



ICT ADOPTION IN HIGHER EDUCATION: AN EMPIRICAL ASSESSMENT OF USAGE, EFFECTIVENESS AND CHALLENGES AMONG STUDENTS AND FACULTY IN MYSORE DISTRICT

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ABSTRACT

Information and Communication Technology (ICT) has become an intrinsic part of contemporary higher education that is influencing the planning, delivery and experience of teaching and learning. Educational institutions have developed more technology-enabled ways of teaching and learning due to the emergence of digital resources. In this context the present study investigates the use of ICT tools in higher education institutions in Mysore District. The study is conducted on the basis of primary data, acquired from 180 respondents including 25 Assistant Professors, 25 Associate Professors, 10 Professors and 120 students of six selected colleges in Mysore District. Simple random sampling procedure was used for the selection of respondents. The data collected was analyzed using simple percentage analysis, charts and pie graphs. The objective of the study is to understand the extent to which ICT tools have been used by the students and faculty members and their function in promoting successful teaching and learning in higher education.

Keywords: Information and Communication Technology (ICT), Higher Education, ICT Tools, Mysore District, Digital Education, Faculty and Students.

1.1. INTRODUCTION

Education is very important in shaping the knowledge, skills and opportunities for the future of an individual. Today there has been a great emphasis on the quality education, especially in higher education. Good teaching is not merely a question of the skill and dedication of the teacher but of the active involvement of the learner and his or her interest. At the same time, significant technological innovations have transformed the traditional learning environment and created new opportunities for teaching and learning.

Information and Communication Technology (ICT) has been an integral part of modern higher education. Students can access academic websites, digital materials, online lectures, electronic resources and other sources of information outside the traditional brick and cement classroom. These advances have created

more chances for students to discover knowledge on their own and have enabled teachers to adopt more interactive and flexible ways of teaching.

Quality education is a trendy word today. Quality education requires qualified teachers and enthusiastic pupils. There is a need to tag higher education with advanced technologies for improved results in higher education. Different websites are trying to locate their 'Gurus' among students. There is a lack of execution of high quality education with the finest ICT approach. This paper is on the usage of ICT tools in class room teaching in such an environment.

1.2. OBJECTIVES

Following are the main objectives of the study

1. To examine the extent and pattern of ICT usage among students and faculty members in higher education institutions in Mysore District.
2. To assess the effectiveness of ICT tools in enhancing the teaching and learning process in higher education.

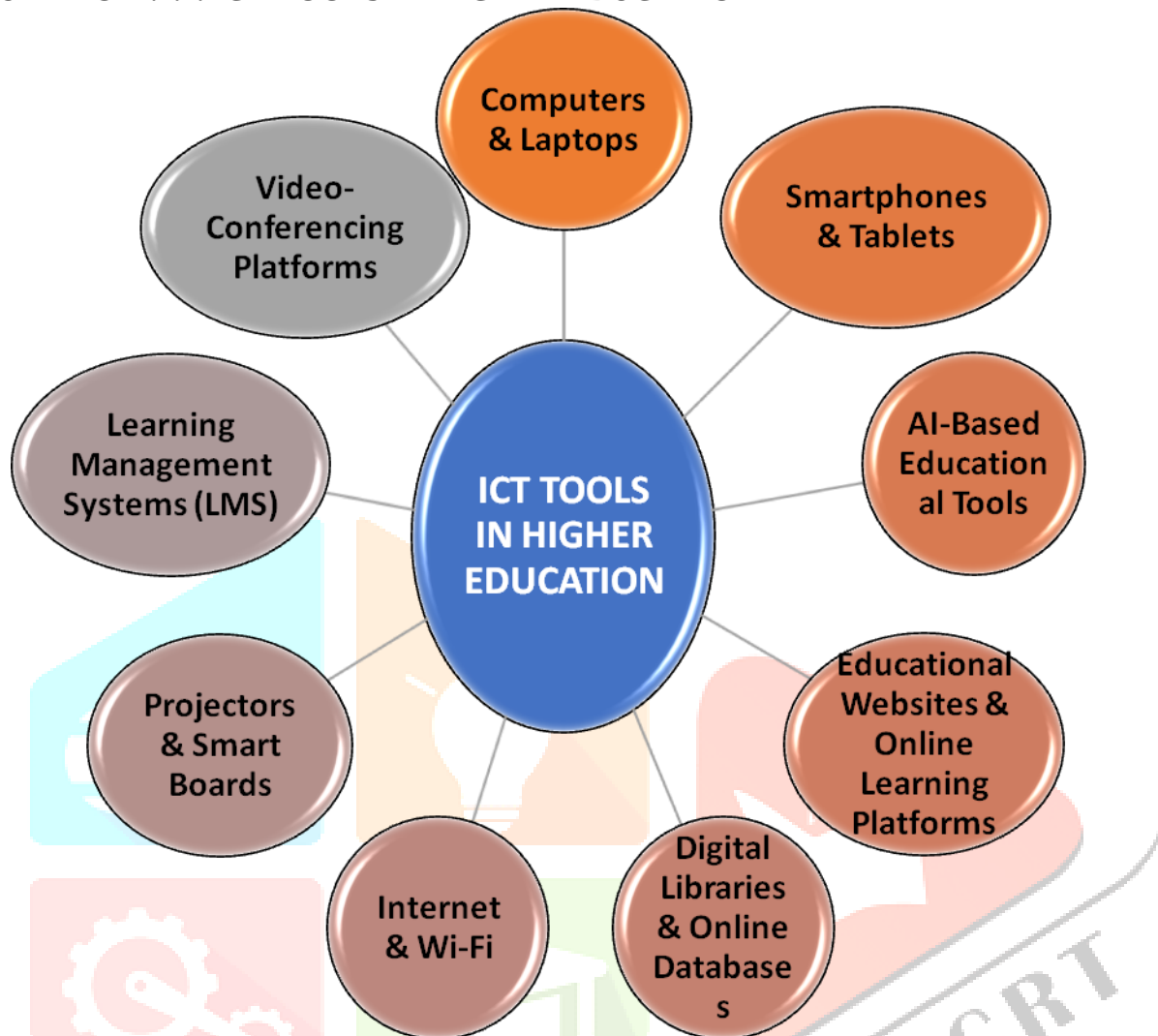
1.3. METHODOLOGY OF THE STUDY

The present study is based on primary data collected from students and faculty members of selected higher education institutions in Mysore District. A total of 180 respondents were selected from six colleges, comprising 25 Assistant Professors, 25 Associate Professors, 10 Professors, and 120 students. A simple random sampling method was adopted for selecting the respondents. Primary information was collected through a structured questionnaire focusing on the usage and effectiveness of ICT tools in the teaching and learning process. The collected data were analysed using simple percentage analysis, and the findings were presented through tables, charts, and pie diagrams. The study is mainly descriptive and seeks to understand the extent of ICT usage and its effectiveness in higher education.

1.4. MAJOR ICT TOOLS USED IN HIGHER EDUCATION

Information and Communication Technology (ICT) has become essential in the higher education system as a complement to classroom teaching and independent learning. The teachers are able to offer the academic information in a more organized and interactive way by using computers, laptops, smart phones, tablets, internet services, projectors, smart boards and multimedia facilities. These technologies allow students to look for study materials, search for information, prepare assignments, contact with teachers and participate in online learning activities. Digital tools have also lessened the need on traditional teaching materials and have created chances for learners to extend their knowledge outside the physical classroom.

Learning Management Systems (LMS), video-conferencing platforms, digital libraries, online academic databases, educational websites and online learning portals are rapidly being used by higher education institutions. These methods are useful in sharing of study materials, online classes, virtual debates, assessments and access to scholarly resources. Recently, artificial intelligence (AI) based educational applications have also started to draw attention for providing academic help, searching information and assisting learning. However, the utility of ICT is not only affected by the availability of these tools but also by the digital skills of teachers and students, reliable internet access, institutional support and their desire to adopt new ways. So, it is important to understand the usage of different ICT tools to measure contribution to the teaching-learning process in higher education.

FIGURE NO -1.4.1. ICT TOOLS IN HIGHER EDUCATION

ICT tools are an essential component of the modern system of higher education, allowing teachers and students to carry out classroom and independent learning activities. Computers and laptops are frequently used to prepare presentations, assignments, research work and academic records while smart phones and tablets offer convenient access to learning resources, educational applications and online communication. Internet and Wi-Fi are the basic foundation to reach websites, e-books, online journals, digital libraries and virtual classes. Projectors and smart boards give teachers the ability to exhibit material in text, graphics, videos, and other multimedia content in the classroom and make courses more interactive. Similarly, Learning Management Systems (LMS) assist institutions to organize course materials, assignments, announcements, assessments, and student-teacher interaction in an organized digital environment.

The rapidly evolving digital environment has also led to the increased usage of video-conferencing platforms to facilitate online classes, seminars, guest lectures and intellectual discussions. Digital libraries and online databases offer students and researchers an extensive range of scholarly knowledge. Educational websites and online learning platforms enable learners to study subjects outside of the mandated classroom materials. In recent years, another source of academic support has also appeared in the form of AI-based educational tools, which assist users with information searches, learning assistance, content preparation and other educational activities. When used effectively, these ICT technologies can help make higher education flexible, accessible and learner-centered. But their benefits are subject to the availability of necessary digital skills, reliable connectivity and appropriate institutional support.

1.5. DATA ANALYSIS AND INTERPRETATION

The primary data collected from the selected respondents were organised and analysed to understand the adoption and use of Information and Communication Technology (ICT) in higher education institutions in Mysore District. The study covers 180 respondents, comprising faculty members and students from six selected colleges. The analysis focuses on the availability and use of different ICT tools, their frequency of use, their usefulness in academic activities, and the challenges experienced by the respondents.

TABLE 1.5.1. PROFILE OF THE RESPONDENTS (FACULTY)

Sl. No.	Category of Teachers	Number	Percentage
1	Assistant Professors	25	41.67
2	Associate Professors	25	41.67
3	Professors	10	16.66
Total		60	100

The table shows that out of 60 teacher respondents, 25 (41.67%) are Assistant Professors, 25 (41.67%) are Associate Professors and 10 (16.66%) are Professors in the study area.

TABLE NO. 1.5.2. PROFILE OF THE RESPONDENTS (STUDENTS)

Sl. No.	Category of Students	Number	Percentage
1	Undergraduate (UG)	90	75.00
2	Postgraduate (PG)	30	25.00
Total		120	100

The table indicates that 90 students (75%) are pursuing undergraduate programmes, while 30 students (25%) are postgraduate students. Thus, the student sample includes students from both UG and PG levels.

TABLE NO 1.5.3. FREQUENCY OF ICT USAGE FOR ACADEMIC PURPOSES

Sl. No.	Frequency of ICT Usage	Teachers (60)	Percentage	Students (120)	Percentage
1	Daily	12	20	72	60
2	Several times a week	10	16.67	30	25
3	Once a week	5	8.33	10	8.3
4	Occasionally	5	8.33	6	5.00
5	Never	28	46.67	2	1.67
Total		60	100	120	100

The table shows that 46.67 percent of teachers reported that they never use ICT tools for academic purposes, while 20 percent use them daily. Among students, ICT usage is considerably higher, with 60 percent using ICT daily and only 1.67 percent reporting no usage. This indicates a considerable difference between teachers and students in ICT adoption and highlights the need for greater digital training and institutional support for faculty.

TABLE NO 1.5.4. MOST FREQUENTLY USED ICT TOOL BY RESPONDENTS

Sl. No.	ICT Tool Used Most Frequently	Teachers (60)	Percentage	Students (120)	Percentage
1	Computers/Laptops	15	25.00	20	16.67
2	Smartphones/Tablets	22	36.7	73	60.8
3	Projectors/Smart Boards	13	21.67	8	6.67
4	LMS	4	6.67	7	5.83
5	Video-Conferencing Platforms	3	5.00	5	4.17
6	Digital Libraries/Online Databases	2	3.33	4	3.33
7	Educational Websites	1	1.66	2	1.67
8	AI-Based Educational Tools	0	0.00	1	0.83
Total		60	100	120	100

The table shows that, teachers and students have different most commonly used ICT tools. The most used tools are computers/laptops (25%) followed by projectors and smart boards (21.67%) and smartphones/tablets (36.7%). However, the most preferred tools by the students are smartphones and tablets (60.8%) followed by computers/laptops (16.67%) and internet/Wi-Fi (15%). There is a relatively low usage of LMS, platforms for video-conferencing, digital libraries, educational websites and AI-based applications. In general, the results indicate that students prefer mobile-based ICT tools whereas teachers are more in to use laptops and classroom-based digital technology.

TABLE NO 1.5.5. PERCEPTION ON THE EFFECTIVENESS OF ICT IN TEACHING AND LEARNING

Sl. No.	Level of Effectiveness	Teachers (60)	Percentage	Students (120)	Percentage
1	Highly Effective	20	33.33	42	35
2	Effective	25	41.67	50	41.67
3	Moderately Effective	10	16.67	18	15
4	Less Effective	4	6.67	7	5.83
5	Not Effective	1	1.66	3	2.5
Total		60	100	120	100

The above table reveals that there is a positive perception of ICT effectiveness among both teachers and students. Among teachers, 75 percent of respondents consider ICT either highly effective or effective, while 76.67 percent among students endorse this. Only a small proportion of respondents consider ICT less effective or not effective.

TABLE NO 1.5.6. MAJOR CHALLENGES FACED BY RESPONDENTS IN THE USE OF ICT

Sl. No.	Major Challenge	Teachers (60)	Percentage	Students (120)	Percentage
1	Poor Internet Connectivity	18	30	32	26.67
2	Lack of Technical Skills	15	25	20	16.67
3	High Cost of Devices/Internet	8	13.33	28	23.33
4	Technical Problems	10	16.67	18	15
5	Lack of Institutional Support	6	10	12	10
6	Lack of Interest/Awareness	3	5	10	8.33
Total		60	100	120	100

The table shows that poor internet connectivity is the major challenge reported by both 30 percent of teachers and 26.67 percent of students. Lack of technical skills is another important concern among teachers, accounting for 25 percent of responses. Students, on the other hand, report the high cost of devices and internet services (23.33%) as a significant difficulty. Technical problems and inadequate institutional support are also reported by both groups. Overall, the findings indicate that improving digital infrastructure, technical skills and institutional support is important for achieving more effective ICT adoption in higher education.

TABLE NO 1.5.7.LEVEL OF SATISFACTION WITH ICT FACILITIES

Sl. No.	Satisfaction Level	Teachers (60)	Percentage	Students (120)	Percentage
1	Highly Satisfied	16	26.67	30	25
2	Satisfied	25	41.67	48	40
3	Neutral	10	16.67	20	16.67
4	Dissatisfied	7	11.67	16	13.33
5	Highly Dissatisfied	2	3.33	6	5
Total		60	100	120	100

The table indicates that there is a positive level of satisfaction with ICT facilities among both groups. 68.34 percent of teachers and 65 percent of students are either satisfied or highly satisfied with the available ICT facilities. However, a smaller proportion of respondents expressed dissatisfaction, indicating that there is still scope to improve the quality, accessibility and reliability of ICT facilities in higher education institutions. Overall, the results suggest that respondents have a favourable perception of the existing ICT environment.

The investigation shows that ICT has become one of the main components of higher education in the selected colleges of Mysore District. Both professors and students utilize a variety of electronic devices for academic purposes, although the levels of use and the types of use varied across the two groups.

1.6. CONCLUSION , MAJOR FINDINGS AND SUGGESTIONS

Overall, the respondents had a positive impression of the effectiveness of ICT in helping teaching and learning and most of them stated satisfaction with the existing ICT facilities. At the same time, issues such as poor internet access, a lack of technical skills, the expense of digital infrastructure and technical difficulties continue to impede effective ICT adoption. The results indicate that ICT has great potential to improve the accessibility, interactivity and effectiveness of higher education, provided the institutions continue to improve their digital infrastructure, training and technical assistance.

1.6.1 MAJOR FINDINGS

- ❖ The study included 180 respondents, comprising 60 faculty members and 120 students. Among the faculty respondents, Assistant Professors and Associate Professors each constituted 25 respondents, while Professors accounted for 10 respondents. Among students, 90 were UG students and 30 were PG students.
- ❖ ICT usage is considerably higher among students than teachers. While 60 percent of students reported using ICT tools daily, only 20 percent of teachers reported daily usage. At the same time, 46.67 percent of teachers stated that they never use ICT tools for academic purposes.
- ❖ Smartphones and tablets are the most frequently used ICT tools among students, accounting for 60.8 percent, whereas teachers show greater use of computers/laptops and classroom-based technologies such as projectors and smart boards.
- ❖ Respondents generally have a positive perception of ICT effectiveness. About 75 percent of teachers and 76.67 percent of students consider ICT either highly effective or effective in supporting teaching and learning.
- ❖ Poor internet connectivity is the major challenge reported by both teachers and students, affecting 30 percent of teachers and 26.67 percent of students. Lack of technical skills is another significant concern, particularly among teachers.
- ❖ The overall satisfaction with ICT facilities is favourable. About 68.34 percent of teachers and 65 percent of students are either satisfied or highly satisfied with the available ICT facilities, although improvements in quality, accessibility and reliability are still required.

1.6.2. SUGGESTIONS

Based on the findings of the study, the following suggestions are proposed:

1. **Improve Internet Connectivity:** Higher education institutions should strengthen internet and Wi-Fi facilities to ensure reliable and uninterrupted access to digital learning resources.
2. **Provide ICT Training for Faculty:** Regular training programmes should be organised to improve teachers' digital skills and encourage them to make greater use of ICT in classroom teaching.
3. **Strengthen Digital Infrastructure:** Colleges should provide adequate computers, projectors, smart boards, digital libraries and other ICT facilities to support effective teaching and learning.
4. **Promote Effective Use of Digital Platforms:** Students and teachers should be encouraged to make greater use of LMS, online academic resources, digital libraries and other educational platforms rather than depending mainly on basic ICT tools.
5. **Encourage Responsible Use of AI Tools:** Higher education institutions should create awareness about the appropriate and responsible use of AI-based educational tools for learning and academic activities.
6. **Increase Institutional Support:** Colleges should provide timely technical assistance and maintenance facilities so that technical problems do not interrupt academic activities.
7. **Make ICT More Inclusive:** Institutions should take steps to reduce the digital divide by supporting students who face difficulties in accessing devices, internet services or digital learning resources.

The study reveals that Information and Communication Technology (ICT) has emerged as a key component of higher education in the selected colleges of Mysore District in facilitating both teaching and learning activities. The results demonstrate that students utilize ICT tools substantially more than teachers and both groups admit the usefulness of them to improve the access to information and to strengthen the teaching-learning process. The respondents reported generally high levels of satisfaction and considered ICT as effective, but poor internet connectivity, low technical skills and lack institutional support remained significant hurdles. Consequently, higher education institutions may utilize technology more effectively to develop a more flexible, engaging and effective learning environment through more focus on digital infrastructure, faculty training, technical support and the successful integration of ICT into classroom activities.

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