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Manifestation of Spaces in Gurukul System of Education

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Abstract: *In ancient India education was a sacred tradition and the main aim was development of an individual as a whole by up lifting the individual intellectually, skillfully, cultural and spiritually. Living in the proximity of the Guru, students learn every aspect of life. The teaching and learning then was a continuous process. But this unique system was crushed during British rule and the glorious eco system came to a downfall. Gurukuls in ancient ages leave us unsolved clues for this setup of education, where students outreach their maximum potential and remain focused for attainment of knowledge. Now with the upcoming generation facing huge problems related to education such as unskillfulness, lack of focus, stress, lack of moral and ethical values, lost traditional and cultural inheritance, calls for revival of Gurukul system for a holistic development, and so for the need of a physical setup which is traditional in concept but also fulfilling present day needs. There are some Gurukuls running in country but present Gurukuls and especially the Vedic Gurukuls are unplanned and are just organic growth of buildings as per the need and resources, leaving the place without any character and not even fulfilling the basic facilities. Now with a change in the outlook of the society the Gurukuls are again gaining a recognition.*

This paper aims to find physical spaces and environment for a gurukul which could aid for the holistic development of students providing traditional and simple solutions for enhancing learning. An effort is made to find the needs of spaces in present and future gurukuls through surveys and interviews. Traditional approach in planning of such spaces is done through various case studies. The project focuses to establish a healthy and uplifting relationship between the teacher and student reviving the Guru-shishya Parampara by spaces for more interaction between the two. Creating a balance between built and unbuilt forms. Result of study indicates that spaces designed for special training, skills, spiritual upliftment are equally important along with the spaces for daily activities like cleaning, cooking, praying etc. To encourage pupils being self-sufficient. The spaces and architecture need to be simple and sustainable for promoting simple living and high thinking.

Keywords: Gurukul, Indian knowledge system, Guru Shishya Parampara, spatial planning,

I. INTRODUCTION

“True education is that which cultivates the soul or the spirit, and leads ultimately to the full and complete development of man’s body, mind and spirit... Literacy then is not the primary goal of education: it is the cultivation of character, and the development of the spirit; it is the education of the heart not the head” - Mahatma Gandhi

India has a rich cultural and traditional history and inherent one of the most unique systems of education since ancient times-- The Gurukul System of Education -- The Guru- Shishya Parampara, which not only provided the students with the information but also helped them developed as a complete human being, who is sensitive and responsible- socially, spiritually and personally. The earliest text of ancient India, Rig-Veda, is the source of Hindu civilization. In this ancient Indian Vedic literature, we observe that education was not merely bookish knowledge but included any instruction which upholds the body and mind.

The guru taught Shishya everything, including Sanskrit, religion, astrology, history, literature, scriptures, medicine, philosophy, and more. Education also covered topics like warfare, statecraft, philosophy, and various life skills. Reading books was only one aspect of learning; It was also correlated with nature and daily lifestyle. It wasn't just memorization of certain facts and statistics and answering questions on exams.

The Vedas taught sacrifice laws, grammar, and derivation, knowledge of nature's mysteries, logical thinking, science, and occupational skills which were the foundation of education. The learning was imparted through oral traditions and the system was kept alive with the help of Guru-Shishya tradition.

Over the period of time this traditional way of the methods for passing on knowledge to future generations institutionalized throughout time, giving rise to renowned institutions like Takshshila, Nalanda, and the well-known temple universities, the vestiges of which may still be found in southern India.

The aim of the study is to find environment required in a Gurukul system which can support holistic development of children.

The objective of the study is to find design parameters for a contemporary gurukul for amalgamating traditional education with new technology needs and climatic considerations. Various spiritual and Indian knowledge-based institutions are now coming up in reviving the gurukul system in country and with the increase in government interventions to save and promote Indian knowledge, the need of well-planned gurukuls is also rising. For the study, case studies, interviews and survey have been done.

The gurukuls thus must be planned providing the special quality which promotes the students achieving their potential and promoting the guru shishya Parampara. The objective of the study is thus to analyze need and relevance of gurukul system in present times. Understanding how architecture could contribute towards a holistic learning experience and to assess how concept of guru shishya Parampara can be incorporated in planning and design. The paper also looks for the design considerations for contemporary gurukul for amalgamating traditional education with new technology needs and climatic considerations.

As the present scenario of gurukuls in India is quite piteous, there are only a few references of study. The study thus includes case studies and an analysis is done through a survey for finding the parameters for design which can manifest the ideologies of a Gurukul into spaces

II. LITERATURE

A. History of Gurukul

This tradition of learning started from the early Vedic Age i.e., 1500 B.C and incorporated a social life. References of such Gurukuls are well known from Ramayana and Mahabharata age. The systems of transmission of learning to newer generations got institutionalized and gave birth to famous universities such as Takshshila, Nalanda and the famous temple universities. These universities also grew architecturally manifesting the pedagogy of the time. The system declined by attack of foreign invaders and was outlawed by Britishers. Some Indian scholars like Rabindranath Tagore, Dayanand Saraswati, and gurus like swami Shradanand tried reviving system after independence. Education establishments like Shantiniketan tried establishing the core concept of Gurukul system but the Vedic Gurukuls were not able to re-establish a recognition and decent infrastructure. There are presently around 5000 Gurukuls in India

B. Gurukul as Social Schools

Gurukuls were one of the earliest forms of public school paved to infuse character, personality development, social efficiency and happiness, spread of culture etc. Slowly these Gurukuls took institutionalized forms and the system started functioning to impart knowledge of every kind. In the development of Indian culture, the system of 4 Purusharthas (Dharma, Arth, Kama, Moksha), 4 Varnas (Brahmana, Khatrriya, Vaishya, and Shudra), and 4 Ashrams (Brahmacharya, Grihstra, Vanaprastha, Sannyasa.) were not only interdependent, but Gurukuls acted as a great support system for them.

In early ages the Vedic knowledge which was imparted, was much advanced and detailed as compared to the any other knowledge system and is still have many subjects unrevealed and unfolded by modern science and education. Theories like atomic energies and mathematics theorems, surgeries. Medicine, grammar, etc have their roots in Vedic sciences. The four Vedas: the *Rigveda*, the *Yajurveda*, the *Samaveda* and the *Atharvaveda*, were the complete source of various kind of knowledge. There were different branches of knowledge like arts, science, philosophy, politics, astronomy, medicine etc in ancient India. These were called *aparavidyá*. Supreme knowledge is technically called *paravidyá*.

Apart from 14 vidyas (4 veda, 4 upveda, 6 Vedange), 64 kala's were also an integral part of Vedic knowledge which were an important aspect of holistic development of pupils. These kalas were mainly the life skills which every individual must know.

C. The Process of Education

Education was concentrated to the three processes of *Sravana*, *Manana* and *Nidhyaasana*. *Sravana*-Means listen and understand., *Mañana*- implies that the pupil has to think out for himself the meaning of the lessons. *Nidhyaasana*- means complete comprehension by the pupil.

Listening and repeating of various mantras and hymns wires the brain of pupil in special way which can absorb, retain and recall the teachings given by the guru. The vibrations created have great power and create a deeper awareness by uplifting spiritual energy. Apart from this doing daily chaos of oneself, Gurukul and Guru, the pupils learn not only to be independent but also empathically towards others and society.

The ancient Gurukuls also taught skills and arts covered under 64 Kalaen, which formed an important basis of development of individuals. Knowledge like *Dhanurveda* and *Gandharv* veda developed skills in individuals.

D. Need of the Project

The idea of Gurukul was abandoned, and in today’s contemporary system, educational is converted into a competitive rat race to outperform. Personality formation, the development of a moral conscience, and ethical education are completely absent. One of the greatest problems with this school is that it is more of a for-profit endeavor than an institutional idea meant to give kids a well-rounded education. Due to modernization and lack of moral education the generation today lacks ethical values.

There are some existing Gurukuls but very few have proper infrastructure and almost none of them are well planned and feel like Gurukuls. The need to build an infallible foundation of moral, ethical, cultural along with scientific and technological knowledge, Gurukul as an alternative system of education is now rising. The physical environment of Gurukul need to be carefully planned to facilitate effortless and enhanced learning space, amalgamated with spiritual and modern aids. There are various studies which finds importance and relevance of Gurukul system and Indian knowledge system in modern age but there are no researches on architecture of Gurukuls which can suggest us what the spaces should be like.

III. THE PARAMETERS

The basic concept and literature study of gurukul leads us to the following parameters which could lead us from the curriculum adopted along with the pedagogy of teaching to the spaces required for the gurukul.

VIRTUES	CONNECTION	PARAMETERS
Guru shishya Parampara	Relationship between guru and shishya to strengthen the learning.	Interactive places for guru and shishya. (Not only during study hours but throughout the day)
Living for learning	Learning all the time	Residential cum scholastic space
<i>Kalayan</i>	Skill development	Spaces for training and special classrooms
Calmness, spiritual upliftment	Contemplation	Meditation and spiritual spaces
Discipline Self-control Physical development	Rules, Martial arts / sports	Spaces for sports and physical activities
Empathy, self-dependence	Teamwork, working for self and others	Common working spaces, connection between built and unbuilt
Respect to nature	Location and landscape	Natural surroundings and natural elements
Simple living, high thinking	Simple and sustainable living	Simple and sustainable architecture and ecosystem

Table 1- Design parameters. Source-by Author

IV. RESEARCH METHODOLOGY

For the purpose of exploration of the topic and finding the future needs of gurukuls the basic study is done of some classic examples. As per the literature studies, parameters are identified which make gurukul a different typology of educational institute. Feasibility and Relevance of these parameters are been again studied through survey. Interviews of Achrya helped exploring the unidentified aspects of gurukuls

A survey of 35 gurukuls have been done through a self-structured questionnaire for finding the type and flow of spaces as they are used to strengthen the guru shishya Parampara. Questionnaire include questions related to guru shishya living patterns, connection between living and learning spaces. It also includes vision for what major activities are included in gurukul apart from the curriculum of Vedic studies. The further details are incorporated by interviews of guru or the acharya of few gurukul exploring the importance of gurukuls in modern age and present-day needs. The flow of methodology is as follows.

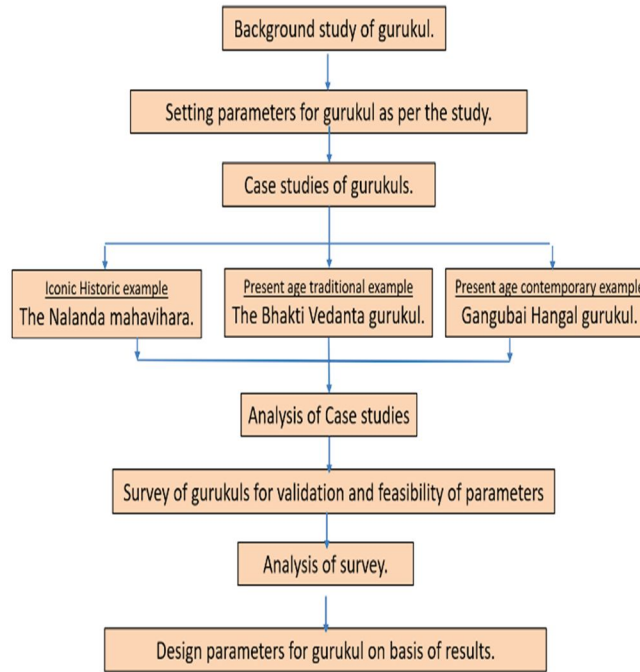


Figure 1- Methodology flowchart

V. CASE STUDIES

Ashrams are found in what can be referred to as "forest universities," remote from the bustle of cities. The Vedas, the earliest known oral writings carrying the ideas of a highly civilized society, are full with lovely allusions to nature and the idea of the interdependence of living things, thus it should come as no surprise. Before beginning the arduous route of learning, it was crucial to these gurus that people recognize their lowly position in the limitless world. However not every gurukula was situated in a forest. Since the gurus were often homeowners with families, many lived in towns and villages. Nonetheless, remote areas were favored. Few studies are made to understand the physical setup of gurukuls.

A. Nalanda Mahavihara

Nalanda stands out as the most ancient university of the Indian Subcontinent. It engaged in the organized transmission of knowledge over an uninterrupted period of 800 years. (5th century -13th century)



Figure 2-Ruins of monastery at Nalanda Mahavihara.



Figure 3- view of monasteries of Nalanda

Source- ASI report Guide to Nālandā, Archaeological Survey of India

While its excavated ruins today only occupy an area of around 12 hectares. They studied subjects such as the *Vedas*, *Hetuvidyā* (Logic), *Shabdavidya* (Grammar and Philology), *Chikitsavidya* (Medicine), the works on magic (the *Atharvaveda*), and *Samkhya*. law, astronomy, and city-planning. The excavations reveal 11 monasteries, 6 temples and giant stupas, meditation halls, parks and lakes. All monasteries and stupas are connected through pathways. The monasteries, laid out in a row, face a parallel row of temples directly across. A 30-metre-wide path runs between the two rows. Each monastery, averaging about 40m x 60m Made of oblong red bricks, once plastered with a paste of lime and sand.

Monasteries at Nalanda are very similar in layout and general appearance. Their plan involves a rectangular form with a central quadrangular court which is surrounded by a verandah which, in turn, is bounded by an outer row of cells for the monks - a typical design of *vihara* architecture.

The central cell facing the entrance leading into the court is a shrine chamber. Its strategic position means that it would have been the first thing that drew the eye when entering the edifice. The building was originally at least 2 storeys high and contained a colossal statue of a seated Buddha

One of the important features of viharas is that Teachers and students live together in the monastery; each year before the monsoon, the eldest monks are given the best rooms.

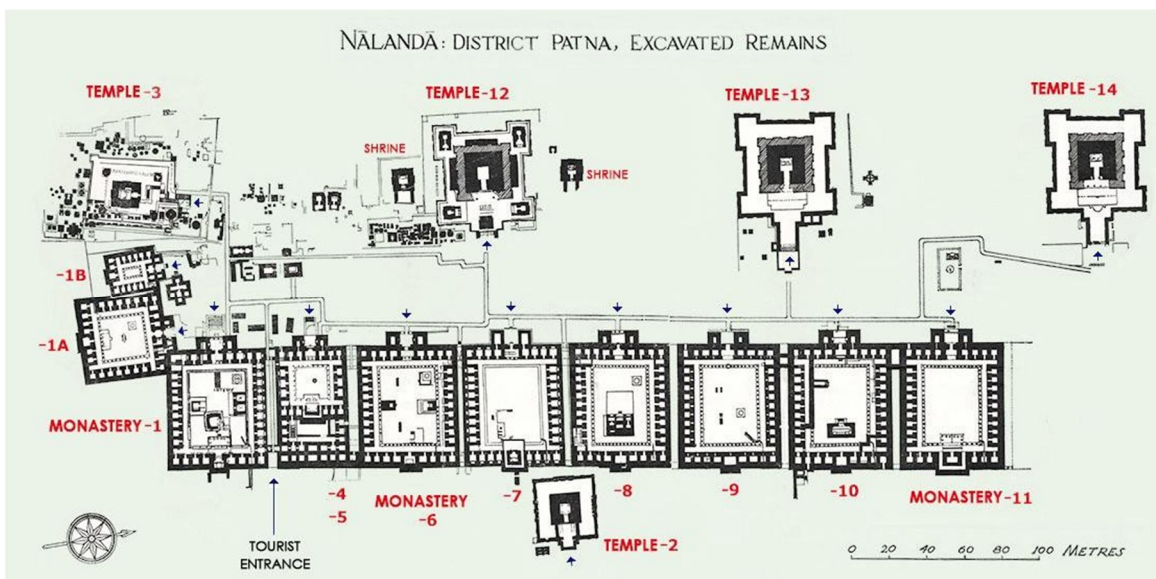


Figure 4- layout plan Nalanda Mahavihara.

Source- ASI report Guide to Nālandā, Archaeological Survey of India

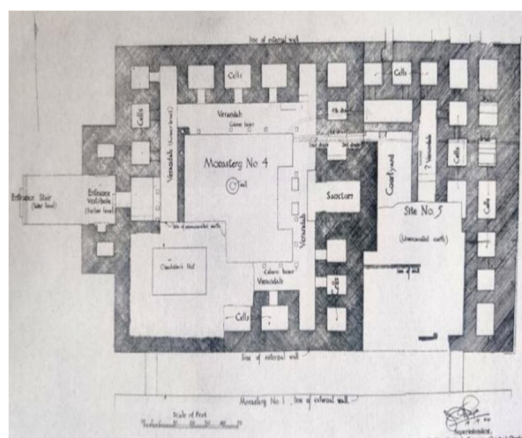


Figure 5-plan of Monastery no-4.

Source- ASI report Guide to Nālandā, Archaeological Survey of India

Monk's training to become temple priests get a room with a purpose-built niche for a holy image, to which they offer flowers and incense after bathing each morning. The central courtyard in each monastery plays an important role. As a Place of interaction, place for teaching and learning (evident from presence of *teaching platform*), *place for prayer* (presence of *shrines/ buddha statues placed on platform near entrance*).

The scale of court is quite similar to residential court yards of ancient times. The main residential and spiritual area surrounded by pokhars or lakes which make the land fertile and aid to tree and vegetative growth around the main habitable land. They also create a buffer zone.

B. THE GANGUBAI HANGAL GURUKUL, HUBLI

Dr. Gangubai Hangal Gurukul is established by the Government of Karnataka in the fond memory of legendary musician late Padma Vibhushan Dr. Gangubai Hangal. It is modeled on Guru-Shishya Parampara without any regimented and rigid curriculum. The Gurukul is set up with all the facilities to accommodate 6 gurus and 36 students



Figure 6- Layout Plan Gangubai Hangal Gurukul

Source- IAB february 2012 publication

Design is based on guru shishya Parampara maintaining a learning and living relationship between the master and the pupil. Gurukul is arranged in north south with communal space and academic facilities integrated east west.

The lawns between the students and guru's houses rises up into the inclined roof and ground line,

Guru's house, Riyaz area, students house is in close vicinity. A continuous walk from guru's residence roof into Riyaz garden/ space to students' residence aided with different textures,

Design provides ample space for student teacher interaction providing opportunity for students to imbibe values and precious knowledge by spending time with guru. Guru and student's spaces are separate but still connected very strongly though common space for a common motive of teaching and learning. The complete setup gives a feel of residential area and not resembling a college/ school. places provide spaces for spontaneous Riyaz and thus making learning a continuous process rather than a time and space bound activity. The vast and uncluttered design provide perfect ambience for better concentration during Riyaz. Holds a strong connection with nature and natural elements. There is separate administrative block, faculty houses and a canteen to provide for non-teaching requirements and administrative work.



Figure 7- Various textures in landscape.



Figure 8-visual connectivity between gurus residence and students residence.
source- IAB february 2012 publication

Gurukul is constructed on an eco-friendly design template. There is a rain water harvesting pit to save the water for gardens. All buildings have enough space to let in the light and wind to reduce energy needs Gurukul has its own organic farm, that provides healthy and high-quality vegetables for canteen. Street Chaos has been cut off by placing gurukul at far end with a green buffer zone. Open-air Auditorium with a seating capacity of 500 offers the ideal ambience for staging Classical Concerts

C. ISKCON Gurukula, Mayapur, West Bengal

"The old system of Gurukula should be revived as the perfect example of a system designed to produce great men, sober and responsible leaders, who know what is the real welfare of the citizens."—Śrīla Prabhupāda

Bhakti Vedanta Academy, established in 1984, is an educational institution based in Śrīdhāma Māyāpur, India, which provides education for boys and adult students on the principles of the Vedic Gurukul system. The gurukul complex reflects the thought of simple living and high thinking. The different buildings are located in the close vicinity of one another. With most of the huts in, traditional vernacular architecture of West Bengal using hard burned local bricks, bamboo and straw. the building comprises of the temple or the yagna hall, the cooking hall and the Prasad mandapam, grain storage area, residential building, gaushala, sports hut. Gurukul is located in admits of nature. Activities and spaces are planned and placed keeping the temple and yagna hall in the center and a one of the most important parts of the gurukul. Most of the spaces are in vernacular architecture except the new buildings. New buildings are planned with a strong connection with nature. Building is surrounded with trees and landscaped area. Gurukul is self-sustainable in various aspects like agriculture, fuel consumption, electricity consumption, water consumption etc. Most of the spaces are simple and for multiple uses.

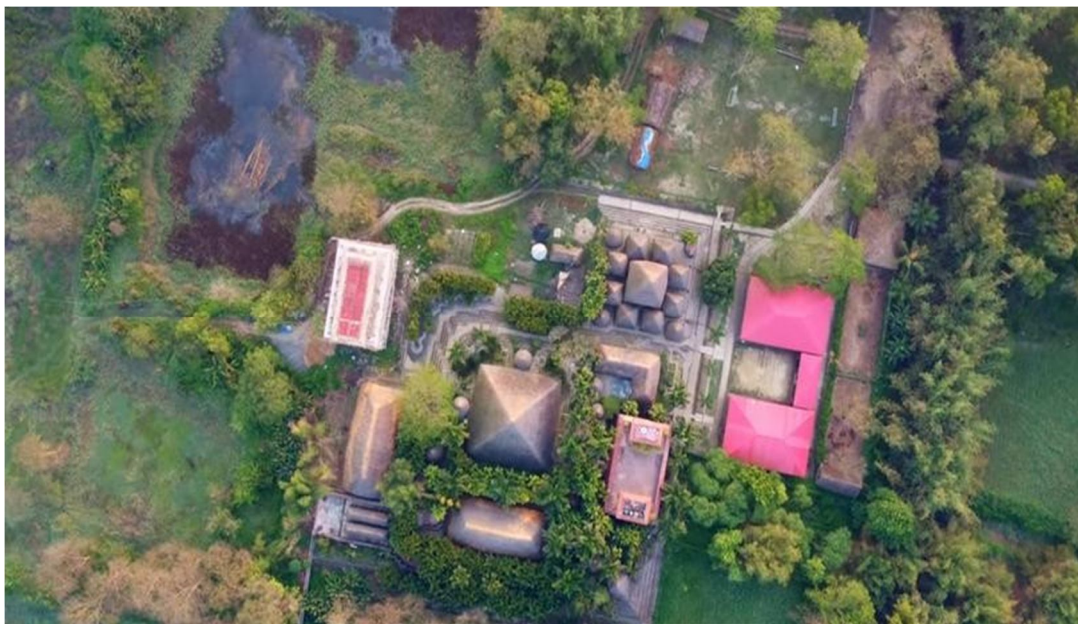


Figure 9-Top view of bhaktiVedanta gurukul.
source- bhaktivedantaacademy.com



Figure 10- gurukul uses vernacular architecture of Bengal.



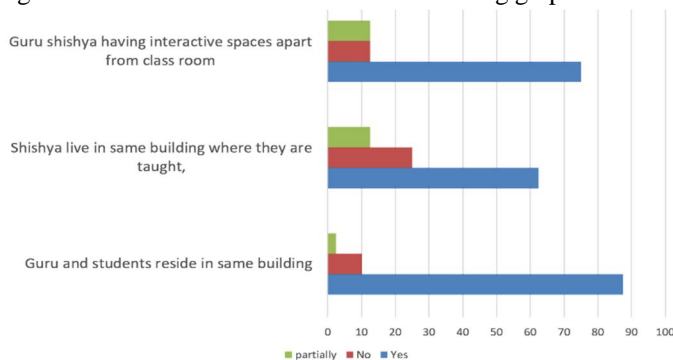
Figure 11- view of gurukul-

source-bhaktivedantaacademy.com

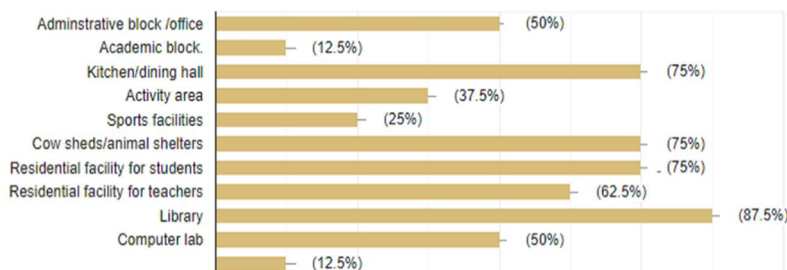
VI. ANALYSIS

A. Survey Results

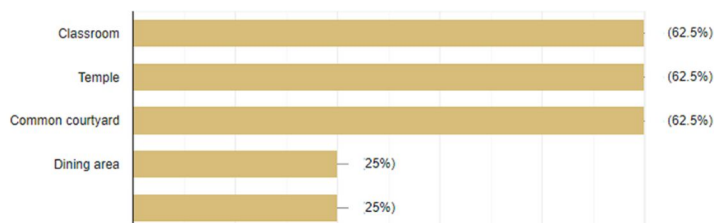
The survey was done across the 35 gurukuls. The results can be seen in following graphs.



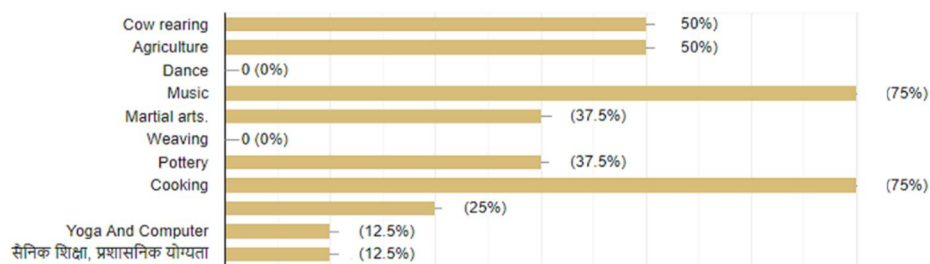
Tick the facilities present in you gurukul (more than one can be selected)



Interactive spaces for guru and shishya, (more than one can be selected)



Skill development provided



Results show that about 75% Gurukul shishya lives in the same building in which they are being taught partially or fully, which shows that living in learning spaces should be either same or can be made in vicinity. In 87.5% Gurukul Guru and shishya that is teacher and the student, live in the same building the result reinforces the fact of practice of students living with the teacher.

The result also shows that the interaction between Guru and shishya is not limited to the classroom. In about 75% of the Gurukul the interaction was in more than just in classroom, in a spaces like temple, dining spaces open areas like Courtyard etc. Through the survey conducted it was evident that apart from learning the Vedas which were mainly Yajurveda 62.5% Upanishad 62.5% Vedangas 75% Rig ,Sam and Atharv Veda (25%each) the gurukuls also train students with the skills like cooking (75%) music (75%) cow rearing and agriculture (50%) martial arts and pottery (50% each.)

VII. FINDINGS

The traditional Indian learning system- Gurukul is all about the relationship between the shishya and the guru. In gurukul the teacher and the students are connected not only for studies but also the values, traditions, skills and culture which a guru wishes to imbibe in his students. This enables the students to bring a holistic development and uprise as a great individual. The learning should not be confined to studying for 6 to 8 hours, but it is a continuous process. Thus, the environment in a gurukul should be such that it increases the interaction between the teacher and the student. And make learning a continuous process. It can be done by, sharing same campus or building, Common living and learning spaces, more interactive places apart from study area.

The learning and living spaces should be either near to each other or should be common. This makes the learning an part of life and life style. Common living and learning space enhance the students feeling toward the space. Gurukul is guru's -kul , that is family of guru. A family lives in a house. So Gurukul being is a larger family, the building and spaces should remain of residential feel and essence, and not resembling a college or institute. Gurukul focuses on simple living, high thinking and moderate lifestyle. Focusing on needs and not wants. And thus, the design of spaces should be simple, uncluttered and sustainable.

Presence of nature and natural elements increase our potentials and bring our body and mind in harmony. Thus, a learning space should by greatly supported by nature. Trees and plants not only increase the capabilities but also enhance environmental quality of the place.

VIII. CONCLUSION

The highest education is that which does not merely give us information but makes our life in harmony with all existence - Rabindranath Tagore.

Education is a purposeful activity. Various scholars and Indian legends like Rabindranath Tagore assessed it long back that Indian education system need a change. The education must be uplifting and enriching not only for individuals but also for society. In gurukul the teacher and the students are connected not only for studies but also the values, traditions, skills and culture which a guru wish to imbibe in his students. The virtues and pedagogy of gurukul need to be manifested in Architecture of the gurukul.

Thus, the environment in a gurukul should be such that it increases the interaction between the teacher and the student. And make learning a continuous process. It can be done by Sharing same campus or building, like creating a common courtyard or movement space between students' area and teachers' area. There must be More interactive places apart from study area like kiosks or platforms can be create as informal spaces.

The study reveals that there must be Common living and learning spaces or the two spaces must be adjacent to each other, this makes learning an integral and amalgamated part of living and life style. Study of Nalanda shows that the best rooms were allotted to the best scholars as appreciation. This inculcates a motivational factor for better performance.

Gurukul being a larger family of the guru, the building and spaces should remain of residential feel and essence, and not resembling a college or institute. The scale should not be overpowering and there must be balance between built and unbuilt, covered and open. Gurukul focuses on simple living, high thinking and moderate lifestyle. Focusing on needs and not wants. And thus, the design of spaces should be simple, uncluttered and sustainable. Pause points, covered and uncovered spaces will play an important part making learning an experience. Presence of nature and natural elements increase our potentials and bring our body and mind in harmony. Thus, a learning space should be greatly supported by nature. Trees and plants not only increase the capabilities but also enhance environmental quality of the place. Using simple passive cooling and heating aids will help cater climatic needs of the place. With the government interventions like plans for creating Vedic boards and creation of Indian knowledge system -an innovating cell under ministry of education to promote Indian traditional knowledge and culture, gives strength for reviving the Indian culture and knowledge at various levels. And thus, gurukul is a new typology of learning institutes evolving in country. This study thus tries laying a guiding outline for architectural development of Gurukuls.

IX. DISCUSSION

Throughout the study of gurukul, it was found that various researches are made in the field of education, management and history, advocating the Indian knowledge system, concluding and suggesting, the amalgamation of modern and traditional system, but none of the study was found in the field of architecture which could help and guide the planning process and suggest the type of spaces and building in Gurukuls.

The need was to fill the gap with a study of gurukuls, understanding the ideologies of gurukuls and needs of modern age. The virtues like learning by sitting near guru, listening, meditating, contemplating, moral values, being independent and self-sufficient, life skills need to be manifested in the spaces

The attention was not given to the Gurukuls since ages because of lack of recognition in formal education system. But with government interventions and formation of *Vedic board by Maharishi Sandipani Rastriya Ved Vidya Parishad*, Vedic studies get a direction. In the seven years Vedic board course of Ved Bhushan and Ved Vibhushan, need of proper and well-planned spaces also arise, which abide both values of gurukul and needs of modern age. More gurukuls parallel to the *Rastriya Adarsh Vidyalaya* for Vedic studies are coming up. This study will thus be very useful for shaping a new typology of educational institutes.

This study will give a direction for future studies for evolving a sustainable environment for Gurukuls..

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