

Annexure 1: Terms of Reference of the Study

Concurrent Evaluation of the Implementation Processes and Achievements of the Technology Assisted Learning Programme in Karnataka State

1. Title of the study

Concurrent Evaluation of the Implementation Processes and Achievements of the Technology Assisted Learning Programme in Karnataka State

Department implementing the scheme

Education Department-State Project Director SSA/ RMSA & DSERT

2. Background and Context

2.1 About TALP programme–(Ref: G.O. ED 64 Mahithi 2016)

Primary and Secondary Education Department is implementing EDUSAT project covering primary schools, Computer Aided Learning (CAL) in primary schools and Tele-Education project covering high schools. In the past, the department has implemented Mahithi Sindhu project, Eleventh Finance commission project, Revised CLASS project, ICT1 and ICT2 projects.

Based on the experience gained from these projects, it has been decided that existing initiatives should be brought under a common programme, which should be teacher driven and focus on the subject related content. This programme called “**Technology Assisted Learning Programme**” (TALP), will cover all Government primary and secondary schools and pre-university colleges. The programmatic approach is expected to provide flexibility and operational efficiency for subject related content creation, teachers’ training and delivery mechanisms.

Following objectives are envisaged for the programme:

2.1.1 TALP programme Objectives:

The main objectives of the TALP programme are:

- Ensure Digital Literacy for all students of Classes 8 to 12 in Government schools and colleges as per NCERT curriculum for ICT in education (year 1);
- Complement normal classroom teaching with ICT enabled teaching and learning in all subjects
 - a) Use technology and e-content for improving teaching pedagogy in classes 1 to 7
 - b) Use technology and e-content for improving teaching pedagogy as well as for enhancing learning outcomes through hands-on practice of e-content by students in classes 8 and above

- Build teachers' capacity for their role of drivers of the project at school and college levels as per NCERT curriculum for teachers
- Track students' learning achievements including that in ICT enabled learning
- Enhance learning achievements by way of improving mean score of high school students by 5 percentage in SSLC examination
- Establish school / college management information system

2.1.2 TALP Components:

There are six key components under the TALP programme:

- EDUSAT:** This component will continue with its current coverage of 2601 primary schools, but the focus will be on development of class and subject specific content, proper maintenance of ROTs (Receive only Terminals) and up-linking facility at DSERT, and establishment of mobile sms-based monitoring system.
- Computer Aided Learning in Primary Schools (CAL):** This component will seek to develop class and subject specific content, and to provide equipment (a laptop and a LCD projector) for delivery of the content to supplement normal classroom teaching in around 5325 primary schools with students' strength of above 200.
- Tele-Education in High Schools:** This component covering 1000 high schools is being implemented in collaboration with IIM Bangalore and its consortium since the academic year 2014-15. Subject to the resolution of copyright issues & contract conditions, this component will be implemented for the contract period of five years.
- IT@Schools* in Karnataka:** All Government high schools and P.U. colleges** will be covered under this component. During the first year of this programme (2016-17), priority will be given to Government high schools included under ICT 3 project and to other Government high schools from which teachers show willingness for training and use technology for IT enabled teaching and learning.
* The ICT@School component will replace the ICT 3 project. While responsibility for training of teachers from aided high schools and providing e-content may be taken by the State Governments, those schools will be asked to fund, procure and maintain the required hardware and connectivity arrangements. This limitation has become necessary due to the lack of adequate funding from Govt. of India and other higher primary demands on the funding available from the State's resources for primary and secondary education.
** P.U. Colleges will be covered from second year (2017-18) onwards.
- Student Achievement Tracking System (SATS):** Web-based UDISE system, developed with funding from Infosys foundation, will be used as the base for tracking students' learning achievements. In addition, open source applications installed in State Data Centre and school level PCs will be used to monitor usage

of e-content by students. If required, customized applications will be procured following competitive process.

- vi. **Management Information System (MIS):** Web-based UDISE system, developed with funding from Infosys foundation, will be used as the base. In addition, more customized applications will be developed.

2.1.3 TALP programme activities:

There are six major activities, which are to be taken up under the TALP programme:

- i. **Teachers' Training:** As the programme is to be driven by the teachers, capacity building of teachers is the major and prime activity. Based on the NCERT curriculum for the teachers, following three levels of trainings are envisaged:
 - a) Level 1 – Induction 01 (Basics) with ten basic refresher modules (01 to 10)
 - b) Level 2 – Induction 02 (Intermediate)
 - c) Level 3 – Advanced refresher modules (11 to 20) and Induction 03 (Advanced)
 - Induction training will be imparted through face-to-face mode, while refresher modules will be delivered through a mix of online and face-to-face mode.
 - Subject teachers and lecturers (Science, Mathematics, Social Science and English in high schools; Physics, Chemistry, Biology, Mathematics, English, Economics, Accountancy and Business studies in P.U. colleges) will be encouraged and facilitated to complete at least Level 1 of the teachers' training.
 - One teacher or lecturer per high school/P.U.college will be encouraged to complete Level 2 of the teachers' training; thereafter perform the role of IT coordinator in that high school/P.U.college.
 - About 70 teachers and lecturers (at least 2 per district) will be trained to complete all the three levels (Level 1, Level 2 and Level 3) of the teachers' training; leading to a diploma certificate from NCERT, and thereafter perform the role of 'District IT coordinator'. The training for these 70 teachers and lecturers will be on full-time basis, without responsibility of classroom teaching during the training duration. The duration will be compressed to about nine months.
 - Head Masters/Head Mistresses (H.M.s) and Principals will be given short-term training in management aspects of the TALP programme.
 - During the first year (2016-17), training of at least 2000 high school teachers (1000 Mathematics teachers and 1000 Science teachers in same high school) up to Level 1. 1000 teachers up to Level 2 and 70 teachers up to Level 3 will be completed.
 - Each of these trainings will have formative and summative assessments.

For the teachers who complete the training programmes successfully and performing the roles envisaged for them (District IT coordinator, School IT coordinator, IT trained subject teacher), suitable incentives on monthly basis will be provided from the programme budget in consultation with Finance Department.

- ii. **Content Development:** e-content for computer/digital device related competencies and for subject related competencies will be developed largely through appropriate adaptation of the content already developed by NCERT, other State government and not-for-profit organizations using free and open source software.

Fresh content development will be mostly in the form of recording of teaching lessons/lectures delivered by expert subject teachers/lecturers.

Such content will be hosted at State Data Center and made available to the schools for download in asynchronous mode and repeated use.

FAQ for each subject will be compiled and updated every year. This facility also will be available for download and local storage. Questions asked live by students during IT enabled learning sessions will be answered by their school teachers.

- iii. **Connectivity for schools and colleges:** Broadband connectivity of 2 MBPS for each school has been recommended by CeG. It is a critical component for effective monitoring of the project and distribution of e-content from SDC to the schools.

CeG's suggestion to seek the connectivity from schools up to Taluka PoP of KSWAN will be followed. Between Taluka PoP and SDC, KSWAN will be used as that arrangement is likely to provide better quality of connectivity.

Consultations will be held with BSNL to get their consent regarding feasibility of providing assured connectivity for each of the schools to be covered under the project. This feasibility check will be done before final selection of school and colleges.

- iv. **Operations and Maintenance Support:** Operation and maintenance support will be an integral part of the programme. Expansion of the programme to more government schools and colleges in second and subsequent years will be taken up only after making adequate arrangements and after earmarking funding for O&M in the schools and colleges already covered in the previous years.

- v. **Development of software for SATS and MIS:** Infosys Foundation has provided funding to M/s ICT Infracon for development of web-based UDISE (Unique District Information System for School Education). The software developed under that initiative and made available to the State government free of cost will be used as the base. Further refinements and improved systems will be developed using in-house capabilities of education department and with assistance from NIC.

- vi. **Supply of hardware to government schools and colleges:** The supply of hardware will follow and not precede teachers' training and their readiness to use the technology.

As a first step, a laptop computer with dongle based connectivity and a projector per high school or pre-university college will be provided in those schools and colleges, where at least two teachers are about to complete level 1 of training. Those teachers will be required to use e-content in their class room teaching.

Once these trained teachers become comfortable in IT enabled teaching over a period of 6 months, the concerned high school or pre-university college will be provided hardware for setting up computer lab for the students.

The CeG has recommended setting up a Central ICT Server in the State Data Center and supplying 15 Mini PCs with 1 Desktop Computer to act as Local Cache and Authentication Server, Open Source Software Linux and Open Source Applications in the concerned school or college. The procurement for the above will be taken up following an open competitive process after obtaining approval of TAP and Empowered Committee headed by Chief Secretary.

2.1.4 TALP implementation arrangements:

The TALP programme will be implemented under the following arrangements:

- i. **Empowered Committee headed by ACS & Development Commissioner:** Review the progress on monthly basis during first 2 years and thereafter at quarterly basis and provide approvals for course corrections and changes in component wise allocations within the scope approved by the Cabinet and annual outlay provided in the budget.
- ii. **Steering Committee headed by SPD, SSA & RMSA:** Monitor the progress on monthly basis, resolve inter-agency issues and provide guidance for implementation challenges faced by PMU.
- iii. **Programme Management Unit headed by DDPI or Sr. ADPI rank officer:** Implement the project, meet as a group on weekly basis, and report to Director, DSERT every fortnight. Services of 3 to 4 IT, management and content professionals from the market will have to be taken to complement the team of officers from the department.
- iv. **District Review Committee headed by CEO, ZP:** This committee with District Informatics Officer-NIC, DDPI, DDPU and DIET Principal as members will review the implementation on quarterly basis.

- v. **District Implementation Unit headed by DDPI:** Meet every month to monitor implementation progress and use of project facilities and content by teachers and students, and resolve inter-agency issues.

vi. **TALP Monitoring level:**

Monitoring Arrangement ->	Empowered Committee	Steering Committee	PMU at DSERT	District Review Committee
Headed by ->	Additional Chief Secretary & Development Commissioner	State Project Director, SSA & RMSA	Director, DSERT	CEO, ZillaParishad
Periodicity ->	Monthly – first 2 years Quarterly - thereafter	Monthly	Fortnightly	Quarterly
Scope ->	provide approvals for course corrections and changes in component wise allocations within the scope approved by the Cabinet and annual outlay provided in the budget	resolve inter-agency issues and provide guidance for implementation challenges faced by PMU	Overall TALP Implementation	Overall TALP Implementation

TALP Implementation level:

Implementation Arrangement ->	State level PMU	District level	School
Headed by ->	DDPI or SADPI	DDPI	H.M.

2.1.5 TALP programme funding:

The budget 2016-17 carries a provision of 85 crore for “Computer literacy in secondary schools”. Finance department is being requested, in accordance with the rationalization exercise for plan schemes, to rename this provision for “Technology Assisted Learning Programme” so as to cover Government Primary and Secondary Schools and P.U. Colleges and to expand the scope from mere computer literacy to IT enabled learning.

The funding available from the Government of India for ICT in Schools component of RashtriyaMadhyamikShikshaAbhiyan (RMSA) and Computer Aided Learning (CAL) under SSA will be appropriately used for supplementing State resources for this programme. An amount of nearly Rs. 18 crore is committed already for EDUSAT and Tele-Education projects, leaving a balance of around Rs. 67 crore for the new components during 2016-17.

During subsequent years, the total outlay will be limited to the budgetary funding available within the plan ceiling of the department.

2.1.6 TALP Implementation Schedule:

The programme has been planned for implementation over a five-year period to cover government primary and secondary schools and pre-university colleges as per scope and components detailed in the previous sections. The implementation schedule for the activities for the first year (2016-17) is detailed below:

Implementation Schedule

S.No	Activity	Time Schedule
1	Setting up PMU	May to July 2016
2	Development of teachers' training syllabus for all three levels	May to July 2016
3	Identification and selection of agency for imparting training	June 2016
4	Training of Master Trainers	July to August 2016
5	Establishment of systems for online refresher modules	August 2016
6	Training of 70 teachers up to Level 3	July 2016 to March 2017
7	Training of teachers and H.Ms	September to December 2016
8	TAP approval	July 2016
9	e-Gov Empowered Committee approval	August 2016
10	Procurement of equipment for classroom teaching	October 2016
11	Mapping of existing e-content to subject syllabus	July 2016
12	Development of new e-content and adaptation of content from open sources	August to December 2016
13	Start of classroom teaching	November 2016
14	Procurement of equipment for computer labs	January to March 2017
15	Start of hands-on practice for students	June 2017

3 Concurrent Evaluation of TALP

The TALP programme is being implemented in Government schools in Karnataka State since academic year 2016-17. Currently, the department is emphasizing on the Technology Assisted Learning in Government Schools. Various Technology Assisted Learning environments and learning objectives (LOs) are under active implementation into general education system.

3.1 Scope and Purpose

The purpose of the concurrent evaluation is to review the LOs of the TALP programme and to examine the impact of the TALP programme on the education of the students in the State, under well-developed pedagogical and technical evaluation frameworks, in order to suggest the most suitable one for effective and wider implementation. The evaluation is for the period 2016-17 to 2019-20. The evaluation is to cover all the **Components and Programme activities** of the TALP programme during this period.

3.2 Objectives

The main objective of the evaluation is to examine the efficacy of the TALP programme - the way it is being planned, organized and comprehensiveness of its implementation and the impact on teaching learning activities:

1. To Conduct the Sample Field Survey to obtain the vital information pertaining to the TALP programme To assess the approach towards planning, allocation and utilization of funds under TALP components
2. To analyze and report after comparison, the extent to which the Objectives of the TALP Programme supported and matched with the objectives of the centrally sponsored programmes (whether the right projects which conformed to the objectives actually supported)
3. To assess if the TALP programme activities are in alignment to the effective implementation of the TALP components and in the direction of attaining programme objectives.
4. To suggest corrective measures, if any, in the implementation process of the TALP components
5. To develop indicators (process, output, outcome and risks) so as to assess the effectiveness of the TALP programme at all stages; from planning to implementation; for use at different levels of administration viz., School, District and State
6. To document achievements and analyze to what extent the outputs/ outcomes (evidenced from objectively verifiable data) fulfill the objectives of the programme
7. To document the financial performance of the programme in relation to the approved cumulative budget outlays provided

3.3 Periodicity & schedule of Evaluation

The evaluation is to be conducted every academic year, for the completed years starting from 2016-17 to 2018-19 and Concurrent Evaluation for the academic year 2019-20

3.4 Evaluation Issues/ parameters

The following TALP activities are to be evaluated for their effectiveness and alignment to the objectives of the TALP programme

The Concurrent Evaluation shall cover various aspects of the TALP components & programme activities, including but not limited to the following:

- Institutional (Governance, Organizational Structure, Stakeholders and Infrastructure);
- Pedagogical (Learner Needs, Content Analysis, Goal analysis, design and strategy aspects of e-Learning, Teacher Driven, Self-Learning etc.);
- Technological (Delivery Solutions, Connectivity, Bandwidth, IT Infrastructure, Hardware, Software, Security etc.);
- Evaluation (Usability, Performance, Outcomes);
- Resources (Human resources, Assets, Solutions including Different Interfaces);
- Ethical (Equal Opportunity, Social and Cultural) and Financial (Budget, Procurement, Expenditure Management)

3.5 Evaluation questions

3.5.1 Related to the TALP programme

1. Critically review the progress achieved in terms of –
 - a) Budget allocation
 - b) Expenditure
 - c) Coverage of Schools & PUCs and beneficiaries over the time period based on secondary data.
2. Flow of funds – adequacy - regularity and mode of transfer
3. Performance and attainment of objectives of the TALP programme across the State. Critically examine the processes (in various stages) and their effectiveness in the actual implementation of the TALP programme. Examine them across the divisions/Districts/ rural and urban areas.
4. To analyze the supply of IT infrastructure and its operational status as well as utilization of funds in terms of purchase of contingency and other materials and bring out its impact on implementation and output delivery across different regions

3.5.2 Implementation of the TALP programme

5. Examine the functioning and efficiency of monitoring mechanism under the TALP programme at various levels
6. Examine the following TALP programme process from the point of adequacy, regularity, quality and reinforcements
 - a) Teacher Training- at the completed level/levels.
Teacher Training: Selection of Teachers- knowledge, access, willingness of teachers
 - i. e-content created by the trained teachers for delivery of lessons through ICT
 - ii. Contribution of the trained teachers to the central e-Content repository
 - iii. Involvement in conducting ICT curriculum to students
 - b) e-Content
 - i. e-Content availability & utilization (pre-loaded e-content on the school laptop)
 - ii. Readiness assessment of the students for ICT curriculum
 - iii. Involvement of other teachers (not trained under TALP) in ICT based teaching
 - c) IT Infrastructure
 - i. Availability & utilization of Laptop, Projector and Internet (internet dongle – SIM based)
 - ii. Availability & utilization of All-in-One systems in the school computer lab
 - iii. Availability & Utilization of EDUSAT equipment (where ever applicable)
 - d) Internet connectivity
 - i. Availability & utilization of broadband internet connection in the school computer lab
 - e) Maintenance
 - i. Up-time and down-time of all the IT infrastructure
 - ii. Up-time and down time of EDUSAT equipment (wherever applicable)
 - iii. Up-time and down-time of broadband internet connection in the school computer lab

- iv. Formation of ET Cell at the school and its functions as per the guidelines provided to the schools
 - v. Availability & updation of all Asset Management Registers as per the guidelines provided to the schools
 - vi. Identification & disposal process of e-Waste as per the guidelines provided to the schools
- f) SATS and MIS
- i. Availability & live updation of desired data on the dashboard
 - ii. Users of the software applications required for Academic & Administrative purposes
 - iii. Daily Attendance capture of Students
 - iv. Daily Attendance capture of Teachers
 - v. Updation of data as required by the applications on desired periodicity

3.5.3 Impact of the Programme

7. Analyze the impact on teaching activity, in the school in terms of time spent by the teachers HM during school hours on attending the TALP Teacher Training programmes across regions & gender.
8. Assess the quality of e-content. What is its impact on interactive learning processes?
9. Assess the quality of EDUSAT content and its impact on the teaching learning processes.
10. Examine the change in teaching methods and approach to children before and after TALP implementation.
11. Impact analysis of the TALP programme on the academic performance of the students in schools at different levels of learning (Comparative analysis of students' average marks of the last 3 years (pre and post TALP implementation) across regions, social groups and gender. Compare the results with control group.
12. Assess the impact on students at pre University level. (Comparative analysis of students' average marks of the last 3 years (pre and post TALP implementation) across regions, gender and social groups. Compare the results with control group.
13. What has been the change in the following (analysis on both primary & secondary data) - Categories of students, gender and across the regions.
 - a) Enrolment at high schools & PUCs
 - b) Attendance at high schools & PUCs
 - c) Transition rate – Government High School to PUCs
 - d) Dropout rate at high schools & PUCs
14. Students' feedback on the TALP interventions in the schools & PUCs:
 - a) Frequency of ICT classes per week
 - b) ICT curriculum
 - c) Ratio of Theory to Practical sessions
 - d) Computer to Student Ratio in Computer Lab
 - e) Frequency of ICT based teaching/learning for subjects per week (e Content)
 - f) Learning experience through e Content for subjects.
- 13 Assess the opinion of teachers regarding the programme. What is the change observed by them in their teaching skills and learning environment in the class room?

3.5.4 Other Issues:

1. Document the Best practices in the implementation of the TALP programme at all levels
2. Examine the School Audit reports of the TALP programme and their findings.
3. Make some case studies about TALP implementation at all levels –
 - a) Cases where non-availability of Electricity, Broadband Internet, theft cases, teachers not trained under TALP, non-availability of IT infrastructure are reported / not reported and action taken on these issues -- resolved / unresolved, time taken to address these issues etc.
4. Examine whether the SOP (Standard Operating Procedures) are followed strictly in the schools & Pre University Colleges. Examine the duties discharged by the concerned officials as per SOP.
5. Give concrete suggestions for improvement of the TALP programme for enhancing the outcomes at various levels- teacher training, e- content, monitoring and other components of the programme.
6. Review the models adopted in other States and the possibilities of their application to Karnataka State.

3.6. Evaluation Methodology

Qualitative and Quantitative research methodologies should be used together so as to back up one set of findings from one method of data collection underpinned by one methodology, with another very different method underpinned by another methodology.

The Evaluation study has to collect the data both from primary and secondary sources. The data requirement and methodology is presented below (tentative)

Data collection

Data Type	Method of data collection	Source of information	Methodology and Tools
Primary	Quantitative data	Key Stakeholders & Beneficiaries School / DIET / DSERT /DPI	Surveys, Observations
	Qualitative data		Focused Group Discussions
			Content analysis
			Interviews
Secondary	Periodical reports, proceedings of meetings (TALP Steering Committee, TAP committee etc.)	Key Stakeholders DSERT / DPI	On selected indicators relevant for the evaluation

3.7 Sample Design

3.7.1 Schools & Pre University Colleges (for TALP Implementation)

Total Schools + PUCs where TALP programme is implemented 3250

Total Educational Districts = 34

3.7.2 Sample for the study

Years	Total Schools	Schools in Sample	Sample Students	Sample Teachers	Total Colleges	Sample colleges	Sample Students	Sample Teachers
2016-17	1000	200	2000	1000	-	-	-	-
2017-18	750	150	1500	750	250	50	500	250
2018-19	750	150	1500	750	250	50	500	250
2019-20	750	150	1500	750	250	50	500	250
Total	3250	650	6500	3250	750	150	1500	750

* Schools - All the 34 Educational Districts to be covered, with at least 2 Talukas per district randomly. The sample schools should have at least 15 schools where EDUSAT programme is being implemented 10 students and 5 teachers (including 1 H.M) per school to be taken randomly for the final sample.

** P.U.Colleges- All the 34 Educational Districts to be covered, with at least 2 Talukas per district randomly. 10 students and 5 teachers (including 1 H.M) per school to be taken randomly for the final sample

Control sample of 1%

Note: Random sampling will be done at KEA

Sample for Implementing Officers

3.7.3 BEOs & BRCs (for TALP Implementation)

No. of BEOs & BRCs = 204 (each)

Sampling Size for BEOs & BRCs = 3 per district = 3 X 34 = **102**

3.7.4 DIETs / District DDPI –Admin (for TALP Implementation & Monitoring)

No. of Divisions = 4 (Bengaluru, Belagavi, Kalaburagi, Mysuru)

No. of Educational Districts = 34

Total DIETs = 34

Sampling size for DEITs = **20** (5 districts per division to be covered)

3.7.5 DSERT (for TALP Implementation & Monitoring)

Director = 01

Joint Director = 01

Deputy Director = 01

Sr. Asst. Directors (SADPI) = **06** SADPIs

3.7.6 SSA (For TALP Monitoring)

State Project Director, SSA & RMSA = 01

Programme Manager-SATs & MIS =01

Total IDI=133 (approximately135)

FGDs= 34 (1 per district)

3.8 Expected output from Evaluation

A comprehensive report highlighting, but not limited to, the following aspects:

- Effectiveness of the overall implementation of TALP programme in achieving the defined objectives as envisaged
- The specific contribution to the effective use of technology in order to comprehend the efficiency of the training inputs and e-content availability
- Quality of e-content and its contribution towards interactive learning processes
- Gap between approved physical and financial targets vis-à-vis achievements
- Infrastructure development and maintenance along with power supply and internet connectivity
- Effectiveness of programme management system
- Roadblocks/congestions/constraints in the implementation of the programme, in terms of availability of personnel's, budget, support system, monitoring system, etc.
- Suggestions and recommendations
- Separate reports for each year and a consolidated report.

3.9 Deliverables & Time schedule

The Department of Public Instruction and KEA will provide the necessary information pertaining to the concurrent evaluation study and also co-operate with the consulting organization in completing the assignment task within the stipulated time period. The concerned officials (at all levels) will be instructed by the department for providing the required information/data at the respective levels.

Deliverables vs Timelines:

Inception Report	1 month after signing the agreement
Field Data Collection	4 months after the inception report
Draft report submission	1 month after Field Data Collection
Final report	1 Month after Draft report submission
Total duration	7 Months

3.10 Qualities Expected from the Report

The evaluation report should generally confirm to the United Nations Evaluation Guidelines (UNEG) "Standards for Evaluation in the UN System" and "Ethical Standards of Evaluations".

The report should present a comprehensive review and assessment of the TALP programme in terms of the content, implementation process, adequacy, information and impact on the beneficiaries.

The qualitative data should be used in unbiased manner to support or for further analysis of the reflections from the quantitative data. The analysis should provide adequate space for assessing the variations across the regions. Case studies to be presented to bring out the realities at the field level.

This is a concurrent evaluation. Therefore, the report should come out with specific recommendations based on adequate field evidence for any modifications in the programme design, content, implementing procedures; and any other modifications to take up mid course corrections to improve the access and impact of the Programme.

3.11 Structure of the report

The following are the points, only inclusive and not exhaustive, which need to be mandatorily followed in the preparation of evaluation report:

The report should be complete and logically organized in a clear but simple language. Besides confirming to the qualities covered in the Terms of Reference, report should be arranged in the following order:

1. Preliminary Part

- a) Title and Opening Page
- b) Index
- c) List of acronyms and abbreviations
- d) Executive Summary- A section that describes the program, purpose and scope of evaluation, research design and methodology, key findings, constraints and recommendations.

2. Background - A section that briefly covers the history or genesis of the sector under which the programme being evaluated is covered. It should give recent fact sheets taken from reliable and published sources and review of the progress of the programme at all levels.

3. Objectives and performance of the program - This section includes the Stated objectives of the program and the physical and financial achievements of the selected program in the period of evaluation. It should cover the description of the target group, aim of the program and method of selection of beneficiaries and the physical and financial achievements.

4. Review of literature/past evaluation reports and their findings

5. Evaluation Methodology - This should include research design, sample design and size, questionnaire design and pilot test, data collection and quality assurance plan.

6. Limitations/constraints in the evaluation study

7. Case Studies & Best Practices

8. Findings of the evaluation study

9. Recommendations that flow from the evaluation

10. Annexure

- a) Sanctioned Terms of Reference of the evaluation study
- b) Survey tools and questionnaires
- c) List of persons with addresses personally interviewed.
- d) Place, date and number of persons covered by Focus Group Discussion (if applicable).
- e) Table showing details of major deviations, non-conformities, digressions of the program.

4. Study Team- administrative arrangements

Principal Investigator	I Class Postgraduate in Education/ /Ph.D in the subject is preferable.	05 & more years of experience in Education/ and related sectors./ experience in education training, content development
1 st Core team member	Postgraduate in Education.	Should also possess a minimum of three (3) years of experience in Education/ / allied sector projects/

2 nd Core team member	Postgraduate in MCA / MSc. Computer Science /Statistics with knowledge of Statistical analysis	3 years' experience in data analysis
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The department and KEA will arrange to provide all the necessary data and information to conduct the evaluation study.

5. Cost and Schedule of Budget release

The Output based budget release will be as follows-

1. The **first instalment** of Consultation fee amounting to 30% of the total fee shall be payable as advance to the Consultant after the approval of the inception report, but only on execution of a bank guarantee of a scheduled nationalized bank, valid for a period of at least 12 months from the date of issuance of advance.
2. The **second instalment** of Consultation fee amounting to 50% of the total fee shall be payable to the Consultant after the approval of the Draft report.
3. The **third and final instalment** of Consultation fee amounting to 20% of the total fee shall be payable to the Consultant after the receipt of the hard and soft copies of the final report in such format and number as prescribed in the agreement, along with all original documents containing primary and secondary data, processed data outputs, study report and soft copies of all literature used in the final report.

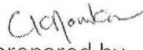
Taxes will be deducted from each payment, as per rates in force. In addition, the evaluating agency/consultant is expected to pay service tax at their end

6. Selection of Consultant Agency for Evaluation

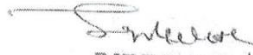
The selection of evaluation agency should be finalized as per provisions of KTPP Act and rules without compromising on the quality.

7 Contact person for further details

- B.H.Girija, Nodal Officer, Senior Assistant Director, Department of State Educational Research and Training, No 4, 100 feet Ring Road, Banashankari 3rd Stage, Bangalore, Contact No. 9845745871, Email: bhgirija.1998@gmail.com
- Consultant (Evl.) KEA


ToR prepared by
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Annexure
TALP PROGRESS – As on July, 2018

I. IT@SCHOOLS IN KARNATAKA

1. Teacher content development and training

During 2016-17, 2000 Teachers (Mathematics and Science) and 1000 HMs from 1000 selected Schools were trained with GOK prepared Induction-1 content.

During 2017-18, 2000 teachers (Social Science and English) of the same schools have been trained using content prepared by CIET for Induction-1. This programme consists of instruction session, hands on activities, assignments for e-portfolio submission. All the contents are made available on a MOODLE platform (ictcurriculum.gov.in) and handouts are available for all these activities. 3000 Mathematics, Science, Social Science & English Teachers and 750 HMs of schools selected during 2017-18 were trained this year using the same content. 320 MRPs (10 from each educational district) have also been oriented on Induction-1 content developed by CIET. In all as against the target of 5750 teachers, 5116 have been trained during 2017-18, a progress of 90% has been achieved. 90 MRPs of PU Board have been trained in Induction-1 for 10 days trained lecturers of 250 colleges selected during 2017-18.

A two day orientation on mentoring online refresher course was conducted by CIET faculty for 143 including MRPs and SRPs. The Refresher-1 Course for 8 SRPs was launched on 13th Nov 2017. During the course of SRP training on Refresher-1 through online mode, CIET experienced challenges in providing online training course that would have to cover thousands of teachers in the due course. Hence, CIET has suggested the course to be redesigned as face-to-face training of 5 days with submission of around 20 assignments. This redesigned model is yet to reach the state from CIET and the same is supposed to get imparted to SRPs and MRPs in the month of April 2018. This will be in turn taken up for training of teachers at DIETs for those teachers of 2016-17 and 2017-18 who have completed Induction-1 training.

For Induction-1 training as prescribed by CIET, 140 hand-outs in Kannada have been developed by the content development team consisting of Government School teachers and in collaboration with APF. The same have been aligned with CIET curriculum with 52 video contents. These 52 videos have been shot in English and published on YouTube channel for wide utility provision with a link to DSERT website.

The videos, nearly up to 120 in number, which were developed for Refresher-1, before CIET revisited the format, are being edited for publishing for the use of teachers. The videos on Apps and Tools like **Geogebra**, **Stellarium**, **PhET**, **Google Earth** etc are being edited for ready reference of teachers. APF is assisting in shooting and editing of these videos. The videos are under final review before publishing the same on **YouTube**.

Progress during 2018-19:

Under Induction-1 training, each trainee is supposed to submit 39 assignments. The assignments of 8026 trainees submitted under this training programme are being reviewed by mentors. 225 mentors have been identified for evaluating these assignments by assigning the assignments of 30 to 35 trainees to each mentor. The mentors and trainees are to be registered in the MOODLE platform by the state resource persons and only then mentors can evaluate the assignments. This process was delayed due to non-functioning of the CIET portal for more than 15 days in the month of June 2018. The portal is allowing just the view of assignments and assessment is being carried out through recording on Google sheet in few districts from the end of July 2018. The evaluation of assignments is significant for announcing the teachers to be eligible for Refresher-1 training based on the grading of Induction-1 training programme.

It is very necessary to carry out assessment on the portal for complete monitoring and grading of individual trainee. Presently CIET is developing a new cloud based portal (In-service Teachers Professional Development) to sustain the load of huge number of trainees and assessments of Karnataka. This is under auditing stage at CIET and may be made available shortly. This will further help in conducting online courses.

During April and May 2018, Induction-1 training was conducted in 2 teams for DIET and DSERT faculty from April 9 – 18, 2018 and from May 16-25, 2018 covering 75 members.

Based on the instructions from Government, teachers of Tele-Education Government High Schools are being giving Induction-1 training. 4 subject teachers from 444 schools of 23 DIETs are being given Induction-1 training at 23 DIETs from July 2018. 527 teachers have been trained so far out of 1776 schools with 30% progress. The training of these teachers will be completed by the end of August 2018.

Refresher-1 training:

11 days Refresher training for State Resource Persons was conducted by CIET at RIE Bhopal from 19.06.2018 to 29.06.2018. A team of 15 Resource Persons were sent to this training programme. These 15 Resources Persons are training 126 MRPs in three batches at Bangalore with 4 MRPs from each district. There are 36 Sessions and 33 e-portfolio assignments in the course. Training is being conducted at DSERT, Bangalore and DIET Bangalore Rural from 30.07.2018 to 08.08.2018 and at DIET Bangalore South from 06.08.2018 to 15.08.2018. These MRPs will have to submit their assignments within August 2018 and SRPs will grade these assignments. District level training of teachers will start from August 2018.

A request has been raised with PMCU of TALP project to assist in designing the online tracking system to assess the impact of training programme in the classroom processes. However there is also an effort to collate the information received through google.com. This monitoring format is capturing the school practices in Technological Pedagogical Content Knowledge by teachers. The DIETs are using these formats to review the progress in schools and the same are getting updated on google.doc. About 750 schools have been visited so far and training related information of these schools is readily available. Many google forms are being updated using hard copies which were not entered online due to network issues. 80% Assignments of 2016-17

batch teachers have been submitted so far. There is a continuous effort in motivating the teachers to complete their assignments. DIETs and MRPs are following it up with teachers and extending support to complete their assignments through interactive sessions after the school hours.

2. Mapping and developing Digital Learning Resources / e-content

a. Pre-loading of e-content on laptops: Digital Learning Resources (DLRs) have been shared with 1000 schools so far under the project as pre-loaded content on laptops supplied to these schools in the first phase. Same will be done with another 750 schools who will receive laptops in the last week of March 2018. The contents so far preloaded cover Mathematics and Science subjects. These contents are mapped on the offline webpage for an easy navigation for teachers and students in schools. The available DLRs from Tele-education, Edusat, CALC, Olabs, Khan Academy, KOER, Radio, Agasthya Foundation have been mapped and integrated to class 8 to 10 syllabus for the preloading of contents. A google form was circulated to schools where laptops were supplied for feedback on the contents pre-loaded. 377 teachers have responded so far. The teachers are finding it useful for classroom interactions.

b. Curation of 45 Olab Experiments: Curation of 45 Olab Experiments including animations, simulations and videos is completed and the offline version of Kannada videos that were developed in convergence with AmruthaVidyaPeetham, Kerala, has been provided to DSERT. These are hosted on AmruthaVidyaPeetham website.

c. e-Resource development for Social science and English Language: The task has been taken up and two meetings were held with Social Science and English teachers to identify the resources.

Mapping of available e-resources and need analysis workshop was organized from 17.07.2018 to 21.07.2018 at DSERT, Bangalore, 8 resource teachers from each of English, Social Science, Science and Mathematics. English team is of the opinion that if they were trained in "Animation Skills" and "Audio and Video Editing Tools" they can create the resources suitable for language teaching in the classroom.

d. e-Reflection with e-Reflectors:

e-Question Banks with self evaluation package in English, Science, Mathematics and Social Science has been developed for class 10 syllabus with macros enabled excel sheet. This was developed for English subject by Mr.SathyanarayanHegde, AM, GHS, Ummachagi, Yellapura Taluk, Uttara Kannada District. Further, DSERT has asked other districts to design similar e-Question Banks in subjects like Science, Mathematics and Social Science. This was developed between Aug 2017 and Nov 2017 and shared with DIETs through emails during Dec 2017. DIETs have been directed to circulate it to all schools and the schools are already using these e-Question Bank. Feedback has been received from teachers on the utility of e-reflectors. 377 teachers have given their feedback through google form. Most of the teachers are finding this useful, particularly in schools where computers are available for the ready use of students.

e. ICT student course content for year-1:

ICT student curriculum for all the 3 years is available in English in CIET website which is developed as per the National ICT Curriculum. ICT student course for year-1 has been translated to Kannada language at DSERT. The first phase of peer review of the translated content has been completed.

One Brainstorming Workshop was organized to discuss and decide on the ICT content to take up in the State. ICT content by CIET-NCERT, ICT content followed by the States of Kerala, Telangana, Mahiti Sindhu and NSQVF are compared and Analyzed.

Follow up meeting was held and it was agreed to follow ICT content by CIET-NCERT and the Structure of Telangana ICT Text Book.

f. Localisation of Khan Academy e-content:

Government of Karnataka has partnered with Khan Academy to make available the educational content including videos, exercises, articles and teacher tools, in Kannada by signing an MOU on 13.09.2017. Under the partnership, DSERT, Karnataka will translate and localize the contents in Kannada. This process includes localizing already available 5,500+ videos and 20,000+ exercises in Mathematics and Science, including dashboards.

A Government Order for Localization of Khan Academy Resources- ED 09, Mahiti 2018, Bengaluru, Dated 01.02.2018 is issued. In the Month of April Inperson meeting with 5 shortlisted resource teachers was held out of which 2 teachers were selected for Video creation and all the 5 for translation of Math Practice teachers. 2 resources teachers were selected as Approvers of translated Math practice sheets and 2 DIET lecturers are working on translation and approving KA Website.

Video Creation:Steps were taken to deploy 2 teachers selected for Video creation on fulltime deputation.

Text Translation: Translation work is in Progress. Website translation as complete, approval is yet to be done. About 30% of Math practice sheets is done.

3. Procurement of hardware/software and technical human resource:

a. LCD projectors and Laptops:

For 1000 schools selected under the project during 2016-17, 400 LCD projectors (600 schools had reported the availability of working LCD projectors) and 1000 Laptops have been supplied in the month of Sept, 2017. For 750 schools selected under the project during 2017-18, LCD Projectors have been supplied to 365 schools (385 schools had reported the availability of working LCD projectors) 365 LCD Projectors and 750 Pre loaded Laptops supplied and installed in the month of March for which 80% out of 70% of the tender amount has been released to the vendor. The detailed circulars and guidelines were issued to all the schools through DIETs. Feedback and usage of these materials is being collected from DIETs.

b. School Computer Labs:

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Entry level All-in-One computers have been approved by the TAP committee and a Government Order dated 27.02.2018 has been issued. The Tender committee prepared draft RFP. The approved tender document floated in E-Procurement on 27th of March 2018 as long term tender. According to schedule of tender the technical proposal opened on 20th July 2018 for two bidders participated in this. It is being evaluated by the Tender Committee. Each school will get All-in-One computers (under the slabs of 10 computers, 15 computers and 20 computers depending on the student strength), a Server, BSNL FTTH connection and Content Delivery Network (100 schools on pilot basis). The school labs will be functional and will be available to impart student curriculum from October, 2018 onwards.

c. DIET Computer Labs:

340 laptops to 34 DIETs, with 10 computers to each DIET, have been supplied during 2017-18 and all DIETs are using these laptops in their training programmes. 30 DIETs received the laptops during Dec, 2017 and 4 DIETs received the laptops during Feb, 2018.

d. Data cards to 1000 schools and 30 DIETs:

A meeting with BSNL officials was held on 30.11.2017 to discuss the feasibility for the supply of Data Cards to schools and DIETs. BSNL suggested for having the Fiber Optic Network Connectivity in place of providing 2G Data connectivity as it would not be possible to have tower connectivity in rural areas and particularly the 2G connectivity would not even make possible the downloading of any webpage/e-content. Hence the proposal to provide Data cards to schools and DIETs has been dropped and DSERT is considering the suggestion by BSNL to provide Fiber Optic Network Connectivity.

e. DSERT Computer Lab:

A state level computer lab with a capacity of 40 All-in-One computers has been created at DSERT. The computers have been supplied and the lab will be inaugurated in the 3rd week of March, 2018. This lab will be used for state level training programme and development activities under TALP project. Till the date five state level training programmes have been successfully carried to MRPs and DIET faculty.

f. BSNL connectivity to school computer labs:

FTTH connections have to be provided to 1000 schools selected during the year 2016-17. A monthly plan of Rs.1091/- for broad band connections with 8 Mbps speed has been approved for 1000 schools. A one-time cost of Rs.14500/- towards ONT and Rs.750/- towards installation has been proposed by BSNL in its proposal dated 14.02.2018. However, based on the decision of the 6th Steering Committee meeting held on 08.01.2018, the action has been initiated to purchase a single unit RJ45 connector and BSNL NTU that will replace a separate switch and modem but it was tested by BSNL officials and opinioned thus not compatible. A meeting will have to be held with BSNL for deciding on the required modem.

g. Establishment of Programme Management Consultancy Unit – PMCU

PMCU has been setup in DSERT for the implementation of TALP activities. NISG, Hyderabad is providing the required support for constituting this unit by deputing required personnel. MoU

has been signed with NISG in this regard. PMCU will have a Project Manager, Functional Consultant, Technical Consultant and E-Content consultant. The PMCU supports the department in implementing the various activities like Teachers' training, Content development, broadband Connectivity to schools and colleges, Operation and Maintenance Support, Development of software for SATS and MIS, Supply of hardware to government schools and colleges and TTMS and Examination management system for secondary and higher secondary (pragathi), etc. According the MoU DSERT paid the fund till Feb 2018. The functionality of the PMCU (NISG) resource team received by Hon'ble Principle Secretary and TALP nodal officer also Director DSERT on time to time.

The PMCU is now assigned with the complete IT architectural development of the department as per the note of the Principal Secretary, Primary and Secondary Education, on 22.01.2018. The Project Manager and the Technical Consultants are placed at SSA state office as the team is part of the Project Monitoring Unit of the State Office.

h. Selection of schools for 2018-19:

A ToR for selection of schools for implementing IT@Schools in Karnataka programme is being prepared. 750 schools will be selected based on the availability of infrastructure and required number of teachers. Funds will be released to DIETs for status check of these schools based on which site preparation cost will be paid including 750 schools and last 2 years 1750 schools status check of UPS, Battery, LCD Projectors will try out through OEM which supplied the previous equipment. Tenders will also be invited for supply of hardware to 250 colleges as per the directions from Government.

i. Room/site preparation in 1750 schools selected under IT@Schools during the last 2years:

All 37 non-ICT schools have utilized the site preparation cost of Rs.179352/- released during July 2017. The other 939 ICT schools had placed their requirement of funds for repair and replacement under room preparation activity. Rs.529 lakhs has been released based on the requirement received from the DIETs during Feb 2018. A detailed guideline has been issued regarding the utility of funds for site preparation and directions have also been provided in the video conference held on 17.02.2018 with DIET Principals. Progress in this regards has been reviewed and 940 schools have presented the documents of to establish completion.

j. Verification of computer labs in schools selected in 2017-18

A ToR is being developed for status check of 2250 schools. A meeting held with OEM's of previous projects supplied equipments. The status report is expected to get compiled by the 2nd week of August 2018 for which funds will be released by the end of August 2018. These schools will have the computer lab established by Oct, 2018 for imparting digital literacy to students.

II. TELE-EDUCATION

The Tele-Education project is based on SAME model i.e., streaming of Tele-lessons using Satellite Advancement Multimedia Education (SAME/Tele-education). IIMB Consortium is providing the technology platform for remote rural school student interaction with Subject

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Matter Experts (Moderator) during Tele-education classes to clarify their doubts after LIVE sessions. This facility has undergone transformation from the initially visualized model owing to the challenges of broadband connectivity in the field.

1000 rural schools were selected for the action research project by IIMB during 2013-14. The programme covers 700 High Schools and 300 Higher Primary Schools. The MoU was signed on 06.03.2014 between DSERT and IIMB. The studio located in DSERT is being used to telecast the programme through EDUSAT hub. Two-way connectivity is a key component required for interactivity and learning can occur in interaction method.

The Project is under consideration of the Government and hence is not being implemented in 2017-18.

III. EDUSAT

- a. Telecast of video lessons under EDUSAT programme is being implemented in collaboration with ISRO since 2004-05. The programme is being implemented in five districts, Bangalore Rural, Chamarajanagar, Kalburgi, Ramanagar and Yadagiri. This programme is being implemented in 2547 schools from Class IV to Class VIII in the current academic year. The transmission of Edusat Lessons has begun from 20.07.2018.
- b. Supply of equipments and installation in 41 centres for Video Conferencing is completed from the Centre of e-Governance. KSWAN connectivity for all 41 centres is being provided by CeG for Video Conference facility. Components like VC Endpoint, Display, UPS (1KVA) and KSWAN 2 Mbps Connectivity are part of this infrastructure. These equipments have been supplied and installed in all 41 locations. Till the day of this report preparation 21 DIET's, 6 DDPI's office, C.P.I Office, P.U.Board & DSERT locations have been given connectivity. It is assured to complete the connectivity by 2nd week of August 2018. A DO letter has been drafted to be sent to Centre for e-Governance through the Principal Secretary, Primary and Secondary Education for completion of the work without further delay as the work is taking more than 15 months.
- c. The Up-gradation of Krishna Studio, SIT Studio and Audio Room located at DSERT has been completed. In this regard, DSERT has formed a Technical Committee for checking the Installation, Commissioning and quality of audio and studio equipments as per the specifications. The Installation, commissioning and acceptance test was conducted on 28.07.2018. The Technical committee has submitted the report regarding the observations done for the acceptance of Studio equipments. Completion of Installation and Commissioning is awaited from the supplier as per the Committee report.
- d. For real time monitoring and analytics on the success of EDUSAT programme, Automated Monitoring System is being built into the project in convergence with Centre for e-Governance. The Pilot testing at Ramnagar district was done in the 1st week of April 2018 and used from 20.07.2018.
- e. CIET, New Delhi, MHRD sent offer letter to start DTH TV channel under the Umbrella of "SwayamPrabha". The Government of India has decided to bear 2.05 crores as one time cost to set up channel. In this regard Hon. Principal Secretary, P. and Sec Govt. of Karnataka

ordered to submit the proposal to start DTH TV channel at DSERT under the umbrella of "SwayamPrabha". In this connection DSERT requested to provide necessary technical support to assess the existing facilities and suggest any further equipments for upgrading/upgrading/modernizing the facilities at DSERT to begin the education channel.

- f. On DSERT's request Joint Director, CIET sent Smt.PushpalathaKumari, Sr.Engineer from CIET(NCERT), New Delhi. She visited DSERT on 28.07.2018 and 30.07.2018 and inspected the Studio's existing equipment, Bandwidth and available content. She informed that the report will be submitted on 01.08.2018. Proposal will be submitted to CIET, New Delhi, MHRD after receiving report from Smt. PushpalathaKumari, Sr.Engineer from CIET(NCERT), New Delhi.

IV. Radio Programme:

The Radio Programme was started in the year 2000-2001. It was being implemented for class 1 to class 8. The department sponsored the broadcasting of radio lessons to schools on payment mode. The programme had to be evaluated for its effectiveness in Nali-Kali classroom where Class 1 to 3 students learn in a joyful learning atmosphere and integrating radio lessons is a challenge. Further, preparing classes for radio lessons and providing time in multi grade primary schools is an added challenge in allowing the lessons to be heard by students. In this regard, the Government decided to conduct an evaluation of the programme to understand the effectiveness in these classrooms and improvisation required. A letter has been written to the Karnataka Evaluation Authority for evaluating the programme for which a ToR has also been submitted. KEA is seeking 8 to 10 months time to complete the evaluation and submit a report after which decision on the further course of action may be taken.