

# **Development of Teachers through Tech-MODE to Meet the Goal of Universal Primary Education– Proposed NTERCs Model for India**

Theme-4- Formal Education and sub theme -Revamping Teacher Education.

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## **Abstract**

*Teachers are shapers of the modern world. They play a leading role in transforming the children into responsible global citizens by facilitating them acquire knowledge, skills, values and attitudes. Educated citizens are the agents of change for a better world. Realizing the power of education on development of individual and development of a country, Universal Primary Education (UPE) is taken as the first goal of UN Development Goals 2000. In reality, the supply of qualified teachers is not meeting the demand in different regions and countries to realize this goal. According to the UNESCO projections a total 10.3 million teachers are needed in order to achieve UPE. The two thirds of world's teacher gap is in certain Sub-Saharan, African and Arab States. In order to meet the goal of UPE many countries need political will, commitment and investment to scale-up the teacher development activity with cost effective teaching learning practices to meet the challenge of UPE 2015. These statistics reflects the need for strategies for developing innovative methods/ models to revamp teacher development with commitment and investment to minimize the teacher gap. Open Distance Education is playing a major role in development of qualified teacher's world wide.*

*This paper discuss about the barriers in teacher education and the need, relevance and advantages of technology mediated Open Distance Education (Tech-MODE) for teacher development and training to meet the demand of qualified teachers. After assessing the existing ICT enabled strategies for teacher development world over an ICT enabled, ODL mediated Network of Teacher Education Resource Centers (NTERCs) model is proposed that facilitate the suggested Three Stage Teacher Development Approach to meet the demand of qualified teachers in a developing country like India.*

## **Issues in World's Teachers Gap**

Some of the issues emerged and questions raised in the discussions and deliberations of 'World Forum' on 'Education For All' in Jomtien in 1990 and Dakar, Senegal reflects the crisis of teacher education even after two decades. The issues emerged are-

- Are there enough individuals interested in embracing teacher as career?
- What attracts candidates to this teacher profession?
- Do they have desired qualifications?
- What are the policies and choices of countries for attaining the goal of development of adequate teachers?

- What structures and mechanisms and process are adopted?
- What kind of support and opportunities available to teachers in beginning and for continuous training to make teacher education a more professional.

There was agreement among the participants that 'positive image' that reflect about teachers in many countries is one attraction. Many women and men prefer teacher career for reasons like fixed suitable timings, stability and a status in a civil society. But the problems identified in teaching career; low salaries, heavy workload, poor working environment, lack of continuous training and support, gender and ethnic biases and disparities in working conditions in rural urban areas are the reasons for teacher career getting diluted and less attractive leading to the worlds teacher gap. This reflects the lack of seriousness of Governments and International Organisations on the issues leading to the crisis of teacher education leaving a wide gap in the demand and supply of teachers to achieve the national and international goals set for Universal Primary and Secondary Education. On the other hand the interesting observation is the emerging new trends and demands of the teachers and the potential learners of 21<sup>st</sup> century looking for alternate flexible learning and skill training opportunities for their capacity building and livelihood.

### **Emerging new demands of 21<sup>st</sup> Century Learners**

In ever changing global socio, economic, educational and job cultures and contexts the learners of 21<sup>st</sup> century definitely have different types of educational aspirations and demands. This apply to learners of any school level, territory level and professional level programmes and 'Teacher Education' is no exception which in fact need constant upgradation of teaching learning technologies and skills in this emerging world of Information and Communication Technologies (ICTs). Framing the policies, adopting new innovative strategies and models by the Governments to meet the new learner's demands is essential. Serving from any where at any time has become a motto in this Internet Web based world of job markets. To be in tune with emerging trends of service/ job demands and learner's aspirations, appropriate learner friendly learning technologies and resources for education, training from any place at any time has become a necessity. ICTs enabled audio video CDs, interactive multi-media course material, On-line courses/programmes, e-learning have been replacing conventional methods of teaching learning in all spears of education especially in school education to meet the increasing enrollments. Revamping Teacher Education to reorient and train the teachers to the emerging ICT enabled teaching/ learning culture to meet the educational demands is a top priority and challenge for Governments of developing and under developed countries. The new ICTs are the cause and effect for this situation of global educational demands and supply markets. The countries that delay their educational policies, approaches in adopting ICT based new strategies to meet the educational demands may lag behind and become obsolete. Technology Mediated Open Distance Education (Tech MODE) strategies and models have been gaining popularity because ICT based flexible teaching/learning strategies reach the unreached clientele groups through network systems and promote independent learning through learner friendly print, audio/video and internet based interactive media.

## **Tech-MODE Strategies for Teacher Education**

Some of the Tech-Mode strategies emerged and adopted successfully for teacher education are worth mentioning like; Teacher e-Education(TeE) China, Interactive Radio Instruction for in-service teachers in South Africa, Community Radio for school and teacher education and using cell phones to enhance teacher education.

**(a) Teachers e-Education (TeE) in China:** Towards 'Life Long Learning' frame work for teacher professional development, China has made continuing efforts through' Teacher e-Education (TeE) Life Long Learning system. Teacher e-Education (TeE) in China, a new concept and new approach which enable providing Life Long Learning opportunities for teachers with support of ICT. Teacher e-Education has emerged in the area of educational technology has become a major requirement for teacher professional competence as well as a pre-requisite for step into the Life Long Learning System. For the promotion of TeE, a special group called National Steering Committee for Teacher's e-Education (NSCTeE) was established drawing experts from the field of educational technology and information technology as members.

This Committee suggested following measures for implementation of TeE in 2001.

1. Speeding up the construction of infrastructure for TeE.
2. Speeding up the construction of learning resources for TeE.
3. Enhancing the construction of pre-service education programmes on information technology and education technology.
4. Exploring new models of teacher's education and instructional management in the context of e-Education through research based efforts.
5. Enhancing the leadership, management and evaluation in the process of TeE.

Considerable number of projects have been initiated by local Governments in China towards e-Education like Regional Teachers Education Centres in different provinces, there have been more than 50 on-line programmes dedicated for teacher's continuing education. In China according to the rules of K 12 teacher's, it is the right as well as the obligation for 10 million teachers to step into the Life Long Learning System, as a realistic option for using ICT to facilitate teacher's Life Long Learning. It has become obligation for the teachers to develop their capabilities in ICT application and also bring students into era of e-Education which has become a critical element for teacher's continuing learning as well as their professional development.

### **(b) Interactive Radio Instruction for in-service teachers:**

An evaluation of Distance Education Programme for teachers of the University of Witwatersrand Johannesburg supporting the teaching of English using interactive radio instruction was done by

Adilia Silvia, Dept. of Psychology and Human Community Development of that University. The programme evaluated was the South African Radio Learning Programme, which used the interactive radio as a basis for both teachers and learner development at school and classroom levels. In addition the programme provided in-service training for the teachers and classroom support based on Open Learning principles. The study also investigated whether the programme had provided a vehicle for community empowerment at the individual, organizational and community level as per Zimmerman's (2000) Model of Empowerment.. On the basis of data collected it was concluded that;

- Teachers reported benefits in terms of improved classroom management , teaching practices and they were also empowered through Interactive Radio.

**(c) Community Radio for School and Teacher Education:**

Community Radio (CR) the mass medium which can be utilized for local community development purposes has got great potential for educational communication and awareness building among the specified community of an area. Number of developing countries are utilizing the C.R. for school and adult education and for development activities of a community. Commonwealth of Learning (COL) through Commonwealth Educational Media Centre for Asia (CEMCA) is helping and supporting the installation of C.R. and by conducting workshops on C.R. operation and preparation of programmes. Community Radio if utilized in a creative approach is a highly potential medium for training and capacity building of pre-service, primary and in-service teachers of a specific geographical community of teachers and students.

**(d) Using Cell Phones to enhance teacher learning:**

Terry B, University of Wollongong, Australia has presented a paper In environmental education in SITE (Society for Information Technology & Teacher Education) International Conference at Charleston, SC, USA March 2, 2009. Her study focused on how action-learning sets helped pre-service teachers (PST) to use cell phones to augment their developing pedagogy. The school based, action learning sets consisted of groups of pre-service teachers allotted to the five schools that participated in the study. For six weeks the PSTs worked in Paris to teach a class for two hours per week. During this period the PSTs had access to cell phones that had inbuilt cameras, excel, word, audio recording, video recording, internet and e-mail features. These cell phones were used to support and inform the teaching of an environment education unit. The findings indicated that the action-learning sets provided a vehicle for sustained and targeted professional growth. The phone provided evidences of its growth as well as record of teaching dilemmas that arose. SMS messages were used as a support tool before and after teaching.

Number of countries are utilizing cell phones, virtual environment; video conferencing, web based internet media for enhancing pre-service teacher's professional identity, field placements, improving teachers perceptions etc.

## **Open Schools and Teacher Education**

The successful efforts to meet the first goal of UNMDGs i.e., "Universal Primary Education" has shown considerable increase in enrolment in primary education and this led to the increase in potential secondary school students world over putting pressure on teacher demand.

'Open Schools' came into existence as an alternate solution to meet the demand of Secondary School Education in developing countries. Open Schools established on the same concept and principles of Open Distance Learning are providing open access and flexible teaching learning methodologies to school dropouts and other students who are willingly opting for 'Open School' system that include young mothers, working adults to acquire skills, knowledge and to improve their livelihoods.

The advent of 'Open Schools' prompted the international organizations like Commonwealth Of Learning (COL) to initiate capacity building programmes/workshops to train educators, administrators, policy makers of different countries in development and operation of Open Schools. 'Open School' system paved the way for the need for optimum utilization of the material and manpower resources. The existing teachers of conventional schools need to be oriented and trained in ICT skills, design and development of Self Instructional Course Material (print, audio/visual material) for Open School children and provide support. Involvement of live teacher/counselor "Human Element" for considerable time (as suggested by Distance Education Theoretician David Sewart) for facilitating effective learning is essential in Open Schools. Unlike conventional face-to-face class room teachers the teacher counselors of Open School need to understand the concept of ODL and require specific skills to facilitate and support the students of 'Open Schools' to negotiate with the print audio/video material to come out successfully.

## **Creation of an Integrated 21<sup>st</sup> Century Educational Ecosystem**

The Governments world over require to adopt a multipronged approach to meet the requirement of quality teachers of primary and secondary education by creating complementary, alternative and integrated learning environments with suitable quality material and manpower resources to prepare the teachers of 21<sup>st</sup> century to meet the classroom based teaching and Open Schools. The Teacher Education curriculum and training need to integrate the concept and skills of classroom as well as ODL systems. Sir John Daniel the President of COL felt the need for creation of a 21<sup>st</sup> Century Educational Ecosystem that integrates Conventional School System with Open Schooling, Teacher Education and Communities. He

observed that, *“The creation and expansion of Mega-Schools (Open Schools) which combine distance learning with community support have a proven track record of increasing access at scale”* (Sir John Daniel 2009). In his latest book ‘Mega Schools’, Technology and Teachers, Achieving ‘Education for All’ Sir John Daniel has quoted examples of Open Schools and teacher education programmes operating at scale in the world.

### **NTERCs for Teacher Development - A Proposed Model**

**Network of Teacher Education Resource Centres (NTERCs)** Model is proposed to cater to the development of teachers at scale through a Three staged Teacher Development Approach in developing countries like India.

#### **The proposed Three Stages of Teacher Development Approach are-**

- Stage - I            Pre-Service teachers’ development
- Stage - II           In-service teachers’ development
- State – III         Continuous training or Life Long Learning for teachers

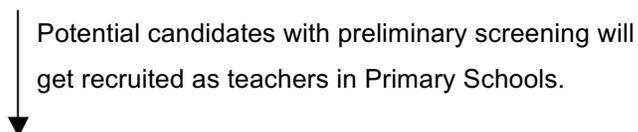
**Creation of the three types of Teacher Education Resource Centres is a pre-requisite for this model. They are-**

- Primary School Teacher Education Resource Centres (PSTERCs)
- Secondary School Teacher Education Resource Centres (SSTERCs)
- Life Long Learning (L3) Teacher Education Resource Centres (L3TERCs)

These centres will have print and electronic media and internet based learning resources for teacher education that promote mostly self directed learning with facilitators (Teacher Trainers) depending upon the stage of Teacher Development as detailed below.

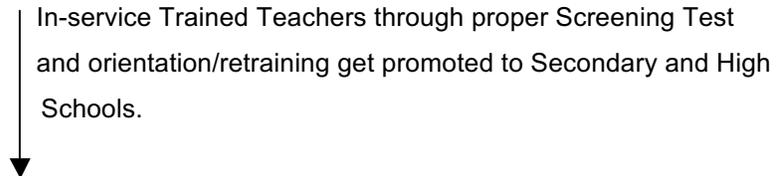
#### **Stage - I**

**Pre-Service Training:** Potential teacher candidates with required educational qualification need to be exposed to the fundamental aspects of Teacher Education, (qualities, skills and commitment as a teacher) through the ODL print, A/V modules and materials of Pre-service Teacher Education Resource Centres (PSTERCs)



**Stage - II**  
**In-Service**  
**Classroom Training:**

The teachers recruited into Primary Schools undergo in-service classroom based training preferably in the same schools with trained Resource Persons (teacher trainers) drawn from Secondary School Teacher Education Resource Centres (SSTERCs) enriched with Tech MODE teacher training modules and A/V resources.

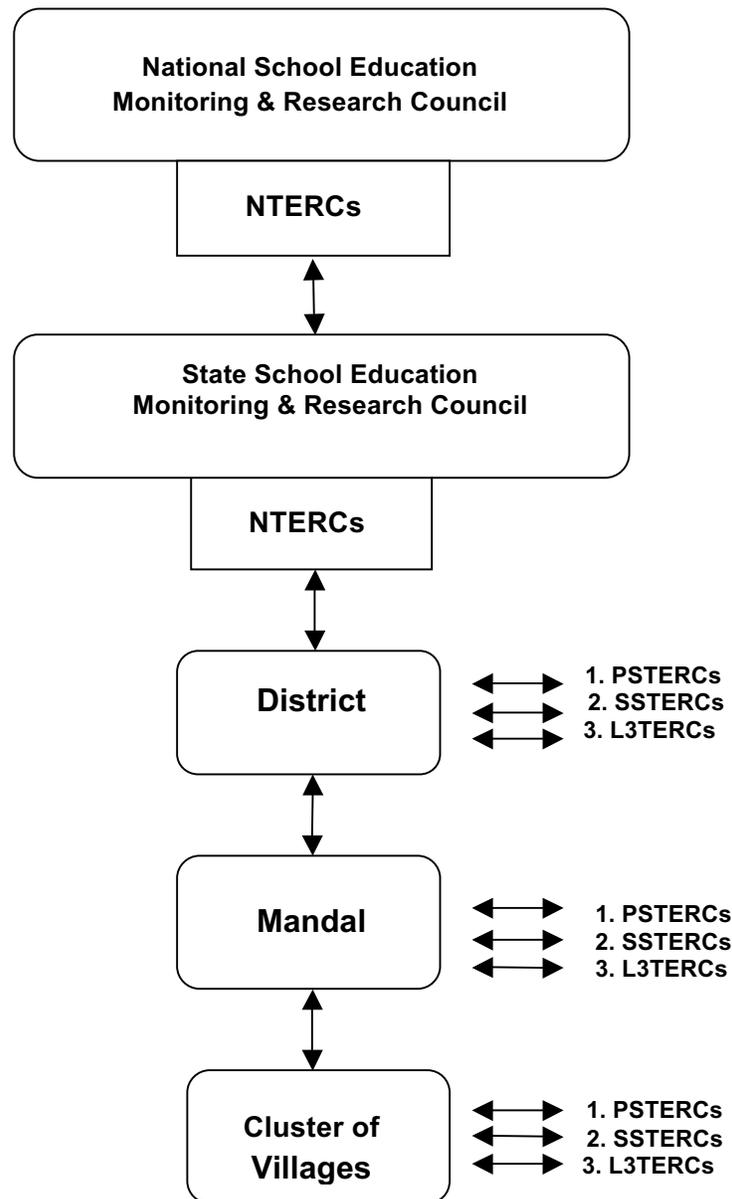


**Stage – III**  
**Continuous**  
**Upgradation or**  
**Life Long Learning**  
**of Teachers :**

Teachers of Secondary and High Schools need to upgrade their skills through out their career through the Life Long Learning (L3) Teacher Education Resource Centres (L3TERCs) that provide material and manpower resources to support them for continuous upgradation/ updating their knowledge and skills through self directed learning.

Population and distances of an area has to be considered while planning/creating these TERCs from mandal levels to district, towns and cities to provide learning resources and training support at three stages of Teacher Development Approach. The TERCs will provide for the facility to borrow or purchase the ODL print/audio/video material by the teacher candidates and teacher trainers and also provision for face-to-face training and on-line/e-learning facilitates with computer internet facilities. Governments need to plan and to invest profusely on TERCs to create suitable Learning Environment for Teachers. Constant control and monitoring at different levels by concerned authorities of TERCs to maintain the quality of the Teacher Development resources and training is essential.

## Diagrammatic Representation of the proposed NTERCs Model



### Conclusion

To address the crisis of trained teachers, countries world over need to revisit the entire policies and process of 'School Education System and Teacher Education Training along with concerned curricula, keeping in view the new ICTs that are changing world education scenario. As class room based in service training for teachers is proved to be successful and effective, it is desirable to integrate the school education curriculum (for various subjects) with inbuilt Teacher Education /Training aspects. This

facilitates continuous training to teachers throughout their career and it is also an 'Action Research' oriented approach that contributes for the development of video modules to enrich TERCs.

In developing country like India, creation of Network of Teacher Education Resource Centers to facilitate Life Long Learning for development and recruitment of teachers is the need of the hour. The quality and growth of teacher education and supply of trained teachers in India largely depend on the Government's policy, commitment and investment by facilitating collaboration / partnership between the ICT/ Edu.Tech companies and suppliers with Teacher Education Resource and Training Centers.

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