

# National Board of Accreditation WOSA '16

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*Automation in Institutions of Higher Education*

## ABSTRACT

Academic institutions have been experimenting with implementation of information and communication technology for several years. However, its impact on learning and teaching processes has not been evaluated. This paper has evolved a scale of maturity in the use of ICT and surveyed several institutions to gauge usage of ICT. This has been compared against the NAAC and NBA score as applicable.

## BACKGROUND

Information and Communication Technology (ICT) has been transforming various industries and services for the past two decades and more. It has facilitated growth in a number of sectors of the economy in general and the financial services sector in particular. In more recently years it has been used in the field of academics. It is believed that there is a high degree of correlation between the usage of ICT and the quality of education imparted. Usage of ICT in higher educational institutions has been on the rise especially in urban setups as well the newer institutions. It is put to a wide range of usages in these institutions, not just in teaching-learning and evaluation but also in admission, placement, recruitment of faculty, the payment of their remunerations and other financial aspects of the institution, maintenance of leave records of students and staff etc., all of which have a collective impact on the learning outcomes of the students. [1, 2, 3, 4]

However, there has not been adequate scientific assessment made to ascertain the existence of this nexus between the usage of ICT and the impact on the quality of the learning-teaching experience in accredited institutions in India. This paper purports to cover this lacunae by studying selected accredited institutions to find out the extent to which ICT has impacted the quality of education imparted. There could be considerable differences in the impact depending on the level or phase of ICT usage and expenditure on the same. Hence it will be interesting to know the level/phase of adoption of ICT in curricular and administrative activities in an institution and observe the enhancement or improvements it has brought about on educational outputs and outcomes. Various indicators such as basic operations, advanced operations, integrated operations and analytics have been identified by the researchers as the levels of adoption of ICT. [5,6,7, 8, 9]

## OBJECTIVE

This study attempts to understand and analyze the use of ICT in academic establishments as well as explore if a relationship exists between use of ICT and quality of education. Moreover, the levels of

ICT usage in these institutions will be studied to know the extent to which the same has impacted educational outcomes.

## HYPOTHESIS

This study explores the following hypotheses:

- *NULL Hypothesis:* The quality of education is not affected by use of ICT.
- *Hypothesis I:* The greater the extent of use of ICT; the greater is the positive impact on the quality of education.

## METHODOLOGY FOR THE STUDY

One of the major challenges of the study was that there is no accurate measure of the use of ICT in an academic institution. Hence, the researchers have selected a set of modules typically used in an educational institution based on their impact on quality of education. Then a scale of maturity was evolved in the use of these ICT modules. This scale has 4 stages viz. basic operations, advanced operations, integrated operations and analytics. A list of typical modules/functions with respect to ICT used in an academic institution has been annexed (Annexure I).

The researchers have selected NBA (for professional colleges) and NAAC (for non-professional colleges) accredited colleges for the survey. NAAC/NBA accreditation score has been used as an indicator of the quality of education. A pilot survey was conducted in leading Mumbai based institutions either accredited by NAAC or rated by NBA to capture use of ICT therein. A team of trained surveyors was used to collect the primary data. Only the Head of the institution/next in line was interviewed to collect the data. (See Annexure II - list of colleges participating in the survey and Annexure III - format of questionnaire used).

Analysis of the data collected was carried out using ratio analysis. An ICT Usage Ratio was evolved based on the extent of automation in each of the modules/sub-modules. This allowed a comparison of two factors viz. **quality of education** versus **extent** of use of ICT.

## Scope of the Study

The scope of the study has been restricted to the metropolitan region of Mumbai and suburbs.

Colleges of higher education accredited by NAAC/NBA have been considered in the survey. This includes colleges offering graduate/post graduate degrees in arts, science and commerce along with those offering degrees in engineering and management.

## Limitations

Due to paucity of time and resources, this study has been restricted to a limited number of Colleges in the metropolitan region of Mumbai only. Further, the heads of the institutions were interviewed and their responses were recorded using the survey questionnaire and no observations have been made as to the actual use of ICT.

## Literature Survey

Aristovnik Aleksander, *The Impact of ICT on Educational Performance and Its Efficiency in Selected EU And OECD Countries: A Non-Parametric Analysis*, TOJET: The Turkish Online Journal of Educational Technology – July 2012, volume 11 Issue 3, has reviewed some previous researches examining ICT efficiency and the impact of ICT. The researcher has used an Envelopment Analysis (DEA) technique and then applied to selected EU-27 and OECD countries. The empirical results show that the efficiency of ICT in Finland, Norway, Belgium and Korea is the highest. The analysis finds evidence that most of the countries under consideration hold great potential for increased efficiency in ICT. [1]

Olaore Israel B., *The Impacts (Positive and Negative) of ICT on Education in Nigeria*, Developing Country Studies., www.iiste.org, Vol.4, No.23, 2014. The researchers have pointed out that during the last decades, considerable resources have been invested in hardware, software, connections, training and support actions with the intention of improving the quality of teaching and learning. A major tenet of the policies in Nigeria that supported the introduction of information and communication technologies (ICT) in education was that they can become catalysts for change. They have however lamented that the implementation of these policies have not been in a systematic manner. As a consequence, the impact and effectiveness of ICT in education is difficult to assess and evaluate. [7]

Sharmila Devi *et al*, *ICT for Quality of Education in India*. IJPSS June 2012, Vol 2, Issue 6, discuss how ICT can be utilized particularly for online, distance and part time education. The researchers opine that ICT when used in distance education can facilitate teaching even if the students are unable to attend the Personal Contact Programs as well as in the evaluation process herein. It will be highly beneficial to all the stake holders namely the students, teachers and Universities itself. [9]

## DEFINING QUALITY

Quality is defined as the degree to which a set of inherent characteristics fulfils requirement. Engineers view it as how well a product conforms to design specifications. Economists view it as applying to only a subset of product attributes where higher performance is universally regarded as better. Customers view quality as the performance of all attributes relative to their preferences. [10,11,12]. The researchers could not secure an internationally accepted definition of quality with regard to education. [13, 14, 15]. It seems pertinent therefore to first list the definitions of quality as perceived by some other sectors of the economy which have global acceptance:

### Manufacturing Industry

Quality is a measure of excellence or a state of being free from defects, deficiencies and significant variations.

### Civil Engineering

Quality Assurance is the process of identifying or deciding all the quality requirements for a project, identifying existing quality documents such as codes, specifications, etc. that are relevant to the

quality requirements of the project and making them available for use, preparation of new project specific quality documents such as Project Quality Plan (PQP) or Quality Assurance Plan (QAP), Inspection Test Plans (ITP), Job Procedures (JP), Project Specifications, etc. that would provide the necessary framework or guidelines for ensuring that the planned or targeted quality requirements (quality goals) for the project are achieved in a systematic and timely manner.

## IT Industry

Quality for the IT industry has been specified by the Software Engineering Institute Capability Maturity (SEI CMM) Model: It's a model of 5 levels of organizational 'maturity' that determine effectiveness in delivering quality software.

## Quality in Education Sector

Some factors that contribute to quality of education are summarized below:

- Learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities;
- Environments that are healthy, safe, protective and gender-sensitive and provide adequate resources and facilities;
- Content that is reflected in relevant curricula and materials for the acquisition of basic skills, especially in the areas of literacy, numeracy and skills for life
- Processes through which trained teachers use child-centered teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities.
- Outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society.

The researchers have used quality as identified by NBA/NAAC. The accreditation parameters are shown below [16, 17]:

**Table 1: Accreditation Criteria**

<i>NBA</i>	<i>NAAC</i>
<i>Institutional Mission, Vision and Programme Educational Objectives</i>	Curricular Aspects
Programme Outcome	Teaching-Learning and Evaluation
Programme Curriculum	Research, Consultancy and Extension
Students' Performance	Infrastructure and Learning Resources
Faculty Contributions	Student Support and Progression
Facilities and Technical Support	Governance, Leadership & Management
Academic Support Units and Teaching-Learning Process	Innovations and Best Practices
Governance, Institutional Support and Financial Resources	
Continuous Improvement in Attainment of Outcomes	

All these criteria add to a total of 1000 points in both NAAC and NBA accreditation process. In case of NBA the scoring pattern is as follows:

1. The Program gets the status 'Accredited' for next 5 years from the date of issue of the letter from NBA, if it gets a minimum score of 750 points and scores minimum qualifying marks in the criteria specified.
2. The Program gets the status 'Provisionally Accredited' for next 2 years from the date of issue of the letter from NBA, if it gets a minimum score of 600 points. The Institution may apply after overcoming the weaknesses to upgrade their status to "Full Accreditation" of the Program.
3. The Program gets the status 'Not Accredited' if it gets the score less than 600 points.

For NAAC the grading is as follows:

**Table 2: Performance Descriptor**

<i>Range of institutional Cumulative Grade Point Average (CGPA)</i>	<i>Letter Grade</i>	<i>Performance Descriptor</i>
3.01–4.00	A	Very Good(Accredited)
2.01–3.00	B	Good(Accredited)
1.51–2.00	C	Satisfactory(Accredited)
<= 1.50	D	Unsatisfactory(Not accredited)

## SELECTING ICT MODULES

Modules were selected based on their potential impact on quality of education. A sample of these are presented below:

**Table 3: ICT Modules and their Impact on Quality of Education**

<i>Modules</i>	<i>Impact on Quality of Education</i>
Academics	<ol style="list-style-type: none"> <li>1. Ensures distribution of faculty loads based on UGC guidelines</li> <li>2. Ensures optimal utilization of assets/resources</li> <li>3. Tracks student performance/attendance</li> <li>4. Tracks progress of lectures based on lesson planning</li> </ol>
Examinations	<ol style="list-style-type: none"> <li>1. Ensures timely &amp; accurate declaration of results</li> <li>2. Extends ability to involve paper setters/examiners beyond geographical boundaries</li> </ol>
Learning Teaching	<ol style="list-style-type: none"> <li>1. Simulates real life experiences               <ol style="list-style-type: none"> <li>a. Stock market analysis</li> <li>b. Dissection of frogs</li> <li>c. Sales force planning</li> <li>d. Virtual art-walk</li> <li>e. 3-D breakdown of IC engines</li> </ol> </li> </ol>
Admissions	<ol style="list-style-type: none"> <li>1. Allocates streams to students based on preferences</li> <li>2. Provides real time feedback on stream-wise standing in student community</li> </ol>

<i>Modules</i>	<i>Impact on Quality of Education</i>
Alumni/ Placements	<ol style="list-style-type: none"> <li>1. Enforces placement rules strictly</li> <li>2. Encourages direct involvement of alumni in placement</li> <li>3. Ensures easier summer placements/live projects</li> <li>4. Provides direct access to student skills sets to potential recruiters</li> </ol>
Regulatory	<ol style="list-style-type: none"> <li>1. Provides single touch reporting to UGC, NAAC/NBA, etc.</li> <li>2. Provides reliable data to committees to fix fees</li> </ol>
Student Portal	<ol style="list-style-type: none"> <li>1. Provides direct communications to guardians on student attendance/performance</li> <li>2. Facilities exchange of education/research material amongst students and faculty</li> </ol>
Support Services	<ol style="list-style-type: none"> <li>1. Ensures better allocation of resources to faculty/students</li> <li>2. Maintains accurate record of research work carried out by students/faculty</li> </ol>
Finance & Accounts	<ol style="list-style-type: none"> <li>1. Maintains accurate records of expenses and student related costs</li> <li>2. Supports budgeting and accurate financial planning</li> </ol>
Human Resources	<ol style="list-style-type: none"> <li>1. Ensures appropriate allocation of faculty to subjects</li> <li>2. Records API points accurately</li> <li>3. Maintains record of faculty performance based on various parameters:               <ol style="list-style-type: none"> <li>a. university results</li> <li>b. student feedback</li> <li>c. HoD appraisals</li> </ol> </li> </ol>

## FINDINGS

Each module had a series of questions covering a sub module/functionality and had to be answered in yes/no. A ratio of yes to no was calculated for each module. A higher yes to no ratio indicates a greater degree of ICT usage.

Table 4 shows average of ratios for each module for the A grade and B grade colleges.

**Table 4:** Summary of Survey Results

<i>Criteria</i>	<i>NAAC/NBA Grade</i>	
	<i>A grade</i>	<i>B grade</i>
<b>ICT Survey Results</b>		
Human resources	0.40	0.62
F&A	0.56	0.65
Support	0.95	0.52
Student portal	0.70	0.45
Admissions	2.60	2.31
Academics	1.25	1.02
Examinations	2.46	1.64
Regulatory reporting	4.66	3.00

<i>Criteria</i>	<i>NAAC/NBA Grade</i>	
	<i>A grade</i>	<i>B grade</i>
Placement/Alumni	0.21	0.24
Learning & teaching aids	2.14	0.87
Average ICT Usage Ratio	<b>1.59</b>	<b>1.13</b>
<b>Faculty</b>		
Faculty Student Ratio:	1/60	1/60
% of PhDs in Faculty:	66%	51%

## ANALYSIS OF RESULTS

The analysis of the survey results is discussed below:

1. The average ICT usage ratio for A Grade colleges was found to be significantly higher (1.59) than that for B Grade colleges (1.13).
2. It may be noted that the qualification of faculty and faculty-student ratio is not significantly different in the A and B grade colleges. This is perhaps on account of the stringent requirements laid down by various regulatory authorities.
3. The modules that showed significantly greater usage of ICT were Student Portal, Admission, Examination, Regulatory reporting, and Learning and Teaching. The learning –teaching module shows the sharpest difference – for the A grade colleges it is 2.14; while B grade colleges it is as low as 0.87.

It is commonly accepted that faculty and facilities (including laboratories, libraries, classrooms, workshops, etc.) define quality of education in an institution of higher learning. In our survey we have selected only colleges which have been accredited by NBA/NAAC, therefore existence of adequate facilities is assumed to be a 'hygiene factor'. Moreover, the faculty parameters do not show any significant variation amongst Grade A and B colleges. Hence, ICT becomes an important parameter differentiating the A from the B grade colleges.

Therefore, the hypothesis that the greater the extent of use of ICT; the greater is the positive impact on the quality of education can be accepted.

## SCOPE FOR FUTURE RESEARCH

The researchers propose to conduct a wider survey covering colleges both in urban as well as rural areas and ensure a more uniform distribution of NAAC/NBA accredited colleges with A and B grades so as to increase the accuracy of conclusions drawn. Brainstorming to identify more unique institutional/faculty parameters (assessment of provision of internet facility to students, student the funding provided, innovative teaching methods, the field of research, number of papers published in national and international journals and their impact factor, research projects undertaken, etc.) will be undertaken to measure the quality of faculty. Finally, the duration of ICT usage needs to be explored as a factor affecting quality of education.

**REFERENCES**

- [1] Aristovnik Aleksander (2012). The Impact of ICT on Educational Performance and Its Efficiency in Selected EU And OECD Countries: A Non-Parametric Analysis, TOJET: The Turkish Online Journal of Educational Technology, Vol. 11, Issue 3.
- [2] Balanskat, Anja, Roger Blamire and Stella Kefala (2006). The Impact Report: A Review of Studies of ICT Impact on Schools in Europe. European Schoolnet.
- [3] International Reading Association (2009). New Literacies and 21<sup>st</sup>-Century Technologies: A Position Statement.
- [4] Jager, A.K and A.H. Lokman (1999). Impacts of ICT in Education, The role of Teacher and Teacher Training, Conference on Educational Research, Lahiti, Finland
- [5] Mizuko, Ito et al. (2008). Living and Learning with New Media: Summary of Findings from the Digital Youth Project. MacArthur Foundation
- [6] Newhouse, Paul (2002). The Impact of ICT on Learning and Teaching; Literature Review. Western Australia.
- [7] Olaore Israel B. (2014). The Impacts (Positive and Negative) of ICT on Education in Nigeria, Developing Country Studies., [www.iiste.org](http://www.iiste.org), Vol. 4, No. 23, 2014.
- [8] Polly, Drew (2011). Developing Students' Higher-Order Thinking Skills (HOTS) through TechnologyRich Tasks: The Influence of Technological Pedagogical and Content Knowledge (TPACK). Educational Technology, v51 n4, pp. 20–26.
- [9] Sharmila Devi et al. (2012). ICT for Quality of Education in India. IJPSS , Vol 2, Issue 6.
- [10] Trucano, Michael (2005). Knowledge Maps: ICT in Education, Washington D.C: InfoDev/World Bank.
- [11] U.S. Department of Education, Office of Planning, Evaluation, and Policy Development (2009). Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies. Washington, D.C.
- [12] Underwood, Jean (2009). The Impact of Digital Technology: A Review of the Evidence of Digital Technologies on Formal Education, Coventry, UK.
- [13] Cartelli, A. (ed.) (2006). Teaching in the Knowledge Society: New skills and instruments for teachers, Information Science Publishing: Hershy, USA & London, UK.
- [14] VISIONS 2020. Transforming Education and Training Through Advanced Technologies, U.S. Department of Commerce, Washington.
- [15] Fisher, T.; Higgins, C.; Loveless, A. (2006). Teachers Learning with Digital Technologies: A Review of Research and Projects, Futurelab Report Series No. 14, Bristol: Futurelab.
- [16] NBA Official Website.
- [17] NAAC Official Website.



## ANNEXURE I

Table of Modules and ICT Scale

Stage/ Function	Human Resources	Finance & Accounts	Support Services (*)	Student Portal	Admissions	Academics	Examinations	Placements /Alumni	Regulatory Reporting	Learning Teaching Aids
Basic Operations	* HR Records * Leave Records	* Journal entries * AR/AP/ GL	* Allocation of services * Billing	* Mass emails * Mass SMSes	* Data entry at Back end	* Data entry of student records	* Exam planning *Issue standard letters to paper setters, examiners, moderators	* Student records	* All records in system	* Use of Internet for research
Advanced Operations	* Loans * Payroll * Income Tax * CRs	* Detailed Chart of Accounts * Payment Gateway	* Real time links to F&A * Library records	* Comm with specific groups * Access to parents	* Online application & validation * Accept scanned documents	* Generate roll nos. * Generate Attendance records * Generate time tables	* Rule based processing (grading, grading, progression, etc.)	* Real time placements	* Generate all tables required by regulatory authorities	* Send & receive assignments from students * Multiple sites /DBs available for access
Integrated Operations	* 360 Feedback (student feedback, results, attendance) * Payroll linked to F&A	* RTGS /NEFT link * Electronic Bank Reconciati on * Real time link to Support Services GL	* Allocation in sync with admissions * Services fee linked to tuition fees * Procurement linked to F&A	* Real time display of attendance, academic records, timetables, accounts	* Generate rule based merit list * Schedule counselling sessions * Link to fee collection	* Transfer records from Admissions, Exam Sections * Time tables based on HR workloads / faculty expertise * Real time updates to Student portal	* Online assessments across India * Applications for reassessments * Links to portal	* Alumni linked to placement	* Generate real time data in NBA/NAAC formats	* Group interaction amongst student groups & faculty, industry experts
Analytics	* Faculty Loading with student performance	* Ratio Analysis * Trends	* Inter active feedback, surveys	* Analysis by family, region, academics, etc.	* Comparison of entrance scores and academic performance * Comparison of Student performance faculty-wise	* Comparison of scores over the years	* Analysis of student value add	* Comparison of scores over the years	* Simulation exercises	

(\*) Library/Transport/Hostel.

## ANNEXURE II

**List of Colleges Participated in the Survey**

1. Birla College of Arts, Science and Commerce, Kalyan
2. Rizvi College, Bandra
3. St. Andrews College, Bandra
4. H.R. College, Churchgate
5. K.C.College, Churchgate
6. SIWS College, Wadala
7. Acharya Marathe College, Chembur
8. SIES College of Commerce and Economics, Sion
9. Gurunanak College, Sion
10. Khalsa College, Matunga
11. Ruia College, Matunga
12. V.K. Krishna Menon College, Bhandup
13. St. Xavier's College, Mumbai
14. K.V. Pendharkar College, Dombivli
15. Vaze Kelkar College, Mulund
16. Jhunjhunwala College, Ghatkopar
17. MCC College, Mulund
18. L.S. Raheja College, Santacruz
19. Joshi Bedekar College, Thane
20. Bhandodkar College, Thane
21. Nagindas Khandwala College, Malad
22. Elphinstone College, Mumbai
23. DAV College, Bhandup
24. Pillai College, Panvel
25. CKT College, Panvel

ANNEXURE III  
Sample Questionnaire

*Part A – Background Information*

Name of Institution:

Address:

Program Covered:

NBA Rating:

Faculty Student Ratio:

% of PhDs in Faculty:

Name and Designation of Respondent:

*Part B – ICT Details*

## B.1 System Faculty Records

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Human Resources</i>	<i>Yes</i>	<i>No</i>
1. HR Records		
2. Leave Records		
3. Loans		
4. Payroll		
5. Income Tax		
6. Confidential Reports / API		
7. 360 Feedback (student feedback, results, attendance)		
8. Payroll linked to F&A		
9. Comparison of Faculty Loading with student performance		

## B.2 System F&amp;A

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Finance &amp; Accounts</i>	<i>Yes</i>	<i>No</i>
1. Journal entries		
2. AR/AP/GL		
3. Detailed Chart of Accounts		
4. Payment Gateway		
5. RTGS /NEFT link		
6. Electronic Bank Reconciliation		
7. Real time link to Support Services GL		
8. Ratio Analysis		
9. Trends		

## B.3 System Support

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Support Services</i>	<i>Yes</i>	<i>No</i>
1. Allocation of services 2. Billing		
3. Real time links to F&A 4. Real time links to Library records		
5. Allocation in sync with admissions 6. Services fee linked to tuition fees 7. Procurement linked to F&A		
8. Ratio Analysis 9. Trends		

## B.4 System Student Portal

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Student Portal</i>	<i>Yes</i>	<i>No</i>
1. Mass emails 2. Mass SMSes		
3. Communications with specific groups 4. Access to parents		
5. Real time display of attendance, academic records, timetables, accounts		
6. Inter active feedback, surveys		

## B.5 System Admissions

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Admissions</i>	<i>Yes</i>	<i>No</i>
1. Data entry at Back end		
2. Online application & validation 3. Accept scanned documents		
4. Generate rule based merit list 5. Schedule counselling sessions 6. Link to fee collection		
7. Analysis by family, region, academics, etc.		

## B.6 System Academics

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Academics</i>	<i>Yes</i>	<i>No</i>
1. Data entry of student records		
2. Generate roll nos.		
3. Marking Attendance and maintaining records		
4. Generate master time tables		
5. Transfer records from Admissions, Exam Sections		
6. Generate Time tables based on HR workloads/faculty expertise		
7. Real time updates to Student portal		
8. Comparison of entrance scores and academic performance		
9. Comparison of Student performance faculty-wise		

## B.7 System Examinations

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Examinations</i>	<i>Yes</i>	<i>No</i>
1. Exam planning		
2. Issue standard letters to paper setters, examiners, moderators		
3. Print Exam forms/hall tickets		
4. Print QP from online paper banks		
5. Rule based processing (gracing, grading, progression, etc.)		
6. Online assessments across India		
7. Applications for reassessments		
8. Real time updates to student portal		
9. Comparison of entrance scores and academic performance		
10. Comparison of Student performance faculty-wise		

## B.8 System Regulatory Reporting

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Regulatory Reporting</i>	<i>Yes</i>	<i>No</i>
1. All records in system		
2. Generate all tables required by regulatory authorities		
3. Generate real time data in NBA/NAAC formats		
4. Comparison of scores over the years, ration analysis		

## B.9 System Placement/Alumni

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Placements/Alumni</i>	<i>Yes</i>	<i>No</i>
1. Student records		
2. Real time placements		
3. Alumni linked to placement		
4. Analysis of student value add		

## B.10 System Learning Teaching Aids

No. of years of implementation: \_\_\_\_\_

(Tick YES if the following are automated, else tick NO)

<i>Learning Teaching Aids</i>	<i>Yes</i>	<i>No</i>
1. Use of Internet for research		
2. Send & receive assignments from students		
3. Multiple sites/DBs available for access		
4. Group interaction amongst student groups & faculty, industry experts		
5. Simulation exercises		

Name of Researcher:

Date of interview:

## Suresh Mhatre

### *Automation in Institutions of Higher Education*



**Suresh Mhatre** is amongst the first of the new generation of managers in the IT industry who have specialized in IT Consulting. After schooling in St. Mary's Bombay, Suresh completed his college education in St. Xavier's, before proceeding to SPCE, University of Bombay for a degree in Engineering. During his graduation, Suresh was elected Chairman of the Bombay University Students Council and was a member of the University Senate. After graduation in Mechanical Engineering in 1977, Suresh went on to complete his Masters in Industrial and Systems Engineering from the University Of Florida, USA. Suresh then joined TCS in January 1979 and spent his initial years developing software before going on to head the Management Consultancy Division in TCS - Bombay. His technical excellence won him the IIIE Gold Medal for the 'Best Case Study'. He also went on to become the National Vice-President of the Institute of Management Consultants of India. He is also a Fellow of the Institute of Engineers and a Fellow of the Institute of Management Consultants of India. In 1989, Suresh was shifted to HR and appointed the youngest Head of Manpower Allocation Committee of TCS, which handles all project allocations. In the next 3 years he completely overhauled the department and achieved the greatest jump in manpower productivity experienced by TCS. Also he helped TCS introduce the concept of key resource identification and mentoring which has helped in controlling attrition. In 1992, Suresh went on to head the Branch Level Review team in Bombay, which reviews the manpower productivity and client satisfaction. During this time, he also was member of the JRD-QV award winning team, which introduced world-class values to TCS. In 1998, Suresh was appointed Head of HR Sourcing with a view to attracting the best possible talent within TCS. As the Head of all recruitment in TCS, Suresh headed a team that was the largest single recruiter of technical manpower in the country. He also headed the Project Allocation Group, which matches skills with project request. During this Suresh initiated a program for accreditation of all the engineering, management schools in the country. This formed the basis of fixing recruitment quotas and remuneration for students of those institutions. In 2001, Suresh was shifted to the Strategic Planning Group where his main challenge was to build up a world class IT organization, which will provide hi-technology solutions to TCS clients. Moreover, he spearheaded TCS's efforts to move to a higher strategic orbit of providing business solutions rather than only IT solutions. In 2003, Suresh went back to Management Consulting and has worked in the area of e-Governance. He was the Chief Technical Architect for the National Rural Employment Guarantee Scheme. He was also the Project Director of the MCGM Project for a period of 5 years during which he implemented 12 modules of SAP for over 4,000 users. Currently, Suresh leads the IT Strategy team for e Governance, Ports and Academic Institutions. Suresh is currently located in Bombay with his wife Kajal and 2 daughters Anandi and Aarti.