

ICT ENABLED EDUCATION FOR REACHING THE UNREACHED – AN EXPERIENCE OF THE JABALPUR BASED RAJIV GANDHI PROJECT FOR ELEMENTARY EDUCATION

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ABSTRACT

Universalisation of elementary education is beset with constraints even sixty five years after India got independence. From among those who join some schools there are dropouts at the elementary and secondary levels to the extent of about 60% and the effect is pronounced at the marginalised sectors. Inadequacy in respect of training of the teachers at the primary level is construed as one of the reasons for non-attainment of the goal of 'Education for All'. Information and Communication Technologies (ICT) have opened vistas of opportunities as regards increasing the outreach of education, a vital component of which is the use of satellite based communication in teaching-learning transactions. The Rajiv Gandhi Project for EduSat Supported Elementary Education (RGPEEE) is a satellite based communication project dedicated for the purpose of increasing the outreach of elementary education from the students' point of view and for providing sophisticated training to the teachers at the elementary level. The paper presents a profile of the project with an analysis of the impact created by it on the learners, teachers, guardians and the society at large.

Keywords: *marginalised, experiential learning, community-learning, trans-learning, joyful learning, assimilated-learning, learner-centric*

INTRODUCTION

The UNESCO Commission for Education (1996) for the twenty first century⁽¹⁾ chaired by Mr. Jacques Delor recommended that there are four pillars of learning – *learning to know, learning to be, learning to do and learning to live together*. The fourth pillar seems to be most significant in the context of the Indian education scenario. Here we have the IIMs, IITs or research institutes like the Tata Institute of Fundamental Research, Indian Institute of Science which give us international pride, but there are primary and elementary schools in the remote villages where water will squeeze through the roofs during monsoon. We have to organise our educational schemes in this scenario of extreme inequity. If we can do that, then only we shall be doing justice to the fourth pillar of learning. Many efforts,

both governmental and non-governmental have been made to bring every child to the school, but the target has not been achieved primarily because of lack of facilities. Moreover, the attrition rate is quite pronounced for pupils located remotely or belonging to socially and economically backward classes. The knowledge society paradigm tends to lead us to the era of ERA (*Enrolment, Retention and Achievement*). So along with enrolment, we need to have concern for retention and achievement and for that the motivation for learning of the pupils is to be kept alive. This calls for providing sophisticated training to the teachers. The training programmes available through the conventional system are not adequate enough to meet the demands of the teachers who in general, lack the desired professional competence. ICT intervention is capable of providing a

solution. Again, many primary level schools would be handling pupils of four classes or even eight classes whereas the total number of teachers and classrooms will be less than four. The schools would not be having minimal furniture, blackboard, etc. Some of the possible consequences are listed below.

- A single teacher handling more than one class.
- Pupils reach school but classes are not held. They just loiter around in the premises of the school completely uncared for.
- The teacher at a single-teacher institution may be handling the cooking of the mid-day meal himself.
- Inability on the part of the teacher to handle the situation due to lack of proper infrastructure and support staff leads to frayed temper as a consequence of which the students become the victims. The children get psychoemotional shocks for getting scolded or beaten mindlessly and feel completely demotivated.
- The teachers concerned become instruments for giving political mileage to the local leadership opposing their counterpart who hold the power.

The situation may not be as dismal as depicted above at every village school. But there the teachers may not be properly trained. An untrained teacher is generally incapable of generating interest about study in the child. Even there are instances of trained teachers not being able to imbibe the child-centric spirit of teaching-learning transactions. How will then the child feel motivated? If such a child hails from a marginalised family and he narrates his experience of dissatisfaction back home, his parents will rather ask him to help them in their household work or whatever little family business they run instead of going to the school. Thus, a prospective learner who could be a significant human resource becomes a dropout.

Thus, we are confronted with a double prong problem:

- (i) To cope with the limitations caused by extreme inadequacy of infrastructure.

- (ii) To create capabilities for the teachers at the primary level.

Technology provides solutions to both the problems. RGPEEE is a landmark initiative in that direction.⁽²⁾

BACKGROUND OF THE PROJECT

The state of Madhya Pradesh (MP) in India has taken several initiatives towards ICT enablement of its people, the most significant among them being the steps taken for the spread of education.⁽³⁾ The salient features of the initiative are as under:

- Use of ICT as a vehicle for improving the quality of teaching-learning transactions and providing social support to schools.
- Increase of educational access to teachers and students by application of technology and thereby meeting the needs of the marginalised sector.
- Increase of outreach of experts.
- Inculcation of the spirit of experiential learning.
- Establishment of linkages between students and teachers from different social, cultural, economic background.
- Under the auspices of the *Sarva Shiksha Abhiyan (Drive for Universal Education)*⁽⁴⁾ and the District Primary Education Programme, a computer-enabled education programme called “*Head start*” has been initiated. It uses computer as a teaching-learning tool at the elementary level.
- “*Fund-a-school*” – A website for Global Partnership in Education is a very innovative programme which aims at using “the internet to bridge the gap between the connected and the isolated, familiar and the non-familiar and between accessed and the remotest”.
- “*GLAN*” – A General Information Access Network for the citizens is a project which provides computer and internet facilities at each district library and these have been running on a self sustainable model.
- Last but not the least, MP is one of the few states which has realised the potential of EduSat. 65 Satellite Interactive Terminals are being established to get access to a teaching end at the *Rajya Shiksha Kendra (State*

Educational Centre) at Bhopal, its capital. An Integrated Project Monitoring System (IPMS) has been created to regularly monitor the activities.

- Teleconferencing has been a regular feature for direct interaction with district and sub-district functionaries. The DRS in Extended C-Band are located in 38 District Institutes of Education and Training.⁽⁵⁾ The facility is used for the purpose of teachers' training and related activities.

The above said initiative has created the desired sensitivity among the common public about the use of ICT for education dissemination. The tribal dominated state of MP has experienced success stories of ICT like e-Choupal, Gyandoot, etc.⁽⁶⁾ Hence, they could accept the interventions of ICT in respect of addressing the two problems raised above. One can appreciate the manner in which the issues were resolved through the words of the then Union Minister of HRD, Shri Arjun Singh while delivering the keynote address at the International Conference on Distance Education, hosted by IGNOU in 2005. *Inter alia* he mentioned the following "... with the successful launch of EduSat by the ISRO a dedicated satellite for education we are into an era where both internet and intranet can be used for transmission, interactions, dialogue, digital repositories, digital multimedia content, and for virtual education and research. We are committed to improve the quality of school education and provide access to the disadvantaged communities in the rural and tribal areas through RGPEEE. Launched in the Hindi medium, this Project shall develop value-added ICT enabled educational software and ensure its dissemination for improving the quality of education of children and teachers, and support literacy and adult education programmes".

With the above background, the Project came into existence as a direct-to-home (DTH) network through a national beam in the Ku-band having coverage across India with 3.8 m antenna and 16-watt power amplifier at the Hub and operationalised with a studio at Prantiya Shiksha

Mahavidyalaya, Jabalpur, Madhya Pradesh which records and telecasts programmes by uplinking to the satellite 'EduSat'. The network consists mainly of Receive Only Terminals (RoT) supported by Solar Panels, a colour television set, set-top box, battery (UPS) and inverter to ensure continuous connectivity at the primary and elementary schools through which the dual purpose is served. The aspect of non-availability of teacher gets compensated by way of tele-teachers who teach via the network through live and recorded sessions. Such sessions are held on working days of the schools. During the vacations the same network is used for training of the teachers.

A BRIEF PROFILE OF THE PROJECT

Table 1: ROTs under the RGPEEE Network
(Here we have picked up data of three formative years)

State *	No. of ROTs
Madhya Pradesh (MP)	**739
Chhattisgarh	60
Uttar Pradesh (UP)	65
Bihar	65
Rajasthan	65
Uttarakhand	50
Jharkhand	46
Haryana (proposal)	32
Total	1122

* Initially, it started with schools in the districts of Sidhi, Jabalpur, Bhopal, Ujjain and Gwalior of MP. Later, it got expanded to some of the adjoining states.

** 695 in the districts of Sidhi

Table 2: Class and subject wise summary of transmitted tele-lessons since the inception of the project till 31 December 2007. (Here we have picked up data of three formative years)

Academic Session: 2005-06					
Class	Hindi	English	Math	#EVS	Total
I	11	10	15	0	36
II	14	7	10	0	31
III	1	22	12	3	38
IV	5	18	13	18	54
V	3	11	18	9	41
Total	34	68	68	30	162

Academic Session: 2006-07						
Class	Hindi	English	Math	#EVS	Science	Total

I	18	12	23	0	0	53
II	23	7	11	0	0	41
III	20	27	19	8	2	76
IV	24	30	24	10	0	89
V	22	26	28	8	2	86
VI	10	14	24	7	14	70
VII	5	11	32	12	18	78
VIII	6	9	24	5	16	60
Total	128	136	185	50	52	553
Teachers' Programme						50

Academic Session: 2007-08

Class	Hindi	English	Math	#EVS	Science	Total
I	5	3	3	0	0	11
II	2	1	4	0	0	7
III	3	10	4	2	0	19
IV	4	5	6	2	0	17
V	6	11	7	2	0	25
VI	0	2	4	2	3	11
VII	1	3	8	2	4	18
VIII	1	1	6	0	3	11
Total	22	36	42	10	10	119

Environmental Studies

In addition to above, 99 training programmes for tele-teaching were also held.

The programmes were planned on the basis of feedback received from the teachers and guardians. They identified the hard spots in the above subjects from the given curriculum and these became the focus in respect of selection of topics. For example, the meanings of some poems in Hindi, idea about Definite and Indefinite Articles in English Grammar, concept of Prime Numbers in Mathematics are some of the topics which emerged out of the feedback and became the need-base of the students. Topics on societal issues were also chosen, like 'The Village Market', 'Water as a Resource', 'Internet as a Mode of Communication', etc. These programmes which are of 40 minutes' duration are telecast live and are again repeat telecast. Moreover, these programmes have been archived in the form of CDs. These are sent to other state governments on their request. Preparation of all the programmes is preceded by training of the teachers in the aspect of tele-teaching. This is essential because the teachers are not used to teaching, facing the camera.

IMPACT OF THE PROJECT

The Project presents a different dimension about teaching-learning transactions to the academic world and drew the attention of the educational administrators towards the use of ICT in primary and elementary education. The impact can be observed from the extract of a communication from Shri Anand Sharma, Director, Elementary Education, Haryana & Special Secretary to Government of Haryana to Dy. Director, RGPEEE Project, Jabalpur vide his d.o. letter No.PS/DEE-07/346 dated, Chandigarh, the 27-04-2007 which read *"I am grateful to you for looking after my teachers while they were in Jabalpur and giving them an important feedback regarding preparation of educational contents to be broadcast through EDUSAT. I would also like to convey my thanks to you for giving them 16 DVDs which had been re-edited by you. These DVDs had been seen by group of our Resource Persons engaged in script writing for the educational contents to be broadcast by Haryana. They have liked the contents prepared by you. I would like to congratulate you and your team for preparing these contents which were the need of the day. I would like to request you to send us any other DVDs which have been finalised by you after re-editing so that children studying in primary classes in Haryana Government Schools can benefit from your successful venture."*

To know further, we visited a number of schools where RoTs are installed. Separate questionnaires in vernacular Hindi meant for students, their guardians and the teachers were distributed and the feedback were obtained. We also interacted with the stakeholders face-to-face. The responses are quite encouraging. It is understood that the Project has been able to create some kind of impact on the marginalised sector, especially because of use of ICT and have adequately instilled a sort of enthusiasm among the students, teachers and the guardians, as well.

Impact on students

There has been a remarkable increase in the attendance of the students to learn through television. The difficult chapters and hard spots are explained with visual aids, in the form of stories and experiential learning. As such, in the remote villages the marginalised children having very poor background are happy to be in school supported by mid-day meal and ICT-mix education and thereby tuned to the new experience of learning. They are getting repeat telecast and thereby getting opportunity to view the lesson who have missed the earlier one. It was observed that the tele-lessons facilitated information retention among the students. A community-learning and trans-learning is also experienced by clubbing the students of nearby school having no RoT and that of different Classes I to V together in a large classroom to view the tele-lessons. The students of different schools presented the feel of a miniature community and the fact that they were from different classes led to a situation where some element of learning could take place cutting across the levels of different classes. The authors, while visiting some schools for practical experience, were quite overwhelmed to see that the impact of ICT enabled learning has been a joyful learning for those students who would have perhaps not hitherto been to school.

Impact on teachers

The outcome of the study shows that RGPEEE had quite a significant impact on the teachers who have taken oath to retain the value of spreading education among the unreached longing to see the light of knowledge. The Project has been understood an impetus for capacity building, training, re-orientation and changing the mindset with regard to ICT intervention in teaching. They have come out of the thought prevailing two decades back that ICT would replace human force. They have understood that technology-blended teaching-learning is a sort of panacea to be practiced for explaining the hard spots for which they would have struggled otherwise. Hence, it is considered to be a good practice. An important aspect of assimilated-learning is experienced out of this study. The tele-lessons are products emerging out of discussions and thoroughly introspected

knowledge that enriches the students and the teachers as well. Otherwise, the teacher at a rural and remote place would have taught the child within the limitations of his restricted capabilities without the fillip of any updated knowledge. They have accepted the fact that learning is now empowered with ICT. Now, the paradigm has got changed. Using ICT as a vehicle the teaching-learning transaction has become more learner-centric than teacher-centric.

Impact on parents and guardians

The Project created tremendous impact on the parents and guardians who have in a way contributed to the success of the initiative by sending their wards to the school instead of engaging them in household work. They have been progressive in their outlook towards ICT enabled learning. They have realised the potential of ICT in providing new experiences to their children. While visiting the schools, the authors felt very happy to see some parents who had come to pick their children peeping through holes in the windows and doors to watch the tele-lessons.

In this connection, the correlation between some of the responses is quite remarkable. Some examples have been provided below:

- 100% of the students say that they *like to come to the school*; 98.6% of the teachers find the *programmes useful* and 97.6% of the guardians feel that their wards are *taking more interest in attending school*.
- 94.3% of the students say that their *teachers also watch the programmes* and 98.6% teachers feel that the *programmes are related to the curriculum* followed at the schools and 95.1% of the guardians feel that the *learning capability of their wards has got improved* after introduction of tele-teaching.
- 89.8% of students say that they *are briefed about the programmes before the telecast* and 87% of the teachers say that they *brief the programme before the telecast* and 100% teachers *discuss the contents after the telecast*.

The above correlations indicate that the responses have been reasonably consistent and the Project stakeholders have valid reasons to feel encouraged.

Here we are talking about the students, teachers and the guardians and the society who all are 'unreached' in real terms of geographical locations. The relevant experiences that have emerged out of our findings are given in *question-answer form* below:

EXPERIENCES WITH UNREACHED

Experience with students

Do you like to come to school?	100% said 'Yes'
Do you attend school regularly?	100% said 'Yes'
Do you know that these days television is being used for teaching at your school?	82.9% said 'Yes'
Do your teachers also watch the programmes with you?	86.3% said 'always' and 8% said 'sometimes'
Do your teachers brief you about a programme before it is telecast?	86.4% said 'always' and 3.4% said 'occasionally'
Do your teachers discuss with you the contents of the tele-teaching programmes?	71.6% said 'always' and 19.4 said 'occasionally'
To what extent you understand the contents of the tele-teaching programme?	65.9% said 'most of them' and 27.3% said 'a few'
Does your attention get diverted elsewhere while a tele-teaching programme is on?	81.8% said 'No'
Can you retain for long the contents delivered through tele-teaching programmes?	94.3% said 'Yes'
Could you follow every bit of what is explained in a film?	78.4% said 'Yes'
If not, could your teacher explain what you did not understand?	89.8% said 'Yes'
Do you once again study the lessons already taught through tele-teaching?	78.4% said 'Yes'
Do your teachers handle all the follow-up activities suggested through the tele-teaching programmes?	58% said 'more or less, all' and 34.1% said 'a few'
Do the teachers discuss about the programme after telecast?	48.9% said 'always' and 46.6% said 'occasionally'
Where do you perform the activities demonstrated during the tele-teaching programmes?	51.1% said 'at home' and 46.4% said 'at school'
Would you like to watch this television lesson again?	85.2% said 'Yes'

What is that disturbs you most when you watch a tele-lesson?	<ul style="list-style-type: none"> • Mosquito bite. • The television gets off frequently. • Sound of the vehicles. • Movements of people. • Television sounds not clear. • Talking with friends. • Sometimes signals. • Transmission is not clear.
Has your teacher ever told you that he/she can not show you tele-lessons in classroom due to some reason?	53.4% said 'Yes'
If 'Yes', what was the reason?	<ul style="list-style-type: none"> • Because of mid-day meal. • Battery is out of order. • Satellite problem. • No signal.
Which one do you like most?	<p>(a) Teacher taking a lesson in the classroom and writing on the board.</p> <p>(b) Learning the lesson through television and then</p>

<p>If your answer is '(a)', why?</p>	<p><i>asking your teacher in the classroom your doubts.</i></p> <ul style="list-style-type: none"> • If we do not understand, we ask the teacher. • Teacher explains well. • We can see and listen well. • Teacher explains in the blackboard in the middle of the teaching. • Teacher explains repeatedly. • We can ask the teacher in the middle of teaching. • Problem is solved immediately. • We learn quickly from the blackboard. • Blackboard teaching is good.
<p>If your answer is '(b)', why?</p>	<ul style="list-style-type: none"> • The teacher explains us after the television programme which enables us to understand the lesson better. • After watching the television lessons, the teacher explains the problems in the lessons which are very helpful to us for remembering the lesson. • The television lessons are more useful. • We like teaching and solving the problems through tele-lessons. • Television lessons are explained better which we do not forget.
<p>What do you prefer? Teaching by your classroom teachers or Teaching through television?</p>	<p>70.4% said 'both' and 27.3% said 'teachers'</p>
<p>Do you feel more inspired to go to your school after introduction of the facility of teaching through television?</p>	<p>100% said 'Yes'</p>

Experience with teachers

<p>Like to enhance academic/professional qualification</p>	<p>95.7% said 'Yes'</p>
<p>Reason for opting teaching as profession</p>	<p>86% said 'noble profession'</p>
<p>As a teacher, what steps would you take to improve the quality of life of your village?</p>	<ul style="list-style-type: none"> • To uplift the lifestyle of the villagers. • Would try to educate all the children in the village and create interest within the parents to educate their wards. • Create awareness among people on the benefits of education and make sure that each and every child is sent to school. • Uplift the status/level of education. • Would motivate children of 5-14 years to go to school. • To encourage children to go to school and would emphasise on the importance of education in one's life. • To educate villagers about cleanliness, caring the nature and benefits of leading a healthy life. • To make teaching more efficient. • Contacting parents, I would convince them to send their children to school and imbibe value education within them.

	<ul style="list-style-type: none"> • Would advise parents to educate their children for fruitful employment. • Create interest within the children and parents to be literate. • Will ensure that children of all sections of the society get basic education. • Every child is the future for his parents. The child should be sent to the school daily. • The children of the weaker sections of the society to be given the benefits (<i>mid-day meal/free books/free education/scholarship, etc.</i>) of the government schemes to lure them to school. • The women at home must be encouraged to send their wards to school. • Imbibing truthfulness, responsibility through education. • Would try for 100% literacy in the village. • Would ensure that villagers are aware of all the policies of the government and welfare measures meant for them. • To create the awareness among students for paving the way for development of society as a whole. • Adult education, learning and teaching activities to be taken up for the upliftment of the village. • Educating all the girls in the villages.
Are the tele-teaching programmes useful?	49.3% said 'highly' and 49.3% said 'moderately'
Are the tele-teaching programmes related to the curriculum followed at the schools?	98.6% said 'Yes'
Are the duration of the programmes adequate?	72.5% said 'Yes'
Has the tele-teacher been able to explain the contents clearly?	98.6% said 'Yes'
Has the tele-teacher undertaken any activity based teaching?	95.7% said 'Yes'
Has the tele-teacher assigned any activity to be done after viewing the programme?	81.2% said 'Yes'
Has the tele-teacher substantiated his presentation with relevant examples?	98.6% said 'Yes'
Have the students faced any difficulty in deciphering the contents?	49.3% said 'No'
Were the demonstration materials used in the tele-teaching programmes adequate?	97.1% said 'Yes'
Your overall impression about the quality of the tele-teaching programme?	42.1% said 'very good' and 56.5% said 'good'
Could the students follow the language used in the tele-teaching programmes?	66.7% said 'fully' and 33.3% said 'partially'
Were the contents suitable with reference to the knowledge level of the students?	100% said 'Yes'
Were the students attentive during the telecast?	100% said 'Yes'
Are the students briefed about the tele-teaching programmes before the telecast?	87% said 'Yes'
Are the contents of the tele-teaching programmes being discussed after the telecast?	100% said 'Yes'
Did you enquire with the students regarding their opinion about the tele-teaching programmes?	100% said 'Yes'
Normally, how many students ask about the tele-teaching programmes before the telecast?	24.6% said 'more than 10', 58% said '4 to 9' and 17.4% 'less than 4'

How many students normally ask questions after each telecast?	58% said 'more than 5', 36.2% said '2 to 4'
How many times parent-teacher interactions take place?	30.4% said 'frequently', 50.8% said 'once in two months' and 17.4% said 'once in six months'
Integrating tele-teaching into classroom teaching is convenient or cumbersome?	98.6% said 'convenient'
The tele-teaching lessons that are being used in the class room are	47.8% said 'the real substitutes for classroom teaching' and 52.2% said 'supplementary & complementary teaching material'
The content of the tele-teaching materials should be only supplementary materials to the existing teaching modes like pictures, demonstrations, presentation of models, graphs, audio and visuals which are otherwise not easy to make available in the classrooms. How do you react to this?	<ul style="list-style-type: none"> • Helping materials should be supportive to the classroom-learning. • The tele-lessons should include pictorial models, stories and happenings. • Tele-lessons are definitely helpful to increase the standard of the children. • The learning aids (<i>assistive technology</i>) are available if one tries. But making an aid is difficult task, especially, for a physically challenged, visually and hearing impaired and voice impaired student. • In the present scenario, it is very helpful if we assimilate pictures, practical experiments, models, scenes and materials as learning aids. • The learning materials and the curriculum should be supportive/matching each other. • The tele-lessons help in explaining a situation with ease. • The learning aids can easily be collected from the natural resources and our surroundings. Tele-lessons would further enrich the teaching-learning process and instill creativity, interest and concentration among the children. • Providing learning aids in all the subjects is not possible in classroom-teaching. So it is easy to explain through tele-lessons. • It enhances logical thinking, knowledge skills. We should help in solving the problems in making available such learning-aids to the learners. • It is quite helpful but the time-slots for the telecast should be planned quite meticulously. • Tele-lessons are useful. But classroom-teaching has its own value and more effective. • Learning aids can be made available easily on little effort but time is a major constraint in preparing learning aids. • Children do learn easily seeing the pictures and supportive materials through television. • Tele-lessons should be livelier and relevant to the subject. • The tele-lessons should be used. It motivates the child to sit through the total duration of the lesson. • I do fully agree. The children get influenced for informative & technology-based learning.
What do you think about tele-teaching?	23.2% said 'Tele-teaching be encouraged at school level', 18.8% said 'We confine to the traditional mode of teaching and rarely use television for teaching in classrooms at school level' and 50.7% said 'Both'

<p>Do you think teaching-learning transaction does not take place effectively through tele-teaching and believe that traditional mode is the most appropriate in school?</p>	<ul style="list-style-type: none"> • Tele-lesson is more effective. The children like those lessons. • The intelligent students learn the lesson easily by way of entertainment. • It helps in enhancing the imagination of the children. • Both are effective. • It is by and large effective. • Tele-lesson is effective only with classroom-teaching. • Tele-lesson is not so useful in comparison to classroom teaching. • There is no proper order in presentation. Sometimes, it is out of syllabus. So it is not so effective. • In tele-lesson, there is no provision of question-answer system. So the learning is more effective in classroom-teaching. • More awareness should be created on tele-lesson.
<p>If 'Yes', what suggestion can you give on integration of technology which is imminent at higher education and easily accepted by students during his/her studies?</p>	<ul style="list-style-type: none"> • Experienced teachers should be engaged in preparation & presentation of tele-lessons. • There should be sound along with pictures and scenes wherever required to make it livelier. • The subject-based real photographs, videos & recordings should be shown for example, while showing a volcano, a live video of the eruption of volcano should be shown for better understanding. • New learning materials should be utilised in tele-lessons. • Lessons to be prepared more interestingly. • The tele-lessons should be updated after understanding the requirements & loopholes in the lessons. • The timings of the tele-lessons should be increased. • The tele-lessons should be more elaborative. • Pictures, scenes, live presentations, models & symbols should be included as far as possible. • New skills and new technological innovations should be shown. • The tele-lessons would be more effective if the lessons follow exactly the prescribed syllabus. • There should be continuity in presentation. • It can be shown in groups. • The presentation should be to the point according to syllabus/subjects. • Tele-lessons would be more successful if the teachers are motivated, aware, interested and enthusiastic. • There should be question-answer sessions following the tele-lessons. • Yoga lessons should be taught through tele-lessons. • It is better to teach with the locally available learning aids. • Adequate teachers should be available in the

	school in comparison to the students.
In your point of view why is training required for the teachers?	29% said ' <i>Enrichment point of view</i> ', 17.4% said ' <i>Pedagogic point of view</i> ' and 2.9% ' <i>Content point of view</i> '
What do you know about teachers' training?	<ul style="list-style-type: none"> • The training programmes should be arranged periodically for refreshment of knowledge. • It creates interest for teaching. • It helps to explain the subject lessons easily. • It helps in understanding the difficult aspects of the lesson easily and know newer knowledge on the subject and activities. • It helps in upgrading the knowledge within the teachers. • The thoughts and knowledge are exchanged which helps in new ideas and learning for better teaching. • It helps in better teaching-learning process and mastering a subject. • New knowledge is explored out of training. • Training is given how to create interest within the learners. • It is like giving water to the plants. • It creates interest in teaching and enhancing the quality of teaching. • The resource teacher should be subject expert and should have more knowledge on the subject and activities.
What are the types of teachers' training?	<ul style="list-style-type: none"> • Skill-based training. • In-service training. • Refresher courses. • Development of skill of questioning.
Training on which other mode, apart from the present mode of training you think would be more viable?	<ul style="list-style-type: none"> • The new technologies should be used compulsorily. • Subject-based training should be given. • Training should be based on the pre-identified difficult areas of the subject. • Master trainer should be properly trained and train others. • Training is more required to make the teaching-learning more effective. • Training should cover all the subjects. • Periodical training should be organised for familiarising with new knowledge & skills. • Continued upgradation in training modules. • Scientific models & practical knowledge-based programmes should be included in training. • Seminars can be organised. • Training schedule should place during 10 am to 2 pm. • Good teachers should be chosen as trainers.
What was the duration of Orientation Programme provided through RGPEEE?	11.6% said ' <i>one week</i> ', 24.6% said ' <i>more than two days</i> ', 14.5% said ' <i>two days</i> ' and 8.7% said ' <i>one day</i> '
How many spells of training have you attended to?	29% said ' <i>more than two spells</i> ', 34.8% ' <i>two spells</i> ' and 11.6% said ' <i>one spell</i> '
Was this duration of training sufficient to enhance your teaching skills?	36.2% said ' <i>sufficient</i> ' and 13% said ' <i>insufficient</i> '
In what ways does the programme meet your needs?	<ul style="list-style-type: none"> • It enhances knowledge along with quality teaching

	<ul style="list-style-type: none"> skills. It enriches, refreshes, fertilises and develops our mind according to the need. Through orientation, we refresh our lives. It is required to make the teaching skill more effective. All the subject-based required knowledge & skills are being trained in the training which enrich us further. It brings constructive changes in the teaching process. It helps us to understand how to bring development in a child. Some new knowledge is being acquired. We learn the easy way to teach. Hence, the teaching activity becomes easier. In training we are tuned to new technologies. Proper utilisation of resources is known out of training. It helps in understanding Mathematics very well.
What difficulties did you face while undertaking the training programme?	<ul style="list-style-type: none"> The purpose gets defeated in absence of skilled trainers. Lack of best trainers/resource persons. The resource persons do not have control over the trainees. The training materials are not as per new syllabus. During the training programmes, lot many problems arise like non-availability of drinking water, proper meeting arrangements and lack of good resource persons. Adequate training tools not available. Sometimes, some sessions are not clearly understood. The course materials are being covered very hurriedly and bookish language is used.
Did you find the trainers skilled, competent and energetic and could arouse interest in you in undertaking the Orientation Programme?	18.8% said 'Yes' and 29% said 'No'
Do you think the training session(s) has/have helped you in performing your classroom tasks better and meet the desired objectives?	24.6% said 'Yes' and 11.6% said 'To some extent'
Was at any instant your training session affected due to technical snag?	37.7% said 'No' and 13% said 'Yes'
Are you willing to undergo more such training sessions in the future?	31.9% said 'Yes' and 2.9% said 'No'
Rate your overall satisfaction level of the training you received through the RGPEEE	7.2% said 'very satisfied', 15.9% said 'satisfied' and 11.6% said 'average'
Any suggestion/comment you wish to make on RGPEEE	<ul style="list-style-type: none"> The weekly/monthly schedule of the tele-lessons should be transmitted in advance The tele-lessons should be made compulsory. The untrained teachers at school should be trained. The teaching-learning should be based on new/latest technologies so that the students can learn the lessons easily. The tele-lessons should be revised with the change in the syllabus.

	<ul style="list-style-type: none"> • The subject & course that are telecast should be made known well before through the schedule. • More orientation programmes should be organised periodically which helps the participants to upgrade his own knowledge and skills. • We should stress upon the all-round development and value education for the children. • The tele-lessons are being telecast during 1030 to 1400. It should be extended up to 1630 to benefit the students. • The tele-lessons should be made as a compulsory component of the curriculum. • The orientation programmes & trainings are required for the teachers and should be organised periodically to update & upgrade the knowledge levels & skills. • The tele-lessons should be based on stories and songs for better understanding. • If we really want to enrich our education system with technology then two-day orientation programme should be organised every month based on the Unit. • The tele-lessons on English and Mathematics should be repeated so that the children understand the lessons easily. • Science, English & Mathematics tele-lessons should be aided with supportive materials and prepared in the way of poetic form to make it more effective.
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Experiences with Parents/Guardians

Are you aware of the tele-teaching facility available at the school of your ward?	90.2% said 'Yes'
If 'Yes', then, wherefrom did you get the information?	65.9% said 'Children', 14.6% said 'Teacher' and 13% said 'Headmaster'
Have you been invited by anyone among the school authorities to come and watch the programmes?	82.9% said 'Yes'
Have you seen any programme by now?	85.4% said 'Yes'
If 'Yes', how many?	36.6% said 'more than 5', 2.4% said '3 to 5' and 46.4% said '1 to 2'

Do you feel that the learning capability of your ward has improved after introduction of tele-teaching?	95.1% said 'Yes'
Is your ward taking more interest in his/her study at home after the introduction of the tele-teaching programmes?	97.6% said 'Yes'
Does your ward discuss the tele-teaching programmes with you?	87.8% said 'Yes'
Does your ward take greater interest in going to school after the introduction of the tele-teaching programmes?	53.6% said 'Remarkably Yes' and 44% said 'Moderately Yes'
Does your child most often talk about at home about the big happening at school?	87.8% said 'Yes'
Does your child at any time say at home about television lessons he gets at school?	85.4% said 'Yes'

Do you think these tele-teachings are appropriate for your child?	97.6% said 'Yes'
Have you ever been told by your child's teacher what is tele-teaching and your child is experiencing a new mode of learning, i.e. tele-teaching at school?	85.4% said 'Yes'
Your suggestions/comments, if any, on tele-teaching system in your ward's school	<ul style="list-style-type: none"> • Interest is created in our children for studies. They become more creative & intelligent. • More such lessons be taught to the students. • Children always like to watch television. So tele-teaching is useful. • The children learn very quickly with this system. • The children are very happy after watching such lessons. • The programme should be continued for the betterment of children. • The school management should take care about maintenance of the RoTs.

MATTERS CAUSING CONCERN

The terminals and the solar power packs (SPP) are quite costly devices. In a school while the television sets and the related accessories remain under lock and key, the terminals and the SPPs remain exposed on the rooftop and there have been cases of thefts. Due to paucity of resources the schools have not been able to provide adequate security. However, the Home Department of the state has been informed about the matter. While they are taking steps as per their provisions, the stakeholders have embarked on the task of sensitising the communities so that they feel that such thefts are losses to the society and to the marginalised children who get deprived of the benefits of technological advancement.

At the initial stages the Insurance Companies were not agreeing to come forward and insure the equipments. However, now they stand convinced. But, more surprisingly, the authorities of some of the schools from where theft has taken place have shown reluctance in lodging complaints with the local Police Stations. They may be scared about the culprits who are local hoodlums and are known to the school authorities. Again, the solution to such a crisis lies in making the local agencies and local people aware of the social cause being served by the Project. A move in the said direction has been

taken on the part of the Project which has been yielding the desired results slowly.

The problems stated above are administrative and operational in nature. More important than these, are the academic problems being faced by the Project. The response has been fairly positive at 60-70% of the schools having the RoTs. In the remaining institutions, the impact of the Project is very insignificant. This is because of lack of interest shown by the in-house teachers. They are supposed to create an atmosphere which makes the students feel inspired about the scheme of teaching at a distance via satellite. They should take effort to bring the child to the tele-teaching sessions. Unfortunately, they behave in the contrary. Steps are being taken by the Project to identify retired teachers, who are physically and mentally fit to take up the task of monitoring the activities at the schools, i.e. the receiving ends. They will be visiting each school at least once a month and interact with the in-house teachers, students and parents and suggest remedial measures in case of any kind of default. These retired teachers will be the link between the RoT Stations and the Hub at Jabalpur.

CONCLUSION

Technology has advanced by a great degree during the last decade and its impact can be seen in every sphere of

our life. However, its use for dissemination of education has not picked up to the extent desired. This is primarily because of the problem of the mindset. Still, we have the hangover of the traditional system and are used to seeing the teacher live in front of us. Introspection into the problems like theft of equipments due to lack of security or its malfunctioning due to improper maintenance would reveal that the prime cause is the issue of insensitivity on our part about the effective use of technology for education. Thus, some repairing is necessary at the level of the mindsets of mainly the

teachers and the guardians. Otherwise, the performance of the Project during the first three years and thereafter remained reasonably steady to the extent that, there is no need to look back.

We may conclude by saying that RGPEEE has adequately done justice to the four pillars of learning - *learning to know, learning to be, learning to do and learning to live together*, as recommended by Delor Commission, that is, *Learning – the Treasure Within*.

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