

Dear Members,

The second e discussion on the framework for ICTs in school education covered Content and Quality Issues addressing the subjects of e-Content Development and Delivery, Quality in School Education, Innovations and Research. We are delighted at the valuable expertise sharing from the ICT for Development and Education Community members. Thanks to the positive response to our second query, we have been able to learn of:

Subject 1: E –Content Development and Delivery

| Issue | Question 1 | Question 2 | Question 3 |
|------------------------------------|---|---|---|
| E–Content Development and delivery | Experiences and examples (case studies, recommendations, etc), on mechanisms for delivery of digital content (computer-aided multi-media, Edusat, Radio, TV, etc) to reach schools. | Challenges in procurement of quality digital content (computer-aided, TV, Radio etc) for schools, especially pertaining to local languages. | Suggestions for strategic and practical use of digital content in the school education system? Are there any experiences that can be evaluated? |

- Content is not ample in the state run boards of both secondary and higher secondary section. It is therefore the responsibility of respective local players or bodies of educational players to create content. IL&FS ETS Ltd has tried a lot by introducing 1093 lessons from class KG to 12 (<http://www.ilfsets.com/Solutions.asp?menuid=3&smenuid=12&childid=1&pageid=3121>). IIT Kharagpur shall also be explored which has developed excellent content for primary education, also covering the entire length of the school standard (KG-12/K12).
- To deal with procurement challenges of digital content, KYAN of IL&FS (<http://www.kyan.com/>) can be used as a projection system on the computer screen for easy access to many children at a time.
- Technology Tools for Teaching and Training (T4) is a United States Agency for International Development (USAID) supported initiative implemented by Education Development Centre (EDC). T4 has innumerable examples of delivery of digital content through Radio using Interactive Radio Instruction (IRI) and TV (Edusat) to reach lakhs of primary schools in several states (Karnataka, Chhattisgarh, Jharkhand, M.P., Bihar) in India in partnership with the state SSAs. Besides, a series of GTL or Group Teaching Learning multi media CDs have been developed on a range of Science and Social Studies topics, and these can be played in Kannada, Hindi and English. Over 500 programs have been produced and broadcast/delivered so far. This can be used for extensive delivery of digital content.
- School radio broadcasts can be an innovative mechanism for delivery of digital content in schools.
- Parents and community members, and Educationists including those working in academic institutions, NGOs, CBOs etc. shall form important stakeholders in the policy making process.
- Open source software and open standards need to be a critical theme of an ICT in education policy.

- The term content shall be dropped for more meaningful and dynamic term 'digital learning resources' which would not only cover information resources, but also software and hardware tools that the learner could use to construct knowledge.
- Allow the students especially in government schools and rural schools to play with the computer internet. Hole in the wall project of NIIT www.hole-in-the-wall.com/ clearly demonstrates that even illiterate students can become experts in cyber surfing through carefree playing in the Net
- India Development Gateway: www.indg.in are developing a Computer Manual in Hindi & English (later in Telugu, Tamil, Marathi, Bengali and other Indian language) for Kiosk /CSC operators.
- At IIT Bombay, a multi-modal repository www.eshikshak.dil.iitb.ac.in has been created which includes (a) references to off-the-shelf CDs, with sections of the Maharashtra State School Board books (Classes V-VII); (b) links to freely available resources on the net and (c) websites of related courseware...in science and social studies.
- Challenges in procurement of quality digital content for schools are: Textbook page turners, no localisation of content, animation/Simulation of trivial concepts, local terminologies/words which look more confusing than the English words used earlier, no linkages to programmes on Radio/TV, no integration of technology with classroom teaching, etc.

Subject 2: Quality in School Education

| Issue | Question 1 | Question 2 | Question 3 |
|-----------------------------|--|--|--|
| Quality in School Education | Suggestions on enhancing the quality of teaching-learning process through the use of ICTs? Are there any impact studies/good practices that we can learn from? | Suggestions on enhancing the quality of teaching-learning process through the use of ICTs? Are there any impact studies/good practices that we can learn from? | Key challenges in ensuring quality in education delivery using ICTs? |

- What we need to develop is the culture of teacher "stop" teaching" and start facilitating "learning opportunities". Motivating, connecting the children should be her task.
- There are good amount of content for trainers too but they need to be authenticated by the respective boards before delivery. Project Siksha from the #1 software company Microsoft Train the Trainers can be a good example where a lot of teachers are trained to use ICT for delivering best results.
- A good trainer shall be motivated with a good earning to deliver quality output.
- Technology in the form of courseware, videos, virtual worlds and real-life experiences can all enhance the teaching-learning process. This can be made possible by:
 - a) Disciplined usage of ICT in the regular classroom teaching by the teacher (showing simulations, animations, videos),
 - b) Getting students to revise or prepare for lessons, by going through ICT-based courseware,
 - c) Getting students to interact with the computer and learn/revise,

- d) Getting students to see videos of real-life examples of science in action...followed by an instructor-led session where questions are asked on relevant phenomena/examples seen in the video,
 - e) Taking students on field trips and getting them to write down/identify real-life examples of concepts taught in class,
 - f) Getting students to carry digital cameras/videocams and snap up pictures of natural phenomena...as examples of concepts/principles taught in class. Value could be added by asking the students to develop a picture-story. Worthy attempts could be suitably rewarded and possibly shared between schools.
- The Key challenges in ensuring quality in education delivery using ICTs are:
 - a) Integrating ICT without disturbing the “existing” fabric of teaching in the schools,
 - b) Making ICTs inclusive in traditional teaching,
 - c) Ensuring that teachers maintains control of the class and does not become a “slave’ of ICT,
 - d) Ensuring that the use of ICT add value to the teaching and transfer of knowledge,
 - e) Ensuring that ICT is not used for trivialities and... in no case leading to confusion!
 - f) Phenomena that could be shown live...should never be simulated/animated!
 - g) Advising students on the use of ICT-based solutions as opportunities for revision, reinforcement and preparation for a subsequent class

Subject 3: Innovations and Research:

| Issue | Question 1 | Question 2 |
|---------------------------------|---|--|
| Innovations and Research | Suggestions on the role and types of research in understanding untapped user needs in schools? | Suggestions on how to seed, discover, incubate, and upscale innovation for enhanced effectiveness in the teaching-learning process. |

- An idea to give one weekend to each student in a month to show his/her creativity in using ICT as a tool to churn out "INNOVATIVE THINGS" can be encouraged. The student who delivers the best (let the teachers and senior students decide) gets additional 5 marks on the net marks in his home exams/final exams.
- Suggestion on how to upscale innovation for enhanced effectiveness in the teaching-learning process would include:
 - [a]. Trainer/teachers to let the imagination go wild they need monetary motivation.
 - [b]. For the student community we should give them free room to innovate and incubate ideas from their mind and the free flow of these as matter/content
 - [c]. Seek parents to send their innovative ideas in sealed envelopes to the Headmaster to read aloud a few of them each day in the assembly (so if there are 1000 students there will be 1000 ideas). We would get a lot to learn every day. Unless imaginations fly we will not be able to think great things for our own future our kids.
- The research areas that need to be explored are:
 - (a) An important factor to remember that the STUDENT IS THE CUSTOMER FOR EDUCATION.

- (b) A thorough understanding of the learning process of children in terms of approaches that are most effective
- (c) Development of prototype lessons and their field testing with children. A number of cycles with students from different scenarios would add value to the approach
- (d) Throw-away prototyping to be adopted as one goes on improving and adding value
- (e) School teachers should be involved in developing school curricula and instructional resources. School principals/headmasters should play a supporting role (and not a dictatorial one) to the teachers and students
- (f) The role of students in the selection of courseware (either in-house or vendor-supplied).
- (g) Thrust must be on adding value to concepts/principles through localisation of content
- (h) Researchers must go on to the field to get data and not work on data collected through questionnaires. They must interview all the stakeholders of education (students, parents, teachers, headmasters, trustees, administrators, end-users both from industry and academics)
- (i) Research projects should be such that their results are verifiable and sustainable. Teams should visit the end-users at regular intervals (for at least three years) even after the projects are completed.

Members can read the summary of Topic 1 at the following link

http://www.solutionexchange-un.net.in/ictd/e-discuss/ediscuss02/summarytopic1_01040801.pdf

(PDF Size: 25.5 KB).

We will be posting **Topic 3: Programme Delivery Issues** shortly and we look forward to your active participation

Thanking you,

Best wishes,

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