
Book review: Revisiting the educational heritage in India

Book review

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Ancient India, until the beginning of the second millennium, was a highly educated society with rich ancient and medieval systems of production and knowledge dissemination, as well as economic prosperity and social and political maturity, maintaining “the long tradition of pride and service” (*Young India*, 20 March, 1924). However, developments during the second millennium, particularly external invasions and colonial rule, caused great harm to Indian society. As historian and political philosopher Dharampal states in his book, *The Beautiful Tree: Indigenous Indian Education in the Eighteenth Century* (Biblia Impex, 1983), indigenous systems were demolished, and the “beautiful tree” was uprooted by British rulers. Although a few have acknowledged some positive outcomes of British rule, stating that it brought education, technology, law and democracy to the four corners of the globe including India, the colonial period was more predominantly marked by the looting and plunder of the wealth of the country in all respects, as Dadabhai Naoroji documented long ago in his *Poverty and Un-British Rule in India* (Swan Sonnenschein & Co., London, 1901), and Shashi Tharoor describes in his recent works, namely, *An Era of Darkness: The British Empire in India* (Aleph Book Co., New Delhi, 2016) and *Inglorious Empire* (Hurst Publishers, London, 2017). The colonial rule was described as “the most sordid and criminal exploitation of one nation by another” “It was the invasion and destruction of a high civilisation” (William Durant, *The Case for India*, Simon & Schuster, New York, 1930, p. 2 and p. 7). The larger net result at the time of independence was that India was characterised as having one of the most backward education systems in the world, with low rates of literacy and enrolment in education and completely shattered economic and social structures. The actions of the invaders and colonial rulers involved not only looting material wealth and destroying temples and structures of civilisation and culture but also, more importantly, destroying altogether the very sources of knowledge of this rich heritage; thus, the world would know little about the invaluable treasure of knowledge that India possessed.

As a result, until recently, very few Western scholars or even Indian academics and policy-makers were much aware of some of the details on the world-famous centres of learning in ancient India, such as the world’s first university, established in Takshashila in 700 BC with



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more than 10,500 students who came from around the world and studied more than 60 subjects in its halcyon days. There were many great centres of higher learning in the ancient period, including Nalanda, Vikramshila and Vallabhi. Few were aware of how they were built and how they functioned. Very few Western scholars have acknowledged the contributions of a galaxy of Indian scholars from the ancient, medieval and even modern periods. Some of the accredited scientists and mathematicians of the ancient period include Baudhayana (for his discovery of several concepts in mathematics, e.g. calculating the value of “phi” and explaining the Pythagorean theorem), Aryabhata, the mathematics genius and astronomer (for his contribution of “zero” and to trigonometry, as well as his discovery of the curvature of the earth and the fact that it rotates on its axis around the sun, nature of solar and lunar eclipses and their happening, the duration of a day and the distance between the celestial bodies of the earth and moon, etc.), Pingala (for using binary values in the form of short and long syllables, a notation similar to Morse code and for his treatise on prosody), Acharya Kanada, who speculated the existence of small, indestructible particles called “Anu” (for the knowledge on atomic energy), Bhaskaracharya (for his work on differential calculus), Varahamihira (for his contributions to astronomy, mathematics, hydrology, geology and ecology, including earthquakes and the concept of gravity), Brahmagupta (for the concept of gravity), Nagarjuna (for the doctrine of emptiness), Charaka, author of *Charaka Samhita* (for *Ayurveda* – Indian medicine), Shusruta, author of *Shusruta Samhita* (for surgery, including plastic surgery), Panini (for several discoveries in the fields of phonetics, phonology and morphology) and Patanjali (for *yoga*). Indian astronomical text – named *Vedānga Jyotiṣa* and attributed to Lagadha – is considered one of the oldest astronomical texts. Another important treatise on astronomy and time-keeping was *Surya Siddhanta* by Latadeva (a disciple of Aryabhata) that includes information about the orbital parameters of the planets, the longitudinal changes of the orbits, which was influential on the solar year computations of the lunisolar calendar. Well-planned settlements were built with scientifically developed drainage and sewerage systems, sophisticated irrigation and water storage systems and other facilities during the Indus Valley Civilisation by around 4500 BC. Actually, ancient India laid the foundations for many areas of knowledge, particularly mathematics, science, logic, medicine, psychology, spiritualism and ethics, in addition to fostering social and cultural studies, and studies in law, languages and linguistics. There were also many great authors, saints and spiritual leaders, who produced monumental literary works of immense value. Some of these contributions were acknowledged by Indian and visiting foreign historians of the ancient and medieval periods. However, many Western scholars have remained ignorant of the richness of Sanskrit and other indigenous Indian languages.

A closely related area refers to the great Indian technical and engineering knowledge and craftsmanship demonstrated in innumerable artefacts, mechanical contrivances, constructions and designs of stone/metallic statues, *stupas*, temples, forts, buildings and other monuments and manufacture of ornaments and armaments made during the past 1,000–2,000 years and earlier, which stand as great architectural marvels signifying the genius of those days, none of which is acknowledged in modern education either. The history of science and technology is said to have begun with the prehistoric human activity of the Indus Valley Civilisation. Only recently have some Western scholars conceded what James Grant Duff, a British soldier and historian from Scotland who was active in British India and authored *History of the Maharrattas* (London: Longmans, 3rd edn – complete in one volume; Mumbai: Times of India Office, 1873 [1826]) first stated: “Many of the advances in the sciences that we consider today to have been made in Europe were made in India centuries ago”. It has been observed that everything has been said in the *Vedas* and that we are more than ten thousand years of human thought too late. For instance, it has been recently stated referring to the work of the 2022 Nobel laureates in Physics, “*Vedanta* and *Gita* are important in exploring the truth of life and where there is no difference between *Advaita Vedanta* and non-duality of quantum

physics" (*Times of India*, 3 October 2022). The Vedas have been acknowledged to be possessing elements common to both quantum physics and the concept of Synchronicity. Robert Oppenheimert is widely quoted to have stated that "access to the *Vedas* is the greatest privilege this century may claim over all previous centuries." The father of linguistics, Panini's 'language machine' and the puzzles in linguistics still continue to enchant linguists around the world. The Pascal's triangle developed by Blaise Pascal in 1600 was originally derived from Pingala's formula given in 300 B.C.E.

In short, India has a long history of education, innovation and knowledge creation and dissemination – a system that was culturally and spiritually enriched and advanced. Successive invasions methodically destroyed its centres of learning, although they were often partly rebuilt. On the whole, the education system repeatedly suffered from this until it was finally and totally destroyed before being replaced by the British education system, the sole objective of which was to develop Indians' strong attachment and loyalty to British rule, as Naoroji (*op cit.*, p. 233) observed. As a result, India, "the country of a hundred nations and a hundred tongues, of a thousand religions and two million gods, cradle of the human race, birthplace of human speech, mother of history, grandmother of legend, great-grandmother of tradition" (Mark Twain: *Following the Equator: A Journey Around the World*. Harper & Brothers, New York, 1897, p. 26), was turned into one of the most illiterate and backward countries in the world by the middle of the 20th century, when it emerged from the clutches of colonial power.

However, aside from limited quotations/statements, a few short and recent monographs and descriptions on Wikipedia and the like, the richness of India's heritage or how it was destroyed by invaders and colonial rulers, have long not been a focus of scholars. There are a very few writings (e.g. D.G. Apte: *Universities in Ancient India*. Baroda: M.S. University, 1961 [reprint 2015]; M. Rev F.E. Keay: *Ancient Indian Education: An Inquiry into Its Origin, Development, and Ideals*. Oxford University Press, 1918; A.S. Altekar: *Education in Ancient India*, Nand Kishore & Bros, 1944; R.K. Mookerjee: *Ancient Indian Education – Brahminical and Buddhist*, Motilal Banarsidass, 1960) describing some aspects of India's rich ancient glory, but these have also not attracted wide attention.

Drawing from innumerable sources, the author of the present book under review, a member of Indian History Awareness and Research – a think tank with headquarters in Houston, USA – tries to convincingly argue in this book that this rich Indian heritage is not a myth, nor is it based on superstitions; it is not simply religious in colour; it came from centuries of wisdom and institution-building; moreover, there is a need to resurrect it. This book covers three major aspects. First, it describes the ancient education system characterised by the *Gurukulas* (these may be called forest universities, as most *Gurukulas*, hermitages and *ashrams* were located in forests) and centres of higher learning, such as Takshashila, Nalanda, Vikramshila and Ujjaini, and how they flourished in the great tradition, with diverse pedagogic and curricular methods of teaching and learning with teachers of eminence and scholars from many parts of the world. Contrary to the general impression, ancient universities promoted valuable attributes such as interdisciplinary learning, practical industrial and vocational training, life-skills, debate and intense discourses, and scientific enquiry. They facilitated the mobility of students and teachers. Women's scholarship was respected. For example, Gargi Vachaknavi, Maitreyi, Ghosha, Vadava Pratitheyi, Apala, Lopamudra, Indrani and Vishwavara were regarded as knowledgeable scholars in *Vedas* and *Upanishads* as men-scholars of the Vedic times and could very well contest the male-philosophers in discussions and debates. Animated debates and discussions were encouraged (for example, the animated debates between Satya Kama Jabali and Rama, or between, Yagnavalkya and Gargi Vachaknavi), as critical knowledge was considered the highest purpose of life. The centres of learning were treated as divine temples, and temples – Hindu temples as well as Buddhist monasteries and pagodas – were

regarded as centres for learning. Their glory, written originally in Sanskrit, Pali, Prakrit and other vernaculars but translated by foreign tourists and scholars, became the only source of information, as the originals were subject to cruel destruction. In fact, not only the rich libraries in India but also those in places such as Alexandria, Cordoba, Persia and Ghazni, many of which contained texts originating in India, were also destroyed. Several countries in West Asia, Southeast Asia, and Europe, specifically Persia, China, Greece, Egypt and Japan, immensely benefitted from the acquisition of original or translated versions of many treatises in areas such as medicine, surgery, ayurveda, gynaecology, obstetrics, paediatrics, psychology, pathology, pharmacopeia, mathematics, algebra, geometry, trigonometry, calculus, decimal systems, metallurgy, physics, atomic theory, chemistry, biology, sexology, martial arts, *yoga*, *dhyana* (meditation), logic, astronomy, *Vedanta*, music, art, architecture, and Sanskrit literature. The treasure also includes Sanskrit classics and epics, dictionaries, Buddhist texts, and works on linguistics, grammar and prosody. Knowledge was transferred from India to some of these countries as early as 100 BC, as hundreds of Sanskrit treatises were translated into Chinese, Persian, Khotanese, Tokharian, Uyghur, Sogdian, Japanese calligraphy; Latin, and this, as the author documents, describing how this transfer “powered a knowledge revolution” worldwide. Indian Ayurvedic medicines found their way into Chinese pharmacopoeia and into Italian research on surgery; Indian numerals into Chinese arithmetic; Arab medicine was founded on translations from Sanskrit works; the imprint of Indian scholars on Islamic sciences, not just medicine, was also firm and well recognised; hundreds of Sanskrit manuscripts were preserved in Japan; Greek and Roman philosophers borrowed scientific concepts articulated by Rishi Kanda of the 6th century BCE. This kind of transfer continued even during the colonial period, when several Indian manuscripts were translated into European languages.

Second, the author briefly describes the assaults on these knowledge systems – schools and universities, rich libraries, temples, indigenous cultures and languages – by invaders and colonial rulers. The assaults on the foremost universities of their time – Nalanda, Vikarmashila and Odantpuri – between 1197 and 1206 AD by Mahmud Ghazni and Mohammad Bakhtyar Khilji were the beginning of such destruction. In fact, the first Muslim invasion of India was by the Arabs who were led by Mahommad Bin Qasim in 711 A.D. These were followed by a series of invasions by Muslims that continued for a long period. Thousands of scholars, Brahmins, Buddhist, and Jain monks were massacred, and thousands of books, including original manuscripts, were burnt. According to the author, these invasions also led to the suppression of Sanskrit, the neglect of science and technology, and the introduction of Islamic education. The Mughal rule in India was followed by a 200-year phase of colonialism. India’s colonial rulers targeted not only its material wealth but also its intellectual wealth, amassing a large number of scientific, philosophical and grammar texts from India, whose traditional schools of learning were completely ruined by British rule. The imposition of English and the British education system on India helped these colonial rulers destroy Indian culture and civilisation and fulfil their political and cultural ambitions. In fact, as M.S. Rajan [“The Impact of British Rule in India, *Journal of Contemporary History* 4(1) (Jan., 1969): pp. 89-102] observes, “the British imposition of English as the medium of education throughout the country has had certain unhappy and far-reaching psychological consequences. It created an urban elite in all walks of life which, by its knowledge and use of English, was cut off socially and intellectually from the millions of rural Indians In the vast majority of cases, the English-educated came either to ignore or denigrate traditional Indian cultural values and the Indian cultural heritage and to attach undue importance to British values” (p. 65).

The book ends with a chapter on the lessons that can be drawn from the ancient system and how they are relevant in reforming education in India. The author rightly stresses the need to (a) develop a holistic, character-building nature in the indigenous education system; (b) restore some of the ancient pedagogic methods – including training in memorisation and

distilling worldly wisdom in fables, games and discussions, and reviving methods for promoting creative new thinking; (c) use ancient Indic knowledge, e.g. *ayurveda*, to find new pathways to solve current national and global problems and (d) study all subjects, including professional subjects, in Indian languages.

Some of these issues are currently being debated, and some have found a place in the *National Education Policy 2020* that the government of India introduced, which is centred on reviving some of these features of the profound traditions of India's past. In fact, one may draw a few more lessons from the experiences of the ancient past in the present context of the development of universities in many countries worldwide as follows [see J.B.G. Tilak, What Can We Learn from Universities of Ancient India? *Journal of Contemporary Educational Research* 4(1), p. 6]:

- (1) We should recognise that universities are the most valuable institutions. They have an unchallenged role in the creation, preservation and dissemination of knowledge, and they play a vital role in the sustenance of humanity – its sciences, economic progress, social advancement and political maturity.
- (2) Teacher or *guru* is the pillar of education's edifice in any society. Teachers' status needs to be elevated to a very prominent place in any society in terms of social prestige and economic status.
- (3) The patronage of the state is crucial for the development of strong and vibrant universities that contribute to human progress.
- (4) Liberal public funding and free education are the best ways of developing strong universities. Voluntary community contributions can add to public funding. Involuntary payment of tuition and other fees by students is not a desirable method for funding universities. There is also no place for "profit" making in education.
- (5) Universities should necessarily be universal in character, ensuring a high degree of diversity.
 - Universities should comprehensively offer teaching and research programmes in a wide variety of scholarly disciplines relevant to human progress. Universities should aim at holistic knowledge development.
 - Student and faculty diversity enriches the learning environment. Talent needs to be drawn from various socioeconomic, cultural and ethnic strata and from far and near geographical places. Talented faculty and students are the most crucial actors in knowledge development in university systems.
- (6) Integrated university systems that focus on research, teaching and community service enable the production of well-rounded personalities.
- (7) Large universities with large campuses and huge infrastructure lead to unfettered knowledge creation and dissemination.
- (8) Nations should ensure a high degree of autonomy among universities for them to become and remain strong, vibrant, creative and innovative.
- (9) Lastly, many countries may have rich cultural heritage. Universities have to be built on this heritage.

This book, which is highly descriptive and informative, is both interesting and valuable. It presents, based on several scholarly research publications published in India and the West,

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definitive accounts of India's rich legacy. However, the book could have been more comprehensive in terms of its coverage of several dimensions of India's extraordinarily rich history of higher education and cultural heritage. Second, the author could have examined and commented on how, e.g., James Mill in his *History of British India* (London: Baldwin, Cradock & Joy, 1817) and others discredited India's intellectual originality and distorted western understanding of India's extra-ordinary treasure of knowledge, and how some such writings continue to distort our knowledge of India's past.

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