

## **CRITERION-VII**

### **INNOVATIONS AND BEST PRACTICES**

#### **7.1 Environment Consciousness**

Gujarat Vidyapith is environment and energy conscious. Among plethora of cement concrete, flora-fauna survive as they have been given due attention. The micro climate in Vidyapith is different than one the main artery roads – Ashram road. The temperature in the main campus in Ahmedabad is about three to four degrees less because of green cover. The lifestyle within campus is simple and influenced by Gandhiji's *Ekadash Vrat*. Gandhiji was, per say, not an environmentalist, but the life style he had lived and has been inspiring us to live, can solve many environmental problems. *Asteya* (non-stealing), *Apagrāh* (non-possession), Bread labour and Swadeshi is the way to sustainable development. Solid waste management is also done very consciously and carefully in participative mode.

Vidyapith has published a book on flora and fauna of the campus. Medicinal plants and vegetables are grown on the campus itself. Agricultural waste is segregated and stored in one place to produce organic manure. Kitchen waste and other bio-degradable waste are utilized by the *gobar* gas plant to produce gas as well as manure which is used in the kitchen garden of the campus to grow vegetables. Only plastic waste of the campus is given to the municipal corporation solid waste management.

##### **7.1.1 Does the university conduct a Green Audit of its campus?**

Yes.

##### **7.1.2 What are the initiatives taken by the university to make the campus eco-friendly?**

###### **\* Energy Conservation**

The illumination in Vidyapith campuses is enough for adequate lighting and high wattage lamps are generally avoided. Air conditioners are used sparingly. The Classrooms have good ventilations and natural lighting is plenty. Seminar halls and auditoriums have been fitted with fans and ventilators. Lights and fans are turned off when the use of the space is over even during working hours.

New experimental designs on auditorium are also carried out to demonstrate such natural system.

###### **\* Use of Renewable Energy**

Gujarat Vidyapith has a Biogas Research Centre at one of its rural campuses, where gas is generated out of the human, animal waste and other organic wastes through bio-gas plants. Different types of bio-gas models are made by the scientists and are popularised in nearby villages. The Sadra *gobar* gas plant satisfies the hostel energy need. The campus of Ahmedabad also has two bio gas plants.

In almost all centres of Gujarat Vidyapith, composting is a regular feature. Mixture of kitchen waste, leaves and other degradable waste is collected and earthworms are added. Also added is the waste on the campus collected by the students who every day sweep the entire Gujarat Vidyapith campus as part of their daily routine. The organic manure, a ton per month on Ahmedabad campus, thus created, is used for greening the campus as well as for increasing production from vegetable and terrace gardens. Only plastic material goes out of campus to municipal corporation solid waste management system.

### **Eco-friendly Auditorium**

Gujarat Vidyapith has an eco-friendly auditorium with 750 sitting capacity. It is constructed with the local materials like bricks, lime and silica in a traditional manner of crushing lime and making mortar out of it. The construction is based on Earth Cooling System. The temperature is found to be 8 to 10 degrees less at 3 feet underneath the ground. Hume pipes of NP2 size are used to make the tunnel below the ground. The air that passes through this tunnel to the hall becomes cool. These pipes open in two open tanks of 30 feet deep at a distance of about 150 feet. There are three ducts in the auditorium that release air in the hall. In the open wells, exhaust fans throw air on water that is sprayed; thereby making the air cool. There are hot air ducts in the hall that throw out the thin hot air through roof ridges located on ceiling and cool air takes place of hot air. Natural wind spin also throws out hot air without using electricity. Exhaust fans are specially used in monsoon when humidity is high. In summer, it is 8 to 10 degrees cooler inside the auditorium. It should be remembered that this is NOT an alternative to air conditioning, it provides comfort level. The total cost of construction is one crore seventy lakh rupees, that is about Rs. 22,667 per capita. There are 70 Watts light fittings, where as flood lights or halogen use has been avoided. The auditorium can be used for academic purpose like a seminar venue as well as for performances. The system needs to be started one to one and half an hour before the programme to achieve its full potential.

### **Natural Water Cooler (For drinking water in campus in different location)**

Natural water cooler saves energy to a great extent. Gujarat Vidyapith started with this system way back in 2005, but the issues of maintenance, limited storage capacity and defective fabrication system led to failure. Since August 2012, Gujarat Vidyapith has once again taken the initiative. Gujarat Vidyapith has installed five water coolers; 150 litres capacity with 6 taps and 100 litres with 2 taps. They are made of stainless steel 304 along with solar panel and DC fan. Although the water cooler is expensive in monetary terms, it provides life time guarantee, uses no electricity and has no moving parts that could create maintenance problems. The operating system of the cooler is simple: the water passes from copper coil, hence it is hygienic. The water also tastes sweet. The coil has been insulated. The fan on the coil is operated by solar energy. The water is 2-3 degrees more cool than in new pot. The system is good for schools, colleges and public places.

### **Steam cooking system**

Another energy saving gadget is steam cooking system. It accelerates the speed of cooking with better performance and is more hygienic. Gujarat Vidyapith has such system for 100 to 500 students. It saves about 50 per cent energy cost and 40 per cent cooking time. But one complain that students have is about the taste of the food.

### **Solar Street Light**

Solar Street Light Electronic photovoltaic cell produces energy with the help of sun light. This energy is stored in the battery that is used during night. Once fully charged, it can be used for 8 to 10 hours. The institute has one plant at its State Resource Centre.

### **Energy Park**

Gujarat Vidyapith has demonstrated a number of gadgets in its energy park like Paddle Power Cycle, Cooker, Distillation Plant, Paddle Power Water Pump, Ambar Charkha, Lamp, Parabolic Dish, Dryer, Musical Instrument, Paddle Power Compressor etc, but they are not widely used. The efforts of the institute are to publicise them for general use, but they have not achieved the expected results.

### **Khadi**

The birth of Khadi is vividly depicted by Gandhi in the following Words. “The beginning of the Khadi movement has been more and more occupying my attention. I do not remember to have seen a handloom or Spinning wheel till the year 1909, when I described it in my booklet ‘Hind Swaraj’ as the panacea for India’s growing pauperism. In that booklet I assume that anything that helped India to get rid of the grinding poverty of her masses would in the same process establish swaraj.”

### **\* Water harvesting**

Gujarat Vidyapith has been making conscious efforts for water harvesting. The efforts are in two ways.

*‘Khambhati Kuva’ A traditional, century old practice in Gujarat*

Seven water harvesting structures have been made on the campus. The ‘*Khambhati Kuva*’ is 25 to 30 feet deep till shallow aquifer is reached. Each structure has capacity of absorbing forty to fifty thousand litres of water per hour. After two to three hours of continuous rain water drains into the wells. The construction is designed after the soak pits. With a diameter of 8 feet that decreases to 5 feet as it goes deeper. The average cost of a structure is around Rs. 55,000. Indirect benefits can be seen in terms of increasing surrounding water table, less mud and hence more cleanliness and relatively less mosquitoes and lower prevalence of vector borne diseases.

### **Bore well**

The other water harvesting structure is 450 feet deep bore well. The rain water gets filtered in 10X10 tanks and infiltrates through a 10 inch pipe. There is no saturation level; and a slow but sure water infiltration. Both these structures have reduced the TDS level on the campus to 800-1200 from a high of 1500 to 2000. There is one existing well of about 100 feet deep. A pipe line with 1 foot diameter has been put in

this well. Rain water is collected through gravity from a surrounding 200-300 feet diameter. The well gets filled during the rainy season and the water gets infiltrated. The water helps the tube well to rise due to this structure. Gujarat Vidyapith has also constructed tank with capacity of 5,000 litres for rain water harvesting. There are five underground tanks in traditional pot (mataka) shape in girls' hostel, each with 25,000 litres capacity. The construction cost is less than usual RCC water tank. However, the water quality was affected due to some structural problem and stored water was used to water the kitchen and the medicinal gardens.

#### **\* Efforts for Carbon neutrality**

During last one decade, green coverage on the campuses have as been improved significantly. Secondly, prone twigs and leaves in all campuses are neither burned nor given away. It is used for composting. Farm yard manure production is undertaken. So is done with waste paper pieces. Use of plastic bottles and cups are sternly restricted. The tree population is substantial. The combined effect of all these action has turned the Vidyapith campuses into a carbon sink. E-governance is being encouraged to minimum paper use.

#### **Plantation**

Gujarat Vidyapith has a tradition of plantation in all three campuses. Plantation day is being celebrated annually and students are given responsibility to maintain plants. Moreover storing of rain water and its proclamation to water tree plantations helps.

#### **\* Hazardous Waste Management**

The main hazardous waste is plastic. This waste is minimized at the originating point itself by emphasizing on the concept of a plastic-less zone. It has been difficult to control the use of plastic in residential quarters. However, the major management method that has been adopted for hazardous waste management is segregation of waste at the composting point. All non-organic waste is separated and given to the Municipal waste collection system.

#### **\* e-waste management**

The Gujarat Vidyapith has initiated efforts to create e-waste awareness. Electronic goods are put to optimum use; the minor repairs are set right by the staff and the major repairs are attended by the professional technicians and there is emphasis on reuse. Use and throw is seriously discouraged. The spare parts of decommissioned computers and other non-working equipment are used by the instructors in the practical sessions of teaching hardware tools with the help of students from USIC department of the Gujarat Vidyapith. Disposal is made with due care and not given away to any waste and scrap collecting vendors.

## 7.2 Innovations

### 7.2.1 Details of innovations introduced during the last four years which have created a positive impact on the functioning of the university.

The awareness and consciousness about continuous innovation in practicing teaching-learning, research, and extension is of recent origin in the higher education university environment in the country. The traditions of Vidyapith were highly innovative. In fact, the idea of the university itself was an innovation. However, after the recognition by the UGC, it started getting into the UGC framework which had focus only on classroom teaching and learning with library and laboratory as the main aids. Vidyapith was also pushed into this direction willy-nilly. There has been a paradigm shift again in recent past where skill formation has come into focus. Vidyapith had always emphasized on character building, skill formation and intellectual development and learning through skills. Thus, for Vidyapith going back to basics called for innovation!

Two successful innovations among many that have been tried in recent past are worth noting. One is to help the teachers and the other is for students.

#### **Teacher's orientation to Gandhian Thought and His Thought on Education**

Late Shri Narayan Desai, former Chancellor of the University took upon himself to organise and conduct camps for the teachers with an objective of orienting them in Gandhian Thought and praxis. He aimed at informing and integrating Gandhian Thought into all the courses that were offered at Gujarat Vidyapith. He also wanted to strengthen the department of Gandhian Thought in the process. Winner of *Gyanpith Moorthidevi* Award for penning a four-volume biography on Gandhiji, he was a rare scholar-practitioner of Gandhian Thought in the post-Independent India. Vidyapith organised camps for university teachers and tried to encourage all teachers to join. Almost 80 to 85 per cent teachers joined the camps and learnt. Efforts are now on to integrate the thought in teaching, extension and research. The last follow-up camp was organised in summer of 2015, when about 35 teachers gathered in a workshop to explore the possibility of bringing Gandhian Thoughts in designing their future research programmes. The details about the activities under the innovation have already appeared in earlier sections. We hope that in coming years the impact would be more perceptible.

#### **Teaching-Learning extended beyond Degree: *The Gramshilpi***

At the time of the establishment of Vidyapith as a national university for alternative education challenging the British Education System, the objective was to educate youth for rural reconstruction. It was presumed that the educated youth would go to rural areas and work. Over a period of time, this objective faded and most started looking for jobs. In 2004-05, there was some hard thinking on how the students could be motivated for looking toward village once again. *Gramshilpi* was conceived as a programme extending the learning of the willing degree holding students to live and learn in a village and then settle down there. For doing this, Vidyapith offered a

fellowship (survival allowance) and professional training and exposure for a period of two years to students who were picked up after careful screening and assessment. Fellowship was extended to third year after a review. It has been successful innovation. 16 *Gramshilpis* have completed the fellowship duration and are settled in different villages. 10 of them have already been awarded for their work.

### 7.3 Best Practices

#### 7.3.1 Give details of any two best practices which have contributed to better academic and administrative functioning of the university.

##### 1. Gram Jeevan Padyatra

The programme that has covered more than 6,000 villages since its inception and has sensitised more than ten thousand students

##### Objectives

Following the often quoted concern of Gandhiji equating real India with villages, the Gram Jeevan Padyatra was started in 2007. The objective is to expose and sensitise the students towards different socio-economic-cultural problems encountered in rural society and the mechanism for conflict resolution evolved. Environmental concern is of recent origin that also is addressed. Above all, the practice tests the skill of students in cultivating friendship and listening empathetically to people before jumping to conclusion or offering solution.

##### The Context

The Gram Jeevan Padyatra is organized in the context of *Gandhi Jayanti*. In the initial stage, there was an apprehension about venturing into unknown terrain, gradually issues have been sorted out.

##### The Practice

Generally a group of at least 10 students along with a faculty member visit selected villages and try to learn from the villagers. In all, four villages are visited during the Padyatra. The accommodation is provided by local public institutions like school or Panchayat office. During the stay, the members of the group interact with villagers and try to understand their life patterns. Students also visit the workplace of people. The idea is to learn livelihood pattern of the family and history of the village. The group interacts with various Heads of Village Institutions and gets educated.

##### Evidence of Success

The Gram Jeevan Padyatra is aimed at the integration of the theoretical learning with the practice. The success of the programme is measured qualitatively by the student's ability to observe and learn from his surroundings in which he is moving and interacting. The skill of socialisation is what denotes the success of the programme. Over the years, this programme has turned out to be the most important component of the academic calendar. The skills and knowledge gathered in this exercise becomes life-long for the student.

The most important evidence of success of this programme was seen when a team of 10 students from Gujarat Vidyapith went to Assam in September 2012 on a peace mission in the aftermath of a fierce riot there. When no one, even the police and the local administration, dared to venture into the riot-torn areas, the students moved fearlessly into all the refugee camps and interacted with people. They listened to the stories of the people with sympathetic ear and shared their grief and also assisted them in their daily chores. They got the children out in the open and played with them to erase the painful memories of futile violence. One of the reasons, perhaps the main one, of their success in winning over people was the education and training they received during the Padyatra.

The second example is the story of Bio-gas Research Centre. A need was felt by observations during Padyatra regarding environmental friendly method of managing waste. The solution that the Micro Biology department came out with was to manage solid wastes generated by installing biogas plants on national highway no. 8 (N.H. no. 8) hotels from Ajmer (Rajasthan) to Malegaon (Maharashtra). For such 154 hotels, success should not be only measured in monetary terms, some statistics are as follows.

No.	Particulars	Benefits
1	Solid waste (organic) generated and managed at hotels / day (biogas plants of Deenbandhu models, ranging from 3 to 8 M <sup>3</sup> size)	8 tones
2	Biogas (fuel) generated out of waste materials / day	385000 ltrs / day
3	Economic benefits	
	a) From combustible gas (methane): Rs. 1.0 lakh/month	Rs. 120,0000/-
	b) From organic manure (digested slurry): (50 kg/day) Rs. 3,000/month	Rs. 360,000/-
	c) Total benefit (a + b):	Rs. 1,565,000/-
	d) Benefit after 3 years: /3 years	Rs. 4,695,000/-
	e) Total cost of biogas plants	
	i. Installation cost: Rs. 38.50 lakh	
	ii. Maintenance cost: Rs. 1.0 lakh/ 3 years	
	————— Total: Rs. 39.50 lakh	
	f) Profit (benefit – cost):	Rs. 745,000/- (After 3 years) Rs. 14 lakh per year after payback period

## **Problems Encountered and Resources Required**

There are no major problems encountered in the Padyatra. The small problems are tackled with tact. Divisions and discrimination resulting from differences in caste, gender and religion often puts student in dilemma. Especially caste-based questions are embarrassing and awkward to reply. However the situation is resolve delicately depending upon the region and environment.

Inadequate, ill-maintained, irregular infrastructure is the reason of rural society to migrate. Assuring critical minimum infrastructure should be the basic responsibility of a welfare state. Provision of boarding is a major problem. In spite of claiming to be one 'number one' state, poor sanitation facility confronts the group, especially for girl students. Sometimes it may happen that not a single house-hold has toilet in entire village! The solution lies in constructing temporary toilet-blocks. A permanent solution is to build toilet blocks for households. It generates positive externality thereby exposing villagers to the benefits of closed defecation. In last four years, Vidyapith has been instrumental in encouraging the building of 3000 toilet block over the state.

Lodging is minor problem, resolved by self-cooking. That makes Gujarat Vidyapith students, boys, good husbands!

## **2. Swabhiman (Self-respect) Fellowship**

### **Objective**

Providing an opportunity to the student to earn and pay for the cost of education and his/her upkeep during the study period with self-respect.

### **The Context**

It is an ideal for the Gujarat Vidyapith to generate the spirit of *Swabhiman* in every student. A strong component of skill formation and upgradation enabling the student to become self-occupied and would get employed in production work after finishing studies. Production is understood both as physical production as in Primary and secondary sectors of the economy and also the service sector.

### **The Practice**

Modern higher education system world over has been experimenting with this practice, but the sole aim there is to facilitate non-affording students to earn in order to pay the fee and meet other expenses. Vidyapith has revived this practice with its original vision. Scope for productive activity in agriculture and allied sectors is absent today. Some scope has been provided for earning wages with work in gardening, campus maintenance and office administration.

It is important to note that the students themselves envisaged the ambiance they would like to live in and accordingly take up the work of their choice. In addition, full autonomy is given to the students from planning to its execution stages. Guidance of experts have been provided to technical problems.



## **Evidence of Success**

The results have been encouraging. Vidyapith is seriously planning to scale up this practice. During 2014-15, remuneration of Rs. 242,439 have been paid to 405 boys and 8 girls. The positive response can be reflected by participation of 706 students, out of which 126 were girls in current financial year so far.

## **Problems Encountered and Resources Required**

The major bottle-neck is the existing mind-set of the students. The conventional mode of financing for education in India is mainly parental or family based. The concepts of Dignity of Labour and Work are found absent. The stigma associated with labour and lack of social recognition discourage students to take up work. Continuous encouragement and counselling have helped students to change the attitude and to take up the scheme.

### **3. Gramshilpi:**

#### **Objective**

Building a cadre of youth for rural reconstruction in the spirit of achieving *Gram Swaraj*.

#### **The Context**

The idea of *Gramshilpi* was conceived in 2004 by the then Vice Chancellor when it was realised that the liberalisation, privatisation and the globalisation in the country 1991, were imposing severe social and environmental costs on the people living in rural areas in general and the tribal areas in particular. The poor have almost been left to the market forces with state support being highly manipulative and corrupt. It was felt that *Gram Swaraj* was the only way in which empowering of the poor and their emancipation was possible. To achieve it, committed cadre of educated and trained volunteers should undertake the process of empowerment and self-governance at local levels.

#### **The Practice**

Vidyapith has introduced the *Gramshilpi* scheme under which a graduate of the Vidyapith willing to settle down in a village of his choice, would be given a further intensive training in understanding rural problems and managing socio-economic and political affairs. Social mobilisation and constructive programme including the economic programme can be taken up by a *Gramshilpi*. Each *Gramshilpi* is supported for a minimum of two years with a sustenance allowance and it is extended for another year if necessary. Then onwards, the person has to build for his self-reliance for survival.

#### **Evidence of Success**

Although, relatively very few have opted for this choice, an impressive number of 16 are now active in the field out of about 50 who had shown willingness initially. It has been seven years since it was implemented for the first time. Four of them have

already been recognised and awarded for doing rural reconstruction work on Gandhian lines.

### **Problems Encountered and Resources Required**

The mainstream education system has conditioned the youth to look for a regular salaried permanent employment. Hence to convince graduates to venture into uncertain future is challenging in nature. Continuous encouragement, counseling and exposure to committed rural activists have helped some students to change the attitude and to take up the challenge.

## **4. A unique way of Skill Up-gradation and Institutional Saving**

### **Objectives**

Enhance maintenance of **900** computers and allied network resources of Gujarat Vidyapith by students and faculty

### **The Context**

There is a vast difference between textbook teaching and practical application of the knowledge and thus courses like ITI have not been able to fulfill the needs of the market.

Having understood the need of extensive practical exposure, Gujarat Vidyapith initiated a program from 2010-11 as a part of *Udyog* activity to cater the need of Software and Hardware and Networking maintenance of its own.

### **The Practice**

This project is carried out by students and teachers of Computer department. We generated a new online and web based supports system so that user can log into the support system to register the need or call.

### **Evidence of Success**

The benefit of this program was getting extensive exposure to practical work, inculcating team work, leadership qualities, and increase in self confidence to attend the clients i.e., customer relationship building.

The Annual Maintenance Contract of Gujarat Vidyapith was catered by this program and approximately Rs. 8 Lakh rupees per year were saved.

The university is maintaining the hardware to reduce discard of hardware and keep low e-waste generation.

### **Problems Encountered and Resources Required**

Time is major constrain and we believe that it is possible due to residential programme.

### **Additional Efforts for Skill Development**

The department has developed a software to generate Identity card for students and university staff. The department has also deployed an Open Source IT Asset management software to keep track of IT assets.

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