Kavita A. Sharma

India and China

Expansion, Equity and Excellence

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Noida, India

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Preface

In the middle of 2019, Ms. Satvinder Kaur from Springer met me and asked me to write a book on higher education. As the President of the South Asian University, I was more than busy at that time. I requested her to wait, if possible, until I finished my tenure, in November 2019. By the time I took up the project, it was the middle of 2020. I had been to China three or four times during my five year tenure at SAU and was amazed how well-equipped the Chinese universities were in terms of physical and academic infrastructure. Way back in 2009, I had given a couple of talks at the Beijing Normal University and had been surprised at the presence of many foreign scholars teaching and visiting the university. The university had also entered several foreign collaborations, which were being actively carried forward.

This had stayed in my mind over the years. Therefore, when Ms. Satvinder Kaur proposed the book, it occurred to me to write on a new trajectory, on higher education in China and juxtapose it with higher education in India, something that I am familiar with. Here are two giants of Asia who started out at around the same time—China in 1949 and India in 1947. Both have faced similar economic challenges and have had a troubled history. Both have huge populations with a preponderance of young people who have to be educated and skilled. I felt that it would be useful to write a broad-based book comparing the higher education of the two countries that could pave the way for further in-depth work focusing on a comparison of one aspect of higher education in the two countries. This was required because so little of higher education in China was in the public academic domain in India. India, of course, was familiar ground. I had to understand China.

Little did I know that the pandemic would intervene bringing about the closure of all academic institutions and libraries, not to mention, personal ill health. As I delved into it, I realized the vast difference in the trajectories of the two countries. It required volumes of reading and getting acquainted, not only with the Chinese higher education system (HES), but also with China's historical background; the suffering and struggles of its people during the evolution of the People's Republic of China; its steely determination to be counted among the leading countries of the world; and the willingness to pay the costs required.

Books on higher education in China were hard to find. They were also very expensive although I did purchase several from my own resources. It was, however, a pleasant surprise to find statutes, proceedings of the Communist Party of China, and government documents, all translated into English and made available by the Chinese government and by other organizations on the internet. There was an abundance of scholarly articles on different research platforms. Newspaper reports and op-eds on China could also be found on the World Wide Web. Given the political and environmental situation, it was pointless attempting interviews with faculty and students in China. About India, I have first-hand knowledge having taught for 37 years and having headed two academic institutions for 10.

Writing this book has been an arduous but exciting journey. It has enriched me and given me an understanding not only of Chinese higher education but also deepened my perspectives on Indian higher education, making me think anew on many issues. The pandemic also made it a lonely journey, but through it, the encouragement and help I received from Ms. Indu Ramchandani have been invaluable. She tirelessly edited and re-edited what I wrote and constantly commented on it, preventing me from thinking in a groove. I must also thank Mr. Vijay Singh, my assistant who kept books and other source materials carefully and produced it instantly when required giving order to the chaos. I'm grateful to Springer and to Ms. Satvinder Kaur for giving me the opportunity to know the different system of higher education of a large neighbouring country, which also gave me a greater understanding of my own.

Noida, India Dr. Kavita A. Sharma

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About the Author

Kavita A. Sharma is an accomplished academician. She has been an active contributor to the cause of higher education through her teaching, publications, and the institutions she has been associated with. She has published several books, including Internationalisation of Education, Sixty Years of University Grants Commission, Hindu College, Delhi—A People's Movement and The Windmills of the Mind. Her research papers on various topics, including higher education, language, immigration and identity, culture and women, have made their way into many reputed national and international publications. She holds a Ph.D. Degree in English from the University of Delhi and an LLM degree from the University of British Columbia, Canada. A Fulbright fellow, she was conferred the Indira Gandhi Sadbhavana Award by the National Integration and Economic Council in 2005. She is associated with many professional organizations, is Vice President Indian Comparative Literature Association, Member International Comparative Literature Association, Indian Law Institute. She has been the founder and president of the Parent's Forum for Meaningful Education.

Chapter 1
Historical Context of Higher Education

The Asian countries, China and India, are the two most populous countries of the world, and together, they represent over one-third of the global population. This makes it imperative to take cognizance of the impact of their policies and their implementation. What happens in these two countries affects the world in all the spheres—economic, political, and others. They began to rebuild their nations at around the same time as well. While India became independent on August 15, 1947, the Communist Party of China (CPC) came into power on October 1, 1949. Further, the two countries also have the youngest populations of the world. Hence, it became vital for them, as they embarked upon nation building, to educate and make their youth employable. Both countries are a study of similarities and divergences as they have charted out their individual higher education paths.

1.1 Background

Both China and India have a long tradition of learning, going back to 5000 years. But when they began to modernize education, they adopted the Western model. As Philip Altbach[1] has pointed out, neither country has made any significant use of its rich indigenous traditions in the structure of mainstream education. The pursuit of modern education began in or around the middle of the 19th century and it took various twists and turns, till the defining years of 1947 and 1949 for India and China respectively.

The historical context is important because subsequent trajectories of higher education took place according to the thought process that was integral to the country's psyche, for centuries. It explains the different paths taken, not only in the contemporary period after their coming into their own but even earlier, according to what motivated them to adopt the Western model and abandon their own traditions. The differences in the evolution of higher education are evident because diverse aims led to varying motivations for setting up or establishing Western-style universities,

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and this has had a vital impact. India and China adopted opposite forms of government; the nature of their diversities and their modes of dealing with them, accounted for differences in formulating policy and affected the speed of implementation.

1.2 China

Although higher learning in China can historically be traced back to roughly 1600–1100 BCE, when the Shang dynasty was in power, there is no consensus among historians about its exact origin. Most scholars agree that the daxue or "university" grew out of youxue, a multifunctional space in which education was a part of its many activities.[2] Youxue also means to travel, wandering, play, and fun. Since the year 2000, there has been a rise in what is commonly called the youxue phenomena. It means to study abroad for shorter or longer periods. Youxue is traced back to Confucius who is supposed to have travelled with his students to neighbouring countries in order to widen their knowledge and mould their character. While retaining the essentials of this purpose, the current use of the term youxue also highlights the experimental and experiential dimensions of overseas education.[3]

1.2.1 Education Through the Dynasties

During the Western Zhou dynasties, between 1100 and 771 BCE, a daxue was established in the capital city as part of the national educational institutions or guoxue. It was even called piyong or imperial daxue for a while. All the institutions at this time, and even later, were controlled by the upper ruling class and were meant for the education of the political elite. They focused on the Confucian classics.[4] Besides daxue, another important institution developed, shuyuan or academies, scholarly societies.[5] The highest institution of learning for a long time was a taixue or the Institution of Supreme Learning meant for advanced scholars.[6]

During 770–476 BCE, called the Spring and Autumn period, and during the Warring States period, between 475 and 221 BCE, dramatic changes took place in Chinese society. In the field of education, the government-owned institutions declined due to political turmoil, and private institutions came up. Many of them were supported by different kingdoms making private education the norm. These institutions, unlike the government ones, did not focus only on the children of the elite. They also accepted poor students. Scholars in these institutions allowed free discussions and even heated debates took place.[7]

This was also a period of a Hundred Schools of Thought. When the authority of the Zhou Dynasty began to break down, the officials spread throughout the country and began to teach subjects of their own specialization. The Confucian school was born out of the officials of the Ministry of Education; the Taoists from the historians; the Yin Yang from the astronomers; the Legalist from the Ministry of Justice, to mention a

few. Thus, specialized teaching in various subjects began around particular teachers. Only the Confucians and the Mohists from among these were organized teaching and learning institutions. Mohism emphasized rational thought, science, and logic and was a rival school of philosophy to Confucianism. It was taught by the Chinese philosopher, Mozi of the 5th century BCE and developed by the scholars who studied under him. Unlike Confucius, who propagated love for humanity but special love for one's parents and family, Mohism talked of undifferentiated or "universal" love for humanity. Confucius' philosophy was the theory on which the social harmony of the state was founded. Confucius bitterly attacked Mohism.

The Qin dynasty ruled between 221 and 207 BCE. Its first emperor, Huang, conquered the warring kingdoms and brought them under one rule. The Hundred Schools of Thought were suppressed and legalist reforms were carried out. The teachings of Confucius were suppressed and many who followed him suffered.[8] Emperor Huang also fought the Xiangnu who harassed China by repeatedly attacking from its northern borders. He built the Great Wall of China to prevent any surprise incursions by the Xiangnu. Although it was a very short dynasty, consisting only of the first emperor, Huang followed by his son, the administrative system the emperor put into place in 221 BCE carried on, with adaptations, till 1912 CE. After the death of the emperor, his son could not consolidate the gains made by his father and was overthrown in three years. The country descended into turmoil and the descendants of the erstwhile rulers saw an opportunity to get back to the pre-Qin order. From this emerged the Han dynasty, after a few twists and turns in 202 BCE and ruled up to 220 CE, with a few years interruption in between by the Xin dynasty which ruled from 9–23 CE.

The taixue or the National University was established during the former Han period from 206 BCE to 8 CE. Before this there were only private schools. During the early former Han period, the philosophical system was the Huang Lao teaching, which was influenced by Daoism and the Five Agents theory. Emperor Wu of the Han dynasty adopted Confucianism as the state doctrine as he felt it was the most systematic philosophical system that could connect spheres of government, society, and cosmology. Besides, it also had a regular system of education.

The Confucian scholar, Dong Zhongshu, suggested establishing a taixue in the capital Chang'an or modern Xi'an where erudite scholars would teach the Five Confucian Classics—Book of Change, Book of History, Book of Songs, Record of Rites, and Spring and Autumn annals. In the beginning there were only fifty persons in the university including both teachers and students. By the end of the Former Han period, the number of students and the disciplines taught both increased consistently. By the Late Former Han period, there were 3000 students enrolled in the university. This can be considered to be the beginning of a government-owned institution for the most advanced learning in Chinese feudal society.[9]

Into the Common Era, the usurper, Wang Mang, from the year 8 to 23 used Confucian experts to bolster his government ideologically and hence founded two different schools, the Biyong and Mingtang academies located south of the city walls. These had an intake capacity of 10,000 students. Until this time, it was common for scholars from the National University to be chosen for high state offices.[10]

Emperor Guang Wu, who reigned from 25 to 57, founded the Later Han dynasty that remained in power till 220. He moved the capital from Chang'an to Luoyang and established the National University close to the Kaiyang Gate. In 126 the buildings were considerably enlarged to receive as many as 30,000 students. In 175 Confucian classics were engraved on stone slabs that were put around the compound of the University. While the scholars and students of the University were supposed to be philosophers, they started meddling in government affairs. The Han court got corrupt and the eunuchs in the court started exercising authority well beyond their positions making the emperor powerless. The most debilitating consequence for the University was a eunuch clique in which they got a thousand students and professors arrested. After this the University became dormant.[11]

After the Han dynasty, Emperor Wen of the Wei dynasty, who reigned from 220–226, re-animated the National University.[12] He sponsored nineteen new chairs to teach more than 1000 students. Students could take examinations for seeking positions of clerks in the central administration, or for becoming secretary to the heir apparent, or even to become "gentleman of the interior." By the time of the Western Jin dynasty, from 265 to 316, there were about 3000 students. It was at this time the system of nine ranks was adopted. For those who qualified to rank 5 and above based on their social background, a separate institution was established known as guozijian or Directorate of Education. The University itself was for commoners. In the next two centuries, especially during the Southern dynasties period, from 420–589 the Directorate provided the state officials, based on their knowledge of the Confucian classics, while the University gradually became an institution for research with very few students.

In northern China, education expanded as many of the more successful sixteen states founded their own national universities as well as specialized schools such as, the School of Four Gates, which were primary schools, law school, and schools for military training and for the education of the princes. All these were open only to the sons and relatives of high officials. Thus, the education system basically got divided into three—the Directorate, the University, and the School of Four Gates.

When the Sui dynasty ruled from 581–618, the Imperial University took charge of the entire education enterprise.[13] It consisted of five schools:

- Guozixue for noble students;
- Taixue, which taught Confucianism and Chinese literature among other things for high level civil service posts, although a civil service based upon competitive examination rather than recommendation was introduced in this period but matured only during the Song dynasty;
- Simenxue, which taught four subjects;
- Shuxue for calligraphy; and
- Suanxue, for arithmetic and mathematics.

Following the Sui dynasty, the Imperial University was expanded into six schools, adding law or lixue to the previous five.[14] The education at the guozixue, taixue, and simenxue of the six schools was classical education of higher learning. All schools were subordinate to the Directorate. The rank system applied. On it depended in

which of the six schools could the candidate be enrolled. Those with official rank of 8 or below could go the law, calligraphy, and arithmetic schools. The sons of high-ranking officials and families could enter any of the three higher institutions. The three higher schools provided education in the Confucian classics, their philosophy, and application to statecraft, while the three lower schools were concerned with more practical matters. It was common to enter the school between 14 and 19 years of age but for the Law School, the age of entry was 18 to 25 years. At the beginning of the Tang period, there were 300 students in the Directorate, 500 at the University, and 1300 at the Four Gates School. The Law School had 50 students and the other two only 30 each.[15]

The third emperor of the Tang dynasty, who reigned from 649 to 683, founded a second Directorate at Luoyang. It consisted of two sets of students—those who were preparing for Jinshi and the others for Mingjing. The Mingjing students studied the classical texts. Jinshi was the highest and final degree in the imperial examination in the Imperial China of the time. It was a very tough examination to pass and the success rate was apparently only 1–2% per thousand.

The Song dynasty followed the Tang dynasty. Its period of reign was one of the most brilliant epochs of culture and education in China. It is commonly divided into the Northern Song and Southern Song periods as after 1127 the dynasty ruled only in South China. During its period, there was a notable increase in the number of candidates declared qualified for Jinshi. Most senior officials were Jinshi holders. During the latter part of the Song period, however, the examination became less important as more officials were needed and hence lateral entry was made possible. This led to the dilution in the standard of bureaucracy.

The fourth emperor of the North Song dynasty, Emperor Renzong, who reigned from 1022 to 1063, established a new National University in 1044 in Kaifeng, the capital of this dynasty. It enrolled 200 students. Emperor Shenzong, the sixth emperor raised the number of students to 2400. Emperor Huizong re-established the Biyong Academy as a kind of preparatory school for the National University. In both institutions, 3800 students were enrolled. Under the new rules, the protocol of selection by examination was abolished. Graduates of the University were directly selected and recruited for official positions. When the dynasty had to flee to the South, this National University ceased to exist and was re-established in the new capital of Lin'an.[16]

1.3 Academies

The academies were an alternative system of education.[17] These ran parallel to the university systems. They could be public, private, or mixed. The Hongdumen Academy was founded in 178 CE at Hongdumen, Luoyang. This was one of the earliest institutions of its kind where art and literature were taught. It is also recognized as the first "Academy of Classical Learning," or as the first shyuan. It went beyond the traditional and long-standing educational ideology which was based

on Confucian Classics, with its focused attention to art and calligraphy, ode and phraseology, epistolary art, novel and painting.

The Tang period, which began in 618 and continued till 907, was a time when culture and art flourished, and many academies were established. One of the earliest was the Lizhang Academy later called the Jixian Academy. Since these academies were primarily libraries and compilation centres, they were called shuyuan, which literally means "book yard." Run by academicians, they were like consultative institutions for the emperor. By the late 8th century more private academies opened like the Academy of Zhang Jiuzong in Suining in the province of Sichuan. They gradually grew into centres where books were not only read and discussed but students were taught by private teachers, who were mainly philosophers and experts in Confucian classics.

In the early Song dynasty, the shuyuan were no longer the national library or a private learning centre and it became the real institution of higher learning. The distinctive features of teaching at the shuyuan were:

- The connection between research and teaching.
- Freedom of teaching.
- Freedom of learning.
- Predominance of self-study in the learning process.
- Teachers' emphasis on enlightenment in teaching and
- The close relationship between students and teachers.

Between 960 and 1024, several academies were established, like the Academy of the Prefecture of Yingtian in 1009 under the protection of the emperor. It was also called the "Academy of the Southern Metropolitan Prefecture." The private academy, Songyan, came up near Mt. Taishi in Henan and was given an official status in 1033. The Yue-Lu Academy near Changshe, Hunan, was founded in 976, enlarged later and visited by the emperor in 1015. He presented the Academy with an official tablet bearing its name. The Stone Drum Academy, established in 997, was officially acknowledged in 1035. The Maoshan Academy was granted land for a new building in 1024 by the emperor.

Initially, local governments or private persons were responsible for the foundation of academies because the early Song dynasty was preoccupied with military matters, defending its northern borders rather than focusing on education. Often the academies were located in remote areas. For instance, the White Deer Cavern Academy was at the foot of Mt. Lushan, Jiangxi, and was financed by the income from the harvests and yields of lands allotted to it.

In 1044, an Imperial edict ordered the foundation of public schools throughout the country. This was a big blow to private academic institutions as they were often forced to submit to governmental supervision. Emperor Shenzong of the Song dynasty, who ruled from 1068 to 1085, seized the income of private academics and merged it with the income of the local prefecture. The fate of the academies was tied to the dictates of the emperors of the various dynasties. It went through many twists and turns. When the Qing dynasty started to control the country, the shuyuan transformed into a government agency. Consequently, it functioned passively, as a subordinate of the

Imperial examination system. The term shuyuan was replaced by "college," a contemporary higher education institution, and thus the concept of Academy, discontinued after a history of 1000 years.[18]

1.4 The Contemporary Transformation

The traditional higher education system was reshaped slowly between 1840 and 1911, the period of the last dynasty. In these 70 years modern higher education emerged in China as a consequence of the Western systems of higher education being introduced and with the impact of other social reforms. The two important types of modern higher education were the modern college, and the new government-owned, specialized institution, focusing on training and creating the kind of workforce that was the urgent need of the hour. Besides these was the Western-style university which offered four-year courses, with its focus on specialized academic disciplines.[19]

The Qing dynasty was forced to reform the prevailing system of higher education as a consequence of the humiliation in the two Opium Wars. Now the top officials were looking at learning from the outside world, primarily from the industrialized nations. The movement to modernize, with an eye on the dynamic reforms encouraged by open-minded reformists especially in the fields of technology, industry, military, and education opened out the doors of the antiquated dynasty and directed the focus to Western concepts so as to incentivize social change and help create a powerful and wealthy nation. The reformists introduced modern industries which were directly supported by Western learning, and thus they channelized a movement of new education. In the course of the initiating the dynamic changes, the reformists adopted several "non-traditional" concepts from the West and introduced them systematically into the last dynasty in Chinese history. Consequently, all the new concepts were quite different from those that had existed consistently prevailed in the well-known dynasties of ancient China. Essentially, the Modernization movement equated itself to modern education systems. This included the use adoption of Western languages and Western technology. The School of Combined Learning (or Tongwen In 1862 the Imperial College, also called the School of Combined Learning (or Tongwen Guan), was founded. Active reformists facilitated the Qing government to establish this. To begin with, it was useful in teaching Western languages, and for training translators in foreign languages, especially English, French and Russian. In 1867, it began to expand and grew from a one-subject college to a wider-spectrum polytechnic having diversified into the teaching of subjects such as physics and chemistry. The Imperial College was the first government-owned modern college of the late Qing dynasties. It not only heralded the emergence of modern higher education in China but initiated the gradual transformation from the traditional to the modern.

Between 1862 and 1898, 44 modern colleges were initiated, and among them was the Imperial College. These institutions had two unique features:

- Courses on Western learning which included foreign languages, natural sciences, and practical technologies which directly challenged the traditional ideologies and practices.
- Great importance was given to military colleges. Consequently, as many as 22 of the 44 earliest modern colleges were military colleges. It was recognized that foreign invaders could be defeated only with adequate military training. China thus focused on advanced military technology and through modern and globally relevant military education.[20]

In 1898, the Imperial University was founded in Beijing as per the command of Emperor Guangxu. General divisions were mandatory for all students, and special divisions from such students who opted for one or two subjects. Forty years after the Imperial College was founded, in 1862, it merged into the Imperial University, in 1902, which subsequently became the University of Peking. The University expanded further into an even larger institution in 1909 with eight primary subjects: classics, literature, law and politics, agriculture, business, medicine, engineering, and science.[21]

In the early 20th century, the concept of a modern university in the Western sense emerged in China. The three main HEIs in Tianjin, Shanghai, and Beijing marked the rudimentary birth so to say, of the new university system in modern-day China. Some specialized disciplines and the well-established four-year system of the West were introduced in its definitive form.[22]

A decade of turmoil leading to the 1911 Xinhai Revolution, ended the Qing dynasty, the last dynasty of China, and led to the formation of the Republic of China (RoC). During this time different types of modern colleges were established. Thereafter, specialized, HEIs were introduced. These included diverse colleges of higher education; normal senior and industrial colleges; some private and missionary colleges, and colleges of politics and law ***Zhang Baixi***, a high official in the late Qing period, made the greatest contribution to reforming education. He was obviously driven by national pride as he wanted to prove that in spite of political turmoil, China could have institutions of excellence.

Although he participated in the Boxer Rebellion of 1911, a peasant uprising to end dynasties and to drive out foreigners whom they perceived, as having a privileged position in China, Zhang Baixi's role was not prominent enough for his career to suffer. After the revolution he became a close advisor to the Empress Dowager. It was on his persuasion that the Imperial Capital University, former Peking University, originally founded in 1898, was reopened. He was acknowledged and honoured by both the Peking University and the Beijing Normal University as a founder. He pursued that goal by not only procuring funding to expand the campus in the heart of the city, but also get a well-supported faculty. In 1902, he drafted the "Authorized School Regulation" called the Renyin school system, since the year 1902 was called the Renyin year. This was implemented by the Qing dynasty. In 1904, he participated in establishing the "Presented School System," also called the "Guimao Educational System," guimao being the name of the year 1904. This was the first modern Chinese educational system.[23]

For the first time in China, large numbers of colleges of higher education now started coming up in individual provinces. These became of the new institutes of higher education. Ironically, many so-called universities with less than three subjects were also referred to as colleges of higher education just to meet the requirements in the two systems. In 1903, the University of Zhejian transformed into the Zhejian college of higher education. Industrial colleges, however, did not metamorphose into the independent type of modern colleges until the following year when the Zouding School System was introduced. The system included various colleges of mining, agriculture, commerce, and industry.[24]

This trend of modernizing higher education continued with several important adjustments over the period of 1911 to 1949 in the republic of China. This period was generally divided or classified as development over three time frames:

- 1912: The Nanjing Interim Government
- 1912–1928: The Northern Warlords
- 1927–1949: The National Government

The measures taken in 1912 for incorporating educational change set the groundwork for the development of higher education in the years that followed. These included:

- The new Renzi Guizi School System as promoted by the Minister of Education, Yuanpei Cai.
- The University Ordinance and the Specialized College Ordinance, being promulgated, and
- Permission to establish private universities and specialized colleges, but not private normal colleges.[25]

During, 1924–1949, the period of the Revolutionary War, several different but unique HEIs came into existence:

- 1925: the Sino French University.
- 1933: the University of Chinese Workers' and Peasants' Red Army.
- 1936: the Chinese People's Anti-Japanese Military and Political University.
- 1942: the School of the CPC Central Committee.

These were characterized by the CPC's educational ideals. These institutes trained specialized workforces—political, military, economic, and cultural for the CPC's Revolutionary War, thus emphasizing the direct link between theory and practice; between political attitudes and red thoughts, and bringing in well-rounded individual personalities, with high qualities in moral, intellectual, and physical aspects, with the objectives of well-rounded. This was in direct contrast to the specialized colleges referred to as "universities" that existed in the regions under the control of the Kuomintang or KMT, also called the Chinese Nationalist Party. As per records, there were 205 HEIs throughout the country in 1949, which including as many as 49 universities, 61 private institutions, 28 technological institutions, and 21 missionary institutions.[26]

1.5 India

India's ancient learning traditions were as ancient as China's, but the approach of the two civilizations was distinctly different. Primarily, the ancient Indian civilization was shaped by religion, or rather, the duties and code of conduct in every sphere of life, known as *dharma*. Political and economic activities were to be followed according to *dharma* as well. Although India produced some great mathematicians, astronomers, doctors, and legal and political experts, by and large, education was concerned with the emancipation of the individual soul. The origins of education in India go back probably to the composition of the Rig Veda. At first it was merely connected with sacrificial rites, and it was from this that the Brahminical education developed. Those pursuing craft were educated in their vocations, but mostly through an apprentice system, the knowledge being handed down from father to son. Not much emphasis was placed on academic pursuits for them except for some texts that they had to learn being essential for their craft.

However, each religious domination or political conquest brought about changes in education. Of course, the educational system existing at the time did not completely die out. Therefore, when Buddhism became the dominant religion with royal patronage, Buddhist education began mainly from Magadh, the modern-day Bihar, as it was the chief preaching ground for the Buddha. The Muslim kingdoms, which followed later, set up their own system of education. They introduced maktabs and madarsas; maktabs were primary schools attached to mosques and were seats of higher learning. The final wave of change before India's Independence, came with the British colonizers with their mode of education adapted to suit their colonial interests.

1.6 The Brahminical Education

The Rig Veda, which consists of 1017 hymns, was composed sometime before 1000 BCE. It is a collection of 10 books, of which seven were seriously guarded family collections of the *rishi*s or sages, handed down from generation to generation. Gradually, others also joined in. Because sacrificial rituals became more complex, each senior priest in the family taught the male family members all the ritual laws and hymns that were known to belong to that branch of the family. The entire Brahminical education system was initially oral.[27] The *Brahmana*s, considered a part of the Veda, were composed between 900 and 700 BCE. They laid down the ritual methodology. They also contained mythology, stories, speculations, and arguments. While the intellectual activity was centred on sacrifice, in the ritual methodology can be seen the beginnings of grammar, etymology, astronomy, philosophy, and law.[28]

The ancient schools followed the *guru-shishya parampara*, the teacher–student discipline or tradition. The student approached the teacher with firewood in his hand indicating that he wanted to be accepted as the pupil of that particular seer, sage, or

priest. With this gesture, he promised that if accepted, he would stay in the teacher's *ashrama*, dwellings or premises, participate in the teacher's daily domestic sacrificial ritual, and help to maintain it. The period of studentship was not merely a period of learning. It entailed vigorous discipline, which was developed through the hard physical work that the students had to do. The shishyas had to work for their teachers, with household chores and errands in the fields; they had to attend to the sacred fires, and the cattle, and regularly collect alms for the guru and the entire family, which included all the brother disciples. The pupils always accompanied the teacher as his entourage and waited on his commands. Renowned teachers attracted students from distant places.[29]

In the early Vedic schools, education was very selective, and only young Brahmins were instructed. But sometime before 500 BCE, the education of young kshatriyas or the warrior caste and that of the vaishyas or the traders also came under Brahmin control.[30] Expanding from the Brahmins to the kshatriyas and to the vaishyas, only these three castes had the privilege of education, the system firmly excluding the shudras, the masses of people engaged in so-called menial work.

The initiation of a Brahmin boy took place in his eighth year, that of the kshatriya in his 11th year, and of the vaishya in his 12th year. The clothing of the pupils indicated their caste, making caste identification easy. Although they all studied together, they had to adhere to their caste norms.[31]

The students had to memorize the sacred texts and other compositions taught orally. Since each Veda took 12 years, the three Vedas (not taking Atharva Veda into account) would take 36 years. Because this was too long a period, different *rishi*s began to teach different Vedas and thus the specialization began.[32] Most likely, by the end of the Vedic period, six *anga*s or limbs of the Vedas were conceptualized:

Vyakarana, or grammar and linguistic analysis,

Nirukta or etymology;

Shiksha or recitation or phonetics and philology;

Chhanda or prosody and ritual instructions;

Jyotish or astrology and astronomy; and

Kalpas or the study of procedures and ceremonies for performing the Vedic rituals.[33]

The insights into metres, linguistic analysis, grammar, structure of sound and language, and linguistic analysis influenced the post-Vedic studies, arts, culture, and the six schools of philosophy that developed later. For instance, the *kalpa* studies, gave rise *kalpasutra*s or Vedic aphorisms like the *dharmasutra*s to memorize the code of conduct or *dharma*. These later expanded into *dharmashastra*s, or the science of righteousness or *dharma*, of the code of conduct, and these were used to settle matters of law among other things. As knowledge increased, it became impossible for students to master all of it. That gave rise to special schools for studying specific subjects.[34]

At its best, Brahminical education encompassed comprehensive study of the Vedas, the sciences of numbers, portents, and time; and included the specific study of logic, ethics, etymology, and pronunciation. Also covered was the study of demons; the science of serpents, or poisons; the science of weapons; astronomy; and even

the science of making perfumes. Simultaneously, the students also learnt dancing, singing, playing musical, and the five arts.[35]

Gradually, the training became stereotype and lost its vitality. The kshatriyas did not take the study of the Vedas very seriously, and the vaishyas paid even less attention to them as their main preoccupation was with agriculture and trade. The result was the growth of specialized schools for the vaishyas, which taught them enough arithmetic and trade practices required for their occupation. As time went by, they often did not even avail of the privilege of attending the Brahminical education schools. However, this made their education very narrow. Craftsmen did not usually send their children and apprentices to school, but trained them by apprenticing them to themselves. They did not teach their children or apprentices to read and write as it was not required for them. They were familiarized with relevant manuals in the tradition for diverse crafts, as they could require them for their craft. However, as the crafts got diversified, more and more people got involved, leading to expertise in a craft, but little else to widen their horizon.[36]

1.7 Introduction of Education Institutions

One of the earliest institutions of Vedic and Buddhist learning was Takshashila, which probably dates back to the 5th century BCE. It was situated in Takshashila about 32 kms north-west of Islamabad, the capital of present-day Pakistan. It is mentioned by Fa-hien, the great Chinese traveller monk who visited the place in 405 CE. Xuanzang, another great Chinese traveller monk, visited Takshashila first in 630 CE and then in 643 CE. By this time the city was in ruins.[37]

The strategist and economist Chanakya, who helped Chandragupta Maurya to consolidate his empire, was a senior teacher there. The institution was significant for the Buddhists as the Mahayana Buddhism was said to have taken shape there. Jivaka, an alumnus of Takshashila, was the physician of the Buddha himself as also of the Magadhan emperor, King Bimbisara. King Prasanjit of Kosala, sympathetic to Buddhism, was also said to have studied here.

Included in the curriculum were the Vedas, medicine, for which it was renowned, astrology, and *hetu vidya* or logic.[38] Later, Buddhist texts were added as the Buddha's teachings came to be known. Students from neighbouring areas and from distant lands came to study here despite the long and arduous journeys. This was because of its renowned teachers, all authorities in their respective subjects. At its peak, over 10,500 students studied here. They came from diverse such diverse regions as Babylonia, Greece, China, and Arabia. Altogether over 60 different courses were taught in various subjects, including science, warfare, astrology, astronomy, mathematics, medicine, religion, politics, music, and philosophy. Students would receive education directly from their teacher in the subject of their choice. They had to pay for their education but those who could not, had to work for their teacher in lieu of payment.

The university produced three great scholars:

- Charaka was a famous physician, the author of the Charaka Samhita on Ayurvedic medicine. He was apparently the court physician of the Buddhist King Kanishka in the 1st century CE. One hypothesis is that the Charaka Samhita was authored by several scholars, and Charaka was the editor of this compendium.[39]
- Chanakya or Kautilya who wrote the Arthashastra.[40]
- Panini, a scholar of Sanskrit, who is considered the founder of grammar and the study of language and literature. He wrote the *sutra*s or aphorisms on grammar in eight volumes called Ashtadhyayi in the 4th century BCE, the most commonly accepted date although scholars also place him in the 5th or 6th century BC.[41]

While many may not consider Takshashila as a university, at least in the modern sense of the term, it comprised multiple colleges managed by individual teachers who taught there. There were probably no lecture halls expressly designed for the purpose. The students were not provided accommodation, and hence it was not a residential university. There was no external authority like a king or a local chieftain who controlled it. There was no centralized curriculum or period of study. Each teacher had the autonomy to teach what he liked. There were no examinations. When the teacher felt that the student had learnt enough, he declared him qualified. In general, specialization in a subject took eight years but it could be shorter or longer depending on the ability of the individual student. No formal degree was awarded; knowledge was supposed to be its own reward. The teachers received no fixed payment as it was not considered proper to receive a salary for imparting knowledge. However, the teachers were amply supported by the members of society. At the end of his study, a student was expected to give his teacher *guru dakshina*, an offering as a token of his gratitude. It was not expected to be anything expensive but if he did not have the means to afford even that, he could approach the king. The king was duty-bound to help him.[42]

Many later scholars built on the accumulated knowledge of the past. For instance, two centuries after Panini, Patanjali wrote a commentary on *Ashtadhyayi*. The most commonly accepted date for Patanjali is between the 2nd and 4th century CE.[43] Around 375 CE Amarsinha, a poet about whose life little is known, composed a metrical lexicon, *Namalinganushasnam*, popularly known as *Amarkosha*.[44] Aryabhata, born in Patna in 476 CE, reduced early writings of astronomy, to a concise and practical form.[45] Another famous astronomer, Bhaskaracharya, was born much later, in 1114.[46]

The ancient Indian scholars also knew Algebra, which went to the West through Arab traders.[47] Another great name emerged in medicine, that of Sushruta who is called the father of Indian medicine, in particular of surgery.[48] He composed or compiled a treatise on surgery called the *Sushruta Samhita* in around 6th century BCE.

When Buddhism became the dominant religion, it enjoyed royal patronage and monasteries were established. Buddhist education began mainly from Magadh, the modern-day Bihar as it was the chief preaching ground of the Buddha. Buddhism gave rise to famous universities. They grew out of a *vihara*, or meeting place for monks, generally refers to a monastery, where the monks congregated during the

four monsoon months. It was essentially monastic in nature but as it grew, lay persons also got access to education in them, and the curriculum expanded from only Buddhist texts to other subjects as well. The most famous universities of the time were Nalanda[49] whose traditional history may be said to go back to the sixth and 5th century BCE to the time of the Buddha and the last Jain *Tirthankara*, Mahavira. Apparently, some recent archaeological discoveries have, however, pushed Nalanda's history back to 1200 BCE.[50] Nonetheless, a mud brick stupa has also been carbon dated to the 6th–5th century BCE. Nalanda therefore was definitely an acknowledged and significantly important Buddhist site since its early period.

The renowned Buddhist philosopher Nagarjuna was said to have studied there in the 2nd or 3rd century CE.[51] Fa-hien came to India in 399 CE and travelled extensively but he makes no mention of Nalanda in his accounts although he seems to have visited the site of its location. However, there is some difference of opinion whether Fa-hien actually visit Nalo or did he go to Nalo where there was an ordinary Buddhist monastery.[52] In any case, the area was the centre of learning, which is not surprising as both Mahavira (5th century BCE) and Buddha (6th or 5th century BCE) taught there. Excavations reveal that its monasteries were built during the Gupta period in the 5th century CE onward. The powerful 7th century CE ruler of Kannauj, Harshavardhana, who belonged to the Pushyabhati or the Vardhana dynasty also contributed to them. Most of the information about it comes from Chinese records. However, it is through Xuanzang, who came to India in the early 7th century CE, that we get a glowing account of the magnificence of Nalanda to which students came from far and wide. Xuanzang studied under the renowned scholar Shilbhadra. He was followed a few years later by Itsing who studied in Nalanda for ten years and gave a detailed account of the life of a student there and the subjects that the students were taught. The subjects of study were the four Vedas, logic, grammar, medicine, different schools of philosophy such as Sankhya, Yoga, and Nyaya and Buddhist works of the different schools of Buddhism. Gradually the focus shifted to Mahayana Buddhism and Tantric Buddhism.[53]

Other famous universities of the time were Vikramshila, in the northern part of Magadha, based on the banks of the River Ganga, Odantapuri about six miles from Nalanda, Sompura and Jaggadala in what is today Bangladesh, and Vallabhi in Gujarat. In addition, there were Buddhist monasteries and seminaries focused on teaching and learning.[54] Nalanda was the most famous. At its peak, it had 3000 students although Xuanzang claims, 10,000. But, it was destroyed by the Muslim invader Bakhtiyar Khilji in the 12th century. Khilji burnt the monasteries down and, what was even more tragic, set fire to its magnificent library housed in three buildings, at least one of them being six storeys high. He also destroyed Vikramshila and Odantapuri. With the coming of Islam, not only were the Buddhist universities destroyed, but Buddhism itself died out in India.[55]

1.8 A Changed System of Education

Muslim rule introduced its own system of education. The Muslims first appeared in the 8th century, which was a century of great societal turmoil but the real storm burst with Mahmood of Ghazni, who raided multiple times between 1000 and1026.[56] With the permanent settlement of Muslims, subsequent dynasties established maktabs and madarsas. Buddhist education, which had flourished earlier weakened and finally ceased to exist after Nalanda, Vikramshila, and Odantapuri were destroyed. Monasteries continued in a desultory manner for some time, but in terms of education this did not amount to much as the most eminent scholars had either been killed or had fled, while the books had been destroyed. Some of the existing texts today can only be found in Chinese or Tibetan, and some efforts have been made to retranslate them into Sanskrit.

Members of successive dynasties, such as the Slave dynasty, Tughlak dynasty, and the Lodhi dynasty, together with Sharqi emperors in Jaunpur in the North and the Bahmani emperors in the South, apparently encouraged education and established colleges for higher education. However, the system was only meant for Muslims. Gradually Delhi became a vibrant centre of education. Despite the exclusion, both the Hindus and Muslims made the effort to learn each other's languages since Persian became the language of the court. This made it useful for Hindus to learn it. Muslims, too, started translating many Hindu texts into Persian.

Going by court historical accounts, by the time the Mughals came to India, there should then have been many schools and colleges. But a college in that era was not necessarily a large institution. It could perhaps only mean a class attached to a mosque with 25 students and one teacher in charge. The teaching was mainly of the Koran and sometimes reading, writing, and mathematics were included. It is telling that Babar did not seem to find much of higher education when he arrived in India. In his memoirs, Babar wrote: "The people of Hindustan have no good horses, no good fruits, no ice or water, no food or bread in their bazaars, no baths, colleges, no candles, no torches, not a candlestick."[57] Obviously, the fame of whatever colleges there were, was not evident and had certainly not gone outside the borders of India.

The Mughal kings, like their predecessors, sporadically encouraged education, in particular Akbar and later Aurangzeb. Akbar was a tolerant king. He allowed Hindu boys to be admitted in the madarsas. Although said to be unlettered himself, he tried to reform education by suggesting that boys were being kept in school for too many years only to learn consonants and vowels. They were also being made to read many books but no writing was taught. Akbar ordered that the boys should be taught to write the alphabet before reading, as was done in Hindu schools. Once the student had learnt to write, he would learn to read much faster as the letters would be fixed in his mind and he could progress on his own. He wanted the teacher to particularly ensure that the student understood the meaning of the words and that regular revision of previous lessons was done.[58]

However, at this time, education in India did not reach very far. Crafts developed far more than academics. The French traveller Bernier visiting India during Shahjahan's