

**MAJOR COMPONENT- Quality Interventions**

**SUB-COMPONENT- Funds for Quality (LEP, Innovation, Guidance etc)**

**ACTIVITY MASTER- Project - Innovative Activities (Secondary & Sr. Secondary)**

**ACTIVITY- Smart Class Rooms/Digital Boards**

## **1.Progress for Smart Class Rooms/Digital Boards in AWP&B 2019-20**

PAB 2019-20 approved installation of digital boards in 75 schools at an outlay of Rs.82.5 lac and expenditure for Rs.82.50 lac was incurred.

## **2.Proposal for Smart Class Rooms/Digital Boards in AWP&B 2019-20**

As education continues to develop through the integration of technology in and outside the classroom, the mentality among many teachers has started to shift as well. There used to be a fear that technology would eventually replace the teacher, but the more prevalent view now is that it is a tool which can be applied to enhance conventional teaching rather than replace it. Integrating technology in education helps students stay engaged. Technology uses interactive modules like videos and presentations and these visually attractive methods of teaching become appealing to students who are already struggling with the traditional method of teaching in a classroom. This is because the audio-visual senses of students are targeted and it helps the students store the information fast and more effectively.

### **Benefits of Technology Integration in Education:**

- The teaching strategies based on educational technology can be described as ethical practices that facilitate the students' learning and boost their capacity, productivity, and performance.

- Technology integration in education inspires positive changes in teaching methods on an international level.
- The teacher simply cannot discover a way of presenting tough concepts that makes the concept clear for each and every student in the class. Technology has that power. Through audio-visual presentations, students will understand exactly how the knowledge is applied in practice.

#### Expected Outcomes:

- The use of multimedia tools in classroom will motivate the students and enhance their knowledge.
- The students' physical as well as mental presence in class will be increased.
- Student will get the experience to travel throughout the world via the virtual space.
- The use of technology will help the students to get quality education with less expenditure.
- This will lead to child-centered learning through technology.
- The use of exploratory learning helps students learn with ease and enjoyment.
- It motivates creativity, aesthetic aspect, analytical ability, problem solving ability and sensitivity of the teacher and students.
- It helps the teacher and students be more enthusiastic in teaching learning process.
- The teacher can improve the attendance and get better results through integration of technology in education.
- By using audio/video modules in class, the involvement of students can be made easy. Technology can make them better understand about the concept.
- Activity-based digital learning helps the students explain things to present their views and to find the solution.

#### **Proposal:**

Going by the response of students as well as teachers regarding the benefits of Digital Board/ Smart Classrooms, it has been found that there is overwhelming excitement among the teacher and the taught. The students have shown a keen interest

in learning through smart classes. The recommendations of teachers and school heads are also heart warming.

In view of the overwhelming response from the students and teachers, the Department of Education feels the need to convert all schools into Smart Classroom by supplementing with Four Integrated Devices at least. The proposed solution and requirement of funds for establishment of these Smart classrooms are given below:

### **Integrated Community Computer (ICC) based learning solution:**

The ICC solution is a holistic solution towards providing an interactive learning environment in the school. This is a teacher-centric-approach-based solution. All components of the platform, be it technology, or content, has been devised to facilitate the teacher to make the entire learning experience magical in the classroom.

#### **Benefits of Integrated Community Computer (ICC) Solution:**

- (a) All in one educational device: This ensures that one device performs several different functions removing both the hassle and cost of buying, using and maintaining separate devices.
- (b) Cost optimisation: Eliminates the need for installing separate infrastructure in every classroom as it can be carried into every classroom with ease
- (c) Any room can convert into an interactive classroom: This is a unique feature which eliminates the limitation of having special boards, thereby making it a perfect solution for those on constrained budget of limited number of classrooms
- (d) Concept based multi-media content: The solution must come with NCERT framework-based state board syllabus for the schools to introduce concept-based learning approach. This will reduce the absenteeism in the school and create learning interest in the students. This content makes learning fun, engaging and helps students connect to it better.

#### **About Solution:**

The Digital Integrated Community Computer (ICC) is based on the Holistic Classroom Learning Model for the Schools, which incorporates the following components:

- I. Integrated Community Computer (ICC)
- II. Training and Capacity Building of Teachers
- III. Project Monitoring and Maintenance

**IV. Objective of the Proposed Solution:**

**The proposed solution aims to achieve the following objectives:**

- (a) Revolutionize the Teaching-Learning process in the schools by setting up of innovative IT enabled education solution
- (b) Enable a technology driven learning environment in schools with an ingenious combination of technology and curriculum mapped content
- (c) Empower the teachers of schools in acquiring IT skills and to feel confident in using IT as an effective teaching tool
- (d) Facilitate overall development of the students by providing them access to the world of information and modern teaching methodologies
- (e) Focus on the traditional methodologies of learning delivered through futuristic technologies but with a clear focus on learning outcomes

**II. Components of Integrated Community Computer (ICC) Solution**

Compared to conventional smart class technologies, the Integrated All-in One technology was developed keeping in mind the user i.e. teacher and student and not the technology itself, as given below:

| Features               | Integrated Community Computer (ICC)   |
|------------------------|---|
| Technology Integration | Multiple Components Integrated into a Single Compact Unit including Large Screen TV |
| Ease of Setup & Use    | Being a Single Cable Plug-inDevice, it is very easy to Setup                        |

|                       |   |
|-----------------------|---|
| Portability           | A Compact Unit with single Plug-in Cable, it can easily be moved anywhere in the school |
| Experiential Learning | Wireless Keyboard and Mouse, can be carried anywhere in classroom for use by Students   |
| Image Size            | Screen Size can go up to 300" diagonally  |
| Costs and Maintenance | An Integrated device which is affordable and requires low maintenance                   |

### III. Training and Capacity Building of Teachers

The capacity-building of teachers is designed to create comprehensive teachers' capacity. The concepts covered are:

- Basic IT Know- how
- How to use the Solution
- Integration of Multimedia Learning Modules in Regular Teaching
- Classroom Management Skills

### IV. Project Monitoring and Maintenance:

The education provides complete project maintenance and monitoring for three years wherein a dedicated team of project monitoring resources works continuously to ensure adequate service delivery to each place through a Centralized Control Centre.

### V. Technical Specifications of Integrated Community Computer (ICC) solution:

| Technical Specifications | Integrated Community Computer (ICC) Solution          |
|--------------------------|---|
| Brightness               | 3000 ANSI Lumens (Short Throw)                        |
| Contrast Ratio           | 18000:1   |
| Lamp Life                | 4000 Hours (Standard Mode) & 3000 Hours (Bright Mode) |
| Resolution               | SVGA 800 x 600  |
| Computer System          | Intel Core i3 Processor, 6 USB ports,                 |
| HDD                      | 1 TB  |
| Input                    | Wireless Keyboard and Mouse, DVD RW                   |
| Output                   | VGA   |
| RAM                      | 4 GB RAM  |

|                       |  |
|-----------------------|--|
| LAN / Internet        | 1 x Gbps Ethernet Connectivity, Internet ready device, Bluetooth and Wi-Fi |
| Audio                 | 30 W   |
| Inbuilt Interactivity | Minimum 120" diagonal Finger Touch/Pen Interactive Screen                  |
| Operating System      | Windows 10 SL or higher  |
| Weight                | 6.5 Kg   |
| Certification         | UL   |

The prioritization of schools is as under:

(Fin. In Lac)

| <b>Digital Classroom Technology 78 devices</b> |                 |                  |                  |
|--|-----------------|------------------|------------------|
| <b>Spill over</b>                              |                 |                  |                  |
| <b>District</b>                                | <b>Physical</b> | <b>Unit Cost</b> | <b>Financial</b> |
| East   | 4               | 1.1              | 4.4              |
| North East                                     | 15              | 1.1              | 16.5             |
| North  | 10              | 1.1              | 11               |
| North West A                                   | 6               | 1.1              | 6.6              |
| North West B                                   | 13              | 1.1              | 14.3             |
| West A   | 2               | 1.1              | 2.2              |
| West B   | 6               | 1.1              | 6.6              |
| South West A                                   | 2               | 1.1              | 2.2              |
| South West B                                   | 7               | 1.1              | 7.7              |
| South  | 3               | 1.1              | 3.3              |
| South East                                     | 7               | 1.1              | 7.7              |
| New Delhi                                      | 0               | 1.1              | 0                |
| Central  | 3               | 1.1              | 3.3              |
| <b>Grand Total</b>                             | <b>78</b>       | <b>1.1</b>       | <b>85.8</b>      |

**Financial Proposal:**

(Fin. In Lac)

| <b>Sr.</b> | <b>School Category</b> | <b>No of schools</b> | <b>Unit Cost</b> | <b>No of Units per school</b> | <b>Fin.</b>  |
|------------|------------------------|----------------------|------------------|-------------------------------|--------------|
| 1          | Left out schools       | 78                   | 1.1              | 1                             | <b>85.80</b> |
|            | <b>Total</b>           |                      |                  |                               | <b>85.80</b> |

### **3.Recommendation of Technical Support Group (TSG)**

|                 |      |      |     |    |     |      |   |     |     |
|-----------------|------|------|-----|----|-----|------|---|-----|-----|
| SMART Classroom | 0.00 | 0.00 | 0 % | 78 | 1.1 | 85.8 | 4 | 1.1 | 4.4 |
|-----------------|------|------|-----|----|-----|------|---|-----|-----|

### **4.Costing of Project Approval Board (PAB)**

| Sub Component | Activity Master  | Level | Physical | Unit Cost | Financial (In lac) |
|---------------|--|-------|----------|-----------|--------------------|
|               | Digital Classroom Technology (K-Yan) (1019 + 78 left out -2018-19) - Non Recurring (Spillover) |       | 78       | 1.1       | 85.80              |