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Wednesday, Aug 21, 2002

Schools must learn the digital ABC

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Schools don't become tech-savvy with just setting up a small computer lab. There's a four-stage time-table to go digital. It's time for basic lessons.

WHILE enough and more has been said about the benefits of information technology in the field of education, the implementation of technology often remains a mystery for a majority of schools trying to get on to the digital bandwagon. For most Indian schools, becoming tech-savvy boils down to setting up a small computer lab where students are `educated' in the basics of computers. However, adopting technology goes much beyond that to integrate digital tools in the daily learning process.

So how best can an average city school go about integrating technology in the education process? There are no correct answers to the question but an attempt is made here to offer a low-down on adopting tech for education. Sort of an ABC of technology implementation for schools put forth in a report from Universal Consulting, an IT consultancy that focuses on the small and medium enterprises segment, which tries to draw out a brief evolutionary path that schools could follow in technology initiatives.

According to the report, Indian educators limit use of technology to teaching students basic computing skills, rather than going a step further and employing technology to enhance the learning process: there is plenty of potential for Indian schools to use technology in day-to-day education, provided it is deployed in the right way.

Says Jay Desai, Chief Executive Officer, Universal Consulting, "The report happened when we were approached by a city school to help integrate technology in day-to-day teaching. Based on the work done there we came up with a basic plan that a school could follow to achieve its technology ambitions."

He adds, "A majority of educators, though aware of the shift to new learning environments, don't know how or where to begin. To effectively integrate technology in their schools, educators need a roadmap for technology adoption that meets the educational objectives of the institution."

"A successful tech adoption plan must have well-defined objectives and achievable and measurable targets. That means, before a school decides to integrate technology, it needs to set clearly-defined educational objectives and assess its current capabilities and resources. Most importantly, its rate of adoption must be in sync with objectives, resources and capabilities."

The report breaks up technology adoption into four stages that, together, are spread across a minimum period of four years:

Stage I — investment and training

According to the report, usually, the first stage of adoption should focus on investment in hardware and training the teachers in the basic use of technology. "The greatest infrastructure will be of little use if the educators don't know how to use it effectively. It is important to allow teachers to get comfortable with using computers for administrative purposes, the Internet to find information and the e-mail to communicate. Also, for the initiative to succeed, pro-active teachers are a must," says Desai.

Training courses should be customised to the teachers' level of technology friendliness.

Training can be carried out in-house or outsourced, depending on the school's internal capabilities.

"There may be some resistance from teachers, though we did not encounter this problem in the school we worked for. On the whole, however, teachers will be initially enthusiastic to acquire the required skills but when it comes to putting in the efforts to acquire new skills, resistance tends to grow. Schools need to provide teachers adequate support, since they are the cornerstone of technology," says Desai.

According to him, schools also need to pay attention to the digital divide that exists between students and teachers. "In our schools, where children are often more computer-savvy than the educators and have computer access at home, it is essential that the teacher feels well-prepared and confident in using technology. Schools should actively try to minimise the digital divide between students and teachers by providing equal access to tech and digital tools."

"On the investment front, in the first year, it would cost an average school in the city anywhere between Rs 10 lakh and Rs 30 lakh covering hardware and software requirements, leased lines etc," says Desai.

Stage II — focus on delivery

Once teachers are more familiar with using technology for basic functions, the focus should move to training teachers in using technology to deliver knowledge in and out of the classroom.

"Great infrastructure and trained teachers cannot teach effectively if they don't have a relevant, subject-specific, digital content - music, videos, interactive CDs, multimedia, animation, simulation games etc. Initially schools must focus on finding readymade software though currently companies developing readily-available software tailored to meet the requirements of the Indian Education Boards are in their infancy and limited to a few age groups or subjects," says Desai.

A school should define a content development team that will identify, evaluate, procure and organise new content, the report says, adding that teachers should not be expected to develop their content, unless they are extremely comfortable with tech or take the

initiative to do so themselves. The planned curriculum should be flexible and experimental, ensuring that a teacher's initiative and creativity is the prime force for use of technology, according to the report.

Stages III and IV — Time for SMS, LMS

In the third stage, a school should select and initiate the implementation of a School Management System (SMS) and a Learning Management System (LMS), says Desai, explaining that an LMS enables organisations to deliver, track and manage multiple forms of training from one central system while an SMS allows for collection of information, automated assessment and performance evaluation, generation of report cards, class schedules, alumni tracking and e-mail communication.

As the report puts it, "in the final stages, teachers will be confidently using digital content in new and engaging ways that will transform the learning environment. Administrators will be able to maximise productivity and parents will be able to participate in their child's development. Eventually technology will become an essential learning tool for students, teachers, administrators and parents."

"By our estimate, if implemented properly, it will take an average four to five years for schools depending on various parameters such as the "tech awareness" of teachers and the drive in stakeholders to make use of technology in education a reality," says Desai. "However, the process does not end with the implementation of technology alone. Schools have to keep monitoring, tracking and upgrading the system regularly. To give an example, the school we worked for formed an IT committee consisting of the principal, teachers and parents to not only oversee the implementation process but also refine it, taking into account changing objectives, resources and technological developments over time," Desai adds.

Investment jitters

The reports says that school administrators are often worried about the cost of the infrastructure involved in moving up the technology adoption pathway. However, there is need to realise the fact that integrating technology with education demands commitment of infrastructure and is different from just wiring a few assembled PCs together. "The investment in infrastructure will increase in each stage as users will not only start using technology to the fullest, but also require more sophisticated digital tools. The expenditure on infrastructure in each stage would be determined by a cost-benefit analysis based on a school's budget and requirements. There is a wide spectrum of cost-effective options for schools - most technology companies, both hardware and software, offer economical prices to schools; schools can avail support from government and even corporate funding is a viable option," says Desai.

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