Bits and Bytes at BITS Pilani

BITS Pilani is an institution that commands great premium and prestige in engineering education in India. While its mother campus is in Pilani; campuses have been started in Dubai, Goa and Hyderabad.

BITS Pilani has always been ahead in the ICT adoption curve. Indeed it is safe to say that BITS Pilani can serve as an exemplary example of how an institute of higher learning in India – universities and colleges - must adopt technology.

Whether it is resource sharing – latest being cloud computing – or one to one email communication or use of Dropbox, BITS Pilani has always been ahead in use of ICT for both administration and teaching and learning. Internet has been used for over two decades for faculty interactions, access to library resources, and so on.

The reason for this is not far to seek. The Vice Chancellor of BITS Pilani, Professor Bijendra Jain, earlier at IIT Delhi, has been a technology evangelist since the early 1980s much before corporate India caught up with the technology bandwagon. Indeed Professor Bijendra Jain has had a major role in establishing ERNET for collaboration way back in mid 1980s.

To put in simple terms technology intervention at BITS Pilani has five prongs:

1. Online Tests,

2. ERP System,

3. High definition video conferencing,

4. Attendance System,

5. Online Courses (aka MOOCs).

BITS Pilani uses online tests to admit students for it's undergraduate programs. Around 180,000 students take BITS Pilani test spread over 49 centres every year. There are over 50 sessions spread over 3 weeks. Processing is via Internet. There are several advantages of BITS Pilani online tests in terms of flexibility, feasibility, efficiency and environmental friendliness. Tests can be held anytime and anywhere around the globe.

BITS Pilani is one of the few institutions in India to implement ERP system. BITS Pilani has chosen Oracle PeopleSoft. BITS Pilani has gone whole hog and has included the entire gamut, including course registration, grades, HR and Finance for implementation of ERP. There are some challenges in implementing ERP in educational institutions in India. Firstly while ERPs have education-related modules, these are not geared for Indian institutes and are more applicable for western educational institutions. Hence there is fair bit of customisation when it comes to ERP. Further, vendors who implement ERP may also not be up to mark. More importantly the cost of ERP packages is significantly higher considering that revenues of educational institutions in India are much lesser. AT BITS Pilani ERP is used to monitor on its own performance including growth in academic programs, quality of teaching/learning and research, as also to assess faculty contribution..

High definition video conferencing is used extensively at BITS Pilani. Using Telepresence-based conference rooms and classrooms in each of its campuses, the leadership is able to

engage with the rest of faculty, students, as also for holding PhD thesis defence, faculty hiring, and for cross-campus placements. High quality video conferencing is also used to deliver courses across its campuses, thereby allowing for faculty sharing and resultant leaving more time for faculty to devote to research. This is especially useful in offering post graduate courses.

The second area for BITS Pilani is technology based attendance system. This involves clicking Selfies using smart mobile phones. While attendance is not compulsory at BITS Pilani, monitoring student attendance enables faculty understand correlation between student's performance and attendance. Sudden changes in one's attendance when detected in time, using data analytics, may be used to avert a serious situation that a student may be facing that could otherwise lead to an unpleasant outcome.

Finally SPOCs (Small Private Online Courses) is BITS Pilani's way of introducing MOOCs (Massive Open Online Courses). BITS Pilani, presently, does not offer free online courses for everybody. Rather, BITS Pilani, in partnership with edX, is offering SPOCs-based (a variant of MOOCs) courses "Small, Private" group of BITS' students who pay fees to earn a degree from BITS Pilani. This ensures that students remain committed to completing the courses. In due course of time, SPOCs-based courses will help BITS Pilani improve quality and scale of BITS Pilani's on-campus and off-campus programs. Prof Jain is convince SPOCs is facr more relevant India, given its ability to improve quality of education in universities and polytechnics.

Technology will continue to drive new applications at BITS Pilani. With improvements in technology, newer applications will emerge. BITS Pilani would be ever willing to embrace them. This is because technology makes feasible what is infeasible. Technology brings in flexibility, transparency and, fairness. Technology brings efficiency, economy and error free operations. Professor Bijendra Jain says that one key word is ICT. But other equally important key word is 'collaboration'. ICT is key to collaboration, be it different universities, different disciplines or simply research group.

It is nobody's case that BITS Pilani implementation of ICT is best or optimum. However educational institutions in India would do well to regard integration of ICT within BITS Pilani with a certain amount of respect. Irrespective of how BITS Pilani fares in ICT implementation or other Indian educational institutions fare in ICT implementation, this recommendation can be well regarded as applicable for all institutions. Indian educational institutions must learn from each other and avoid mistakes and incorporate best practices.