



E-Governance Practices and Institutional Excellence in Higher Education: A Data Driven Approach Towards Digital Transformation

¹ Chandana M*  and ² Mariya J 

¹ Research Scholar, Jain (Deemed-to-be University), Jayanagar 9th Block,
Bengaluru, India

Email id: cm21919994@gmail.com

² Assistant Professor, Benedictine Academy, Anchepalya, Bengaluru, India

Email id: jmariya1995@gmail.com

Corresponding Email id: cm21919994@gmail.com

Abstract

The development of a country depends on the quality and effectiveness of its education system. In this contemporary era, technology can help Higher Educational Institutions (HEIs) innovate and serve the students by providing accessible and flexible education experiences as the digital transformation has a major impact in various sectors across the globe, including higher education which is one of the most impacted domains.

The higher education system in India is undergoing a significant transformation through the integration of E-Governance. E-Governance is the use of Information & Communication Technologies (ICT) for planning, implementation and monitoring of government programs, schemes and activities. Application of E-Governance has led to new area of innovations. It acts as a key driver of digital transformation by leveraging Information & Communication Technologies (ICT) to enhance efficiency, transparency and service delivery in government and institutional systems, particularly in higher education. It also facilitates real-time communication and coordination between various stakeholders such as students, faculty members, administrators, policy makers, etc.

This study aims to examine the role of E-Governance in facilitating digital transformation in higher education institutions and to analyze its impact on quality and efficiency.

Key words: E-Governance, Information & Communication Technologies (ICT), Higher Educational Institutions (HEIs), Digital Transformation

1. Introduction

1.1 Digital transformation is essential for the growth and survival in the competitive world. Digital technology has evolved the organizational structure and framework in various sectors. It has been replacing the physical spaces. Universities are evolving into digitally enabled ecosystems driven by innovation, connectivity and information.

1.2 E-Governance in higher education refers to the use of Information & Communication Technologies (ICT) for planning, implementation and monitoring of various programs, admission, examination, management and other activities. It includes various functions like online admission, online examinations, administration, student information and other services. Furthermore, E-Governance enhances transparency, accountability and accessibility in institutional activities. The various stakeholders like students, faculty members, administrators can get access to the information and other services efficiently whenever required. It also facilitates better decision making that are essential to plan the institutional operations.

1.3 The institutional excellence is closely connected with the efficiency, transparency, quality, etc. Thus, the institutions must adopt innovative governance models that leverage data and technologies like artificial intelligence, cloud computing, etc. to improve the academic excellence and survive in the competitive world.

1.4 Also, the adoption of E-Governance includes various issues and challenges like accessibility to internet in rural areas, privacy and security of data, faculty training to adopt to digital systems, adequate ICT infrastructure, financial constraints, etc. Therefore, it is important and essential to analyze the current practices of E-Governance in HEI's and identify the areas for improvement to gain maximum benefit.

2. Objectives of the study

- To analyze the E-Governance practices in higher education.
- To understand the role of data driven approach in decision making.
- To identify the challenges and opportunities in digital transformation.
- To provide suggestions for achieving the institutional excellence.

3. Literature Review

3.1 E-Governance

E-Governance started as a part of e-government initiatives to improve the public service through digital mode and technology. Moving on, its application existed in educational institution also. It aims at enhancing transparency, efficiency, accessibility and participation.

3.2 Digital transformation in higher education

Digital transformation in higher education is the comprehensive integration of digital technologies to reimagine teaching, learning and institutional activities. It includes digitization, digitalization and transformation. Now-a-days, Higher Educational Institutions (HEIs) are adopting hybrid learning models, online platforms, smart class rooms with technologies, etc.

3.3 Data driven governance

In higher education system, data driven governance includes data analytics like student performance, institutional benchmarking, optimization of resources, etc. to assist in decision making process.

3.4 Theoretical frameworks

Many theoretical frameworks support the adoption of e-governance like:

- Institutional Theory: It examines the rules, norms, etc. that shape the adoption and implementation of digital technology. It also explains that the government technology is designed and used to align with the existing institutional arrangements and requirements leading to standardization in organizations.
- Diffusion of Innovation Theory: Everett Rogers Diffusion of Innovations Theory (1962) explains how the new ideas, technologies spread through a social system over time and suggests adoption is driven by the innovation's perceived benefits, complexity, and communication channels.
- Technology Acceptance Model (TAM): Fred Davis explains how the users accept and adopt new technology. The theory states that the adoption is primarily driven by two factors – perceived usefulness and perceived ease of use.

3.5 Recent trends

- Artificial Intelligence (AI): AI focuses on creating smart machines that can perform the tasks that require human intelligence like learning, reasoning and problem solving.
- Cloud Computing: Cloud Computing focuses on delivering the computing services over internet, including storage, database, software and analytics. In simple words, it is the on-demand availability of computing resources.
- Blockchain and many more: Blockchain securely records the transactions across a network of computers. It works by grouping the data into blocks, which are cryptographically linked in chronological order, making tampering nearly impossible without network consensus.

4. Research Methodology

The study adopts qualitative research method based on secondary data sources like journals, online database, books, conference proceedings, magazines and reports.

5. Limitations

- The study is relied on secondary data.
- The inherent bias may be present in this study.

6. E-Governance Framework in Higher Education

The quality of our higher education must be improved in order to be world-class by implementing e-governance in this area. E-Governance Framework in Higher Education includes the following:

- In administration: online fee payment system, online admission and enrollment.
- In academics: digital library, online exams, etc.
- In decision making: data dashboards, performance analytics, etc.
- In various stakeholders' involvement: student portals, alumni network, etc.

7. E-Governance Practices

- E-learning Content and Repositories: E-Books, E-Journals, Digital content such as SWAYAM, NPTEL, etc. helps the students resided in various areas to learn and gain knowledge.
- Digital Faculty Management: There are various online platforms for managing teacher payroll, training, attendance, etc.
- Grievance Redressal and Communication: Through the online portals, parents and students can provide feedback, check results, report issues, etc.
- Academic Records & Certification: The digital depositories like National Academic Depository (NAD) and Academic Bank of Credits (ABC) stores the academic data to ensure security, authenticity and easy access to the users of information.
- Enterprise Resource Planning (ERP) Systems: Enterprise Resource Planning integrate various institutional functions into a unified platform that improves the coordination and efficiency.
- Learning Management System (LMS): Learning Management Systems support online teaching, course management and student assessment.
- Smart Campus Technologies: Smart Campus Technologies include smart classrooms, IoT devices, etc.

8. Role of data driven decision making

The role of data driven decision making helps the HEI's to increase the governance, efficiency and effectiveness in education through the following ways:

- Strategic Planning: Data driven decision making plays a vital role in HEI's strategic planning. It includes vision, mission, allocation of resources, formulation of policies, rules and norms, etc. It helps in identifying the risks and opportunities for academic development.
- Monitoring the Performance: Continuous monitoring of Performance helps in maintaining quality standards and identifying gaps in the education sector. It includes standardized testing/benchmarking, faculty evaluation, tracking student performance and progress and so on.

- **Predictive Analytics:** Predictive Analytics involves analysis of historical and real time data to forecast future outcomes, identifying at-risk students and many more. It helps to increase the academic success rates.
- **Real Time Decision Support:** Real time data analytics assists the administrators to make decisions on real time data insights. For example, attendance. It enhances the operational efficiency and ensures that the decisions are made on time with relevant information.

9. Benefits and Challenges of E-Governance in Education

Benefits:

- a) **Accessibility and Efficiency:** E-Governance streamlines the administrative tasks like admission process, attendance, examination; reduces paper work and provides 24/7 access to various stakeholders like students, parents, teachers and administrative staff. All the above one increases the operational efficiency.
- b) **Reduces Cost and Time:** By implementing E-Governance, the operational costs can be reduced for the institutions and also, it saves time and expenses for students and parents.
- c) **Transparency and Accountability:** E-Governance increases the transparency and minimizes the corruption, inefficiency by making the information accessible to various stakeholders. It also increases the accountability as the digital records can be easily monitored.
- d) **Academic Outcome:** Technological mode of learning improves student engagement and performance, social connectivity, job opportunities, etc. It also supports collaborative learning, increases communication between students and faculty members and prepares the learners for technological world.
- e) **Real Time Data and Decision Making:** E-Governance helps in instant statistical report generation which helps in decision making process.
- f) **Assistance in Accreditation:** Digital record maintenance is helpful for NAAC accreditation as it helps to present the data easily.

- g) Long Term Development: E-Governance improves the education system and has long term impact on organizational goals as it integrates technology that foster innovation and improvement in the HEI's.

Challenges:

- a) Digital Divide and Accessibility Issues: One of the major challenges is accessibility to internet/digital modes particularly in rural areas.
- b) Concerns over Privacy and Security of data: Using digital platforms raises concerns over privacy and security of data. Therefore, it is essential for the HEI's to take cybersecurity measures to prevent misuse of information.
- c) Need for Faculty Training and Skill Development: The faculty members and administrative staff require continuous training and development to adopt to digital systems.
- d) Lack of Adequate ICT Infrastructure: Lack of adequate ICT infrastructure in certain institutions especially in developing regions face challenges like outdated software, poor maintenance. This limits the effectiveness of E-Governance initiatives.
- e) Financial Constraints: Financial constraints may hamper adoption i.e., the cost of implementing E-Governance systems can be high to the HEI's to adopt advanced digital tools.
- f) Technical Issues: Frequent technical glitches, maintenance issues can hamper the academic and administrative activities in the institutions.
- g) Resistance to Change: Certain stakeholders may resist to change due to lack of awareness, fear of using latest technology, comfortable with traditional systems. All these matters slow down the implementation. Suitable management strategies help to overcome this barrier and improve further.

10. Discussion

E-Governance in education includes transformation of institutional culture. The institutions implementing e-governance system experience faster administration access, academic tracking and better decision making. The success of it depends on the faculty training & upgradation, institution and leadership support, system upgrades and many more. Thus, successful implementation requires proper vision and mission, support of various stakeholders and continuous evaluation. The integration of data analytics into governance process increases the institutional performance. All these digital transformations would be possible only when there are proper planning and support.

11. Recommendations

1. Government and HEI's should invest more in ICT infrastructure that includes speed connectivity, modern systems, digital networks and cloud-based platforms.
2. Training programs like seminars, workshops and hand-on training sessions should be conducted for faculty and staff that help them to adopt to new technology and improve their efficiency in handling various systems.
3. HEI's should adopt various strategies to manage resistance through motivational initiatives, organizational and leadership support and awareness campaigns.
4. Collaboration with technology providers is essential to implement E-Governance solutions as it ensures access to latest technology and upgrades.
5. Policy frameworks for data governance like data privacy and security, storage and sharing protocols are essential.
6. Special attention should be given to rural areas to ensure equal access to E-Governance services.
7. HEI's should continuously monitor and evaluate E-Governance initiatives through feedback from various stakeholders so that, it helps to fulfill the gap and improve in future.
8. Regular audit should be conducted to ensure data integrity and security.

12. Future scope of study: Data collection through primary data to understand more on impact on AI in governance, sustainability, comparative study across borders, etc.

13. Conclusion

E-Governance plays an important role in transforming HEI's into efficient organization by leveraging digital technology. It helps in achieving higher level of excellence and competitiveness. However, addressing challenges is essential for sustainable implementation. A strategic and inclusive approach to digital transformation will help the HEI's to realize the benefits of e-governance.

References

1. Dr. Devaiah N G (2015): E-Governance in India-Challenges & Strategies, Himalaya Publication House
2. C S R Prabhu (2004): E-Governance-Concepts & Case studies. Prentice Hall of India
3. Dhiman, A K (2008): E-Governance-Good governance using ICTs. Authorspress.
4. Ministry of Education (2020) – National Education Policy 2020, Government of India
5. OECD (2020) – The OECD Digital Government Policy Framework: Six Dimensions of a Digital Government, OECD Publishing
6. World Development Report (2021): Data for Better Lives. World bank
7. UGC (2023): Digital Initiatives in Higher Education. UGC, Government of India
8. Dwivedi, Y K Hughes, L., Coombs, C., et al. (2019): Impact of digital technologies on business and society. Journal of Business Research, 120, 103-120.
9. Scott, W. R. (2014): Institutions and Organizations: Ideas, Interests, and Identities (4th ed.). Sage Publications.
10. Heeks, R. (2006): Implementing and Managing eGovernment: An International Text. Sage Publications.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

