

# **Empowering Rural Communities through Virtual Academies: Experiences from India**

G Dileepkumar and S Senthilkumaran  
M S Swaminathan Research Foundation  
India

## **Abstract**

*The changing scenarios have been demanding professionals at various levels to adapt new ways of education and training to update their skills and knowledge for making their identity in this competitive world. Advances in Information and Communication Technologies (ICTs) are helping educational organizations and training institutes to meet these requirements by offering online and web-based courses and practicing new generation open distance learning methodologies (ODL) i.e., synchronous (Chat, Flash meetings, Breeze meeting, Teleconferencing and Video Conferencing to name a few) and asynchronous (Internet education portals, web based learning management systems, Forums, and wiki's to name a few) learning methodologies. However most of these technologies are accessible to urban folk, none (or) very few above discussed technologies are accessible to rural communities that to not for education, training (or) learning purposes.*

*The M S Swaminathan Research Foundation chose to impart a pro-nature, pro-poor and pro-women orientation to technology development and dissemination as its main mandate when it started functioning in Chennai in 1989. This main mandate has given birth to the Information Village Research Project (IVRP) in 1992, and started implementing from 1997 onwards by establishing Village Resource Centres and Village Knowledge Centres. After receiving successful results from the IVRP pilot experiment, the initiative was further strengthened into the Jamsetji Tata National Virtual Academy in the year 2003 by bringing various International and National partners, with an objective to empower the vulnerable remote rural Indian communities by building the skills and capacities through ODL mode, viewing that this education should reach every home and hut, and gives them a better control on their own development i.e., to make better choices, to take better decisions, and to create better livelihood opportunities.*

*In this paper, the authors discussed their experiences, methodological frameworks and approaches emerged out of their experiments with ICTs and ODL principles.*

## **Introduction**

Education and Training traditionally involve learning from teachers and other pedagogical standards. The role of the teacher is to impart knowledge to those who do not possess them. Teachers talk in front of the class, and the pupils have to listen and write down what the “knowing” teacher says. This top-down method is not only used in the formal education system, also training staff uses this method to train the people. Even though this way of teaching and learning is part of our culture, the changing scenarios

demand people to adapt new ways to update their skills and knowledge for making their identity in this competitive world.

Advances in Information and Communication Technologies (ICTs), and specifically in Multimedia, Networking, and Software Engineering have promoted the enormous amount of learning resources and Learning Management Systems (LMSs). During the last years, thousands of electronic texts, images, movies, or Java applet based learning resources have been developed for learning purposes in Internet environments. To take advantage of this situation, new services were developed for creating synchronous (Chat, Flash meetings, Breeze meeting, Teleconferencing and Video Conferencing to name a few) and asynchronous (Internet education portals, web based learning management systems, Forums, and wiki's to name a few) learning environments. With the help of these contemporary Information and Communication Technology based services, the search, classification, organization, and peer-to-peer exchange of learning resources by learners, instructors, and course developers are becoming commonplace. However most of these technologies are accessible to academic institutions, research organizations, multi national corporate companies and elite urban groups. None or very few above discussed technologies are accessible to rural communities that too not for education, training or other learning purposes.

### **Beginning: Use of ICTs and Open Distance Learning Methodologies for empowering rural communities**

Since the onset of the Industrial Revolution in Europe, this technological divide has been existing and becoming an important factor in enlarging the rich-poor divide both among and within nations. Therefore, the M S Swaminathan Research Foundation chose to impart a pro-nature, pro-poor and pro-women orientation to technology development and dissemination as its main mandate when it started functioning in Chennai in 1989. This main mandate has given birth to the Information Village Research Project (IVRP) in 1992, and started implementing from 1997 onwards by establishing Village Resource Centres (VRCs) and Village Knowledge Centres (VKCs) in the Union Territory of Puducherry, with financial support from the International Development Research center

(IDRC) of Canada. After receiving successful results from the IVRP pilot experiment, the initiative was further strengthened into the Jamsetji Tata National Virtual Academy in the year 2003 by bringing various International and National partners, with an objective to empower the vulnerable remote rural Indian communities by building the skills and capacities through the Open and Distance Learning (ODL) mode, viewing that this education should reach every home and hut, and gives them a better control on their own development i.e., to make better choices, to take better decisions, and to create better livelihood opportunities.

For achieving this, till date the MSSRF has been inventing various tech-mediated frameworks; for example with the help of the ISRO's uplink/downlink satellites the VRCs are equipped with Video Conferencing facility; and the notice boards, community news papers, wired and wireless public address system, KYAN-PC<sup>1</sup>, wifi based video conferencing such as 802.11 b and 802.11 g., and also on-site interactive training programmes on various aspects ranging from "fish pickle preparation" to "management of virtual platforms".

From 2004 onwards, these interventions even became strong and speeded up with the help of the partner agencies in the form of multi-stake holder partnership approach with a programme called "Mission 2007:Every Village a Knowledge Centre", and now it has been turned into a movement called Grameen Gyan Abhiyan (GGA)<sup>2</sup>. With the help of the GGA partner institutions personnel/the MSSRF employees, the NVA has been setting up VRCs and VKCs, creating need based content through participatory techniques, group discussions etc.; and organizing need based training and educational programmes for all the rural communities irrespective of age, sex, religion, gender and caste. These

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<sup>1</sup> KYAN-PC contains PC, projector, TV tuner card, DVD player, amplified speaker and modem

<sup>2</sup> GGA is a multi-stake holder partnership, which brings International, National and regional agencies to test their ICT enabled rural development activities on the existed NVA (VRC and VKC) platform and give a birth to new applications for the benefit of rural communities empowerment. This platform also allows Academicians, Corporate Sectors and Policy Makers to study and understand the grassroot level realities for creating new policies for the benefit of rural India.

initiatives have now given birth to grass root academicians; and the NVA decided to felicitate them with the NVA fellowship as recognition to their work. These fellows will act as the knowledge workers and torchbearers of the NVA in those remote rural regions; and work for the welfare and well-being of vulnerable communities. As on today, the NVA has 985 Indian National fellows from 21 states (Andhra Pradesh, Assam, Chattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Puducherry, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarkand and West Bengal), and 25 International fellows from Afghanistan, Philippines, Nepal, Kenya, Nigeria and Sri Lanka.

For providing life long learning opportunities to the NVA fellows, and to the needy people who discontinued their education in early stages of life and interested to pursue the same in the later stages for satisfying their information and knowledge needs and to create livelihood opportunities, the MSSRF-NVA has started a school – **Jamsetji Tata Training School (JTS) for Leadership in rural knowledge connectivity** – on 17 February 2007 with an aim to use contemporary ICTs and ODL principles to educate and train vulnerable rural communities and intermediaries (NVA fellows/kiosk operators/chaupal managers/Agricultural Extension Officers etc.) about improved agricultural technologies, health, governance, water management, environment, biodiversity and livelihood opportunities.

The goal of JTS is to bring the knowledge revolution by enabling knowledge transfers between and across rural communities, scientists, educators, administrators, health care providers, technology enablers on local agro-ecological and socio-cultural conditions of each village, and also relating to various farming methods and techniques.

The JTS focuses on creating decentralized learning environments with a central knowledge base (blend of traditional and modern knowledge) through a network of VRCs, VKCs and consortium of potential GGA partners, and uses contemporary ICTs and ODL principles for information and knowledge empowerment to achieve the proposed goal.

## **Activities of the JTS**

- Explore skills and needs of NVA fellows, and create ecologies based on their interest.
- Equip Fellows to VRCs and VKCs, and enable them to cater the needs of the community
- Set up Knowledge Hub Consortium (KHC) to create centralized knowledge base and develop Open Distance Learning Modules
- Organize need based capacity building programmes.
- Organize virtual thematic workshops between scientists and NVA fellows
- Fill gaps in the competence of the Fellows to assume leadership roles
- Addressing grassroots issues to the relevant government/other agencies or organizations
- Training on computer applications including assessing virtual forums, entrepreneur skill set (including proposal writing, estimation of profit and loss, sustainability, market linkages, license etc.), SHG accounts software, life skill education, communication skills, groundwater conservation, livestock and fodder management, SRI method of paddy cultivation, seed treatment, tree plantation, herbal garden, drip irrigation, medicinal plants, techniques of promoting small-scale industries such as fish pickle, mushroom, tailoring etc.
- Develop virtual platforms (learning management systems, wiki's, discussion forums, social blogging system etc.) to create Asynchronous and Synchronous learning environments.
- Transforming NVA Fellows into Rural Science Managers and ICT Entrepreneurs.

The JTS uses different communication techniques and strategies (group discussions, flash cards, posters, field demonstrations, role plays, video documentary films, social games etc.) for organizing on-site training programmes and capacity building exercises. The JTS organizes virtual training programmes and take follow-ups for on-site training programmes through synchronous (Chat, Flash meetings, Breeze meeting, Teleconferencing and Video Conferencing to name a few) and asynchronous (Internet education portals, web based learning management systems, Forums, and wiki's to name

a few) for organizing competency analysis and assisting NVA fellows across the nation to share their experience with each other.

## **Experiments conducted so far for developing methodologies to scale up JTS activities**

### **Explore skills and needs of NVA fellows, and create ecologies based on their interest.**

The specific competencies of the NVA Fellows need to be identified in order to cluster the available human resource on various aspects. The JTS organizes Region Wise Interactive meetings and workshops to document core competencies of NVA Fellows. The NVA Fellows get a change to demonstrate their skills as trainers during this workshop, especially where “hands-on” or “field-level” training is required. The second part of this workshop would reiterate the factual issues.

### ***Workshop Methodology***

The lives and aspirations of Lord Buddha, Swami Vivekananda, and Mahatma Gandhi reached an apogee (with their own giftedness), when they had to encounter a right opportune moment that they set their hearts on ruling the world with their principles. Likewise the potential of the NVA Fellows should be tapped at the right moment to help them bite off more than they can chew. The kind of motivation being induced in them would make them hit the ground running as the future rural leaders. This is doable by identifying their giftedness, and creating ecologies, to provide right opportunities at the right time through training programmes and capacity building exercises.

The ecologies could be created based on the skills and needs of the NVA fellows, which could be find out by organizing workshops and making the NVA fellows to identify their giftedness by themselves and also on the target group with whom they intend to work and their vision for an effulgent future. Through a well-planned facilitation programme we could differentiate the skill called ‘giftedness’ under three aspects:

- **Genetic** – Skills inherited from one’s birth or a congenital ability
- **Epigenetic** – Those abilities derived or learnt from parental influence
- **Extra genetic** – Those abilities influenced by outside or other sources.

Through the group discussions and continuous facilitation programmes, we could find out the vision and the legacy of the NVA fellow. Help them in building their legacy by enhancing their creativity and thinking ability in right direction through capacity building exercises and training programmes.

S. No.	Name of NVA Fellow	Giftedness	Vision	Legacy
		Genetic Epigenetic Extra genetic	Plan of Action based on the skill of NVA fellow	Ex: 5000 literates.

Thanks to **Kozmetsky Global** Collaboratory of Stanford University and ICRISAT, India for introducing this methodology.



workshops on exploring skills and needs of NVA fellows organized in the regions of Guntur and Medak districts of Andhra Pradesh, India to create the ecologies of NVA (106 participated) Fellows based on their interest, For example: Agriculture, Health, Education etc. The participants, resource persons and organizers of this workshop found this is a useful methodology to identify skills and needs of NVA Fellows and the target community whom they intend to work. The outcome of this workshop helped us to *design, develop and organize need based training programmes and capacity building exercises periodically for NVA Fellows and needy communities through NVA Fellows*

*to address grassroots level issues and transform NVA Fellows into Rural Science Managers and ICT Entrepreneurs.*

**Equip Fellows to VRCs and VKCs, and enable them to cater the needs of the community**

Before setting up of VRC and VKCs, the staff and volunteers of the implementing agency should get accepted by the people. Unless the local people accept the implementing agency and are ready to work with them, the programme cannot take off. The people should be ready to work with them. The implementing team could take help of local NVA Fellows to establish a good rapport with a wide cross section of the local community, and also involve local NVA Fellows to carry out large scale consultations with the local people. Information needs of the community and the people's familiarity with different technologies and communication channels should be assessed through PRA. A bottom-up approach of involving the users themselves in assessing their needs is necessary to make the programme more effective and helps to develop micro planning for the village.



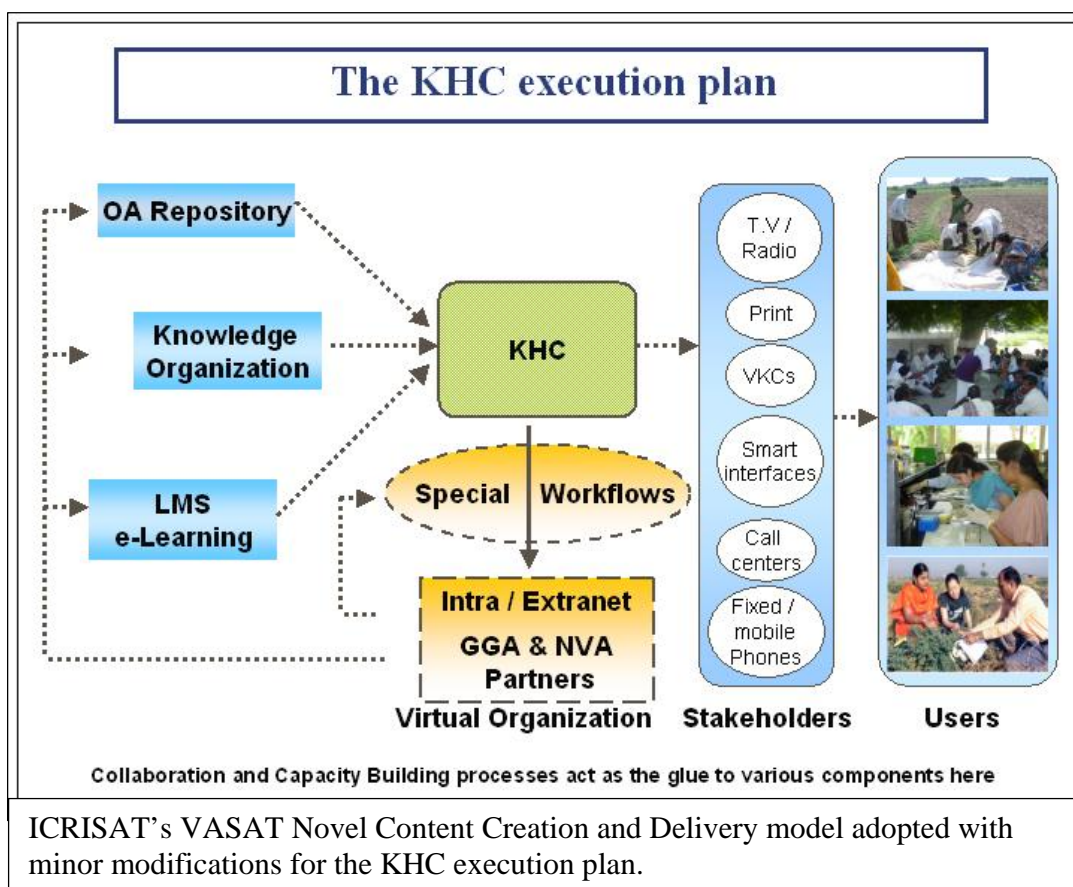
**Set up Knowledge Hub Consortium (KHC) to create centralized knowledge base and develop Open Distance Learning Modules**

There are many forms of Village Knowledge Centres currently functional across the country being run by different companies / organizations / NGOs / and corporates. Knowledge becomes the nucleus for all these models, which cannot be static. Most of



such centres / initiatives use static content for knowledge dissemination which most of the times doesn't come from an authentic source. It is here the need arises for a dynamic knowledge base and delivery model to reach the poorest of the poor for bringing the knowledge revolution by enabling rural knowledge connectivity.

Creation of dynamic knowledge base is possible only by bringing knowledge producers (both traditional and modern) and knowledge users to a common platform and enable various delivery mechanisms through innovative partnerships, innovative capacity building programmes, and innovative content development approaches.












This consortium has both technical and domain partners, and focuses on creating training modules in various languages and use various technical platforms for developing the same.

Initially the KHC focuses in five states with following potential partners

- Tamilnadu (MSSRF – VRC, VKC boundary<sup>3</sup> and strategic partners<sup>4</sup>)
- Maharashtra (MSSRF – VRC, VKC boundary and strategic partners)
- Andhra Pradesh (AP-SRC, Access Livelihoods Consulting India Private Ltd., Loyola College and National Remote Sensing Agency (NRSA), AP, Tata Consultancy Services (TCS), AP
- Gujarat – Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT)
- Kerala – (MSSRF -Wayanad)
- Microsoft – Digital Green Project team (focuses on developing repository of grass roots agril. videos)

**Organize virtual thematic workshops between scientists and NVA fellows**

	<p>A Virtual Workshop to the Trainers: Content Development and Management</p>	
		
	<p>28-29 September 2007</p> <p>VOL 1</p>	
MSSRF, Cennai		Wardha, Maharashtra
	<p><b>Jamsetji Tata Training School</b> Leadership in Rural Knowledge Connectivity National Virtual Academy for Rural Prosperity M S Swaminathan Research Foundation, Chennai</p>	

Experimental results revealed that Video Conferencing is a powerful tool, to enable effective synchronous learning environments. Participants and organizers participated comfortable and achieved the proposed outcomes.

<sup>3</sup> Strategic partners : the local partners, who provide knowledge and information

<sup>4</sup> Boundary Partners: the local partners, who hosts VKC and provide support for executing the daily services.

## Develop virtual platforms

Using Open Source software packages for developing virtual platforms are under pipeline.

The screenshot displays a web browser window titled "VKC-Content Management System : Home - Microsoft Internet Explorer". The address bar shows "http://localhost/xampp/abutor/index.php". The page content includes a navigation menu with "Home", "Forums", "Glossary", "File Storage", and "Manage". The main content area is titled "Home" and features a grid of icons for "Forums", "Glossary", "File Storage", "Chat", "TILE Repository Search", "Frequently Asked Questions (FAQ)", "Links", "Tests & Surveys", "Site-map", "Export Content", "My Tracker", "Polls", "Directory", "Blogs", "Reading List", and "Groups". A "Content Navigation" sidebar on the right lists various topics like "Groundnut Cultivation", "GN-Fertilizers-Yield2", and "GN-Fertilizers-Fertilizers2". Below the main content, there is an "Announcements" section with a blue background and white text in Telugu. The text reads: "వేరుశనగ పంటకు అందించే ఎరువులు, దిగుబడి :". Below this, there is a list of five bullet points in Telugu. The browser's taskbar at the bottom shows several open applications, including "4 Outl...", "2 Micros...", "2 Windo...", "4 Intern...", "XAMPP C...", "Relead E...", and "Microsoft...". The system clock shows "5:34 PM".

వేరుశనగ పంటకు అందించే ఎరువులు, దిగుబడి :

- వేరుశనగ పంటకు సతతజని అందించేటప్పుడు కొంత టేమ ఉండేటట్లు చూడాలి.
- కలుపు మొక్కలు నివారించాలి. వాణాపరణంలో రకరకాల పోషకాలు ఉంటాయి.
- మైకోఆర్గనిజమ్స్ అనేది మొక్కకు రైకోబియం అనే బ్యాక్టీరియా ద్వారా మొక్కకు అందుతుంది.
- మొక్క మొదరు రంగులో ఉంటే సతతజని ఎక్కువగా ఉందని గుర్తించవచ్చు.
- భూమిలో ఆమ్లస్థాయి ఎక్కువగా ఉన్నట్లయితే రైకోబియం అందదు. ఆమ్లము, క్షారము తటస్థంగా ఉండేట్లు చూడాలి.

Fig: On going experiments with ATutor open source software package

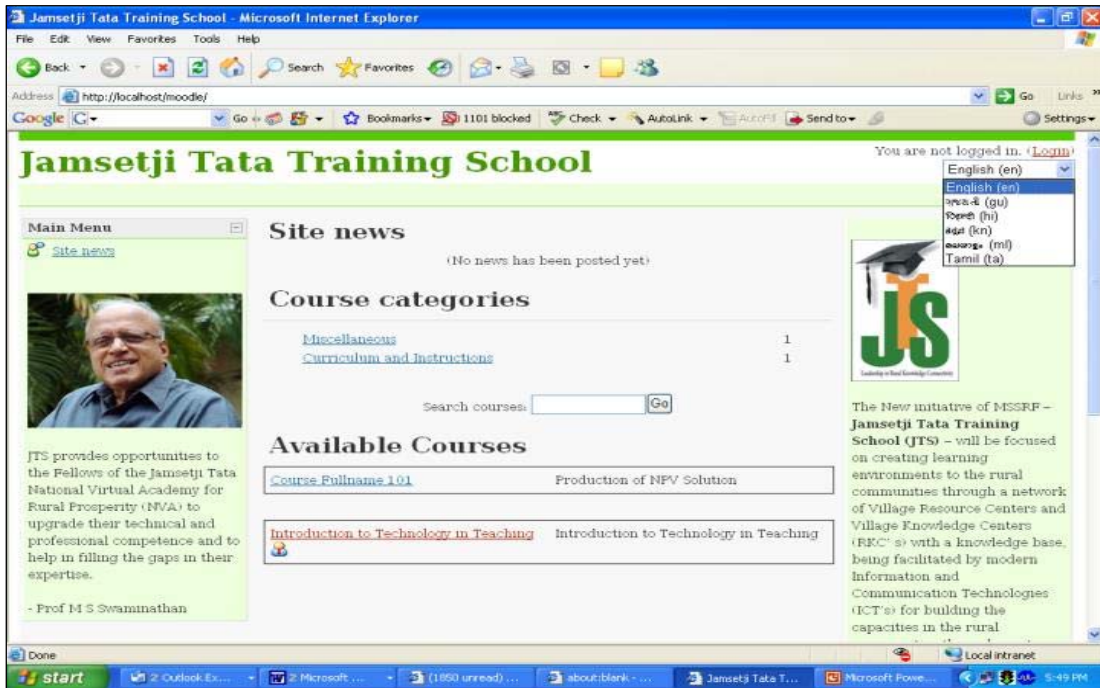
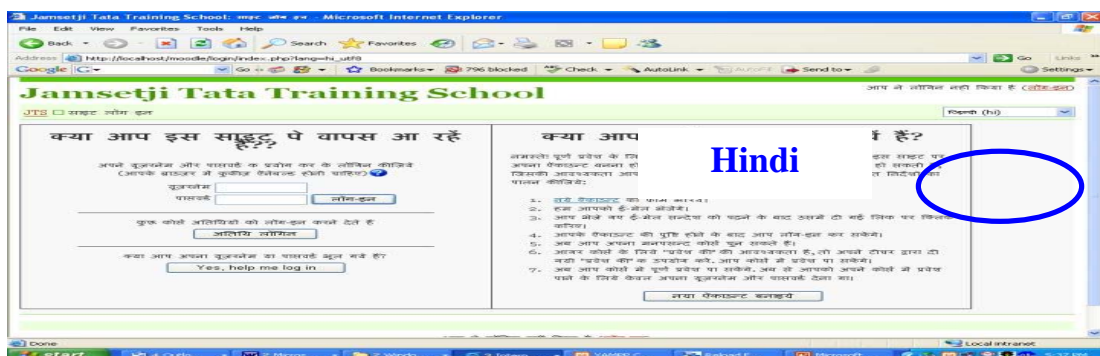
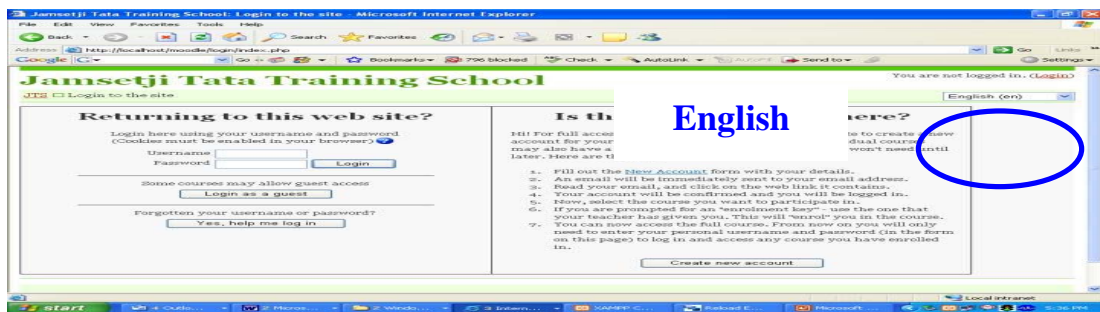


Fig: Ongoing experiments for developing Virtual Platform with Moodle open source software package for organizing virtual training programmes.



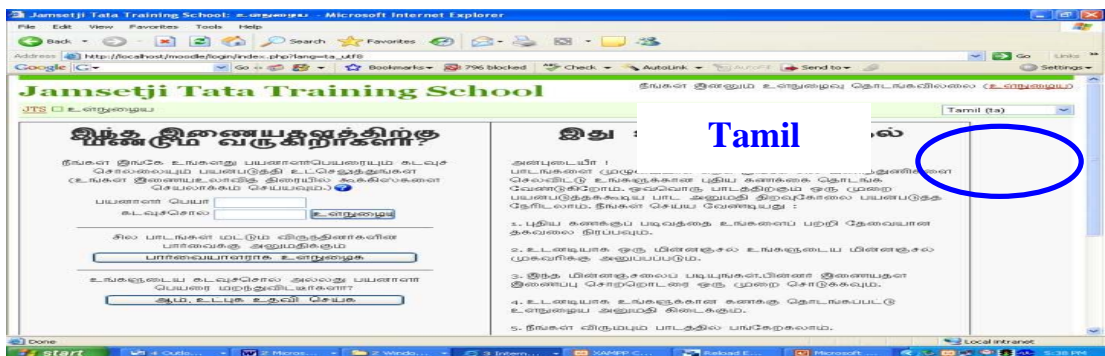
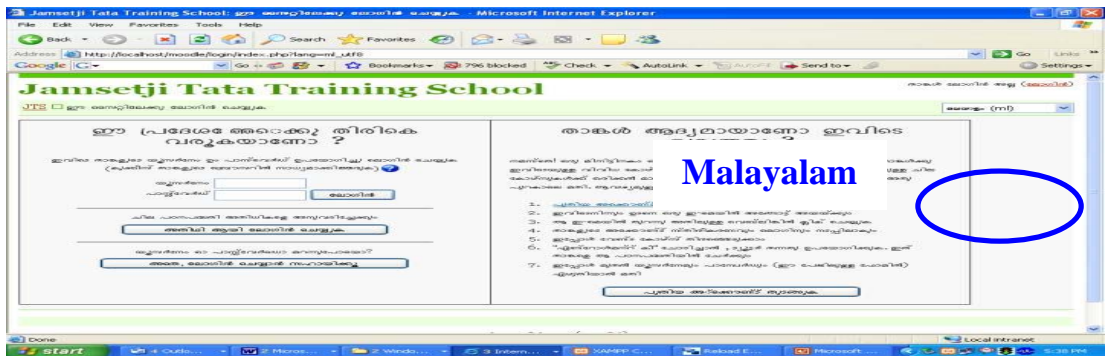
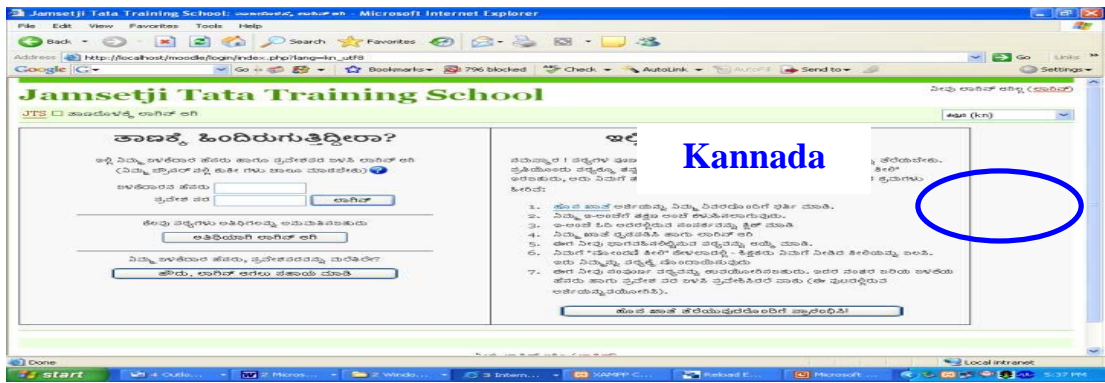
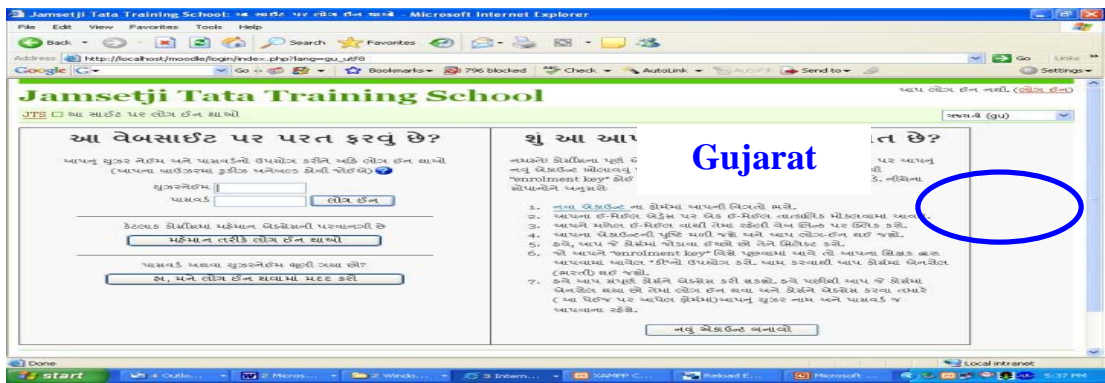


Fig: Ongoing experiments for developing Multilingual virtual platforms with Moodle software.



Fig: Ongoing experiments for developing Virtual discussion forum and social blogging system.

## Life-Long Learning and Education

The JTS adapted following monitoring mechanisms for NVA Fellows life long learning and education.

- Periodical interaction with NVA Fellows through Video Conference wherever possible
- Strengthening linkages with the partners/stakeholders for monitoring and evaluating the performance of NVA Fellows.
- Bringing out quality monitoring case studies about the changes that have taken place
- Undertaking impact assessment study involving partners/stake holders.

## **Team India for a New India:**

**(Prof. M S Swaminathan's, *guiding light for NVA, GGA and JTS, vision*)**

The National commission on Farmers has proposed that every village in the country should have a Gyan Chaupal<sup>5</sup> or Village Knowledge Centre to bridge the growing know-how do-how gap.

The government of India has accepted the recommendation of the National Commission of Farmers that knowledge connectivity should become an integral part of the Bharat Nirman (i.e., New Deal for Rural India) programme. The Bharat Nirman document (November 2005) contains the following commitment.

“The Government is committed to expanding rural connectivity through a slew of measures, so that rural users can access information of value and transact business. This will include connecting block headquarters with fiber optic network, using wireless technology to achieve last mile connectivity and operating information kiosks through a partnership of Citizens, Panchayats, Civil Society Organizations, the Private Sector and Government”.

The Department of Information Technology of GoI has initiated a programme for establishing 100,000 Common Service Centres to cater to the needs of Rural India.

The stage is thus set for ushering in a knowledge revolution in rural India. The Green Revolution in rural India. The Green Revolution helped to improve the production of wheat, rice and other crops, and the Knowledge Revolution can lead to the enhancement of human productivity and creativity in every area of human endeavor.

While equipment like computers and innovations like the Internet are important for facilitating the rural knowledge revolution, only rural women and men can help to shape the direction and relevance of this revolution. This is where the Jamsetji Tata National

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<sup>5</sup> Gyan Chaupal - Gyan means knowledge and Chaupal means the centre of village where people assemble and take decisive steps towards the development of the village.

Virtual Academy for Rural prosperity and Jamsetji Tata Training School for Leadership in Rural Knowledge Connectivity is playing such a critical role. NVA-JTS is the largest capacity building and human resource development organization in the areas of ICT for villages in the country. Its Fellows are grassroots workers in villages who have mastered modern ICT procedures and are devoting their time and talent to training rural women, men and children in the use of the new tools of knowledge and skill empowerment.

The ultimate goal is to enlist one woman and one man from every village as Fellows – they will be master trainers, training others in the village. They will also be in charge of the care and management of the VKC in the respective villages. By 2010, the Jamsetji Tata NVA-JTS will be the largest professional academy in the digital world. The Fellows are drawn from all parts of the country and belong to different organizations. Thus, the Jamsetji Tata NVA-JTS has become a truly national integrating force in the present Knowledge era.

*Please contact NVA-Director, S Senthilkumaran [senthil@mssrf.res.in](mailto:senthil@mssrf.res.in) (or) JTS-Programme Coordinator, . Dileepkumar [g.dileepkumar@mssrf.res.in](mailto:g.dileepkumar@mssrf.res.in) to become a member in achieving Leadership in rural Knowledge Connectivity.*

## **Acknowledgements**

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