



THE USE AND IMPACT OF ICT AMONG STUDENTS AND TEACHERS: A CASE STUDY WITH REFERENCE TO MILAGRES COLLEGE MANGALURU

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ABSTRACT

Purpose: Realizing the modern trends of ICT, Milagres College Mangalore has initiated and installed all possible ICT related facilities. The college has made extra efforts to provide the ICT facilities for UG students, staff and faculty members to promote and develop the teaching-learning process. Therefore, an attempt is made to take up this topic as a case study to analyze the impact of ICT and its contribution on Education at Milagres College, Mangaluru, D.K, and India.

Methodology: The fundamental facts are gathered from primary and secondary sources. Structured surveys are used to gather primary data, and books, articles, and websites are used to collect secondary data. The respondents are chosen using the convenience sample approach. The study's sample size is 50, and the participants are staff and students of Milagres College in Mangalore.

Findings: The results of the study showed that the integration of ICT has contributed in creating better atmosphere of teaching learning process. As a result, it has helped teachers to be more engaged, productive, interactive and dynamic in learning teaching environments at Milagres College. The college has provided Internet facilities to every class room, WI -fi on every floor, LCD projectors in every class room. Facilities such as well-set Computer Lab with internet facility, E-Library facility in the reading room and NLIST and Easylib Library Management Softwares, Milagres Learning Management System (MLMS), Enterprise Resource Planning (ERP) Education Administration Management, E-Content recording and publishing, Power Point Presentation, YouTube Videos, CCTV surveillance security system, Biometric Attendance System, Online and digital Payment System, Social Media Platforms, Intercom communication system, Google Meet, Zoom and WebEx online classrooms platforms etc. are been used for teaching learning process and administrative purposes.

Originality: This case study discusses the management initiatives that have facilitated the college beyond the campus, through online teaching learning initiatives and analyses the impact of these efforts on knowledge dissemination and a teacher productivity (Engagement)

Paper type: Case study

KEY WORDS: ICT, LMS, E-Library, Easylib, ERP, Teaching Learning Process, Resource, Perception, Communication, Promotion, Management, Engagement.

1. INTRODUCTION

The Twenty First century has seen that the use of ICT has become an inevitable part of life. It has largely impacted every sphere of human life and in particular it has revolutionized the education sector, enhancing learning and promoting interactive, engaging and effective teaching methodologies. It has been also postulated that using ICT by teachers and students outside normal class hours improves performance in academic and non-academic fields. In the present era students are depending upon the internet, than text books and reference books. As information and Communication Technology (ICT) are a technical tools, used for collecting, storing and communicating information, it supports teaching, learning and research activities to a greater extent. ICT can increase the quality of education in several ways. It motivates and attracts concentration of the students, and builds thinking capabilities of students, thereby improves knowledge. Using technology successfully teachers can motivate



student folk and engage themselves, and fill enthusiasm into their classrooms. Thereby reviving teaching passion as they learn new skills and methods. ICT (Information and Communication Technology) offers the potential to replace the traditional classroom setting, fostering improved comprehension of concepts. To adapt to virtual activities, there is a demand for a reshaping of the learning process through innovative teaching methodologies. The advent of COVID-19 has triggered a transformative shift in education, replacing the conventional chalkboard and pen with virtual platforms and touch screens. As for as teaching faculty is concerned it is easier to explain the concepts through graphical designs and presentations using ICT techniques to students. Hence, the scope of ICT is found to be vast in educational institution in imparting quality education to cope up with the modern competitive world. So, it is desirable to study the impact of ICT in teaching and learning process in the colleges. In this context, based on a case study of Milagres College, Mangalore. We discuss some of the key aspects of ICT in teaching and learning process and its sustained impact in achieving positive results of education.

2. REVIEW OF RELATED WORK

The desire for ICT has revolutionized communication, heightened consumption, and modified our relationships and information access. These technical items, whether a computer, plasma TV, or cell phone, have become inevitable in human life. People desire to live linked lives as ICT consumers, making it a lifestyle choice for many. Furthermore, this penchant for ICT has modified communication, heightened consumption, and altered how we communicate and get information. Using various keywords such “ICT” OR “Higher Education” OR “Teacher” OR “Student” the research articles were found, which are reviewed here below. According to Mondal, A., & Mete, J. (2012) the integration of ICTs in higher education presents both promising opportunities and formidable challenges. By incorporating ICTs, universities can expand access to education, promote equity, streamline administrative tasks, and enhance teaching methods, ultimately improving the overall quality of education. However, ensuring equitable access to technology, providing faculty with adequate training, and maintaining educational standards in the digital realm are critical challenges that must be overcome to fully realize the potential benefits of ICT integration in higher education. The purpose of this article was to look at the function of ICT in knowledge management (KM) in higher education. The study investigates the evolution of KM technology and applications from 2000 to 2012 by performing a comprehensive literature analysis and categorizing articles. In higher education, the rise of ICT in the previous decade has created new potential for effective information sharing, exchange, and dissemination. As a result, this study provides a high-level overview of KM and ICT integration in the higher education scene - Toro, U., & Joshi, M. J. (2013)

In the words of Kozlova, D., & Pikhart, M. (2021) the purpose of this research is to investigate students' perspectives of the incorporation of ICT in higher education, especially in their university education. Current higher education trends have hastened the incorporation of multiple eLearning modes, such as hybrid learning and blended learning, into university courses. The research was undertaken in this context to better understand how students see eLearning as users of this technology in their educational path. The survey found a substantial shortage of digital capabilities among instructors across all selected five areas, with content production being notably low. ICT training was found to be directly associated to improved skill in communication, cooperation, and content production. To summarize, establishing digital teaching competency continues to be a crucial problem for the education system, as well as the key to developing a new era of education that embraces digital innovations by Garzón Artacho, E., Martínez, T. S., Ortega Martin, J. L., Marin Marin, J. A., & Gomez Garcia, G. (2020) A study conducted in India by Gupta et al. (2015) focused on the engagement of academics in higher education and its impact on performance. The study examined the relationship between job resources, perceived autonomy, work engagement, and service employee performance. The findings indicated that work engagement mediated the relationship between supervisory support and service employee performance. Additionally, perceived autonomy moderated the relationship between co-worker support and work engagement. These results underscore the importance of creating a supportive work environment to enhance engagement and cooperation among academics. However, the study has limitations, and further research is recommended. The implications suggest that universities should implement policies fostering supportive relationships among colleagues and supervisors to improve engagement and performance in service delivery.

Bolaji, H.O., & Adeoye, M. A. (2022) this descriptive research in the Ilorin Metropolis looks at ICT accessibility, usability, and secondary school teachers' attitudes towards ICT. The findings demonstrate widespread inaccessibility to ICT facilities, emphasizing the need for reforms to enable successful technology integration in education. Improving infrastructure as well as offering teacher training and support may develop a favourable attitude towards ICT use, benefiting both students and educators. Shailashri and Sureka (2016) in their study found that in the current highly competitive and intricate business landscape, organizations must adapt and adopt a



proactive approach to attain market success and maximize profits. Succeeding in this dynamic environment necessitates the cultivation of an innovative atmosphere that can keep pace with societal changes. This involves encouraging freedom of thought and providing consistent support from top management. In the face of escalating global competition, companies must set themselves apart by nurturing skilled employees and implementing effective human resources (HR) practices. These practices should encourage enhanced thinking and active involvement from every individual within the organization, recognizing their contributions as vital to fostering innovation. Acquiring, developing, and retaining such talented individuals are indispensable for achieving corporate triumph. When individuals are afforded opportunities to innovate, their engagement with the organization deepens, consequently becoming a crucial driver of overall success. The focal point of this paper is a case study on Tata Consultancy Services (TCS), scrutinizing how TCS adeptly retains and engages its talented workforce through its HR practices. The study establishes a correlation between these practices, innovation, talent management, and employee engagement.

3. OBJECTIVES OF THE STUDY

The objectives of the case study are as follows:

- To know the importance of ICT in Educational Institutions.
- To assess the extent of ICT integration in College.
- To evaluate the effectiveness of ICT tools and technologies in facilitating teaching and learning.
- To analyses the impact of ICT on students' academic performance
- To identify challenges and problems involved in the implementation of ICT at the College.

HYPOTHESIS

The study is based on the following Hypothesis:

- Implications of ICT in an educational institution on teaching and learning process has a positive impact in long and short terms.
- Usage of ICT is a correlative of Teachers' effectiveness and productivity in an educational institution.

4. METHODOLOGY

The basic data are collected from primary and secondary sources. Primary data is collected from structured questionnaires and secondary data is collected from books, articles and web sites. Convenience sample method is used to select the respondents. Sample size is 50 and the area selected for the study is staff and students of Milagres College, Mangalore.

5. PROFILE OF THE COLLEGE

Milagres Educational Institution was incepted in the year 1848. In the beginning, it was an Primary School with classes I to V and higher classes were added gradually. The Higher Secondary school started in the year 1929. The Government of Karnataka upgraded the High School into Pre-University College 1982. With the aim of imparting higher education, the Management initiated Milagres Degree College in 2010. The college is run by the Catholic Board of Education of the Diocese of Mangalore and locally managed by the Milagres Church. The college is a Christian minority institution, is affiliated to Mangalore University and recognized by UGC MHRD, Gov. of India under Section 2(f) of UGC Act, 1956. It is accredited by the NAAC with B++ grade in the first cycle. The college presently offers the programmes like B. Com, B.Sc.HS, B.Sc. FND, B.Sc. ID, BBA Logistics, BCA, BCA AIML. Also, it offers UGC skill-oriented courses like Aviation, Hospitality Management, Logistics and Supply Chain Management, Data Analysis, Cloud Computing, Cyber Security, Artificial intelligence and Big Data Analytical. Milagres college is a thriving education institution which promotes professional skills and life skills among the students through offering various skill-oriented programmes and courses. It also offers curriculum beyond fixed University programmes by offering 13 life skill Add on courses such as Tally and basic computers, Spoken English, Craft and embroidery, Journalism, Entry to CA, GST, Yoga, Event Management, Dance, Beautician, Basic French, Personality Investment Management, Photography, soft Skill and Employability, first Aid, Ghumat Certificate Course. These certificate courses enhance the life skills and improve the quality of life. At present Milagres College is having 600 students and 35 staff professed to use the above techniques of ICT from last 12 years. It has been found very useful to teachers to be fully engaged with minimum stress using ICT tools in teaching learning process. Use of ICT techniques have become convenient to the Management and staff in teaching, learning, communication and promotion. Milagres Educational Institution consist of KG to UG courses containing 2500 students and 100 staff. In the pursuit of knowledge, the right learning environment can truly impact a student's performance and his all-round development in a positive and meaningful



way. With a suitable infrastructure development and with modern amenities of ICT the quality level of education is ignited.

6. ICT (Information and Communications Technology): CONCEPT AND MEANING

ICT is the infrastructure and components that enable modern computing. Although there is no single, universal definition of ICT, the term is generally accepted to mean all devices, networking components, applications and systems that combined allow people and organizations such as businesses, non-profit agencies, and governments to interact in the digital world. ICT is an extensional term for information technology (IT) that stresses the role of unified communications and the integration of telecommunications and computers, as well as necessary enterprise software, middleware, storage and audio-visual, that enable users to access, store, transmit, understand and manipulate information. ICT is technology that supports activities involving information.

7. ICT IN EDUCATION

(ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum. Colleges use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. This decreases teacher's paperwork and improves work-life balance. By utilizing trusted apps and technology, teachers can steer away from traditional methods and embrace digital media. Virtual lesson plans, grading software and online assessments are all available to teachers and can save them valuable time. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teacher's capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV. ICT facilitates the acquisition of basic skill. ICT in hands teacher training through online resources and sharing of teaching resources among teachers. ICT neighbours learning the computer and internet in which technology facilities learning across the curriculum.

8. ICT INFRACTURE OF THE COLLEGE

Milagres College is providing several ICT facilities with basic infrastructure for the use of teaching and learning process for staff and students. These facilities are briefly explained below:

8.1 Computer Lab: Computer forms as a basis for ICT. Computer is a machine that can store and process information. Most computers rely on a binary system, which uses two variables, 0 and 1, to complete tasks such as storing data, calculating algorithms, and displaying information. Computers come in many different shapes and sizes, from hand held smartphones to super computers weighing more than 300 tons. The college has set up a well-equipped computer lab having the latest hardware and software. A total number of 80 computers are set up in the Computer Lab with internet, LAN and Wi-Fi facility. Through this facility students are enabled to get hands on training in information and technology. Students of BCA use lab for programming, whereas ID students use it for designing, graphics, the Commerce students use it for tally and digital fluency. College staff rooms are provided with computer facilities with Wi-Fi connection. The PCs become a helping tool to faculty in preparing classes, to make PPT, notes preparation, by down loading study materials, articles for the research purposes. By these the teachers can improve their subject knowledge and teaching techniques and also improves their research options.

8.2 Wi-Fi connectivity: The College has Wi-Fi connectivity of 100 MB on every floor for the students and staff to make use of it for learning and teaching. This facility comes handy to the faculty to download the important information's on the spot and to dispatch the students. Total 20 LCD projectors are installed in different class room which makes staff to conduct classes with creative teaching.

8.3 E-Library facility enables the students and staff to access global resources. NLIST software assist staff and students to search research materials. Easylib, Library Management software's helps the librarian and library staff to manage and function the library day to day activities effectively and smoothly. It also enables the librarian to manage the library system. It enables to students to access library books quickly.

8.4 Milagres Learning Management System (MLMS) is set up by linking it to the Milagres college website by which the teachers upload self-prepared E-Content videos by uploading them on YouTube and Facebook. This facility enables not only Milagres students but also public to view and learn from this variety of E-content. Using this tool the college faculty are enabled conducting on-line examinations and publish results of the internal



examination. This facility is very handy to the staff to dispatch the information about student academic performance to the parents.

8.5 Enterprise Resource Planning (ERP) system: This ERP system is functioning in Milagres for the past 12 years. This facility is useful for the whole office work, such as, Application process, Admission process, Payment of fees, Issue of Certificates. This ERP system is very beneficiary to the parents by the SMS system where the parents come to know the punctuality and the attendance of the students in daily classes. It is useful for office administrative purposes like accounting and completing the office work punctually and within the deadline.

8.6 Digital fees payment system: This system is established in collaboration with the bank. Holding cash in the hands was a risky affair for the students. But now this system enables cashless fee payment. The college has facilitated the students and parents to make the college fee payment through Digital platforms like Net banking, NEFT, Google pay, Phone Pay and Paytm etc. Through this digital payment system, the college staff can deal with the fee collection faster without waste of time. There is no time wasted to calculate the cash. It reduces the circulation of fake currency.

8.7 Tally Accounting System: The whole campus is connected with Tally ERP system. This accounting process is monitored through this system. The accountant and clerks are enabled to use tally and complete the accounting process, using computers faster and in scheduled time. This system also enables the college office staff to maintain proper account and auditing system.

8.8 The CCTV surveillance security system: This system enables the Management, Principal and the staff for better monitoring the movement of students and visitors to the campus. The College has installed more than 100 cameras in common areas in and around the college campus through which there is better security control especially in connection with security of girl students, theft, damages peer fighting. Due to the awareness of CCTV surveillance, the discipline and punctuality has improved and damages to the college property is drastically reduced.

8.9 Biometric Attendance System: This system has made the staff to be more punctual and accountable in their duties.

8.10 Intercom communication system: Through this system the communication between the staff and students has become faster. The Principal is enabled to share important information directly to the students and staff. Through this intercom system the students conduct weekly assembly and hence improve their leadership, public speaking and oratory skills.

8.11 Social media: The College has best practice of producing e-content videos on important topics on every subject. They are uploaded on the social media platform like YouTube and Facebook for the benefit of students and public. Online classes during Covid period were held through Google Meet, Zoom and WebEx online classrooms etc. At present, these systems are used to organize conferences, seminars, PTA, Management, IQAC and alumni meetings.

8.12 Website: Milagres College website www.milagrescollege.edu.in is designed to disseminate up-to-date information about the college and the activities held. This helps the students, parents, alumni, stakeholders and public to get update information about the college.

9. DATA ANALYSIS AND INTERPRETATION

Primary data is collected through sample survey method by grouping the students and staff. The methods are basically interviewing and questioners. Out of the total 100 respondents, female respondent's percentage is more, which is 60%. Out of the total participants degree holders cover 68% and PG holders cover 32%. This shows the higher qualified percentage is far less than degree holder's percentages. On analysing the problem faced by degree staff and students with regards to their accessibility to ICT, it is found that in case of hindrances, power failure, non-ability of computer systems, all participants disagree (100%) to this questions. All agree that the ICT Infrastructure provided in the college has reached a satisfactory mark.

**Table 1 Perceived Potentials of ICT Use to Increase Learning Interest and Motivation**

Particulars	Responses (%)			
	Strongly disagree	Disagree	Agree	Strongly Agree
Learning using ICT is more interesting	-----	10.46	45.53	44.01
I prefer to learn by using ICT	6.01	20.19	42.55	31.25
It's more comfortable to learn using ICT	10.5	23.78	30.46	35.26
I love learning ICT skills	10.34	28.29	30.41	30.96
I'm more enthusiastic to learn with ICT	7.82	18.13	38.52	35.53
ICT use increase my motivation to learn	13.86	28.78	24.88	32.48

Source: (Primary data)

The findings indicate that the majority of the participants had a positive perception of the potentials of ICT use to increase their interest and motivation. More than 60% of them strongly agree and 60% of them agree with the whole statements designating the potentials of ICT use to increase students' learning interest and motivation in the questionnaire.

Table H: 1Use of ICT in an educational institutions positively influences teaching learning process

Particulars	Strongly disagree	Disagree	Agree	Strongly Agree
I feel confident learning new computer skills.	1 (1%)	6 (5.9%)	70 (69.3%)	25 (24.8%)
I find it easier to teach by using ICT	0	12 (11.9%)	70 (69.3%)	19 (18.8%)
The use of ICT encourages students to communicate more with their classmates.	11 (10.9%)	0	63 (62.4%)	27 (26.7%)

Source: (Primary data)

The percentage of strongly agree and agree is 94.0, 88.1 and 89.1. The mean is 90.4 higher than 90% .data shows that ICT in an educational institution positively influences teaching learning process.

Table H: 2Use of ICT positively influences Teachers to be more effective and productive in teaching process.

Particulars	Strongly disagree	Disagree	Agree	Strongly Agree
I think that ICT supported teaching makes learning more effective.	1%	8(7.9%)	57 (56.4%)	36 (35.6%)
I am aware of the great opportunities that ICT offers for effective teaching.	0	8 (7.9%)	57 (56.4%)	36(35.6%)
The use of ICT enables the students' to be more active and engaging in the lesson.	0	9 (8.9%)	58(57.4%)	34(33.7%)
The use of ICT helps teachers to improve teaching with more updated materials	1 (1%)	6 (5.9%)	56 (55.4%)	38 (37.6%)

Source: (Primary data)

The percentage of strongly agree and agree is 92.0, 81.1 and 93. The mean is 88.93 higher than 90% data shows ICT positively influences Teachers to be more effective, productive and more engaged in teaching learning process.

This study is based on the Hypothesis that the positive impact of ICT in long and short terms and ICT as a correlative of Teachers' effectiveness and productivity concerns are proved true. ICT also improves the teachers in engaging themselves more effectively and smoothly.

10. INFERENCES

The impact of ICT on the teaching and learning process is evaluated. This includes examining how ICT tools, such as smart boards, e-learning platforms, and educational software, have changed traditional pedagogical approaches and increased student engagement. The integration of ICT has contributed to creating more interactive and dynamic learning environments at Milagres College. Multimedia presentations, virtual simulations, and online collaboration tools have enhanced student engagement and participation in the classroom. Effectiveness of the college's e-learning platforms and their impact on self-directed learning also analysed. These



platforms have facilitated continuous learning beyond the classroom, enabling students to access study materials, lecture recordings, and supplementary resources. The results of this study show that technology-based teaching and learning is more effective in compare to traditional classroom. This is because, using ICT tools and equipment will prepare an active learning environment that is more interesting and effective for both teachers and students.

Training and support provided to faculty members in adopting and effectively utilizing ICT tools in their teaching practices. Workshops, seminars, and ongoing professional development programs aimed at enhancing digital literacy among educators. ICT has improved administrative processes within the college, such as student registration, record-keeping, and communication with stakeholders. These improvements have contributed to streamlined operations and enhanced efficiency. The integration of ICT has expanded students' access to a wide range of educational resources beyond traditional textbooks.

11. ABCD ANALYSIS OF THE STUDY

Advantages: With the use of ICT, teaching methods are made easier to the teachers and it helps for fast learning and quick grasping tool in the learning process.

Benefits: It has avoided lengthy explanations and voluminous notes making for both teachers and students thereby, saving a lot of time and writing works. It is a great for paper less work. This indirectly motivates students and teachers to devote their extra hours for other curricular activities.

Constraints: As the computers and electronic gadgets are too expensive, it may expand the budget of the institution. Power supply and interruption problems, network problems are the hindrances for the fullest implementation and use of the ICT in the college.

Disadvantages: Excess use of the mobile phones and computers may develop an addiction, may restrict for the scope for creative thinking. It also restricts the students and staff in explorative learning and scope for imagination.

12. CONCLUSION

The study is hereby concluded with summarizing the inferences and findings related to the use and impact of ICT at Milagres College. It highlights the significance of ICT in modern education and its potential to transform the teaching-learning process. The challenges faced during the implementation of ICT leads to present possible solutions to address them. Challenges include technology-related issues, resistance from faculty and students, and financial constraints. The study has Projected the long-term impact of ICT integration at Milagres College and proposes potential future directions for further leveraging ICT to enhance the overall quality of education. Study has explored how the use of ICT has shifted the focus of learning from teacher-centred to student-centred approaches. ICT has expanded research opportunities for both students and faculty members. The availability of online research databases, academic journals, and digital tools that have facilitated research activities and academic publications. In the classrooms staff as well as students prefer new technologies. The study shows that, the faculty perception on ICT in education is very high. Further it is suggested the effectiveness of ICT in college may be made more conducive by feedback from students, faculty and administrators regarding their experiences with ICT integration. This may analyse the perspectives and suggestions provided by different stakeholders to improve the implementation of ICT in the future.

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QUESTIONNAIRE

Instruction: For each item four responses are given.

(1) Strongly Agree [SA], (2) Agree [A], (3) Disagree [DA], (4) Strongly Disagree [SDA].

Give your responses by tick mark in the concerned box.

Sl. No.	Statements	SA	A	DA	SDA
1	Learning using ICT is more interesting				
2	I prefer to learn by using ICT				
3	It's more comfortable to learn using ICT				
4	I love learning ICT skills				
5	I'm more enthusiastic to learn with ICT				
6	ICT use increase my motivation to learn				
7	Learning using ICT is more interesting				
8	Power failure				
9	Not installed in all the classes				
10	Shortage of computers				
11	I feel confident learning new computer skills.				
12	I find it easier to teach by using ICT				
13	The use of ICT encourages students to communicate more with their classmates.				
16	The use of ICT enables the students' to be more active and engaging in the lesson.				
17	I think that ICT supported teaching makes learning more effective.				
18	I am aware of the great opportunities that ICT offers for effective teaching.				