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Original Article

Tracing the Journey from Gurukul to Google: An Interdisciplinary Study on the Transformation of Knowledge Systems in India

Dr. Anirudha Maruti More
Assistant Professor, Dr. J. J. Magdum College of Engineering, Jaysingpur

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Correspondence Address:
Dr.Anirudha Maruti More
Assistant Professor,
Dr. J.J.Magdum College of Engineering.Jaysingpur
Email:
anirudha.more@jjmcoe.ac.in

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Abstract

This paper critically examines the profound transformation in the dissemination of knowledge in India, tracing the trajectory from the personalised and value-driven Gurukul system of the Vedic era to the present-day digital landscape dominated by platforms such as Google. It traces the journey of knowledge transformation and includes the effect of each era on this, such as in Islamic education, which was democratized as it cut the rigid, birth-based exclusivity and became multilingual, incorporating languages like Arabic and Persian. The colonial period was a total paradigm shift as it changed the system of knowledge transformation by changing the medium of instruction. It explores major milestones, including the rise of ancient universities, the shifts brought by Islamic and colonial institutions, post-independence reforms, and the disruptive impact of information technology and NEP 2020. The effect of globalisation also broadened the study, which adopts an interdisciplinary approach, analysing pedagogical, cultural, social, technological, and policy dimensions. It highlights the democratisation of access, challenges of the digital divide, evolution of teaching roles, and the ongoing need to blend ancient holistic values with contemporary innovations such as AI and online learning platforms. A holistic approach is necessary, as this paper suggests, since technological aspects alone will not be sufficient for the overall well-being of the learner, who also requires aspects such as critical thinking, morals, ethics, social, and cultural concerns. So, such policies should be derived that integrate the ancient with technology-driven modern. So the paper concludes by emphasizing the necessity for a balanced, inclusive, and culturally rooted knowledge system to achieve true learner development in the 21st century.

Keywords: *Gurukul Knowledge Dissemination, Pedagogy, Digital Education platforms, Google, Technology in Education, Role of AI in learning, Indian Knowledge System(IKS), Hybrid mode, NEP2020.*

Introduction

This paper aims to trace the journey of knowledge transformation from the traditional Gurukul system to the recent, technologically savvy culture. This transformation needs to be studied in all dimensions, like pedagogically, culturally, socially, psychologically, economically, and politically. It is essential to understand how knowledge dissemination evolved from the ancient Gurukul system to the modern education system. This journey is significant in the overall changes in the learner. The paper would like to see the paradigm shift in knowledge transformation and its effect on the learner and the educational system. Tracing the journey from Gurukul to Google symbolizes the profound change that has taken place, from an ancient, oral, and personalized system to the most advanced digital, global, and instant learning platforms.
So let's examine this journey from its very beginning, that is, of the ancient system that is-

Gurukul System in Ancient India:

The origin of this system is in the Vedic period, that is, the Vedic Age (around 1500 BCE – 500 BCE) The important characteristics of this system are that students who are called Shishya had to live in Gurukul, which means Guru as a teacher and Kul means the place, which was called Ashram till completion of Education, where they learned knowledge of Vedas, Upanishads, and other religious scriptures, mathematics, astronomy, philosophy, warfare, medicine, and arts.

The Pedagogy: As in this early age, only oral transmission was the way to disseminate the knowledge, where the Shishya had to pay great concentration to get the knowledge, and it was the power of the learner. The ancient Sanskrit words like Shruti and Smriti were very meaningful and important in this learning transformation and learning process. Shruti means Divine Knowledge that is the absolute truth and that which is heard from the Rishis, ancient Sages. Shruti is the foundation of Hindu philosophy and knowledge, which consists of the Vedas (Rigveda, Samaveda, Yajurveda, Atharvaveda), Upanishads, Brahmanas, and Aranyakas. Smriti means that which is remembered and mostly humanly composed texts (Epics): Ramayana, Mahabharata, Dharma Shastras: Manusmriti, Yajnavalkya Smriti,

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Puranas, Agamas, Sutras, etc, and mostly deals with social customs, laws, ethics, rituals, and practical life guidance.

Values and Skills: This system highlighted spirituality, morality, ethics, religious aspects, social community, purity in life, along with knowledge acquisition, and the focus was on the overall development of the learner.

Ancient Universities in India:

This is the pioneering transformation in the dissemination of the knowledge system in India, as it became world-class centers of higher learning. Due to this, scholars from outside India were attracted, which is a significant change in the knowledge transformation, as in the earlier system, knowledge was restricted to the higher or upper class. Written communication, like books, was widely used in this as in earlier times, as the only oral medium.

1. Takshashila: (Around 5th or 6th BCE) presently in Pakistan, and this was the world's first known university. This focused diverse curriculum includes the Vedas, Vedangas, medicine, surgery, statecraft, Military science, law, politics, mathematics, Astronomy, languages, Philosophy, Archery, and Grammar. This university was the hub of the great scholars in that era, and their contributions in their respective fields are great, like Panini, the great Sanskrit Grammarian, Chanakya or Kautilya, the father of Arthashastra and the mentor of Emperor Chandragupta Maurya, founder of the Maurya Empire. Jivaka, the renowned physician, was the personal doctor of Lord Buddha. Sushruta is called the First Surgeon.

2. Nalanda: (Around 427 BCE)This University was established in the Gupta Empire and Kumara Gupta's active reign. It was the World's first residential university and had a diverse curriculum like Vedas, grammar, logic, medicine, astronomy, and alchemy. This university became the knowledge centre of Buddhist Philosophy. It had the world's first library, named as Dharmaganja, with a nine-storey structure and Ratnasagara, Ratnadadhi, and Ratnarajaka departments. This University boosted the renowned scholars like Nagarjuna, Dharmapa,

Both universities attracted scholars from nearby countries like China, Tibet, Japan, Korea, Mongolia, Shri Lanka, and Persia. In such a way, Indian Knowledge was disseminated outside India.

After the destruction of these two universities, the knowledge centre shifted to temples and monasteries.

Temple and Monastic Education (7th to 12th CE)

Mostly the temples and monasteries of religions like Hindu, Jain and Buddhist became the pivot of knowledge dissemination centres through all over the India like Vikramshila, Vallabhi, Odantapuri and Somaura in Bihar and Bengal as Buddhist called as Mahavihara and also included Jain preaching In south India Hindu temples like Kanchipuram, Madurai and Sringeri became education hubs all the above included subjects religious philosophy, music, literature and dance.

Then the invasions of Islamic rulers who destroyed the set knowledge centres and established their own, known as Madrasas

Islamic Madrasas (12th -18th CE)

Destroying the ongoing education or knowledge centres, Islamic rulers emphasized the establishment of their own, as it is called Islamic Madrasas, as the centre of religious studies, mostly Quran, Hadith, Fiqh, law, and the medium of instruction is Arabic. Sometimes subjects like mathematics, astronomy, logic, and medicine were taught in the reign of the Delhi Sultanate and the Mughal period, famous examples like the Madrasa of Delhi, Jaunpur, and Lucknow.

After this, the Colonial knowledge system came into existence under the British Rulers who came to India for trade purposes only.

British Knowledge System:(1600-2000) As the British ruled over India near about 190 yrs that is from 1757 to1947 from Company rule that is East India to Crown rule and in this took over the Indian Education System in their hand and changed the system also as per their model. and still its impact is on our present that is modern education system. Traditional Education remained limited in the era of British rule as they introduced Western Education. The most important aspect was the invention of the printing press, and due to this, printed textbooks were introduced into the education system. So it structured the British-style education and knowledge transformation system.

Charter Act of 1813: First time the British Parliament allotted a fund of Rs.1lakh.for the promotion of education in India.

Macaulay's Minutes 1835: By this, the English made the medium of instruction of education in India, and with this, Indian education became truly colonized with the aim of creating clerks and administrators for the British. This was the turning point in the Indian education system and knowledge transformation, and till this present age, it is criticized that India's education and knowledge transformation are under the influence of the British.

Wood's Despatch 1854 Magna Carta of English Education in India:

It was to focus on a systematic plan for education in each department, and in this view, universities like Calcutta, Bombay, and Madras were established in 1857. English was the medium of Higher Education, and at the primary level, vernacular languages were the medium of instruction. A teacher training institute has also been established for this.

So in such a way, the British took over the traditional Education System or knowledge-dissemination system in India. Again, in this British era, the education system was controlled by only the elite class, exam-oriented, narrow, and British-centric.

After Independence, that is, from 1947, the Indian government took steps to change the British education system and the knowledge dissemination process.

Post Independent Period:
(Nation-building Phase): 1947-1960s

University Education System (1948-49) The first education system was. Dr.S Radhakrishan was the chairperson of this commission, and the purpose of this commission was to review the present British-oriented education system and suggest reforms to change it and make it more indigenous and focused on more quality, morals, and values.

Secondary Education Commission (1952-53) Dr.A.Lakshmanaswami Mudaliar, Vice-Chancellor of Madras University, was the chairperson of this commission to suggest reforms in the primary and secondary education system.

Kothari Commission (1964-66) Dr.D.S.kothari was the chairperson of this commission, who later became Chairman of UGC, which was comprehensive in suggesting changes from elementary to higher, including teachers. This commission recommended and paved the way for National Education policies.

First Education Policy (1968) gave emphasis on equal education to all, up to 14 years of age, compulsory, three-

language formulas, and most importantly, 6 %of GDP should be allocated to education.

Second Education Policy (1886) focused on removing illiteracy, women's and adult education, and vocationalisation, and improving primary education.

The Third Education Policy (1992) made the education system decentralized, opened Navodaya Vidyalayas, opened distance learning, and granted autonomy in higher education.

Fourth Education Policy (2020). This is the most recent policy introduced in 2020 and implemented from 2021 step by step up to 2030 nationwide. The main focus of this policy is to improve skills, critical thinking, and multi-disciplinary and multiple entry and exit at higher education.

In such a way, the knowledge dissemination process changed drastically after 1947 as it became inclusive, democratic, nation-building, technical, skill-oriented, innovative, multilingual, and equality-oriented.

Regarding tracing the journey of knowledge transformation in India from Gurukul to Google, it is noteworthy to be aware of the radical changes, from oral to digital, as the advent of the internet changed the face of the knowledge dissemination process dramatically. Due to this, the knowledge dissemination process became open for 24 hours, not restricted to schools, colleges, and universities. It is like open access means knowledge is accessible very easily with the help of Google. Earlier methods of classroom teaching with blackboard, chalk, and duster to advanced virtual classroom, smart boards, LCD projector, and wall, etc. The process became livelier. It is more technology-driven, and one can learn at one's own pace from a remote place called distance learning, and globally. The role of the teacher is now as a facilitator and content provider. The variety of new online learning platforms, including government or official e-Learning platforms like SWAYAM, DIKSHA,e-Pathshala,e-PG Pathshala,e-ShodhSindu, Swayam Prabha, NPTEL, National Digital Library of India, NROER, and e-Yantra, private and EdTech Platforms like BYJU'S, Unacademy, Vedantu, Coursera, Simplilearn,upGrad, Khan Academy, WhiteHat Jr., Testbook, Toopr, Udemy, Doubtnut, Meritnation, EduKart, Physics Wallah, GUVI, Amazon Academy. There are some Corporate/Institutional LMS Platforms (Learning Management Systems) like Paradise LMS, Zeus, Learning, G-cube, Shezartech, Deskera, IPIWizlQ, Abara, Cornerstone,e-Khool, Vowel, MagicBox Skyprep, Spayee, and Shoology.In such a way, 41 learning platforms are presently available, which shows how knowledge dissemination has totally changed from traditional to modern, and in this role, Google is very crucial. It totally changed the face of Knowledge dissemination systems in India, as in the traditional Education system, Schools, Colleges, and universities were knowledge spreading centres, and today this concept is going on, vanishing due to these online platforms.

Striking Features of Transformation:

It is necessary to note the striking changes that occurred in this knowledge dissemination process in India, like a shift in medium from oral to face-to-face to Digital text, I-based tutorials, and a series of video lectures with instant global access. Earlier, there was very limited accessibility to small groups, mainly the upper caste, royal family, etc., but now open access to all as it becomes democratized, and even women are getting higher education, as it was restricted. The nature of teaching in previous days was deep. Personally, a bond between teacher and disciple today has become completely impersonal due to increased online platforms. In olden days, the purpose of education was to have holistic development, spiritual growth, and character building. And today, the main focus is on employability, skills, and technical development. In the past, knowledge was preserved in oral and written manuscripts, books, etc. In this digital age, it is preserved through Digital archives, cloud storage, and open-source platforms. The scope of knowledge was limited to Philosophy, arts, Vedas, and local cultural knowledge of science. In modern days, the scope is widened as a global curriculum, focusing on social and environmental, material, chemical, and medical science.MathematicsTechnological aspects. Computer and AI. In the present days, the pace of teaching and learning has also increased than it was one year ago, as it was gradual, requiring years. The evaluation system in ancient days was observation, then in colonial days, a standardized exam system, and offering degrees. In this digital age, it's become an online assessment, I-based analysis, and Lifelong Learning Badge, etc.

Conclusion

The journey of knowledge transformation from Gurukul to Google witnessed remarkable changes that went from intimate, personal, exclusive, holistic, philosophical, and character-building to skill-based, impersonal, technological-driven AI-based online platforms and inclusive, open access to all, including women. It is expected that there should be a blending of ancient values, a holistic approach, ethics, discipline, with modern tools like digital platforms, MOOCs, AI, and Life Learning Badge, etc. This fusion helps to retain the knowledge rooted, indigenous, and relevant, and it will have harmony between traditional and technology, so subjects like the Indian Knowledge System are essential.

The transformation of India's knowledge system, from the Gurukul's holistic and value-based residential learning to today's instant, technology-driven platforms, reflects a journey of adaptation and resilience. While EdTech and policy reforms like NEP 2020 have democratized access and fostered innovation, challenges around equity, personalization, and the erosion of traditional values remain. The way forward lies in mindful integration: blending the moral, spiritual, and experiential strengths of the Gurukul model with the accessibility and scale of digital tools. This synthesis can ensure that education in India remains inclusive, culturally rooted, and future-ready, truly empowering learners for the demands of the 21st century.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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