aided and autonomous colleges, not to mention colleges of arts and science, colleges of engineering, commerce, medical and agricultural colleges. Then there are IITs, NITs, IIITs, IIMs and numerous other institutes that award postgraduate diplomas. Therefore a comprehensive compilation of statistics and other pertinent features of the complex higher education system is needed. Senior functionaries in the Ministry of Human Resources Development (MHRD) and those in State HRD Ministries are advantageously placed to attempt such an exercise. However, the Indian Administrative Service (IAS) officers are forever in transit from place to place and departments, and tend to lose interest in the domain of a Ministry once they move. Pawan Agarwal, the author, is a notable exception.

Ever since he was exposed to higher education as a Director in MHRD during 1998–2003, he learnt more about the subject and then became immersed in it as Joint Secretary (Finance) in the UGC, a position that served as a vantage point for him. Since then he has made study of higher education his singular mission. By bringing out a comprehensive book *Indian Higher Education: Envisioning the Future*, he has filled a gap in literature on higher education.

The 69 tables, 18 figures and 22 boxes in the volume together contain a wealth of assiduously gathered useful data and information. They cover several facets of higher education such as the number of institutions in different categories, their annual rate of growth, enrolment and gross enrolment ratio (GER). (As he has done with regard to data related to a few other parameters and in the light of data from different sources, the author rationalizes the GER to 11%. The latest survey data of the National Council for Applied Economic Research (NCAER) collected by this reviewer shows that enrolment into higher education at present is near 14 million out of a population of 144 million in the 18–24 age group. This works out to a GER of about 10%). The other aspects Agarwal analyses are access to higher education by gender and social groups, disparity among different regions, rise of private investment, the level of public funding and the extent of expenditure, distance education and use of technology, work-force development and skill shortages, regulatory framework and quality management, output of Ph Ds and research publications and similar related aspects. He has gathered an impressive number of topical references (listed at the end of the book).

In the opening sections, preface and introduction, the author presents his approach to his chosen onerous task, and in the last two sections, perspectives and epilogue, he summarizes his conclusions and thoughts for future growth of higher education. Some of his observations are given here. (This reviewer's comments and notes are shown within square brackets.)

- Policy is often based on impressions of a few individuals rather than on data and analysis. There are no groups or agencies in the country involved in researching higher education policy. As a result, quick fixes with programmes are

resorted to without any strategic thought about the larger picture.

- It is essential to put in place a system catering to the information needs of students and parents about institutions, courses, graduate destinations, etc.

- The existing affiliating system is a drain on the university system.

- Indian higher education is driven by an unrealistic myth of uniformity: for instance, it is believed that all degrees are equal [sounds like all men are born equal!]. He refers to Nicholas Barr, who enunciates that while '*social elitism, where social background influences access to best universities, is wrong, intellectual elitism is both proper and desirable*'. Therefore Indian higher education ought to be so structured as to allow for the brightest students to study in the best universities. In this connection Agarwal points out that '*of all measures, the faculty and its quality has an enduring impact on the quality of education*' and suggests some solutions for the unsatisfactory situation in this respect in India. [The following illustrate the gigantic dimension of this most serious problem in Indian higher education: in technical institutions alone over 40,000 Ph Ds are needed to fill the vacant posts of Professors and Associate Professors; one-third of posts are vacant in our leading IITs, as reported recently; the new IITs and Central Universities are yet to get going with recruitment of teaching faculty. It is a moot point whether just the solutions suggested by the author can meet the challenge of attaining the required massive scale, in terms of both quality and strength of teaching faculty in India's institutions of higher education.]

- Supported by statistics, Agarwal analyses gender, inter-caste, inter-religion, rural–urban and inter-state disparities. Interestingly, he finds a correlation between per-capita State domestic product and gross-enrolment ratio. [Regional disparities result in migration of youth to a few states in search of technical education and thereafter to lucrative employment leading to social problems, as has happened in a recent conflict between a group of objectors of Maharashtra and a group of migrants from Bihar.]

- Private investment over the last five years has been about five times that of public investment. [This observation precedes the recent move by the government

substantially enhancing public investment during the 11th plan-period.] Private initiative is the '*most dynamic and growing sector of Indian higher education*' and therefore deserves to be facilitated.

• Chapter 5 on workforce development, which runs into 78 pages, is the longest in the book. His analysis of employment pattern in India, which is one of the best this reviewer has come across, examines the relationship between higher education and economic growth. It is shown that the disjunction between education and technical training and the advanced and traditional work skills underlies the perceived skill shortages. At the higher end there is a shortage of engineering talent in microelectronics and a dearth of high quality PhDs in knowledge intensive bio-industry and in R&D of manufacturing industry. At the other end, government textile units in Tirupur are unable to find 30,000 trained persons to employ, leather units in Chennai are short of about 12,000 trained workers and hosiery units in Ludhiana are unable to meet their requirement of 50,000 skilled workers. He observes that in India manpower forecasting is weak and is based on past assumptions. [This explains why India failed to anticipate the employment boom in IT-enabled services and business process outsourcing. This has caused as yet un-arrested exodus of engineering graduates and postgraduates to the rapidly expanding services industry.] Private training institutes have mushroomed, taking advantage of lack of proper forecasting and a vacuum in public policy in this regard. Agarwal points to the emergence of over 650 nursing schools and over 320 colleges in Karnataka to cater to the demand for nurses in Ireland, Great Britain and the USA and to less known but remarkably successful examples like the 200 community colleges of South India, which are in some respects similar to North American community colleges. [Surprisingly, he does not mention the emergence of phenomenally successful non-formal training institutions like NIIT and APTECH.] The author, now based in West Bengal, mentioned to this reviewer in a recent conversation that 1 million applications, including graduates and postgraduates, were received for 4000 jobs of peons or attendants! This suggests another side of the picture of the mismatch in which supply far exceeds demand.

• The existing regulatory bodies (UGC and AICTE) and the other agencies, meticulously listed in Chapter 7, have failed to maintain quality standards in the university system. The inevitable fall-out is that '*several well-known institutions, the IITs, the IIMs, the NIFTs, National Institute of Design and Tata Institute of Social Sciences, some of whom have not even sought degree-granting powers, function outside the conventional university system*'. Also presented in this chapter is good background and up-to-date information with respect to entry of foreign universities and other providers into India, a subject that has currently come to the fore. [125 of the Fortune 500 companies have established R&D bases using the FDI route!]. In summary, Agarwal's message is that a centralized regulatory system will not work: '*If continuation of the UGC is an anachronism, so would be the setting up of IRAHE, Indian Regulatory Authority for Higher Education, suggested by the National Knowledge Commission*'. For a large system like that of India, multiple accrediting bodies with sufficient capacity to undertake cyclical accreditation are needed'. Here, Agarwal makes a useful comparison with the regulatory system in the USA.

Higher education and research in social sciences and humanities has not received adequate attention in this book. No one will gainsay that, without these disciplines, which include some of the absolutely fundamental needs of human knowledge and knowledge acquisition, the system of higher education must remain woefully incomplete. Economics, which is regarded as part of social sciences, is an exception in terms of the importance it receives from institutions and at policy levels: indeed this has helped economics acquire a brand of its own. While the methodologies underlying other social sciences on the one hand and natural sciences, humanities (*especially* language education) on the other are distinctly different, there is considerable merit in bringing all these fields closer together with two likely benefits. First, there is room at the interface between these disciplines for advanced studies and research. A second benefit relates to funding. The science agencies have developed several successful models to promote advanced scientific research. The Science and Engineering Research Council

of DST, the Board of Research in Nuclear Sciences of DAE, the extra-mural research scheme of CSIR, the DBT initiatives in the field of life sciences and biotechnology, to name a few, are noteworthy in the way they have funded projects and programmes. DST's Kishore Vigyanik Protsahan Yojana (KVPY) was an innovation in talent search. Innovation in science pursuit for inspired research (INSPIRE) is DST's most recent novel mechanism for attracting and retaining talented youth in science research. The investment supporting these mechanisms and initiatives runs into several hundred crores of rupees. In stark contrast, the level of funding by the Indian Councils of Social Science Research, of Philosophical Research and of Historical Research is significantly lower (see 2007 report of the Fourth Review Committee on restructuring the Indian Council of Social Science Research). These bodies also lack comparably effective mechanisms. It is necessary to correct this situation because inadequate attention to fundamental education and research in humanities, language and social sciences can result in intellectual and cultural shortcomings that mean dire consequences to the very fabric of a society.

The ills that plague the state universities, which constitute the bulk of the university system, should be viewed as a national crisis. They are at the mercy of their respective state bureaucracies and political leaders not only where funding is concerned but also in major decisions such as selection of Vice-Chancellors, members of syndicate and faculty. As a result, the governance of state universities has been plunged into a perilous state. [Those states which have higher education councils, such as Kerala and Andhra Pradesh, and Karnataka which has recently set up a Knowledge Commission, have been helping to some extent to improve the quality of higher education.] But in general what makes a bad situation worse is that 21,000+ colleges are affiliated to one or the other of the nearly 130 affiliating universities. The unfortunate result is that most state universities have become predominantly examining bodies with practically no time left for faculty to do research, which is their core academic function. Consequently their share of research output, which was 60% of the country's research output in the 1950s, has dropped to 10%. Central universities and the IITs enjoy

significantly higher levels of funding and the age of faculty retirement has been raised to 65 years. Consequently, such universities and institutes are likely to denude the state university resources by absorbing their more capable faculty. Urgent interventions have thus become critical to help state universities preserve such strengths as they currently possess. While Pawan Agarwal has gathered and analysed numerous aspects of the situation, the condition of the numerous state universities described here also needs to be appreciated in order to understand what is dragging down these universities. For most state governments, whose finances, energy and time have to cater to many other demands, the university system is not high on their agenda. How then will state universities see better days? Agarwal does not address this question.

The quality of governance of institutions of higher education, the academic credentials of their faculty and the merit of their students constitute crucial elements of the knowledge infrastructure. The Central Government has improved salaries of teachers and the value and the number of scholarships to students. The question waiting to be addressed is, what further measures must be taken on one hand to attract talented students to fundamental disciplines such as basic sciences, mathematics, humanities, languages and social sciences, and, on the other, to attract internationally competitive faculty for these and several other disciplines. A satisfactory answer to this crucial question is not easy to find. There are numerous articles being published on the prospect of India becoming a knowledge superpower, as the country is blessed with a phenomenally rising working age population. However, Pawan Agarwal's tome on higher education, as well as issues of the kind briefly raised by the present review, need to be properly assimilated before one can project India's future glory.

In regard to the 'research-innovation-growth linkage', Agarwal has summarized S&T indicators of four top economies, USA, China, Japan and India. It is also instructive to point out the way two small countries, Finland and Israel, have transformed their domestic economies and their international stature. As for Finland, a single firm, Nokia, was alone responsible for the country to make a worldwide impact in a technology-

intensive field. Nokia's strategy, which worked the miracle, was to invest on its own 1% of Finland's GDP in R&D and largely in Finland's universities, thus raising investment in academic R&D to over 18% of Finland's total R&D expenditure. To see this in perspective, all of India invests just under 1% of the country's GDP in R&D, of which only about 4% or so is expended in academic R&D. Very little of it comes from Indian industry. Israel is yet another exceptional case in this context. According to the story of Israel's economic miracle published in 2009 by the Council on Foreign Relations, Dan Senor and Saul Singer say: '*in 2008, a year of global economic turmoil, per capita venture investments in Israel were 2.5 times greater than in the US, 30 times greater than in Europe and 350 times greater than in India*'. According to OECD statistics, 45% Israelis in the 25–34 year age group (as against 10% in India according to an NCAER survey) possess graduate and higher degrees. '*Further, nowhere in the world where people work in a centre of technology innovation do they have to do national service. Thus young Israelis get experience, perspective and maturity, all of which in combination have rendered Israel a technologically leading country in the world*'.

India justifiably takes pride in what its software industry has accomplished. Their rate of growth in revenue earnings and the astonishing scale of manpower induction deserve praise, as do their commendable in-house training programmes. However, this is far from enough. For a country of India's size and multifarious involvements in a range of high technology fields, and its enormous young population, many more initiatives are necessary. As Milton Friedman says in his farsighted 1955 report to India's Ministry of Finance: '*The conquest of the technical frontier, like the conquest of the geographical frontier, requires a varied initiative by millions of individuals*'.

Above all, India's higher education must strive for superior quality. We need institutions that are ranked high among world's best-known universities. For this to happen a respectable number of institutions must produce internationally competitive outputs on a sustainable basis (for the latest on outputs in S&E generated by advanced western countries and Asian countries, in particular China,

see *Science and Engineering Indicators 2010* just released by the US National Science Foundation). Only then may the most talented Indians outside and within India gravitate to its universities and other academic institutions. This is the path to brand building. Only then may one expect Central and State political leadership and in general people everywhere to look up to educational and research institutions as 'crowning jewels'. This process must begin by providing a clear picture of higher education and its institutions to the interested public. Pawan Agarwal's commendably readable book has done just that and everyone who regards higher education as fundamental to nation building ought to read it. The 2000 World Bank Task Force Report 'Peril and Promise' emphasizes the value of higher education in even loftier terms: '*The best higher education is a model and a source of pressure for creating a modern civil society. This is an ideal not often realized but is nevertheless a standard against which to measure national systems*'.

The potential for building higher education into such a powerful instrument resides in India's historical, intellectual, cultural and democratic underpinnings. One should therefore hope for further, more comprehensively enhanced, editions of Pawan Agarwal's book and other works of this nature to create awareness, to help develop policy and to generate a movement towards an elevating higher education standard that India must set up and sustain.

P. RAMA RAO

*International Advanced Research Centre
for Powder Metallurgy and New
Materials,
Balapur,
Hyderabad 500 005, India
e-mail: pallerama_rao@yahoo.co.in*