

Pedagogical and structural modernization of Indian schools: Blend of modern science and ancient values enriched initiatives

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Abstract

The Indian education system stands at a transformative juncture, where the integration of modern scientific approaches with the timeless wisdom of ancient Indian values is not only desirable but essential for holistic development. This paper explores the dual dimensions of pedagogical and structural modernization in Indian schools, emphasizing the need for a balanced synthesis of cutting-edge educational technologies, inquiry-based learning, and interdisciplinary curricula with core cultural and ethical foundations rooted in India's rich heritage. Through a critical analysis of policy reforms, institutional innovations, and grassroots initiatives, the study highlights how modern science-driven tools—such as digital learning platforms, STEM education, and competency-based assessment—can be effectively harmonized with value-based education drawn from ancient texts and philosophies like the Vedas, Upanishads, and Gandhian thought. The paper concludes by proposing a sustainable framework for educational reform that not only enhances academic excellence but also nurtures character, citizenship, and cultural continuity in 21st-century learners.

Introduction

Education as a process of socialization is as ancient as the civilizations are, from the very initial stages of human civilizations when human started living in groups, the process of education has been started. Firstly under the informal setups under which people were learning from their ancestors, parents, society members, circumstances, nature and many more. With the passage of time and development in societal affairs, the formal setup of education has been started i.e. schools, colleges and universities. The Gurukul system of education is one of the most ancient and dominant systems of education in the history of human civilization. The Gurukul system of education starts from the initial years of kids' life i.e. age of 5-6 years. Generally, 12-15 years of schooling was there, then some of the selected students get entered into the higher education system and the others go into society to play

their role and responsibilities in a better manner. The system of education which was started under the Gurukul system is enriched with a multidisciplinary system in which so many different subjects were taught to the kids and many skills which are essential for leading a good, happy and prosperous life were also practiced. There are different aspects of human life for which the students were made ready in the system of Gurukul education, like to be capable of earning a livelihood by authentic means, to be responsible for family and society as a whole, to maintain good physical and mental health, to take care of the family members, to earn name and fame in the society and ultimately lead towards ultimate aim of human life i.e. to attain self realization and to reach the state of ‘Moksha’ salvation. There was a blend of different methodology of teaching which can be called as pedagogy. There was a system of intense strict discipline there so that students could be ready for the higher goals of life rather than involved only in mundane affairs. An activity-based, value-enriched curriculum was there for the holistic development of the personalities of the kids. The system of education during ancient times is named the Gurukul system of education, in which the students stay with the Guru at his place, far away from the hustle life of cities, in the lap of nature; they learn all the things which will be later on implemented into the real life to solve real life problems. Before starting the teaching learning process, there was an initiative to develop intense emotional bound between the teacher and the students; Guru and Shishya. The teaching of Vedas, secrets of nature, logic and reasoning, science and necessary skills for a vocation, intense practice of grammar etc. were the basis of education.

Gurukul education system also known as Vedic education is a system of education that is rooted in ancient Indian traditions and is focused on the holistic development of an individual. It is based on the Vedas, which are considered to be the oldest scriptures of Hinduism. To get the benefits of this value-enriched education system, I am trying to develop a school system in which modern science and technology are an essential part of it and the values-based cultural heritage will also be blended with it, and develop a holistic curriculum for the students.

Review of related literature

Bhattacharya and Sachdev (2021) in their study “Gurukul system versus modern education in India—A need for amalgamate on of the two systems to eliminate the crisis of illiteracy, economy and social problems of the society” compared the education systems of the world, including India, with Gurukul system of education. With the objectives to, 1. Understanding the Education system in the world. 2. Education system in India. 3. The

Gurukul System of India 4. Problems with the Modern Education system., and 5. A study on the issues faced by the Indian students.

Joshi (2021) explored in a study entitled, “Gurukul and modern education system in India: Holistic outlook” that, the Gurukul system of education may still be relevant in modern world with the merits of closeness to peer and teacher than distracting factors like social media etc., high regard for the teacher among students and society as well, practically-tested knowledge imparted through practical rather than mere theoretical transaction of information and facts and implementation of the principle of child-centered education. Gurukul systems may interact and modifications must be welcomed where and when needed in any of the implications of both the systems of education. Modern era Gurukul education must be founded to accomplish the objective, to develop pupils in such a manner so that they might get benefits of both, past and present and must be superior in all the sense.

Pareek (2021) surveyed on Gurukul education system Vs modern schooling system. He found that the underlying difference among Gurukul and present system of education is that modern education consists various subject areas like arithmetic, languages, sciences, social sciences, engineering, etc. yet the education under Gurukul system includes study and practice of Vedas, epics, literature, military training, politics etc. As a Holistic approach of Gurukul and the modern day education system, we have to pay attention towards the individual learning, must give more attention to the learning styles of the students, their learning needs. The peer pressure and the pressure from the side of parents, pressure of competitive examinations must be lower down or convert the pressure in pleasure. We have to give more attention towards the development of a complete human being with Value Based system where the child's individuality will be in the centre and they can excel the education according to their interest areas, the character formation for future citizenship, to lower the stress level etc.

Mohanty and Dash's (2018) accessed on the “UNESCO Sustainable Development Goals (SDG)”, particularly SDG 4 — "excellent education and lifetime chances for everyone" — its theoretical and empirical aspect were the focus of study. Not to compromise with the future generations' capability to fulfill their needs by the gifts of nature and meet the present needs of human society, is the main fundamental idea of sustainable development goals. Sustainability is a paradigm shift to think about the future without causing imbalance in societal and environmental considerations and side by side achieving the best quality of life in harmony with others elements of the environment.

Shyamala and Shwetha (2018) examined the applicability of ancient “Indian environmental protection” practises in the modern context and discovered that, maximum societal practises were developed by our antecedents to safeguard the atmosphere. They regarded earth as “Mother Earth” & symbolize her as the Goddess "Bhumi" or "Prithvi," and it is addressed as such. Three categories were used to classify forests. The categories "Shrivan," "Tapovan," and "Mahavana" were the first, second, and third, respectively. There is a tiny population of "Bishnois" in Rajasthan, India, who follow a form of environmental religion. To protect and preserve the environment, education for the environment should be acknowledged by all stakeholders of society as like democratic institutions, governmental and social organizations.

From the above discussion we can draw out the sum of the needs or necessities of the Gurukul education system which are as follows;

Necessities of Gurukul education

1. Gurukul education is concentrated on developing these values/characteristics among the disciples, so it is highly needed in modern-day society throughout the world.
2. The holistic development of the personality, that is physical, emotional, social, moral character development and many more are missing from the education system.
3. The undue pressure of physical world prosperity on the children is leading them towards frustration and ultimately it is harming there humanity and kindness.
4. Students are not taught to maintain appropriate relationships with their associates, whether they are their parents, peer groups, colleagues or any other society members, and it is a great threat to their capability of proper adjustment towards the environment.
5. Due to the absence or less developed ethical sense of the students, leads the world towards non-sustainable development which is destroying the environment, physical as well as social.

School's Vision

To ensure holistic development of all children in-spite of any socio-economic background so that they will lead successful life and contribute into sustainable development of nation.

Realisation of the vision will be achieved by following the under mentioned philosophy;

The building would be situated away from the hustle and bustle of city life, offering students a wholesome experience of being close to nature. All the students would be residing in the school building itself as it would be a boarding school. It will work as a supplementary or additional constituent to the national curriculum. Not only this, various activities focusing

on nature conservation would also be carried out (keeping the age groups of students in mind).

Aims and Objectives of the school

- To provide education to all students irrespective of family background.
- To promote their overall well-being by practicing activities of all three domains of personality i.e. cognitive, affective and psycho-motor.
- To give children the opportunity to learn in a joyful manner.
- To prepare them for life and not just for job market.
- To focus on holistic development- including physical, mental, emotional, social, vocational and moral development.
- To make them sensible to nature to ensure sustainable development.
- To make them self-disciplined so that they will become more responsible citizens.

Pathways/action plan to achieve these aims

In the absence of an appropriate approach and action plan it may seem superfluous and something that seems too good to be true, something that looks good on paper but, cannot be achieved in reality. However, in my belief it can be turned into reality, only efforts need to be made in that direction. Also, a reliable team is required, the members of which share the same ideology and are ready to support through the entire process. The way is still not without challenges, some of which are-

- Study and fulfil the legal requirements and prepare documents according to the regulations/instructions supplied by the concerned government office.
- Manage/arrange financial resources and purchase or acquire land on lease, to set up the school building.
- Permission from governing bodies and local authorities to establish such a school.
- Getting support from local communities.
- Designing curriculum.
- Selecting extra-curricular activities and obtaining resources for the same.
- Finding and training competent teaching staff.
- Convincing parents to get their ward admitted in the school
- And all these steps can be realised on ground by intelligent planning and effective execution in the correct manner.

Successful compliance of first four steps from the above mentioned process, the major issue is to design the curriculum for the school capable enough to pursue with the very vision and

philosophy of the school. With the above discussion, the following execution plan will be adopted, in accordance with principles of Vedic Education;

1. Curriculum development
2. Methodology of transaction of curriculum
3. Assessment of students' achievements

Curriculum development holds the most dominant place in any of the institutions or overall education system of the nation, not in the present but from the very initial stages of civilization, the dominant philosophers, Psychologists, Educationists, great teachers, social leaders and reformers all had an interest in developing the curriculum for education system in such a way in which they wanted the society should modify and develop. The curriculum can be said the soul of the education system, which is the reflection of the fundamental philosophical postulates of a person, any philosophical or psychological schools or particular ideology, as:

- **Languages:** The combination of three languages will be incorporated. The different languages student will learn and it will make them capable to interact with more number of people in their own native language. Language is a medium to development the understanding of the other people or cultures, leads towards spreading respect and tolerance for the other cultures and the people of other communities or religions. The very aim of Gurukul education system was to spread love and respect for other people, respect for their freedom etc. might be fulfilled via the way we are providing them multicultural experience is through the learning of multiple languages.
- **Natural Science** will have dominant place in the curriculum in which physics, chemistry, biology, botany, zoology etc will be covered. The scientific temperament of the students will be developed only if they are involving themselves in the finding of the cause and effect relationship which is going on in whole the universe continuously, the bent of mind towards rationalism to find out the reasons behind any phenomena, not to be fallen under superstitions, to make continuous efforts to explore more and more from science for the betterment, comfort and to raise the standard of living of the people must be the attitude of the youngsters so that they can contribute their best in the field of science and ultimately towards the society.
- **Mathematics** has been regarded as the best tonic for development of the faculty of brain from very beginning of the civilizations. In the Gurukul education system also the mathematics has been given utmost weight-age. Calculation of lunar and solar eclipse

and so many other natural happenings has been done by the people of thousands of year back, due to the mastery over the mathematical calculations. The basic things of the mathematics starts with arithmetic and in the lower classes more stress will be there on development of basics skills which are needed for solving the complex problems of mathematics in easier way. Dominant system of developing the brain faculties for calculating faster than the electronic calculators has been developed by the people of Gurukul education system which called ‘Vedic Mathematics’.

- **Social Sciences:** The prominent aim of human life is to lead a successful social life in which the person might be capable to fulfill his/her responsibilities in a better manner. This can be done by knowing our civilization, the culture, the age old knowledge which has been developed and recorded throughout history to understand our surroundings in a better way. By the inclusion of geography, environmental sciences, to learn about the important aspects of social institutions like religion, family, society, community and, in the modern era, the constitution, the way of organising law and order in society, so to make the students sensitized about the social issues of history, the surrounding, the social institutions, field engagement.
- **Arts** in the curriculum, like drawing, painting, performing arts, fine arts, music, dance etc. subjects will be included not only in the theory, but the maximum of the parts will be practical so that students can explore their own nature via self expression on canvas or on instruments or on any of the artistic endeavour. The importance of art can be revealed in the Vedic education system by the illustrations from the Epic Ramayana, as Maharishi Balmiki, writer of the Ramayana epic, himself taught Luv and Kush {Sons of Lord Rama} with a variety of skills sets.
- **Yoga** will be practiced in each and every class as a daily routine. The morning assembly will start with the practice of Aasanas, which will give flexibility to the body, having a great positive impact on internal body organs and their functioning and ultimately, to attain a healthy disease-free body, which is essential for achieving the higher goals of life. The blend of Aasanas, Pranayamas, meditation and mindfulness techniques will be presented in front of the students in a practical manner.
- **Vocational development:** The modern day society is very much interested in the development of the prosperity of the individual and society as well, education, nowadays becoming more and more professional in which education and training of some vocation is an essential part of any of the levels of education throughout the

globe. General pass courses, which only provide the certificate to the students, are nowadays not in fashion. To develop the appropriate attitude and aptitude among the students regarding some particular vocation, preparations have to be started from the very beginning. This particular thing has also been mentioned in the National Education Policy-2020 of India, that, vocational education would be started on a compulsory basis from 6th class onwards. In the Vedic period also under the Gurukul system the curriculum was designed around the development of skills among the students the military skills, war skills, the trade, how to communicate with the people etc. were in fashion under the Gurukul system of education. So while adopting the vocational education the modern and the traditional vocations will be blended in my school to fulfill the distinct ideas of adjoining Vedic Gurukul education and Modern Education.

- **Community service projects to achieve** sustainable development goals serve the community and society in various ways have been regarded as the dominant aims of education and it is an expectation of the educated person that they will lead society and serve the needy people in different ways. To accomplish the very idea the sustainable development goals has also been developed by UNO in which learned society are taking the lead and they are trying to fulfill the sustainable development goals in every book and corner of the world. In this regard, students from my school will also be part of community service.

Pedagogy or methods of teaching: Pedagogy or methods of teaching, the success of the curriculum is more or less dependent on the methods of transaction of the curriculum. The curriculum which is decided will only be beneficial if it is transacted through the appropriate methods which are suitable to the students of a particular age group. To fulfill this very principle, following methods of teaching will be adopted in my school.

- **Learning by doing:** Maximum of the attention will be devoted to this particular maxim of teaching. More and more practical work will be assigned to the students so that they can develop and construct their own knowledge and understanding of concepts by their own experience. This method will enhance the students' practical approach to acquiring knowledge and applying it to their real life.
- **Activity based learning:** Students learning a better way while they are involved in construction of the knowledge instead of receiving the knowledge from some source, so learning by doing and learning by personal experience will be adopted as prominent

pedagogy to encourage the students to construct their own knowledge and develop their own understanding over the issues. Maximum activities will be introduced for involving the students in learning by doing and learning by experience.

- **Art integrated pedagogy** given much importance, as psychological and educational research has pointed out that if content is presented in the form of one or another art form, like song, poem, individual and group play, skit etc. students will learn easily as they show an interest in art forms, their learning will be permanent also due to the inclusion of the principle of interest. This particular option has been supported by CBSE as they published the handbook on Art Integrated Education in 2020, to make the teachers well versed in the concept of integrating art forms into the pedagogy.
- **Play method:** Maria Montessori has laid down much importance to the play-way method, in which bookish knowledge is made subordinated to knowledge by experience gained in the informal play-way method. Froebel has also supported this identical idea by developing his own method of learning for little kids that is gifts and blocks, which provides concrete hands-on experience to the students on the issues of the concepts of many subject areas.
- **Lecture method - Shravan, Manan, Nidhidhyansana:** The original form of lecture method which has been developed under the Vedic education system which includes three components; one is Shravan; the listening; second is Manan; meditating upon the things which has been listened in the class and, third; Nidhidhyanasana; which includes self study and discussion of the issues in the form of doubt clearing sessions and debate in the presence of experienced, learned people like teachers and senior scholars. Shravan, Manan and Nidhidhyanasana are not only the three words, but these include the whole process of the great lecture method in itself.

Assessment of the achievements of students: To assess the holistic development of the students, the holistic assessment model will be adopted in my school in which assessment of the development of cognitive, effective and psycho-motor domain will go hand-in-hand.

- **To assess the knowledge,** understanding, application, analysis and other higher order thinking skills of the students, the mixture of objective and subjective examinations will be included. The applicability of the knowledge in real life will also be assessed by incorporating some of the assignments and projects to the students.
- **To assess the psycho-motor** domain development of the kids, practical examinations will be enforced, the performance assessment method will be adopted in which a student

has to perform a skill-set and, objective observation schedules for assessing their development or mastery over the skill/s will be introduced.

- **The affective domain** learning assessment methods will be introduced in the form of field engagement with the weaker or needy sections of society for example, students will be given the task of visiting an old-age home and spend speculate time with the old-aged people.

Conclusion: The above mentioned details show the pathway of establishing a model school blended with effective and still relevant techniques of prominent education systems from ancient history, “Gurukul system of education”, and the current educational advancements of modern societies for teaching and learning in a unique manner leading towards development of complete human being.

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