EXECUTIVE SUMMARY

Programme Details

TALP began in 2016 as an initiative for Computer Education and education through Computers in Government high schools, known as IT @ Schools and later extended to Government PU Colleges. Unlike all other previous Computer Education programmes where persons with technical skills were hired to teach school subjects, capacities of regular school teachers was built to teach their own school subjects/syllabus. TALP included Science, Mathematics, Social Studies and English in its fold.

Methodology

Descriptive Survey, Documentary analysis, Observation and Case Study techniques are the chief methods. Questionnaires, Rating Scales, Checklists, FDG/IDI schedules, Observation Data Sheets, Case Study data sheets have been used for Primary Data Collection.

Data have been collected, across the State, from 650 high schools, 6500 students of TALP Schools, 68 Control Group schools where Computer Education (not TALP) is there and 136 students thereon; 650 Head Teachers, 1300 parents of TALP Schools, 70 Educational Officers each of Directorates of school Education and pre university Education.

Sample of PU Education/TALP is 150 TALP PU Colleges and 1500 students, 750 Lecturers, 300 parents of PU Students constitute sample of PU Colleges.

Sample of EDUSAT Components of TALP study is 50 schools of which EDUSAT is 25 Schools from 05 EDUSAT districts and 25 Tele Education schools of 18 Districts covered during pandemic Times.

Sampling is as per ToR of the Study. A total of 14 tools are used. IT@ High School (05), TALP in PU Colleges (05) and EDUSAT (03), for 14 different target groups.

Analysis has been both qualitative and quantitative.

Summary of Significant Findings of the Study

Infrastructure Facilities: Distribution to Schools

Section – I: IT@High Schools Programme and Performance

Analysis of State Level Secondary data for 8th, 9th and 10th Standards during the reference period 2016-17 to 2020-21 on enrolments, attendance and transition rates reveals the following insights.

- It is noted that 2016-18 is pre TALP and 2019-2021 is TALP period. Gains in enrolments in percentage terms are 4.49, 9.21 and 13.73 at 8th, 9th and 10th standards by 2020-21.

- From negative values in attendance before TALP, gains by 2020-21 at 8th, 9th and 10th standards are observed to be 9.33, 11.14 and 17.53 percent respectively.

- Transition trends showed losses before TALP from 8th to 9th and 9th to 10th standards. This trend got reversed to positive gains, marginal values, by 2020-21, 2.68 and 1.13 percent gains.

- **DSERT Basic Data:** DSERT/DoE/GoK had supplied 7658 desktops, 1221 laptops and 239 tablets to 1000 schools in 3 packages of 11, 15 and 21 systems. .

- DSERT also gave 3221 Computers depending upon the size of schools. A total of 15945 Computers were given during 2016-17 to 2019-20 includes supply to DIETs/Offices. Again 6330 systems were given during 2020-21. TALP coverage of 2020-21 is 3851 high schools. All the systems have pre-loaded cassettes on syllabi/topics of 04 subjects: Science, Mathematics projectors across 3851 TALP schools and SMART Boards to 242 TALP schools.

- No school has been given TALP Management Contingency Grant.

Infrastructure in Sample Schools (650) – Primary Data/Field Survey Data Reports

- 92 per cent schools have set up a Computer Laboratory (CL). All the schools (with CL) have Printers wherein 19 per cent schools have Colour printer facility (Colour Printers are essential for Biology/Geography/etc lessons for advanced learning/surfing/to get a print out). 34 per cent schools have scanners also [2 to 3 page downloading, for project work/assignment, scanners would be useful].

- 26 per cent schools do not get uninterrupted electricity and neither have UPS facility in computer laboratory. 47 per cent schools do not have either internet or Bluetooth facility.

- 91 per cent schools have projectors to use Computers for classroom teaching-learning transactions [83 per cent LCD projectors]. No LED projector anywhere.

Organization of Computer Education in Schools (TALP)

- 82 per cent schools begin Computer Education at 8th standard [11 per cent do not have 8th standard]. Majority of students had no exposure to Computer before 8th standard. Pace of learning for 80 per cent students is uniform and good.

- 45 per cent schools give only pre-loaded cassettes experience/learning opportunity to students. 16 per cent schools have CDs/DVDs [with or without a CD/DVD Library; 11 per cent have a CD/DVD Library] for use of students [schools have procured]. Students in 39 per cent schools visit learning web-sites.

- In 80 per cent schools students maintain a Computer Education/TALP notebook. Computer Education is an examination subject in 27 per cent schools. 40 per cent schools give project work/assignments in Computer Education.

MIS and SATS in Schools

- 27 per cent TALP schools report that they have adopted MIS.

- SATS is adopted by 99 per cent schools. 95 per cent find it useful. Basic analysis of SATS data is there in almost all schools.

Proficiency in TALP Implementation

- Teachers have developed e-lessons in 58 per cent TALP schools. It is a team effort in almost all schools. In majority of schools TALP trained teachers have trained their untrained (in DIETs) colleagues (shared their skills). All of them are reported to use their skills (report by HTs).

- Web links were given to teachers under Level II, Refresher Training, to 62 per cent TALP schools. These links are reported to be useful, relevant and simple.

- 41 per cent schools report that they get their school/Computer Laboratory budgets audited.

- 90 per cent teachers use DIKSHA portal. They do not have positive views on DIKSHA Portal in the context of State school system.

Teaching – Learning Process (TALP) in Schools – Reports by Head Teachers

- There is a balance in average number of teachers managing 04 subjects of TALP in all schools, though there are slightly more Mathematics teachers.

- 92 per cent teachers engaging TALP classes are either trained by DIETs or by colleagues or self-trained. 5.5 per cent schools have engaged Contract teachers.

- Average Contingency expenditure is Rs.1,00,000/- per year, per school, for the maintenance of Computer Laboratory reported by 66 out of 650 schools.

- 35 per cent schools have entered into AMC for service and maintenance of computer lab with local franchisees.

- MIS (27 per cent schools) include mainly student/MDM (student)/teachers attendance, admission/TC registers.

- Nearly 14 per cent schools have adopted a correct approach to e-waste management (once in a month).

TALP – Feedback from Teachers

- It needs to be noted that teachers are serving students without complete facilities needed for TALP. All the lessons are not there in CDs/DVDs, preloaded in Computers. They do not have LED projectors. Most of them are not having SMART Boards and other accessories essential for a TALP kit. Still, for the given level of implementation, teachers are doing full justice to TALP in their schools.

- Majority give equal attention to regular vs. TALP classes, give assignments/ projects to students. However, only a small percentage of teachers evaluate the assignments/ projects.

- Majority concede that CD/DVD lessons are useful at the least up to 60 per cent level.

- Only 22 per cent teachers report that they can complete the full syllabus (cover syllabus) with reliance on computer mediated teaching (TALP). They have a 'positive attitude' to TALP.

- Teachers share their skills; work with colleagues in developing e-lessons.

- Overall feedback from teachers is that, teachers are very highly satisfied with the TALP programme.

Feedback from Students

- 97.4 per cent students attend schools from their own homes (not hostels). 95.65 per cent are locals (not migrants) to the place of school; 42 per cent can walk to school. Public bus is also used. 12.5 per cent students travel to school from a distance of more than 5 Kms, which is not in conformity with the national norm. However, commuting is not a problem for them, as 41 per cent of sample students, use bicycles to school, use Free Bicycles given to them by the DoE/GoK. 54 percent students are girls. Either students have schools at a walkable distance or they use bicycles. None of them will be tired to commute to school.   Further, it is noted that there are 07 per cent over aged students in the sample.

- 97 per cent students report that TALP is highly useful for them. 33 per cent students get guidance in computer use at home. 80 per cent clarify their doubts with teachers.

- 8th standard schooling is the medium level of education among parents of all students. Majority of parents are in low paid jobs which constrains them to buy smart phones, pay for wi-fi and renewal of internet facility (needed for advanced learning/for doing projects), Pre-paid charges.

Feedback from PARENTS

- 90 per cent parents reveal involvement in on-line schooling of children. They have conferred with HTs, Teachers, Margadarshi Teachers (of VIDYAGAMA schools – Pandemic times).

- Parents did not wholeheartedly welcome on-line classes. Only 2 per cent students (parents) had got Smart Phones before the launching of on-line classes. 49 per cent parents purchased Smart Phones for exclusive use of their children, for on-line classes. 79 per cent parents prefer Blended Learning.

- Only 07 per cent students (parents cannot buy packages of more than 1 or 2 GB per day) can use Smart Phones beyond school hours for advanced learning.

- A great majority welcome SAMVEDA classes (beamed on TV by NCERT). Almost all parents have positive opinion about VIDYAGAMA classes.

- Only 8 per cent homes have UPS facility; they are prepared for power problems affecting on line classes. 22 per cent homes/children lose on line classes due to power problems in Kalburgi division.

- A great majority welcome assessment of children in public places (DoE arrangement during pandemic times).

- 55 per cent parents report that their children got addicted to mobile phones.

- Majority of parents, even while they are economically weak, have adjusted to on line schooling with great difficulties; they prefer regular schooling.

e-content Review Report: TALP lessons in 04 school subjects had been reviewed by expert at a Workshop. Overall rating of quality of lessons at High School stage is 85 per cent while it is 62 per cent at PU stage.

A checklist analysis of performance of TALP on 05 parameters – infrastructure, Learning organization (Sample 650 schools), Teachers' Feedback (Sample 3250), Students' feedback (Sample 6500) and Parents' feedback (sample 1300) revealed that TALP State average performance is functioning at 52.09 percent of expectations (123 variables). Respective percentages on 05 parameters are: 53.4, 75.9, 56.6, 46.1 and 63.0 percent.

District level analysis of performance showed Kodagu, Chikkamagaluru, Gadag, Chamarajanagar and Bidar are on top 5 of the list of 34 Educational districts. Madhugiri, Sirsi, Yadgir, Raichur and Bellary districts are the bottom 05 districts in the list.

Bottom 05 and more districts need intensive care and attention by DIETs/DSERT.

Experimental Vs. Control Groups: TALP and Non TALP Learning Attainments.

The differential gain in learning attainments as per SATS average achievements between 650 TALP quasi-experimental sample schools and 34 non-TALP control group sample schools is 06 percent in favour of TALP schools. The jump from 2018-19, SATS results to 2020-21 SATS results in TALP schools is 78 to 89 percent while in non-TALP schools for the same reference period, it is from 78 to 83 percent. **TALP matters for learning attainments.**

CASE STUDY INSIGHTS:

There is 20 per cent difference across top 5 and bottom 5 schools in the State in TALP performance [Implementation], as per CASE STUDY analysis.

Better monitoring of learning organization in schools, provision of infrastructure facilities, hands-on-training to teachers, issue of SoP for implementation of TALP in schools are needed to bridge the gap between top and bottom ranked schools.

SoP based/Guided M and S will be needed for lifting the bottom ranked schools above optimum levels of performance, as revealed by the 10 schools of the case study.

Section II: TALP in Pre University Colleges

Scope for assessment / review of PU Colleges is limited as TALP is confined to distribution of Pre-loaded (with lessons) laptops to 750 colleges, 61 percent coverage, during 2017-18 to 2020-21.

Infrastructure: Computer Laboratory (CL), Science Laboratory, Library and Reading Room are in 39, 84, 48 and 16 percent PU Colleges (Sample size, 150). PU Colleges in Kalaburgi division lag behind other 03 divisions in all respects. Inspite of constraints, 51 percent college faculty have developed e-lessons and shared with DIETs (31 percent faculty shared). PU Colleges are doing well, to the best of their resources, in utilization of pre-loaded laptops for purposes of teaching their subjects.

Organization of TALP/Implementation in PU Colleges:

- Majority of PU Colleges in the Sample are of medium size. Mathematics and Science subjects are accorded priority in Induction, Level I training. While English, Economic, Business Studies, Accountancy get lower priority in training.

- 21 percent colleges show Computer Education/TALP theory classes in the timetable. Pre-loaded laptops are used in Classrooms by 28 percent colleges.

- 33 percent PU Colleges have a computer lab, not a contribution of TALP, own initiative.

- TALP is not implanted either adequately or systematically in PU Colleges. SoP is also not issued by the Department.

- Average expenditure per college which has a Computer Laboratory is Rs. 6269/- per year, excluding expenditures on Wi-Fi/telephone bills. Precise data is not available as colleges do not maintain a lab log book.

- Only 11 out of 31 colleges which have Computer Lab (02 Colleges, no response) dispose e-waste. Disposal methods vary and there is no uniform system.

- 10 percent colleges have AMC for maintenance, repairs and service even while majority face problems in computer maintenance. Other depends on locally available technicians.

- Adoption of MIS in colleges for digital governance is limited in incidence and not uniform in usage.

- 37 percent colleges store question papers of previous years in the computers and share it with students. 60 percent colleges maintain marks registers/data in digital format.

Feedback from Lecturers

- Data is from 750 Lecturers. B.Ed trained and experienced teachers are preferred by DIETs for TALP induction training, especially in Science and Mathematics. Level I Training is well received by the Lecturers.

- 54 Percent lecturers report that 60 percent of their time and effort in teaching/transacting their subjects is saved. It is recalled that there is no full integration of PU Syllabus in pre-loaded lessons; only 62 percent integration is there.

- 96 percent trained Lecturers have tried/sensitized their untrained colleagues. Nearly 20 percent lecturers have also acquired additional digital skills beyond the training curriculum like working on word documents, surfing internet, downloading advance resource materials, pictures, videos, documents, retrieving them and preparing PPTs. A few (10 %) can also work on Excel sheets. A couple of them (2 percent) can edit and save downloads, use graphics and charts.

- A great majority of lecturers report that the training was useful for transacting lessons using preloaded cassettes in the classroom.

- Inspite of inadequacy of training, hands-on exercises, infrastructure facilitation, lecturers have integrated well with TALP Opportunity.

Feedback from students:

Profile: There are 1500 students from 150 colleges. 64 percent are girls. 14 percent children of first generation learners are learning at High School technology based teaching.

Going by the socio-economic background of students, it is observed that TALP project more than satisfies the concerns of equity and justice while quality of service is a persisting concern.

TALP exposure: 56 percent students had exposure to Computer before TALP, in high schools. 31 percent students have TALP Classes in time table. 28 percent students have also Computer Education/TALP practical classes.   77 percent students like TALP classes-Reasons given by those students who did not like TALP teaching (Teachers using pre-loaded computers) was that they themselves were not good in basics- basic concepts of the subjects. 98 percent students use SMART phones for On-Line classes. 30 percent students get help from elders.   Conversely, 70 percent students do not have anyone at home to help them. 52 percent students rate the TALP lesson to be 'useful'. 37 percent use audio-cassettes for learning language skills, useful for TOFEL examination.

63 percent students have access to e-gadgets for colleges' related assignments beyond on line classes, either at home or college. Deprived proportions of students across Belagavi, Bengaluru, Mysore and Kalburgi about this opportunity are 32, 36, 38 and 44 percent students respectively.

36 percent students were involved with their classmates/teachers in development of e-content.

Performance in Computer Education Examination:

39 percent students have Computer Education as an examination subject in their colleges. 26 percent students (Total 1500) got more than 60 percent marks, A+, A, B+, B grades in Computer Education examination. Concern is about those who do not have Computer Education examination 9.60 percent (who get C/D grades (14 percent)).

Remedial Classes: 35 percent students get remedial classes while 12 percent (Total 1500) students get them through laptop mediation.

On-line Classes: 38 percent students express difficulty in learning through on-line classes (pandemic context).

Home Milieu: for online classes is 'Good' for 58 percent children, 'satisfactory' for 32 percent students and 'poor' for 10 percent students.

Online Vs. Regular Classes: 56 percent students prefer on On-line classes

FINAL INSIGHTS: **On-line classes during pandemic times have been organized with utmost efficiency, as per students' report**. However, exposure of students is not complete: e-gadgets problem, practical classes, experience of completing projects/assignments is not comprehensive, assessments are not done comprehensively, assessments are not done for full set of students, internet/power problems are there and home milieu is not uniformly good.

On-line Classes are challenged by concerns of regional disparities in provision, individual differences in students' receptivity; of equity and justice. They need to be addressed over time.

Feedback from Parents: there are 300 parents, 185 fathers and 115 mothers (62:38). 71 percent parents discussed modalities of on-line education with colleges-HTs/Lecturers. 60 percent parents got SMART phones to their children only after online classes began. 36 percent parents shared their phones, did not have capacity for purchase of phones exclusively to children.

- 20 percent parents do not have capacity for prepaid purchase of 2 GB packages. They buy one GB Package which is used for classes. Students are unable to do post class studies, assignments, surf information and engage in projects. This proportion is 31 percent in Kalburgi division.

- Only 28 percent want regular classes even while 98 percent are happy with on line classes. Only a small proposition of parents believe that their children got addicted to mobile phone.

Section: III: EDUSAT

- **Schools:** EDUCAST refers to TV lessons of erstwhile 05 districts and Tele Education of Pandemic times 18 districts. Sample schools of the Study (50 Schools) are managed by elderly and experienced HTs. 25/50 schools get uninterrupted electricity. Out of them 09 schools have UPS facility. In effect, 16/50 schools are at the mercy of the Power God for EDUSAT programmes.

- 22/50 schools maintain a log book for use of TV/EDUSAT lessons.

- A great majority of schools face problems of maintenance and repairs of TV sets. Majority do not have an AMC. 25/50 Schools need at least one week to get their sets to order. In effect, in 54 percent schools, kids lose classes.

- In 24/50 schools teachers were not trained in integration techniques of EDUSAT lessons with school studies programme.

- 38/50 schools have rated (HTs) quality of EDUSAT lessons to be very good/good. EDUSAT lessons have been received very well by almost all the schools. 12/50 HTs report that students' performance in examination improved substantially due to EDUCAST lessons.

EDUSAT-Feedback from Teachers

250 teachers are the total sample-EDUSAT and Tele Education. 82 percent teachers report that they integrate their classes/lessons with EDUSAT/TV lessons. HTs had given a lower figure. 39 percent integrate when TV lessons are in progress, 14 percent before (give orientation to students on day's lessons before the lessons are beamed). Rest of the teachers, after the TV Classes. There is no SoP for integration of lessons.

- 50 percent students get their doubts of TV lessons clarified with teachers-teachers' feedback.

- **90 per cent teachers rate the lessons as of 'Very Good' (25 per cent teachers) or 'Good' (65 per cent teachers) quality. 'Very Good' or 'Good' certificate given by**

teachers indicates that the EDUSAT programme is successful in the State. It needs upscaling, systematization and enrichment support from DSERT.

- **EDUSAT/CIET/DSERT need to recognize individual differences among students in learning deficits, learning style, learning atmosphere at home and learning capacities of students, to maximize the utility of lessons.**

- 66 Percent teachers report that TV lessons integrate 60 percent of their syllabus. 60 percent should be considered as good. Teachers' direct interactions/teaching also matter.

- TV lessons are better in regard to narratives. They need improvement in regard to use of diagrams, maps, experiments and other visuals

Final insight: EDUSAT is an extremely useful intervention in Elementary Education, provided it is accorded a higher level of systematized attention and marginal increases in investments.

EDUSAT - Feedback from Students

Profile: There are 500 students from 50 schools, 250 each from EDUSAT and Tele Education programmes with 57 percent girls, 60 percent 4th to 8th standards and rest in 9th/10th standards.

Socio-Economic Background: EDUSAT/Tele Education is serving the **poorest of the poor** families in the State. **This programme is rich with values of equity and justice.** The Department needs to upgrade the programme through supply of LED Televisions Video-Conference facilities and issue of handouts of TV lessons.

Quality of EDUSAT (Tele Education Also)

Lessons: 88 percent students consider the lessons as 'useful', 90 percent as 'relevant to their syllabuses, 79 percent as 'Visual with Clarity', 82 percent as 'clarity in audibility' and 80 percent for 'simplicity in use of language and style of presentation'.

Lessons are not fully (by all students/more than 90 percent students) approved by students. They report on sub-optimal quality on one or the other parameters.

Coverage of syllabus: 58 percent students report that nearly 50 percent syllabus is covered by EDUSAT lessons. This should be considered as **'satisfactory'** as regular school teachers also transact lessons/syllabus. Teachers matter.

Final Insight: There is a need to be devise ways and means of maximizing the effectiveness of a good and useful programme – the EDUSAT.

Section IV: Control group students- Feedback and a comparative account with evaluation study:

- Sample for the TALP evaluation study is 650 schools and 6500 students while for the Control group it is 136 students from 68 schools.

- 15 per cent students are first generation learners (both father and mother illiterate) in both Control and Sample groups.

- Mean Level of Education (MLE) in the total sample is better in Control Group Students (7.9 years) than in Sample Students (7.1 years). In case of fathers, the values are Control group – 8.4; Sample – 7.4, and for mothers, Values are Control group – 7.6 and Sample – 6.7 years.

- Going by the MLE of control group and Sample groups, it is inferred that selection of schools under the TALP programme by the Department, a post facto revaluation, is highly justified. Benefits under TALP are going to relatively more educational backward families.

- Going by the occupational background of Control group students and sample students, it is observed that sample students group is relatively poorer than control group students. Both are poor. Their socio-economic background reveals that parents in both Control group and Sample, Sample more than Control group are constrained to get Smart phones and buy pre-paid Internet packages for uses of on-line schooling and off line (digital) project work.

- TALP umbrella, sample group, students are better than sontrol group students in regard to exposure to Computer Education/TALP practical classes, duration of practical classes per week, contribution of TALP to studies.

- However, Control group students are better than Sample group in regard to prior (prior to school Computer Education/TALP) exposure to Computer, possession of e-gadgets other than Smart phones, help/assistance from elders for Internet operations.

- Both groups are placed in the same boat in regard to access to Smart phones beyond school hours, enjoyment and likings for Computer Education/TALP classes.

FINAL WORD: TALP programme has proved to be a shade better in its benefits to students of the Sample group in comparison to similar benefits to Control group students in schools which have Computer Education (not TALP). TALP schools get pre-loaded content materials in Computers which is not the case with Control group students/schools. These e-content also make a positive difference in favour of Sample group over Control group.

Section V: Feedback from Educational Officers

There are 70 officers each from DSE (Department of School Education) and DPUE (Department of Pre University Education). Data is collected through IDI in most of the cases. Comparatives analysis across DSE and DPUE is made.

- DSE has field level/grassroots officers like Cluster Resource Persons (CRPs) and Block Resource Persons (BRPs). Both the officers-DSE/DPUE- Feel that 'adequate infrastructure' for TALP programmes is not given by the Department.

- PUE officers are relatively more strict in advising parents to purchase smart phones for on-line classes for their own wards. DSE Officers have a better reality perception than DPUE officers about socio-economic conditions and purchasing capacity (phones) of parents, as most of them work at grassroots and has a comparable status. Both DSE and DPUE officers openheartedly welcome the idea of departmental (Government) supply of Smart Phones/Tablets to economically backward parents/students. They have equal empathy.

- There is divergence in option of DSE and DPUE officers in regard to resumption of off-line/regular classes. 73 percent of DSE officers are in favour while 37 percent of DPUE officer approve it.

- DSE officers (43 percent) did household surveys to check on access/ possession of mobile phones with students for on-line classes. PUE officer depend on Principals' reports.

- DSE Officers recommend Vidyagama Classes along with teachers' supplementary teaching for slow learners/ also for those who miss/do not comprehend lesson. PUE officers recommend weekend compensatory classes (Note: There is no Vidyagama for PU Stage).

- DSE officers are relatively better in their awareness about DLR- OER and Market access, Wi-Fi applications and study related websites than DPUE officers.

- DSE officers nod their needs in full approval of Vidyagama Classes and SAMVEDA TV Lessons, as Beneficial to Students. Almost all of them have conferred with HTs and Margadarshi teachers about conduct/organization of these classes.

Final Insight: DSE officers are relatively better than DPUE officers in their perceptions and orientation for on-line lessons/classes. DSE officers are also better exposed to training programmes in this context.

RECOMMENDATIONS

Two types of recommendations are submitted in this evaluation study report: (i) Short Term which can be implemented immediately and (ii) Long term which need deliberations at higher levels of governance in the State.

Short term Recommendations.

<u>Infrastructure:</u>

1. Facilitate development of (digital) CD/DVD library in all TALP schools using DLR, OLR and audio cassettes for language learning.

2. It is recommended that DSERT provide Interactive Video-Conferencing Facility to all the schools, supply SMART LED Television Sets, integrate AMC for: all TALP activities, e-gadgets for (TALP) IT schools, IT @ PUC, EDUSAT and other e-gadgets in schools. Let the AMC be a State floated service with franchisees in all District/Taluqa Head Quarters that can reach schools within a day for maintenance, repairs and service of all e-gadgets. Provide training in use of EDUSAT to all HTs/teachers without any deficits.

3. Department needs to upgrade the EDUSAT/Tele Education Programme through supply of LED televisions (many students complained of eye-strain due to regular viewing of ordinary TVs for lessons), Video-conferencing facility (Convert all RoT schools to VCF) and issue of handouts of TV lessons.

<u>Training:</u>

1. There are Inter-district differentials in TALP training performance of DIETs (See Section 5.4). Standardize quality of training programmes, bring uniformity in training (E.g.: Hands-on-practice sessions differ). Roll out a SoP for DIETs. Ensure full complement of staff for DIETs.

2. Provide training to all HTs and IT coordinators in management of MIS in schools. Provide training in school base MIS to educational officers for M & S of MIS.

3. Provide Basic Training /orientation to all officers of Both DSE/DPUE on M and S of TALP and online classes and digital learning opportunities. Give SoP for M & S.

4. Give Training to teachers and Lecturers 2 sessions, Level I Induction Training which is already there and 2nd session on advanced digital skills with hands-on-practice and project work.

Curriculum:

1. Maximize the integration of Lessons in all subjects with school syllabi and review the quality of lessons from the perspective of end users (students) (See e-content review workshop report).

2. Quality of TV lessons-visibility audibility, language and style of prevention, relevance to syllabi need a thorough and systematic review from the perspectives of students – end users of the programmes

Monitoring and supervision:

1. Facilitate setting up of Computer Lab in schools in a systematic way issue SoP, get State level audit of computer laboratory in TALP schools.

2. Develop a handbook of TALP e-lessons, subject-wise, and distribute to students (and teachers). Involve DIETs in this exercise in a workshop mode.

3. Standardize management techniques of e-waste in schools using an environment friendly framework. Develop a SoP in this context for all end users.

4. **Develop and distribute a SoP for integration of lessons to EDUSAT teachers, (DSERT); give then a day's orientation, subject wise.**

5. There is no uniformity in DIETs in regard to strict implementation of time-table, specifically for hands-on-practice and project work. A SoP to all DIETs on TALP training is desirable.

Individual Differences:

1. Ensure remedial classes for slow learners of TALP lessons wherein computer mediated teaching /learning is there.

2. **EDUSAT/CIET/DSERT need to recognize individual differences among students in learning deficits, learning style, learning atmosphere at home and learning capacities of students, to maximize the utility of lessons.**

Others

1. **Upscaling: 90 per cent teachers rate the lessons as of 'Very Good' (25 per cent teachers) or 'Good' (65 per cent teachers) quality. 'Very Good' or 'Good' certificate given by teachers indicates that the EDUSAT programme is successful in the State. It needs upscaling, systematization and enrichment support from DSERT.**

2. **Motivation:** Develop criteria of BEST TALP School; in a district and give rewards/incentives to such schools, one from each district and top 05 for the State. This

will promote competitive performance for digital learning and promotion of digital skills, use a workshop mode involving variety of stakeholders and experts for the purpose.

3. Provide orientation to parents PTA meeting on the need and significance of online learning. Impress upon the needed home milieu for the same

4. **Assessment:** Develop a subject-wise, standard wise **Battery** of e-projects and assignments for use by schools, teachers and students. Specify number of projects/ assignments to be completed, periodicity of these exercises ensuring balance across subjects and time-use pattern of students. As an annexure, provide a list of school based 8 to 12 standards DLR web –sites and their special features.

5. **Publicity:** Facilitate publication and publicizing exercises of very good quality e-lessons developed by school teachers and students across the state. Enroll a Quality regulations mechanism. Publish information about good quality e-lessons from schools in 'Shikshana Vaarthe' magazine of e-lessons.

6. EDUSAT is an extremely useful intervention in Elementary Education, provided it is accorded a higher level of systematized attention and marginal increases in investments.

Long Term Recommendations:

There is a need for a systematic implementation of TALP programme.

State of the Art AIO Laptops (as per norms), LED projects (as per norms – strength of the school), SMART Boards with pens, colour printer with scanner, pen drives, computer tables with chairs (as per norms), UPS (generator for large schools), contingency fund for purchase of cartridges, printing paper, service/maintenance and repairs, Wi-Fi monthly telephone bills, installation costs etc. Then only TALP implementation will be wholesome (all items of a kit/package), comprehensive (all schools of the DoE) and systematic (addresses all teaching-learning concerns). Cost Estimate of a TALP tool kit is as follows: lower estimate, basic prices-Rs. 55000/-, a little higher, moderate estimate- Rs. 94000/-, with one laptop and one projector, one smart board. Details are given in the report

There is a need for a **CLOUD NETWORK** in the Department of Education with a spread across all wings of the Department. The department of Schools/PU Education should approach Centre for e-Governance (CeG) of the government to get the feasibility report, get funds from the government after a detailed network plan and get the tendering done through CeG.

Soft-ware personnel engaged on contract basis, in every taluk/district can visit PU Colleges, on a peripatetic arrangement and provide hands-on-practice, develop competencies/skills among lecturers in real time contexts when they teach units/syllabi of their subjects.

<u>**FINAL WORD:**</u>   TALP has been an excellent initiative of the DoE/ GoK in the direction of creation of a DIGITAL SOCIETY. It needs a higher level of systematization for increasing the level of efficiency, justice, equity, effectiveness and quality schooling.