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e-Governance: An Approach to Revolutionizing the Higher Education Sector in India

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In the current era, e-Governance has emerged as an approach for strengthening higher educational sector. e-Governance involves new styles of leadership, new ways of debating and deciding policy and investment and new ways of assessing education, new ways of organizing and delivering information and services. United Nations e-Government Survey (2014) reported that India is one of the top 50 performers on e-Participation. e-Governance in higher education is understood as a set of activities involving the effective contribution of Information and Communication Technology (ICT) for strengthening administration and management in higher education system. Bhanti et al. (2013) highlighted that "e-Governance interface can be used to get the feedback from the students related to the course and performance of university. Students can directly give their feedback about the performance of the universities/colleges to the regulatory bodies". Technology and transparency are two vital inputs having the potential to transform the system of higher education into a vibrant space for learning and research. Goel (2008) observed that there is no uniformity as far as admissions to the universities are concerned. Besides national level test for medical and engineering, private universities and the universities running under state government conduct their separate admission test. This leads to wastage of time and money for the entrants. Although MHRD has been thinking of conducting one test and prepare a common list for successful candidates so that they have a choice based on selecting the institution, it has not been put to action. In order to conduct such a test at national level, a tremendous amount of data needs to be managed. Such a huge flow of data can only be managed through the use of ICTs. Effective utilization of e-Governance have multiple effects such as creation of earning opportunities and jobs, improvement in the delivery and access to basic services like health and education. Oktem et al. (2014) found that usage of e-Governance applications were mainly related to the Internet usage variables rather than socio-economic status of students. Internet security, Internet usage level, Internet usage ability, and Internet usage tendencies were independent variables that had significant effects on the solution of the problem of improving ICTs usage in the processes of governance.

Concept of e-Governance in Education

e-Governance means 'Electronic Governance'. Here 'Electronic' indicates the technological capacities of our system and 'Governance' is a new perspective in government paradigm (Das, 2013).

e-governance can be defined as a way for the government to use the most innovative information and communication technologies, particularly web-based Internet applications, to improve the quality of the functioning and to provide greater opportunities to participate in democratic institutions and processes (Zhiyang, 2002).

e-Governance is one of the application of ICT for delivering government services, exchange of information communication transactions, combination of various stand-alone systems and services between Government-to-Customer (G2C), Government-to-Business (G2B), and Government-to-Government (G2G) as well as back office processes and interactions within the whole government framework (Saugata & Masud, 2007).

Importance of e-Governance in Higher Education

e-governance process brings efficiency and transparency in the system and hence in the field of higher education malpractice may be reduced to a large extent. The importance of e-Governance in spectrum of higher education as given by Shrivastava, et al (2014) are given below:

Importance to University

- Centralized information access from anywhere.
- Increase in student enrollment ratio.
- Provide quality e-services, e-participation.

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- Increase clearness.
- Inventive teaching tools.
- Less paper work.

Importance to Students

- Increase participation in education affairs.
- Personalized login for each student.
- Extensive saving in time, cost &efforts.
- Information & transaction services.
- Job opportunities.
- Social connectivity for collaboration.
- Access to virtual lectures & seminars.
- Can solve their problems like examination queries, result verification etc.
- Students can submit feedback to university.

Importance to Colleges

- Easy access to data.
- Electronic data exchange with university.
- Instant statistical report generation.
- Helpful for NAAC accreditation.

Importance in Overall Higher Education System

- Long term impact on organization goals.
- Improve education system.
- Empowerment of faculties, students & encouragement of their participation in governance.
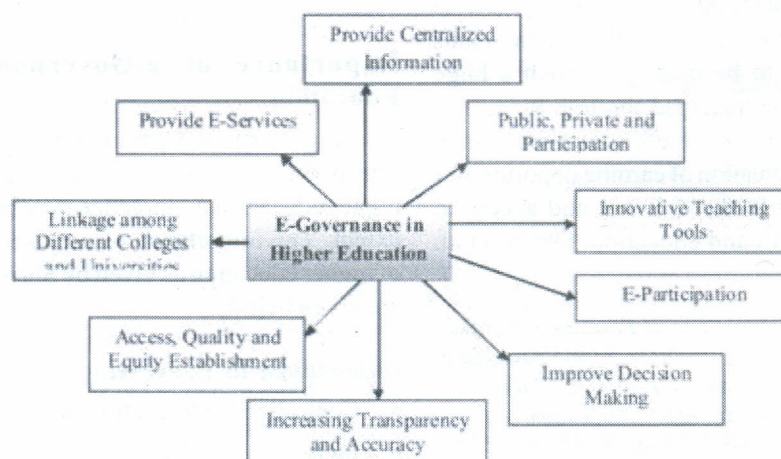
There is no doubt that higher education in India can flourish through e- Governance by significantly supporting the processes. The importance of e-Governance in higher educational institutions of India is represented visually in the chart Fig. 2 (Kapoor & Kelkar, 2013).

Initiatives Taken by the Government for Implementation of e-Governance at Higher Education

The first initiative of e-governance started in 1980s with the efforts of National Informatics Centre in which all the district headquarters were connected through computers. Since then various projects of e-governance in different states are running. Various Acts were passed in India for successful implementation of e-governance in the country. Information and Technology Act (2000), Right to Information Act, 2005 are some Acts related to e-Governance. The UGC has initiated the implementation of the e-governance project through a centralized initiative to realize the objective of inter-operability of various e-Governance applications for a decentralized implementation model. The Project of e-Governance was awarded to National Informatics Centre (NIC) during the year 2013 (UGC Annual Report, 2014-15).

Information and Facilitation Centre (IFC)

A National Informatics Centre Network (NICNET) based Information and Facilitation Centre (IFC) was set up in June 1997. The main objective of the Information and Facilitation Centre is to promote an effective, responsive and citizen friendly administration. The Centre provides information to Indian and foreign students visiting India for higher studies about the schemes of the Ministry. The procedure to be followed for availing the services i.e. guidelines of various Schemes/Programmes and application forms have been made available on the web-site of the Ministry. The information can be accessed through computer having internet facility. The address of the website for the Department of School Education

Fig. 2: Importance of e-Governance in Higher Education Sector

& Literacy and Department of Higher Education is http://www.education.nic.in (MHRD Annual Report, 2013-14).

National Mission on Education through ICT

The National Mission on Education through Information and Communication Technology (ICT) has been envisaged as a Centrally Sponsored Scheme to leverage the potential of ICT, in teaching and learning process for the benefit of all the learners in Higher Education Institutions in any time any where mode. This was expected to be a major intervention in enhancing the Gross Enrolment Ratio (GER) in Higher Education by 5% during the XI Five Year Plan period. The three cardinal principles of Education Policy viz., access, equity and quality could be served well by providing connectivity to all colleges and universities, providing low cost and affordable access-cum-computing devices to students and teachers and providing high quality e-content free of cost to all learners in the country. This scheme seeks to bridge the digital divide, the lack of skills to use computing devices for the purpose of teaching and learning among urban and rural population in Higher Education, who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy (MHRD Annual Report, 2013-14).

Office Implementation

During the year 2014-15 several training programmes have been organized for the UGC officials up to the level of Joint Secretary for smooth implementation and usage of e-Office. Master trainers have been identified and trained to impart training to others at all levels and facilitate day-to-day issues in future (UGC Annual Report, 2014-15).

Web-Based Application

UGC has been inviting online applications for its various schemes since 2011. Presently there are 23 UGC schemes having on line application forms. The e-Scholarship Fellowship Award Registration Tracking System (E-SARTS) has twenty one online applications for various scholarship/fellowship schemes of UGC and can be accessed at http:// www.ugc.ac.in/ ugc_schemes/. The NIC is developing web based online application forms for the other XII Plan Schemes of the UGC. User manuals which give step-by-step instructions on the usage of the application has also been developed for the two Schemes of General Development Assistance, Scheme to Central, State and Deemed Universities and Development of Women's Studies Centres in Indian Universities and Colleges. The applications have been hosted on the NIC server and can be accessed at URL http://eschemesugc.gov.in (UGC Annual Report, 2014-15).

e-PG Pathshala

The National Mission on Education through information Communication Technology (NME-lCT) is envisaged as a Centrally Sponsored Scheme to leverage the potential of ICT, in teaching and learning process for the benefit of all the learners in Higher Education Institutions at any-time anywhere mode. The Learning Management System for e-PG Pathshala (http://epgp.inflibnet.ac.in/) is available in open access and hosted on INFLIBNET server as well as accessible through Sakshat Portal (UGC Annual Report, 2014-15).

Production of Courseware e-Content for Post Graduate Subjects

The Project "Production of Courseware e-Content for Post Graduate Subjects" was awarded to the UGC as nodal agency by NME-ICT-MHRD in the year 2011 for development of e-content at PG level in 77 subjects. The objective of the Scheme is to provide high quality e-content for PG programmes offered in Indian universities for the benefit of the teachers and students. This will address disparities of various kinds like rich/poor, urban/rural, cast and religion based disparities, geographical disparities, regional disparities, etc. The e-contents can be viewed by the students to supplement their class room teaching or as a standalone method of leaning various topics taught at the PG level (UGC Annual Report, 2014-15).

Digital India Initiative-Mapping of Degree awarding Universities/Institutions

As per the Digital India Initiative of the MHRD, (UGC Annual Report, 2014-15), the UGC has taken mapping of the Universities with reference to

(a) Universities connected with Digital Fiber,

(b) Universities having LAN and

(c) Universities having Wi-Fi facility.

These initiatives are taken by the Indian government for the purpose of establishing transparent and quality higher education in India.
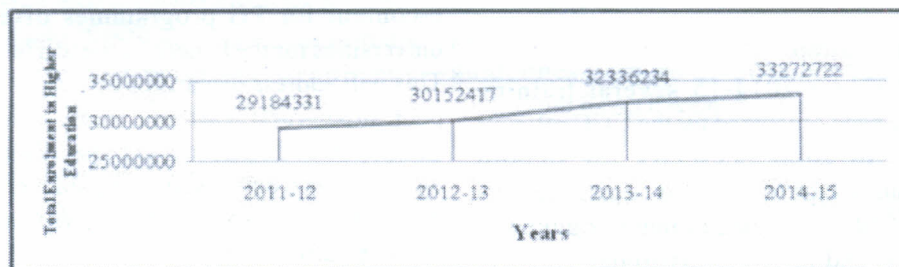
Effectiveness of e-Governance in Quality Development of Higher Education

India has one of the largest higher education systems in the world with 757 universities and 38,056 colleges (AISHE, 2014-15) Total enrolment in higher education is 3,32,72,722 and total Gross Enrolment Ratio is 23.6% (AISHE, 2014-15) So, growth of higher education is changing very rapidly. In this respect, e-Governance is also playing its effective role. e-Governance has prominent role in admission procedure. e-Governance helps to promote transparency and accessibility in admission procedure at higher education system. e-Governance is one of the important components in higher education sector because of which enrolment status and GER has increased from 2011 to 2015. The increase is depicted in the Graphs 1 & 2.
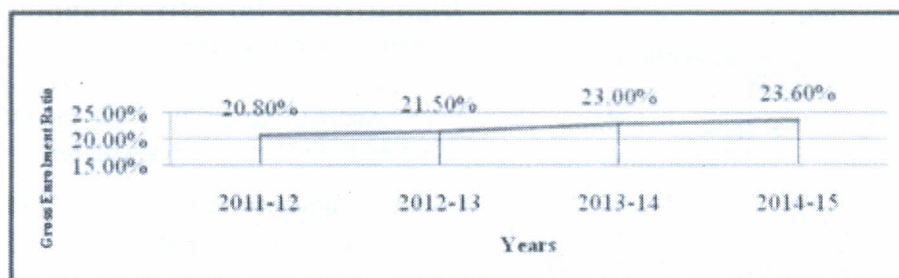
If the quality of our higher education system has to improve, for all institutions to frame into world class pattern, then there is no alternative to the introduction of e-Governance in this sphere at the fastest possible pace. Implementation of e-Governance in higher education has enabled effective monitoring by government/the regulatory bodies and other stakeholders their own managements, parents of the students and the society. The introduction of e-Governance in higher education is such a concept that is empowering the governing bodies to administer and increasing the progress of the education plan in the whole country (Kaur & Meheta, 2014). Online platforms and ICT tools have helped to take higher education to millions of deserving students in far who would otherwise have no access to university education. The MOOCs (Massive Open Online Courses) model made it possible for the country to provide quality education to the masses despite poor faculty student ratios (FICCI Higher Education Summit, 2013). A massive open online course (MOOC) is an online course aimed at large-scale interactive participation and open access via the web. In addition to traditional course materials such as videos, readings, and problem sets, MOOCs provide interactive user forums that help build a community for the students, professors, and teaching assistants. MOOCs are a recent development in distance education (Wikipedia).

The implementation of information technology has increased the broad participation of the students in the process of achieving good higher education goals at all levels by providing the possibility of online discussion groups and by enhancing the rapid development and effectiveness of the learning methods. Online Management Information System and Information Management are two major instruments of e-Governance. These instruments are playing active role in imparting quality at higher education sector (Bhanti et al., 2013).

Graph 1: Enhancement of Enrolment in Higher Education

Graph 2: Enhancement of Gross Enrolment Ratio in Higher Education

Source: AISHE, 2011-12 to 2014-15 [1, 2, 3, 4]

Information Management

It is collection, management, and distribution of information to one or more audiences. This involves those who have a stake in to that information. Information Management in higher education include: Information about the regulatory bodies under Ministry; Information about the norms / rules / regulations / deadlines pertaining to courses, funds Information about the faculty members of all universities; information about the courses / syllabi; information about admission in various universities; online submission of applications; library resources; activities including seminars / conferences / alumni.

Online Management Information System

The function of an 'Online Management Information System' is to support and study information relating to: Enquiries from prospective students; Management of admissions process; Registration of students and storing their data with their teaching option choices; handling records of examinations, maintaining records of faculties and handling enquiries; interaction with students; providing statistical reports; interacting parents through a parent portal; knowledge resources including library; affiliation function; administrative functions; personnel management system; budget / accounts / finance / treasury and audit system.

The country's education sector, particularly higher education, is often accused of being overly regulated and under governed. With science and technology evolving at such a rapid rate, the conventional classroom education we offer can hardly be described as sufficient.

Challenges in Implementation of e-Governance at Higher Education in India

There are number of challenges in implementation of e-Governance at higher education in India (Saini, 2016). These can be categorized into five parts. Like,

Social Challenges

Different Languages: People in India speak different languages, have different cultures. It is a huge challenge for implementing e-Governance projects as most applications of E-Governance are in English.

Low IT Literacy: Literacy level of India is still not 100% (74.04%: 2011 Census). And those who are literate have not much knowledge about information technology.

Services Are Not Accessible Easily: Use of internet in India is growing but a major portion of Indian population is not able to access e-Governance activities for reasons like limited access to ICT and devices.

Lack of Integrated Services: Most of the e-Governance services offered by state and central government are not integrated. There is the lack of communication between different government departments.

Lack of Awareness in People: most of the Indians is not aware of the benefits of e-governance services. The Government does not pay much attention in awaking people about e-governance activities.

Huge Population: Huge population of India itself is a major challenge for successful implementation of e governance at higher education. Measuring population, creating database and keeping it updated regularly are some of the difficulties faced.

Economic Challenges

Cost Effective: India is a developing country; the most important obstacle in the path of implementation of e-Governance at higher education is the 'cost'. Majority of the population is living below poverty line. A large amount of money is involved in implementation, operational and evolutionary maintenance task.

Maintenance of Electronic Devices: Innovation in IT takes place very fast. And it is very difficult to update our existing system in the same pace. Maintenance of electronic devices is an obstacle in rapidly changing technical environment.

Low Per Capita Income: The per capita income of people in India is very low. People therefore cannot afford online services provided by the government.

Technical Challenges

Privacy and Security: One of the obstacles of e-Governance application is the privacy and security of an individual's personal data that they provide to admit in higher education. Lack of security standards can limit the development of e-Governance projects.

Multimodal Interaction: Multimodal interaction provides the user with various multiple modes of

interfacing with system. e-Governance application will be effective if its users can access it using different devices.

High Cost of Internet: Due to high cost of internet many economically backward students are unable to get facility of e-Governance.

Political Challenges

Lack of Cyber Laws: Due to lack of cyber laws many institutional websites are hacking by different cyber criminal.

Insufficient Budget: For creation of e-Governance suitable infrastructure, maintenance sufficient budget has not been allotted by Government.

Lack of Motivation and Slow Working Process: In preparation of e-Governance friendly environment in higher education the working process by the government, institutions, colleges are very slow. Very few persons are there who motivating to establish e-Governance in higher education. Like organizing class through video conferencing, teleconferencing etc.

Lack of Advertisement: If any new schemes related to e-Governance are lunching in India, these are not highly advertising by the Private Agencies/ Government Body.

Other Challenges

Lack of Infrastructure: Most of the Indian colleges, universalities do not have the sufficient infrastructure for e-Governance implementation.

Lack of Innovative Teaching Tools: In most of the higher educational institutions virtual lecture, video conferencing, digital library are not available.

Lack of Adequate Training Facility: Lack of adequate training facility is one of the challenges in implementing e-Governance at higher education. Due to lack of trained employers at higher education sector, there is no proper structure e-Governance system.

Regional Disparity: Urban students are getting more benefits of e-Governance than Rural students.

Suggestions for Better Implementation of e-Governance at Higher education

For effective implementation of e-Governance at higher education National Knowledge Commission Report (2006-09) suggested that "Before implementing e-Governance at higher education,

Government should reform higher educational administration through re-engineering and should provide and maintain national ICT infrastructure for e-Governance". Some suggestions are given for better implementation of e-Governance at higher education sector in India.

- There is a need to provide a cheap and easy accessible network.

- To provide e-Governance in higher education infrastructural condition must develop in all higher educational institutions.

- In rural colleges and universities e-Governance facilities have to reach.

- All the department of the government should be integrated together to provide a single window for all services at one place.

- e-Service delivery in different fields of higher education need to be improved. These fields are enrolment, examination, result, feedback, request of documents, certificates, issuing ID cards, employment and so on.

- Different innovative ICT tools for teaching-learning like virtual class, video conferencing, teleconferencing, and digital library facility must be provided to all the higher educational institutions and users must use them properly.

- Government must allocate sufficient budget for e-Governance establishment, maintenance in higher education sector.

- Vision of the different program with its mission and objectives have to be clear.

- Proper training should be given to employees for effective delivery of services at higher education sector.

- More awareness about various programs and services related to e-Governance should be provided the target group.

- There is a need to create a proper healthy and safe environment through inclusion of various provisions in the law.

- Literacy rate, Poverty, Language and cultural discriminations must be eradicated from our society for better implementation of e-Governance at educational as well as other sectors.

Conclusion

The Indian higher education system has undergone massive expansion to become the largest

in the world enrolling over 1 million students each year. Such expansion would have been unimaginable without the extensive use of ICT tools. To illustrate, if India were to create this additional capacity through increase in brick and mortar institutions alone, it would have had to build six universities and 270 colleges each and every month in the last 20 years have been impossible to achieve with India's limited resources. Instead, India chose to go the MOOCs way. There are many schemes and programmes to promote higher education through e-Governance. But only schemes, project preparation, programme organization are not enough to implement e-Governance at higher education. We need to work collaboratively to remove social-economical-political-technical challenges from our society. Then only we can create an e-Governance friendly higher education system effectively.

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