A STUDY OF INFORMATION AND COMMUNICATION TECHNOLOGY ENABLED TEACHING IN HIGHER EDUCATION WITH REFERENCE TO CONVENTIONAL COLLEGES UNDER SHIVAJI UNIVERSITY, KOLHAPUR.

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INTRODUCTION:

Today's age is influenced by and information and technology. The information and technology has influenced all the aspects of human life. Education is not an exception to the technology and information. Communication is the soul of teaching and learning process. Information systems are important and they redefine the way of different organizations. The fast growing ICT has eliminated the limitations on communication around the world and has contributed towards efficiency and productivity of the various organizations. It has been universally recognized the need of ICT in education in the era of globalization where there is free flow of information through satellite and internet holds the way in global information dissemination of knowledge. Academic institutions are using ICT for online learning however use of this technique is not widely adopted by the teachers. The ICT provide innovative learning opportunities and provides for significant advancement in research too. The countries like India where there is need to spread the education to a large population ICT shall play a vital role in the process of education.

OBJECTIVES OF THE STUDY

1. To investigate the present status of ICT infrastructure in the colleges.

2. To study the attitude of the teachers in the use of ICT.

3. To explore the attitude of the students about ICT teaching.

4. To identify causes or factors for non use of ICT in teaching.

5. To provide suggestions and measures for the use of ICT.

SIGNIFICANCE OF THE STUDY

The study is a path finding towards to the policy makers in adopting ICT enabled teaching in higher education. It will bring the facts regarding use of ICT at conventional colleges under Shivaji University, Kolhapur. The study considered the aided multi-faculty colleges in the jurisdiction. It will also find out the attitude of the teachers towards use of ICT in teaching.

The study shall guide for the planning of ICT enabled teaching .Use of ICT enabled teaching will focus on smartness of the students on employability variable. Besides, this will enable the academicians, institutions and persons interested to understand the significance of ICT enabled teaching in the context of globalization.

Few studies were conducted on this topic at the national and the state level. Very few researchers have studied pertaining to aided conventional colleges in Western Maharashtra. Therefore, the study is an important contribution on this background. The scope of the present study is relating to the area covered under Shivaji University, Kolhapur only.

LIMITATIONS OF THE STUDY

1. The study is limited only for the use of ICT in the colleges (conventional, aided and multi faculty) affiliated to Shivaji University, Kolhapur

2. For the sake of maintaining and safeguarding secrecy, certain confidential and information, documents, which are not made available by the colleges, may put limitation on fact-finding.

RESEARCH METHODOLOGY

A research methodology is the arrangement of conditions for data collection and analysis of the data in a manner that aims to combine relevance to the research purpose with economy in procedure. The present study is regarding Information and Communication Technology Enabled Teaching in Higher Education with Reference to Conventional Colleges under Shivaji University, Kolhapur.

Source of Data Collection

For the research purpose, both primary and secondary data used to get the information and to meet the objectives of the study. There are several tools and techniques of data collection. These tools differ considerably in the context of time, energy and cost at the disposal of the researcher. For the present study, data collected through primary and secondary sources. **1. Primary Data:**

Primary data is fresh and original collected to satisfy the research objectives. The data was collected through the questioner.

Secondary Data: - The researcher has also used the secondary data by was books, articles, magazines, journals, internet different websites etc.

A) RESPONSES OF PRINCIPALS ABOUT THE AVAILABILITY OF ICT INFRASTRUCTURE:-

Table No 1

Availability Total number of Desktop Computers without Internet access.

Range for the number of Desktop computers available for the use in teaching	Frequency	Percent
0	8	28.6
1-20	9	32.1
21 - 40	5	17.9
61 - 80	2	7.1
81 - 100	1	3.6
Above 100	3	10.7
Total	28	100

The figures in the above table show the response of the Principals about the availability of total number of Desktop Computers without internet access. 28.6 percent principals have opined that there are not such desktop computers in the colleges. 32.1 percent colleges have 1 o 20 c0mputers. 17.9 percent colleges have 21 to 40 desktop computers. It reveals that about 1/3 colleges do not have desktop computers for the use of the students and teachers and about 1/3 colleges have only up to 20 desktop computers.

Therefore, it is concluded that there are not enough Desktop Computers for the use of the students and teachers.

Table No 2

Total Number of LCD Projectors Available for teaching and learning process.

Range for the number of LCD Projectors available for the use in teaching	Frequency	Percent
1 – 10	23	82.1
11 - 20	4	14.3
Above 21	1	3.6
Total	28	100

The figures in the above table show the response of the Principals about the availability of total number of LCD projectors for the use in teaching learning process. 82.1 percent

principals have opined that there are minimum 1 to 10 LCD projectors for the teaching and learning purpose. 14.3 percent colleges have the laptops in the range of 11 to 20 for the teaching purpose. It reveals that majority of the colleges have LCD projectors, but they are not enough considering the number of the classes and divisions for various streams.

Table No 3

Total Number of Desktop Computers with Internet Access.

Range for the number of Desktop computers available for the use in teaching	Frequency	Percent
0	2	7.1
1 - 50	13	46.4
51 - 100	6	21.4
101 - 150	3	10.7
151 - 200	2	7.1
251 - 300	1	3.6
301 - 350	1	3.6
Total	28	100

The figures in the above table show the response of the Principals about the availability of total number of Desktop Computers with internet access. 7.1 percent principals have opined that there are not such desktop computers in the colleges. 46.4 percent colleges have 1 o 50 desktop computers with internet facility. 21.4 percent colleges have 101 to 150 desktop computers with internet facility. It reveals that about majority colleges do not have desktop computers with internet facility in proportion with the enrolment of the students for the use of the students and teachers.

Therefore, it is concluded that there are not enough Desktop Computers with internet facility for the use of the students in proportion of the enrolment of the students.

B) ATTITUDE OF TEACHERS ABOUT THE USE OF ICT:-

Table No 4

Attitude the Teachers Regarding Use of ICT for Learning Process.

Sr. No.	Use of ICT for learning has a positive impact	Frequency	Percentage

1	Yes	230	97.87
2	No	05	02.13
Total		235	100

The figures in the above table show the attitude of the teachers regarding impact of use of ICT for learning process. 97.87 percent teachers have opined that there is great impact of use of ICT in learning process. It reveals that almost all the respondents opined that there is great impact of use of ICT in learning process. Therefore, it is concluded that there is great impact of use of ICT in teaching learning process.

Table No 5

Classification of the Responses Regarding the Obstacles/ Causes for Non Use of ICT in Teaching

Sr. No.	Obstacles in the use of ICT in teaching and learning	Frequency	Rank
1	Insufficient number of computers	13	V
2	Insufficient number of Internet- connected computers	11	VII
3	Insufficient Internet speed (bandwidth)	12	VI
4	Insufficient number of Interactive Whiteboards	21	I
5	Insufficient number of Laptops/Notebooks (Kindle)	18	II
6	College computers are out of date and/or needs repair	04	XII
7	Lack of adequate skills of teachers	14	IV
8	Insufficient technical support for teachers	13	V
9	Insufficient pedagogical support for teachers	16	III
10	Lack of adequate content/material for teaching	04	XII
11	Too difficult to integrate ICT use into the curriculum	03	XIII

12	Lack of pedagogical models on how to use ICT for learning	08	IX
13	College time (fixed lessons time, etc.)	04	XII
14	No sufficient space (classroom size and furniture, etc.)	07	X
15	Pressure to prepare students for exams and tests	10	VIII
16	Most parents not in favour of the use of ICT at College	05	XI
17	Most teachers not in favour of the use of ICT at College	07	X
18	Unclear benefit to use ICT for teaching	00	
19	Using ICT in teaching and learning not being a goal in our College	04	XII

Figures in the above table show the classification of the responses regarding the obstacles in the use of ICT in teaching and learning. The responses are tabulated and mode value is calculated. Based on the mode value, the obstacle in the use of ICT is insufficient number of Interactive Whiteboards. The second reason as per the number of responses is the insufficient number of Laptops/Notebooks (Kindle). The third obstacle as per the rank of the responses is Insufficient pedagogical support for teachers, fourth obstacles as per the responses is obstacle goes based on the Lack of adequate skills of teachers, and fifth obstacle as per the rank is Insufficient technical support for teachers, these are the major obstacles in the use of ICT in teaching and learning process. Accordingly the rest of the obstacles are ranked which stands as barriers in the Use of ICT in teaching learning process.

Therefore, it is concluded that there are various obstacles in the use of ICT in teaching process, however, the most ranked obstacles are Insufficient number of Interactive Whiteboards, Insufficient number of Laptops/Notebooks (Kindle), Insufficient pedagogical support for teachers, Lack of adequate skills of teachers, and Insufficient technical support for teachers.

C) ATTITUDE OF STUDENT ABOUT ICT TEACHING

Table No 6

Attitude of Students about Use of ICT Which Increases the Knowledge and Skill.

Sr. No.	Nature of Response	Frequency	Percentage
1	Yes	780	100
2	No	00	00
Total		780	100

The figures in the above table show the classification of opinions of students regarding learning with the ICT which increases the knowledge and skill. 100 percent students have opined that ICT enabled learning increases the knowledge and skill. It shows that all the students have opined that ICT enabled learning increases the knowledge and skill. Therefore, it is concluded that all the students have positive opinion regarding learning with ICT that increases the knowledge and skill.

Table No 7

Opinion of the students regarding essentiality of the use of ICT for learning.

Sr. No.	Use of ICT is essential in learning process	Frequency	Percentage
1	Yes	780	100
2	No	00	00
Total		780	100

The figures in the above table show the classification of opinions of students regarding essentiality of the use of ICT for learning. 100 students have opined that it is essential to use ICT for learning. It shows that all the students feel that ICT is essential for learning purpose. Therefore, it is concluded that it is essential to use ICT for learning.

Table No 8

Opinion of the students regarding positive impact of use of ICT on learning.

Sr. No.	Use of ICT for learning has a positive impact	Frequency	Percentage
1	Yes	780	100
2	No	00	00
Total		780	100

The figures in the above table show the classification of opinions of student respondents regarding positive impact of use of ICT on learning.

100 percent students have opined that there is positive impact of use of ICT on learning. It reveals that all the students have opined that there is a positive impact of use of ICT on learning.

Therefore, it is concluded that there is positive impact of use of ICT on learning.

FINDIGS OF THE STUDY:-

1. Very few teachers use ICT devices in teaching learning process

2. Whatever ICT equipments are with the colleges that are fully in operation.

3. Desktop Computers installed for educational purposes for the use of students and teachers at various places in the colleges are not enough in numbers.

4.There are various obstacles in the use of ICT in teaching process, however, the most ranked obstacles are Insufficient number of Interactive Whiteboards, Insufficient number of Laptops/Notebooks (Kindle), Insufficient pedagogical support for teachers, Lack of adequate skills of teachers, and Insufficient technical support for teachers.

5. The teachers have opined that use of ICT in teaching and its impact on students' learning is positive.

6. The students have positive opinion regarding learning with ICT that increases the knowledge and skill.

SUGGESTIONS

The present research project on ICT enabled teaching in higher education has interdisciplinary relevance. It studied infrastructure relating to ICT, use of ICT by the teachers, effect of use of ICT in teaching on the students. The present study is also related with studying the attitude of the students regarding learning with the help of ICT. Consequent to the findings and observations made following the analysis and interpretation of data with respect ICT enabled teaching, it is imperative in case of present research to provide certain suggestions which may be useful for the Planners, the State and the Stakeholders. Following are the suggestions:

1. It is essential to fulfil the vacancies of the teachers in the colleges to have effective ICT enabled teaching.

2. It should be mandatory to teachers to use ICT devices in teaching learning process.

3. There should be an academic department dedicated to the pedagogical use of ICT.

4. Installations of Desktop Computers, WIB, Smart Boards as per requirements.

5.Teachers must undertake professional development in the matters of ICT, especially in the areas such as internet use and general application, Equipment specific training, Pedagogical use of ICT in teaching and learning, subject specific training on learning applications (Tutorials, Simulations), course on multimedia (using digital video, audio equipment), participation in Peer learning Communities or group work with other teachers about the use of ICT for teaching and learning, and other professional Development opportunities related to ICT (use of e-learning, massive open online courses, n-list, OPAC).

6. Provide technical support in the use of ICT to the teachers and students whenever required.

7. Make available the facility of LMS, VLE, and e-portfolio system adequately.

8. Make available 100 percent applications of Technical Measures (Filtering) to prevent access to certain content, so that students can have an access to the educational sites only.

9. Colleges must provide ICT devices to the teachers (Tablet PC, notebook, LCD Projectors, IWB, Digital Reader, Data Projector etc.) for teaching learning process.

10. Colleges must Teachers must use ICT devices in teaching and learning process and use the skill acquired during training for the benefit of the students.

11. There must be a topic/subject in the curriculum which makes the students to work on computers.

BIBLIOGRAPHY

Reference Books:

1. Carl Simmons & Claire Hawkins (2009) Teaching ICT, Sage Publications India Pvt. Ltd., New Delhi.

2. Sreedevi Dr. P. S.(2016) ICT Enabled Education, A. P. H. Publishing Corporation, New Delhi.

3. Sreedevi Dr. P. S.(2016) Encyclopaedia of ICT in Education, Vol.1 &2, A. P. H. Publishing Corporation, New Delhi.

4. Srinivasa K. S. (2015) Information and Communication Technology, Navyug Books International, New Delhi.

5. Rajub Saha and Jayant Mete (2017) ICT in Education: A 21St Century Phenomenon, A. P. H. Publishing Corporation, New Delhi.

6. Angadi Dr. G. R. (2016) professional Development and ICT in Education, A. P. H. Publishing Corporation, New Delhi.

7. Chatterjee Deepak (2015) An Introduction to Teaching, Atlantic Publishers and Distributers (P) Ltd., New Delhi.

8. Swami Anita & Borkar Usha (2016) Higher Education, A. P. H. Publishing Corporation, New Delhi.

9. Chauhan Dr. R. S. (2014) ICT in Education, A. P. H. Publishing Corporation, New Delhi.

10. Department of School Education and Literacy Ministry of Human Resource Development Government of India (2012): National Policy on Information and Communication Technology (ICT) In School Education.

11. Schwalbe Kathy (2011) managing Information Technology Projects, Cenage3 Learning India Pvt. Ltd., Delhi.

12. Neelam Kumari (2014) Communication and Education Technology, S. Vikas &Company, India, Jalandhar

13. Mangal S. K. , Uma Mangal (2014) Essentials of Educational technology, Prentice Hall Learning Pvt. Ltd. , Delhi.

14. Sodi Reeta (2015) Essentials of Quality in Higher Education, Shree Niwas Publications, Jaipur.

Journals and Reports:

1. Kavitha T C Dr. D Ashok SOM (2015): "ICT: An Enabler and a Catalyst to Nurture Service Quality in Higher Education- A Review", India International Journal of Emerging Research in Management &Technology, ISSN: 2278-9359 (Volume-4, Issue-2) Research Article, February 2015.

2. Meoli Kashorda and Timothy Mwololo WAEMA(2011): "ICT Indicators in Higher Education: Towards an E-readiness Assessment Model", Reports Proceedings and of the 4th Ubuntu Net Alliance Annual Conference, 2011, pp 57-76, ISSN 2223-7062,

3. Augustus Richard J. (2015): "The Role of ICT in Higher Education In The 21st Century", International Journal of Multidisciplinary Research and Modern Education (IJMRME) ISSN (Online): 2454 - 6119 (www.rdmodernresearch.org) Volume I, Issue I, 2015.

4. Sukanta Sarkar (2012): "The Role of Information and Communication Technology (ICT) in Higher Education for the 21st Century", The Science Probe, Vol. 1 No. 1 (May 2012) Page No- 30-41.

5. Dr. Md. Mahmood Alam (2016): "Use of ICT in Higher Education", The International Journal of Indian Psychology ISSN 2348-5396 (e) | ISSN: 2349-3429 (p) Volume 3, Issue 4, No. 68, DIP: 18.01.208/20160304 ISBN: 978-1-365-39398-3, July-September, 2016, pp-162-171.

6. Munienge Mbodila1, Telisa Jones2, Kikunga Muhandji (2013): Integration of ICT in Education: Key Challenges, International Journal of Emerging Technology and Advanced Engineering, Website: www.ijetae.com (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 3, Issue 11, November 2013)

7. Deepa Mehta, Suman Kasnia (2011): "A Scenario on the role of ICT in Governance and Education System", IJCEM International Journal of Computational Engineering & Management, Vol. 13, July 2011 ISSN (Online): 2230-7893, pp.100-109.

8. Uttam Kr Pegu (2014): "Information and Communication Technology in Higher Education in India: Challenges and Opportunities", International Journal of Information and Computation Technology. ISSN 0974-2239 Volume 4, Number 5 (2014), pp. 513-518 © International Research Publications House, pp – 513-518.

Websites:

1. https://en.wikipedia.org/wiki/E-reader

2.https://www.google.co.in/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=meaning+of+digital+camera&*

3. http://www.webopedia.com/TERM/K/kindle.html

4. http://smartboardita.pbworks.com/f/smartboard%20with%20kindergartener.pdf

2.https://www.google.co.in/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=meaning+of+digital+camera&*