ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN PURSUIT OF ACADEMIC EXCELLENCE: A COMPARATIVE STUDY OF INDIAN UNIVERSITIES

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SYNOPSIS

1. INTRODUCTION

Education is a social process. Education is one of the main keys to economic
development and improvement in human welfare. Since Education is closely
linked to economic growth, it is one of the key determinants of one’s lifetime
earnings. Education provides the skills for learning to know; learning to live
together; learning to do and learning to be. Thus, education is the primary agent
of transformation towards sustainable development and increasing people's
capacity to transform their vision for society into reality. Education not only
provides scientific and technical skills, it also provides the motivation,
justification, and social support for pursuing good life.

2. INDIAN HIGHER EDUCATION
   – AN OVERVIEW

In the Indian context the age group of students from 18-24 usually corresponds
to university/tertiary education. The courses may include non-professional (e.g.
Humanities / Pure Sciences / Commerce) degree courses. Responsibility of the
Central, State and Local Bodies for Education has been laid down in the
Constitution. Indian education sector has seen a remarkable increase in the
literacy rate from 18.3% in 1950-51 to 64.8%\(^2\) in 2001-2003. Total Enrolments in
all Educational Institutions (School to University) is 224 million. Number of
Universities as on 31.03.06 was 355 (20 Central; 216 State; 101 Deemed
Universities, 5 Institutions established under State Legislation, 13 Institutes of
National Importance). There were only 27 Universities in the year 1950-51 and
now there are 355 Universities\(^3\) as on 31.03.2006.

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1. UGC Annual report 2005-2006 and education.nic.in
There were only 27 Universities in the year 1950-51 and now there are 355 Universities as on 31.03.2006. In spite of mammoth growth in the number of Universities, there are issues related to access, participation, equity, quality, relevance, management and resources. The Government of India has taken up many initiatives to cope with the situation of the country and to increase the public expenditure on education, which at present is a mere 3.76% of the total budget allocation as on 2003-2004.

3. QUALITY IN HIGHER EDUCATION

Higher education is a transformative process of increasing wisdom and expertise for the benefit of humanity. That is, universities are, basically, places where people and ideas are transformed: students gain expertise and (self-) knowledge; ideas are transformed into research and further understanding.

UNESCO (2004) gave two principles that attempt to define quality in education: the first identifies learner’s cognitive development as the major explicit objective of all education systems. Accordingly, the success with which systems achieve this is one indicator of their quality. The second emphasizes education’s role in promoting values and attitudes of responsible citizenship and in nurturing creative and emotional development.

Quality education is a dynamic process, not static or a finished product. It evolves as it adapts itself to the needs of human existence and the aspirations of the human spirit. It is equivalent to what is considered excellent or successful in the process of developing the human potential, of rearing the young to be a desirable member of a social group, according to its standards and expectations, to what the group considers ideal.

3. http://www.education.nic.in/cd50years/g/z/EV/0ZEV0101.htm
UNESCO (2005) document on Global Monitoring Report states that it is equally vital that students were given an education of good quality. “Quality education” is difficult to define precisely, but three principles identified which underlies what quality education represents: education that is relevant, education, which is equitable in terms of access and outcome, and education, which observes individual rights.

4. INFORMATION AND COMMUNICATION TECHNOLOGY IN EDUCATION

During the last decade higher education sector has seen the rise in organizational structures for meeting the new challenges. All of them would like to promote the developments in Information and Communication Technology (ICT) to design, manage and to deliver courses and training modules. The term information and communication technology encompasses all the computer-based teaching systems, such as CD-ROM, as well as all the telecommunication systems, such as web, e-mail and video conferencing. This can support aspects of teaching and learning from courses, development, presentation, delivery and support to administration, registration, assignment handling and marking, even when the student community is widely dispersed and never meets face-to-face.

5. TRADITIONAL VIEW OF ACADEMIC EXCELLENCE


   {http://portal.unesco.org/culture/en(ev.php-URL_ID=30075 &URL_DO=DO_TOPIC&URL_SECTION=201.html}

values that govern our efforts to achieve excellence? Although answers are multifold in nature, in practice only two concepts of excellence govern much of what we do. One is ‘resources’ and the other is ‘reputation’.

What is especially important about these two views is that they are seldom stated explicitly, yet they are implicit in our policies and practices. The problem here is that the pursuit of excellence in terms of resources and reputation is only tangentially related to our more fundamental societal purposes, and especially to our educational function.

The concept of resources is based on the notion that excellence depends primarily on having plenty of resources. In other words, quantum of resources in an institution is directly proportional to promoting excellence. The resources that induce excellence are of three different types: money, high quality faculty, and high-quality students. Money can be measured in terms of endowment, income from public and private sources, the amount we actually spend, and the things money can buy: libraries, laboratories, physical plant, faculty and students. Faculty can be of high-quality according to some laid down parameters, namely highest academic degrees they hold or reputation of the institutions where they received it, but the ‘highest-quality’ faculty (i.e. the ones who are most sought after and who command the highest salaries) are almost always the ones who are widely known for their research and writings, “high quality” students are those who earned high marks and who received high score in admissions tests.

The concept is that of ‘reputation’ is that of excellence is based on the notion that the most institutions of excellence are the ones that enjoy the best academic reputations/image, the good research work done and research projects handled by the institution, the consultancy work undertaken, rating by the accrediting agency, pecking order (reputational polls in which people are asked to rate the excellence or quality). Under this reputational view the excellence of an institution is determined by its positioning in the society (pecking order).
An important feature of these two traditional views of excellence is that they both produce very similar ranking of institutions. That is, the institutions that occupy the top positions in the reputational hierarchy tend to be the same ones that have the most resources of money, prestigious faculty, and high-performing students (Astin, A, 1985). On reflection, this close correspondence is really not so surprising. Having a great deal of resources can help to enhance reputation, and having an outstanding reputation can help to attract money, prestigious faculty and bright students. Reputation and resources, in short, tend to be mutually reinforcing.

6. RATIONALE

The Constitution of India in Part IV of the Fundamental Duties declares that it shall be the duty of every citizen of India — ‘to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement’.

Government of India has initiated the use of Information and Communication Technology in different organizations. First National Conference of IT ministers held on 15\textsuperscript{th} July 2000 set up a ‘Task Force on Human Resource Development (HRD)’ in Information Technology (IT) to maintain the global leadership position in the knowledge-led business. The recommendations came under National Programme for Human Resource Development in IT (NP-HRDI). This relates to strategic interventions under definite plan of action. Several recommendations such as setting up of Institutes of Information Technology, Use of ICT for improving institutional performance for increasing efficiency and productivity, promoting networking of Institutions through ‘National Network of Institutions’, digitize libraries of original works, IT faculty development initiatives, early faculty induction programme, quality improvement programme, sequential PG programme in IT, PG programme in IT dual mode, adjunct faculty from IT industry and adopting modular, credit based approach in curriculum
design at various levels for enhancing student mobility. The recommendations also included setting up of ‘National Qualification Framework’ for IT education, courseware development initiative, web-based forum for facilitating curriculum and promotion of technology-mediated IT education using broadcast media, teleconferencing, web-based and other multimedia approach, promotion of post-graduate education and research programmes and facilitating collaboration between educational institutions and IT industry.

In case of foreign countries and universities, ICT has been implemented to improve the learning experience. The Flinders University’s education principle for supporting academic excellence, is that those who teach its students must strive for excellence in their teaching. This encompasses a commitment on the part of teachers to learn and continue to learn, about the teaching and learning process; to draw on relevant aspects of their research to improve their teaching.

The University aims at making use of existing and emerging information and communication technologies (ICT) to support academic staff in their efforts to achieve excellence as teachers, and thereby improve students’ learning experience. It is also committed in providing support and resources for engaging staff in the scholarship of teaching.

Universities like Griffith, Australia known for innovation in their work are committed to multidisciplinary teaching and research, and creation and communication of knowledge. In the pursuit of excellence in teaching and research, Griffith University is committed to innovation, bringing disciplines together, internationalization, equity, social justice and lifelong learning.

Information and Communication Technology in education has been identified as a tool to undertake several research activities. The present study is a humble and earnest attempt in this direction to know how ICT enables the university
education for academic achievement and also in the journey to achieve excellence. ICT has brought about dramatic changes both in the learning needs and the way learning opportunities are offered. Institutions need to implement the ICT enabled system in the campuses. Further, Universities need to develop the capabilities and infrastructure for advanced technological changes.

It is noted that there is lack of specific case studies have not been undertaken in the context of Indian scenario with respect to use of use of ICT in the Universities. It is also important to inquire if the intervention made by quality assurance agencies, like, NAAC has any impact on the system of HE in general and on the use of ICT in HE in particular. Thus, it was thought to conduct a research systematically to study the use of ICT under various heads like: students’ admissions, staff recruitment, teaching and learning, examinations, library and information services, administration and finance.

7. **STATEMENT OF THE PROBLEM**

The study was stated as:

‘Role of Information and Communication Technology in Pursuit of Academic Excellence: A Comparative Study of Indian Universities’

8. **OPERATIONAL DEFINITION OF TERMS**

1. Information and Communication Technology (ICT)

Information and communication technology encompasses all the computer-based teaching systems as well as all the telecommunication systems, such as computing, records and finance management, the web and the Online-systems, video and tele-conferencing. ICT can support aspects of teaching and learning like course development, presentation, delivery and support to admission, examination, assessment, library and information services, finance and administration.
2. Academic Excellence

Academic excellence of an educational institution depends on the teaching learning process and the relevant research activity undertaken to enable the institution to keep the highest order of benchmark in its institutional activities.

3. State Universities and Other Universities

State Universities\(^8\) are established by an Act of State Legislature and are of unitary or affiliating type, funded by the respective states.

The Other Universities are referred in the research work as Central and Deemed to be Universities.

i. Central Universities are established by an Act of Parliament and are of unitary or affiliating type, funded by the Central Government.

ii. The central Universities are funded by Central Government, MHRD and Deemed Universities are Under Section 3 of UGC Act, basically self-funded and some are funded by the UGC and MHRD.

iii. Deemed to be Universities are established on the recommendation of the UGC in terms of Section 3 of the UGC Act by the Central Government.

9. OBJECTIVE OF THE STUDY

The objectives of this study are:

- To compare the use of Information and Communication Technology in the admission of students for various courses admitted in State Universities and Other Universities.

- To compare the use of Information and Communication Technology in employment of staff in state Universities and Other Universities.

- To compare the use of Information and Communication Technology in Teaching and Learning Process at different levels in State Universities and Other Universities.

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• To compare the use of Information and Communication Technology in Examinations at different levels in State Universities and Other Universities.

• To compare the use of Information and Communication Technology in Management of Library in State Universities and Other Universities.

• To compare the use of ICT in administration of University in state universities and Other Universities.

• To compare the mean scores of responses towards the use of Information and Communication Technology in Higher Education by teachers belonging to State Universities and Other Universities.

• To compare the mean scores of responses towards the use of Information and Communication Technology in Higher Education by administrators belonging to State Universities and Other Universities.

10. HYPOTHESIS

The following hypotheses were stated:
1. There is no significant difference between mean scores of responses towards the use of Information and Communication Technology in Higher Education by teachers belonging to State Universities and Other Universities.

2. There is no significant difference between mean scores of responses towards the use of Information and Communication Technology in Higher Education by administrators belonging to State Universities and Other Universities.

11. LIMITATIONS OF THE STUDY

The following were the limitations of this study.
• The sample comprised only accredited Institutions and about 60% of them responded.

• The data in respect of Perception of Use of ICT were collected only from University Teachers and Administrators.
12. REVIEW OF LITERATURE

There has been a substantial body of research materials related to different aspects of the use of ICT in Higher Education. For convenience of understanding, the researches have been given under headings in the thesis such as Constituents of ICT, Role of ICT in Higher Education, Global Trends in Educational ICT Practices, Use ICT in Teaching and Learning, Use of ICT in Libraries, and Use of ICT in Organization and Management of Higher Education.

A sample of the reviews are given below:
Brown, David G. (2002) argued that computers enhanced teaching and learning by providing opportunities for presentations, practice and analysis, and by providing more access to source material via Internet. Computers and Internet connectivity was found to enhance communication and interaction within faculties, between classmates, and between faculties and students.

Collis and Van der Wende (2002) conducted a survey on the use of ICT in higher education and it was found that, in general, institutions were changing from a period of mostly bottom-up experimentation to institution-wide encouragement of the use of ICT. With the help of a three-stage model, it explained that in many analyzed cases the first stage of institution-wide ICT implementation, i.e. the establishment of institution-wide technological infrastructure, was in place. The second stage, i.e. rich pedagogical use of this infrastructure, was still in development. The third stage, to be labeled as strategic use of ICT with a view to target differences groups of higher education, was not considered explicitly yet.

Collis Betty & Marijk Van Der Wende (2002) conducted survey on Models of Technology and Change in Higher Education an international comparative survey on the current and future use of ICT in Higher Education, and the findings reveal that, the change is slow and not radical. In nutshell it seems that higher education institutions do not expect revolutionary change as a result of or related to the use of ICT.
Keats, Derek (2003) found that when used wisely, ICT, such as, Internet can help unite people and create powerful and synergic partnerships at local, regional and global scales. The use of Internet has enabled the formation of various forms of virtual universities within and between countries across the Globe. It is clearly evident that as a communication medium that cannot be limited by time and space, Internet was enabling new local and global education synergies in teaching and learning -- for enhanced Higher Education to unlimited audiences, beyond time and distance boundaries, easily and conveniently.

One of the most important studies on this aspect of higher education is that of Nyvang Tom (2003) found that implementation of ICT in higher education learning environments was a complex task. Teachers, students, management, administration and ICT support were affected by the implementation of ICT. To facilitate the study of the changing processes, the first step was to understand what problems and challenges implementation of ICT led to and how it affected the existing practices. His focus was on teachers and from that perspective implementation of ICT consisted of three interrelated processes: Selection of ICT, adaptation of ICT and change of practices with ICT. Each process presented its own challenges and goals. With the motivation for implementation of ICT by the teachers it was expected to improve quality in student learning based on a social constructivist understanding of learning.

Libraries were considered to be the heart of educational institutions. These play a very important role in teaching and learning environment of the information society. Several studies explored automation of libraries in different countries, and in different states in India. Moorthy and Karisiddappa (2001) found that majority of the libraries in India were involved in library automation. Kumar (2003) investigated the library automation process of five university libraries of Haryana and found that these libraries had acquired CDS/ISIS as their first library automation package. Mohamed Haneefa (2007) conducted a study to investigate the application of ICT in special libraries in Kerala, India. The
findings shows that most of the libraries were hampered by lack of funds lack of infrastructure and lack of skilled professionals to embark on automation of all library management activities and application of ICT. A good number of the library users were not satisfied with the application of ICT in their libraries and indicated “inadequate ICT infrastructure” as their major reason for dissatisfaction.

13. METHODOLOGY

Methodology followed in conducting the present study and details are given below under captions, namely, Sample, Tools, Procedure for Data Collection, and Data Analysis.

13.1 SAMPLE

The present study was conducted on 140 Universities accredited by National Assessment and Accreditation Council (NAAC) till March 2007. It included State, Women’s, Language, Technical, Deemed, Central and Medical Universities. Out of these 140 Universities, there were 100 State Universities, (including Two Women’s, Two Language, and Four Technical Universities); 32 Deemed to be Universities (including One Medical, One Agriculture, One Women’s, Ten Technical, and Four Language Universities) and Eight (8) Central Universities were part of the study. There were residential as well as affiliating Universities and a majority of them were funded by the UGC, New Delhi and Ministry of Human Resource Development, Government of India. The responses were received from 85 Universities, which comprise 61 State Universities and 24 Other Universities (Central and Deemed to be Universities).

In addition to it, these samples consisted of Faculty Members and Administrators of these sample Universities. As many as 715 respondents were received from these accredited Universities, out of these 520 were the faculty members’ side and 195 were the administrators involving both men and women.
13.2 TOOLS

The data was collected on the use of Information and Communication Technology (ICT) in different aspects of Higher Education through a suitably tailored and administered questionnaire. Along with this, the perception toward the use of ICT in Higher Education was also assessed. The details of tools used are being given in the following captions.

13.2.1 USE OF ICT IN HIGHER EDUCATION

The ICT can be used in different aspects of Higher Education. The use of ICT in Higher Education was assessed with the help of a questionnaire developed by the investigator. The questionnaire included queries related to use of ICT in students’ admissions; use of ICT for staff recruitment; use of ICT in teaching and learning; use of ICT in examinations; use of ICT in library and information services; and use of ICT in administration and finance.

The questionnaire comprised both open ended and closed type questions. There were 19 questions related to the aspect of use of ICT in admission out of which four were open ended. Use of ICT for staff recruitment was another aspect of higher education where ICT can be used. There were eight questions related to the Use of ICT for staff recruitment. Out of eight questions, only one question was open ended and rest were closed type questions.

With regard to the use of ICT in Teaching and Learning, there were 19 questions out of which 14 were open ended and remaining were closed type questions. The fourth aspect was the use of ICT in examinations in which 22 questions related to different aspects of use of ICT in examinations, five questions were open ended and the remaining questions were closed type.

The fifth aspect was the use of ICT in library and information services. There were 23 questions related to different aspects of use of ICT in library and information services. Out of which six questions were open ended and remaining
were closed type questions. The last aspect was Use of ICT in administration and finance. There were 10 questions related to the use of ICT in administration. Of these, one question was open ended and the rest were closed type questions.

Further, there were four questions related to the use of ICT in finance out of which one was open ended and rest were closed type questions. The top page of the questionnaire contained questions related to general information about the Universities. There was no time limit for filling this questionnaire. The questions were self-explanatory and the respondents required no additional instructions.

13.2.2 PERCEPTION TOWARDS THE USE OF ICT IN HIGHER EDUCATION

In this study the perception and response towards the use of ICT in higher education of faculty members and administrators was assessed. For this perception towards the use of ICT in higher education the investigator based on Likert method developed a scale. There were 32 statements related to different aspects of use of ICT in Higher Education. Some of the aspects were, use of ICT in admission, recruitment of teaching staff, evaluation of teaching staff, instructional material, giving assignments and thought provoking questions on websites, examination of students, etc. There were five choices given against each statement like: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD). The respondent was required to put tick mark only on one option amongst the given five options as his / her response. Out of 32 statements, there were 16 positive statements and the remaining statements were negative. For positive statements the weightages for SA, A, U, D, and SD were 5, 4, 3, 2 and 1 respectively were given while it was reversed for negative statements.

Before framing the questionnaire the investigator had interaction with some of the present Vice Chancellors and also former Vice Chancellors for the opinions and views on the ICT and its implementation in Universities. After designing the questionnaire comments / opinions were obtained regarding the structure and
the contents of the questionnaire from Vice Chancellors / Professor (s) of fifteen Universities and the questionnaire was modified accordingly.

13.3 PROCEDURE OF DATA COLLECTION

As mentioned under sample, the data was collected from 140 accredited Universities. The questionnaires on role of ICT in pursuit of academic excellence, and perception towards the use of ICT in higher education were sent to the Vice-Chancellors of accredited Universities by the Director, NAAC, Bangalore. The Vice-Chancellors in turn asked the appropriate departments / persons to respond to the Questionnaire. As the questionnaire cut-across working of all the aspects of the higher education institutions, it took time to fill in the questionnaire. The follow up action was taken up by the investigator through phone and also by e-mail. Many a times there were incidents of negligent handling of the questionnaire, which resulted in the loss of the questionnaire. In such cases the questionnaire along with the scale was sent to them again with the request letter to respond at the earliest. After much persuasion and requests the data was collected. About 60.71% Universities (i.e. 85 universities) responded to the questionnaire. The perception towards the use of ICT in higher education scale was to be filled in by the faculty and administrators. In all 715 responses were received. Out of these 520 were from faculty members and 195 were from administrators. The scoring of the scale was done as detailed in the section ‘tools’.

14. DATA ANALYSIS

The data was analyzed by computing percentages. The content analysis technique was also used for analyzing the responses to the open ended questions. The t-test was used for comparing the perception towards the Use of ICT in Higher Education of faculty and administrators.

The data analyzed is given under results and interpretations; a few of them are given below:
14.1 COMPARISON OF USE OF ICT IN ADMISSION OF STUDENTS IN STATE AND OTHER UNIVERSITIES

14.1.1 Putting Admission Notice on Website
Universities have been publishing the notice of admission on their websites and related to this, 88.52% of State Universities and 95.83% of Other Universities (Central and Deemed to be Universities) reported to have given the information about admission to various programmes on their Websites.

![Putting Notice of Admission on Website](image)

14.1.2 Frequently Asked Questions (FAQs) on Website
The Universities’ Websites were containing the frequently asked questions to facilitate clarity and provide answer to individual questions. Regarding this, it is observed that 37.70% of State Universities and 45.83% of Other Universities were keeping the information related to FAQs on their Websites.

![Frequently asked Questions on Website](image)

Like above analysis all other questions have been analyzed and results obtained.
14.2 COMPARISON OF USE OF ICT FOR STAFF RECRUITMENT IN STATE UNIVERSITIES AND OTHER UNIVERSITIES

The ICT can be used in staff recruitment process. There were eight aspects related to which the information was collected. The percentages were computed for each aspect separately for State Universities and Other Universities. The results are given aspect-wise under separate captions.

14.2.1 Employment Notification on Website

a. For Permanent Teaching Posts: The Universities were publishing their employment notifications of permanent teaching posts on their Websites. Related to this, 83.61% of State Universities and 91.66% of Other Universities (Central and Deemed to be Universities) were putting the notification of the employment of permanent teaching posts on Website and rest of them did not do so.

![Graph showing percentage of State Universities and Other Universities for Employment Notification on Website]

Like above analysis all other questions have been analyzed and results obtained.

14.3 COMPARISON OF USE OF ICT FOR TEACHING AND LEARNING IN STATE UNIVERSITIES AND OTHER UNIVERSITIES

The ICT can be used in Teaching and Learning. There were nineteen aspects related to which the information was collected. The percentages were computed
for each aspect separately for State Universities and Other Universities. The results are given aspect-wise in separate captions.

14.3.1 Broadband Connectivity in Departments

81.97% of State Universities and 70.83% of Other Universities (Central and Deemed to be Universities) were found to have provided the broadband connectivity to all the departments / schools on the campus or satellite campus and rest of them did not do so. The speed of Broadband ranged from 128 kbps to 512 mbps. Some universities have Very Small Aperture Terminal (V-SAT) connectivity.

Like above analysis all other questions have been analyzed and results obtained.

14.4 COMPARISON OF USE OF ICT FOR EXAMINATIONS IN STATE UNIVERSITIES AND OTHER UNIVERSITIES

Undeniably ICT can be put to best use in the process of examinations. There were 22 aspects in the questionnaire related to which the information was collected. The percentages were computed for each aspect separately for State Universities and Other Universities. The results are given aspect-wise in separate captions.
14.4.1 Database of Paper Setters

60.66% of State Universities and 58.33% of Other Universities (Central and Deemed to be Universities) were maintaining database of paper setters.

14.4.2 Using ICT for the Appointment of Paper Setters

The Universities are trying to experiment, the use of ICT in appointment of examiners. 34.43% of State Universities and 33.33% of Other Universities (Central and Deemed to be Universities) were using ICT in the appointment of paper setters and rest of them have no idea of the using ICT for the appointment of examiners.

Like above analysis all other questions have been analyzed and results are obtained.

14.5 COMPARISON OF USE OF ICT IN LIBRARY AND INFORMATION SERVICES IN STATE UNIVERSITIES AND OTHER UNIVERSITIES

Libraries are considered to be the heart of educational institutions. They play a very important role in teaching and learning environment of the information society. The ICT can be used in Library and Information Services. There were twenty-three aspects in the questionnaire related to which the information was collected. The percentages were computed for each aspect separately for State Universities and Other Universities. The results are given aspect-wise under separate captions.

14.5.1 Library Computerization

The Universities are trying to computerize the libraries to enhance the services, which enable the university to become one of the temples of learning.
i. Fully Computerized: Related to this, 29.51% of State Universities and 54.16% Other Universities (Central and Deemed to be Universities) have fully computerized their University libraries.

![Library Fully Computerized Bar Chart]

ii. Partially Computerized: 49.18% of State Universities and 20.83% Other Universities (Central and Deemed to be Universities) have partially computerized their libraries.

iii. Computerization in progress: 21.31% of State Universities and 25.00% Other Universities (Central and Deemed to be Universities) were in the process of computerizing their Libraries.

Like above analysis all other questions have been analyzed and results obtained.

14.6 COMPARISON OF USE OF ICT IN ADMINISTRATION AND FINANCE IN STATE UNIVERSITIES AND OTHER UNIVERSITIES

The ICT can be used in administration and finance of departments in the Universities. There were fourteen aspects in the questionnaire related to which the information was collected. The percentages were computed for each aspect separately for State Universities and Other Universities. The results are given aspect-wise under separate captions.
14.6.1 Computerization of the Administration

i. Admission: Related to this, 57.38% of State Universities and 70.83% of Other Universities (Central and Deemed to be Universities) were maintaining database of admitted students and rest of them did not do so.

![Computerization of the Admission](image)

ii. Fee Collection: Related to this, 52.46% of State Universities and 50% of Other Universities (Central and Deemed to be Universities) reported to have computerized the Fee Collection and rest of them did not do so.

iii. Evaluation: Related to this, 39.34% of State Universities and 70.83% of Other Universities (Central and Deemed to be Universities) have computerized evaluation work.

iv. Results: Related to this, 75.41% of State Universities and 79.16% of Other Universities (Central and Deemed to be Universities) computerized the results of students and rest of them did not do so.

v. Transfer Certificate: Related to this, 29.51% of State Universities and 58.33% of Other Universities (Central and Deemed to be Universities) were issuing computerized transfer certificate and rest of them were not using ICT in issuing transfer certificate.

vi. Convocation: Related to this, 40.98% of State Universities and 54.16% of Other Universities (Central and Deemed to be Universities) were giving information about the convocation through the use of ICT.
Like above analysis all other questions have been analyzed and results obtained.

14.7 COMPARISON OF PERCEPTION TOWARD USE OF ICT OF STATE UNIVERSITIES & OTHER UNIVERSITIES TEACHERS

The comparison of mean scores of perception toward the use of ICT in Higher Education by teachers belonging to State Universities and Other Universities was analyzed with the help of t-test. The results are given in Table 1.

Table 1: Mean, SE and t-values of Perception toward the use of ICT in Higher Education by Teachers belonging to State Universities and other Universities

<table>
<thead>
<tr>
<th>Type of University</th>
<th>Mean</th>
<th>SE</th>
<th>t-value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Universities</td>
<td>119.72</td>
<td>0.92</td>
<td>0.86</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Other Universities</td>
<td>118.24</td>
<td>1.57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From table 1, it is evident that the t-value is 0.86 that is not significant. It shows that the mean scores of perception toward the use of ICT in Higher Education by Teachers belonging to State Universities and other Universities did not differ significantly. In this context, the null hypothesis that there is no significant difference between mean scores of Perception toward the use of ICT in Higher Education by Teachers belonging to State Universities and other Universities is not rejected. It further indicates that teachers working in both the State and Other Universities were found to have positive perception about the use of ICT in Higher Education.
14.8 COMPARISON OF PERCEPTION TOWARD USE OF ICT BY STATE UNIVERSITIES & OTHER UNIVERSITIES ADMINISTRATORS

The last objective was to compare the mean scores of Perception toward the use of ICT in Higher Education by Administrators belonging to State Universities and other Universities. The data was analyzed with the help of t-test. The results are given in Table 2.

Table 2: Mean, SE and t-values of Perception toward the use of ICT in Higher Education by Administrators belonging to State Universities and other Universities

<table>
<thead>
<tr>
<th>Type of University</th>
<th>Mean</th>
<th>SE</th>
<th>t-value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Universities</td>
<td>119.17</td>
<td>1.56</td>
<td>1.17</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Other Universities</td>
<td>121.92</td>
<td>1.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From table 2, it is evident that the t-value is 1.17 that is not significant. It shows that the mean scores of Perception toward the use of ICT in Higher Education by Administrators belonging to State Universities and other Universities did not differ significantly. In this context the null hypothesis that there is no significant difference between mean scores of Perception toward the use of ICT in Higher Education by Administrators belonging to State Universities and other Universities is not rejected. It further indicates that Administrators working in both the State and Other Universities were found to have positive perception about the use of ICT in Higher Education.
15. FINDINGS

The data analysis and results obtained were compiled and given in findings. These are classified under seven headings given below:

1. General:
   - Majority of State Universities were found to have an edge over Other Universities in areas such as development and maintaining website in house, updating their websites daily or weekly, and having broadband facility on their campus.
   - Both State and Other Universities have networked their departments were using Wi-Fi for networking the departments

2. Use of ICT in Admission of Students in State Universities and Other Universities
   - Majority of Other Universities were found to have an edge over State Universities in areas, such as, putting admission notice on Website, eligibility requirement for admission on Website, Online pre-admission counselling / guidance, Down loading facility of admission form, and publishing wait listed candidates on Website.
   - Less percentage of both State and Other Universities were retaining admission notice on website for more than two months, putting frequently asked questions on website, online filling of admission form, and putting model question papers of admission on website.
   - A few State and Other Universities have started conducting online entrance examination
   - Only one State University was providing facility to deposit tuition / course fee online.
3. Use of ICT in Staff Recruitment process in State Universities and Other Universities

- Majority of Other Universities were found to have an edge over State Universities in areas, such as, publishing the employment notification on their websites of permanent teaching as well as non-teaching posts, providing facility for downloading application form for permanent teaching as well as non-teaching posts, and communicating the date of interview to the candidates through e-mail.

- A few State as well as Other Universities were providing online facility for filling up the form for permanent teaching as well as non-teaching posts, contractual teaching as well as non-teaching posts, providing facility for downloading application form for contractual teaching as well as non-teaching posts, posting the date of interview on their website using e-mail to communicate the selected candidates.

4. Use of ICT in Teaching and Learning Process in State Universities and Other Universities

- Majority of State Universities were found to have an edge over Other Universities in areas, such as, providing broadband connectivity to all the departments / schools on the campus or satellite campus, having greater of terminals, having more LCD Projectors, and established Learning Resource Centres.

- Majority of both State and Other Universities teachers were using either LCD or OHP during teaching, encouraging the use of ICT in their affiliated colleges, developing Computer Aided Instructional Materials in different subjects, preparing Instructional Materials in different subjects for putting them Online, preparing Web Based Instructional Materials in different subjects, using ICT for clarifying the doubts of students, creating facility to get Online students’ feedback about institution.
5. Use of ICT in Examination in State Universities and Other Universities

- Majority of both State and Other Universities were maintaining database of paper setters, putting the examination schedule on their Website one month in advance.

- A few of both the State and Other Universities have started using ICT in the appointment of paper setters, putting the Question Bank in different subjects on the University website although more Universities have developed Question Banks in different subjects, attempting to conduct examination Online, using Online facility available for sending question papers to the affiliated colleges, having the facility for randomly generating separate question papers for each candidate through the use of computer, issuing E-Hall Ticket, and having the provision for giving mark sheets electronically.

- It is further noted that there is only one State University, which has the facility for filling and submission of the examination form Online.

- None of the State and Other Universities has made provision to apply for the revaluation Online or sending the documents by e-mail.

- Both State and Other Universities were planning to use ICT for uploading question banks on their Websites, conduct Online examination in selected subjects, prepare database of paper setters, and to use ICR and OCR technology in the examinations.

6. Use of ICT in Library and Information Services in State Universities and Other Universities

- Majority of Other Universities were found to have an edge over State Universities in areas, such as, total computerization of their University library and providing facility to their users to make a request to reserve books Online.

- Most of State Universities were found to have an edge over Other Universities in areas, such as, partially computerized their libraries, providing the network with Satellite / Off campus centers, having their library website or home page,
having their own server, and providing Digital Library / Institutional Repository Access to their users.

- Both State and Other Universities are found to have computers with internet connection in their Libraries, using Bar Coding system for issuing the books, having INFLIBNET facility in the library, besides providing UGC Infonet service on the campus for use by students.

- A few State and Other Universities have smart card system, and provided linkages with libraries of affiliated colleges, libraries of other Universities, and other important libraries of Government / Private Organizations. It is also found that a few of the universities have installed Electronic Surveillance system in their Library, besides providing Mechanism for Mining / Login facilities to their users.

- About six state universities are having RFID system in their library.

7. Use of ICT in Administration and Finance of Departments in State Universities and Other Universities

- Majority of Other Universities were found to have an edge over State Universities in areas such as maintaining database of admitted students, having computerized the evaluation work, issuing computerized transfer certificate and giving information about the convocation through the use of ICT, giving training to Non-teaching staff in using ICT, doing in-house maintenance of hardware and software, developing Database of Alumni using ICT, creating e-forum on their website which can be used by Alumni for forming discussion groups, providing Online facility for registration of their alumni, computerizing the finance section, providing Non-plan Grants and Grants for Researches, computerizing the reconciliation of accounts process, and using computers for issuing utilization certificate.

- Both State and Other Universities have computerized the Fee Collection, and the results of students. Faculty members and system analyst were the nodal persons for updating the university website, had networked their off
campuses, were having the EDUSAT facility. Besides ICT was also used for making Budget Proposals and allotment of plan grants, computerization of the auditing section and they have practice of maintaining computerized cash register.

- Majority of State Universities were found to have an edge over Other Universities in areas, such as, having Curriculum Division and Co-curricular Division, giving Annual Maintenance Contract for maintaining hardware and software which they were using, Fee collection and Salary and Budgeting were computerized.
- Only a few State and Other Universities had created facility for payment of fee through credit cards.

8. Comparison of perception towards use of ICT of State Universities and Other Universities teachers and administrators

- Teachers working in both the State and Other Universities were found to have positive perception about the use of ICT in Higher Education.
- Administrators working in both the State and Other Universities were found to have positive perception about the use of ICT in Higher Education.

16. SUGGESTIONS

Universities are challenged to integrate the technologies into their strategies, organization and educational structures. There is a gap between the expression about information society and knowledge economy on the one hand, and the practical approach to ICT and its implementation at institutional level on the other hand. Most Universities have by now – either on their own, or more often under the impulse of a national / state plan of action are engaged an analysis of the status, and have invested funds for the implementation of ICT networks and systems. Their approach many times is more defensive – i.e., keep up with the competition and avoid being left behind in the ICT race – rather than positive –
i.e. acquire a clear vision of the role about ICT that it could play in the development of the university’s mission with all its constituents (students, staff, administration etc.). Universities are confronted with outside problems coming from their environment, as well as with inside problems linked to their own mindset, structure and culture.

Looking at the diversity in the Higher Education Institutions and different locations of the country the following steps are suggested for further improvements in the system so that the our country can produce some of the best universities and our old values and glory can be rebuilt with technological advantages.

16.1 Vice Chancellors / University Administrations

- Development of proper networking infrastructures and culture within the institution and outside;
- Development of pool of human resources in the system and their training for effectiveness;
- Stimulation of innovation in research and teaching learning, examination process;
- Recognition of the academic and support staff for the research work and contribution in the ICT implementation;
- Support for partnership among institutions; Public and private partnership for ICT implementation;
- Institutional arrangement for quality enhancement and use of ICT for improvements and
- Development of packages / software like Management Information System (MIS) / Student Management System (SMS) to enable the HEIs to compete globally and locally.
16.2 Funding Agencies:

i. Central Government:

- More funds to the existing universities to cope with the global competition and to suit the local needs of the society;
- Public and Private partnership for running the courses and industry institutions interaction for implementation of relevant course content;
- Recognising the good research work by the university faculty for the implementation of the ICT in the course / curriculum and innovation in teaching;
- Recognizing the University for their good performance for implementation of ICT;
- Supporting the new schemes to support the disadvantage community students to come to the mainstream of life in Information Technology courses trough different Universities;
- All Central funding agencies to recognize Universities and their centers / schools for research and mutual-interactions.
- Accreditation to be made compulsory by the respective regulatory agencies for all the type of Universities irrespective of the type to make all the constituents who are working in the University accountable and
- The grants may be linked to the performance of the institutions to bring the effectiveness in the system.

ii. All State Governments:

- Appointment of faculty as well as support staff for smooth functioning of the Universities;
- Recognition of the academic and support staff for the research work and contribution in the ICT implementation;
- Accreditation to be made compulsory by the respective regulatory agencies for
all the types of Universities to make all the constituents who are working in the University accountable;

• The grants may be linked to the performance of the institutions to bring effectiveness in the system;

• Implement the software like Management Information System (MIS) / Student Management System (SMS) to the HEIs to compete globally and locally;

• Promote new schemes to support the disadvantaged community students to bring them to the mainstream of life, in Information Technology courses in different Universities and

• Implement the Students’ Charter in every University for mutual benefit and recognition with a focus on use of Information Technology in every possible way to enhance efficiency and effectiveness of teaching learning and other administrative matters to promote academic excellence.

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