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SPECIAL ISSUE JANUARY 2019

NAAC SPONSERED

NATIONAL SEMINAR

ON

Use of ICT in Teaching, Learning and Evaluation

7th January to 8th January 2019

Organized by

INTERNAL QUALITY ASSURANCE CELL

Dnyanopasak Shikshan Prasarak Mandal, Manora's

M.S.P. Arts. Science and K.P.T. Commerce College, Manora
Dist. Washim Maharashtra, India.

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Sd/
Chief Editor

PUBLICATION ETHICS AND MALPRACTICE STATEMENT OF RESEARCH NEBULA

UNIVERSITY GRANTS COMMISSION (PROMOTION OF ACADEMIC INTEGRITY AND PREVENTION OF PLAGIARISM IN HIGHER EDUCATIONAL INSTITUTIONS) REGULATIONS, 2018 New Delhi, 23rd July, 2018

Link https://www.ugc.ac.in/pdfnews/7771545_academic-integrity-Regulation2018.pdf

the Head of the HEI within a period of 45 days from the date of receipt of recommendation of DAIP/ complaint / initiation of the proceedings.

vii. The IAIP shall provide a copy of the report to the person(s) against whom inquiry report is submitted.

12. Penalties

Penalties in the cases of plagiarism shall be imposed on students pursuing studies at the level of Masters and Research programs and on researcher, faculty & staff of the HEI only after academic misconduct on the part of the individual has been established without doubt, when all avenues of appeal have been exhausted and individual in question has been provided enough opportunity to defend himself or herself in a fair or transparent manner.

12.1 Penalties in case of plagiarism in submission of thesis and dissertations

Institutional Academic Integrity Panel (IAIP) shall impose penalty considering the severity of the Plagiarism.

i. **Level 0: Similarities upto 10% -** Minor Similarities, no penalty.

ii. **Level 1: Similarities above 10% to 40%** - Such student shall be asked to submit a revised script within a stipulated time period not exceeding 6 months.

iii. **Level 2: Similarities above 40% to 60%** - Such student shall be debarred from submitting a revised script for a period of one year.

iv. **Level 3: Similarities above 60%** -Such student registration for that programme shall be cancelled.

Note 1: Penalty on repeated plagiarism- Such student shall be punished for the plagiarism of one level higher than the previous level committed by him/her. In case where plagiarism of highest level is committed then the punishment for the same shall be operative.

Note 2: Penalty in case where the degree/credit has already been obtained - If plagiarism is proved on a date later than the date of award of degree or credit as the case may be then his/her degree or credit shall be put in abeyance for a period recommended by the IAIP and approved by the Head of the Institution.

12.2 Penalties in case of plagiarism in academic and research publications

I. **Level 0: Similarities up to 10%** - Minor similarities, no penalty.

II. **Level 1: Similarities above 10% to 40%**

i) Shall be asked to withdraw manuscript.

III. **Level 2: Similarities above 40% to 60%**

i) Shall be asked to withdraw manuscript

The Author can claim 10 marks for the publication in this journal as per 18 July 2018
https://www.ugc.ac.in/pdfnews/4033931_UGC-Regulation_min_Qualification_Jul2018.pdf

Table 2

Methodology for University and College Teachers for calculating Academic/Research Score

(Assessment must be based on evidence produced by the teacher such as: copy of publications, project sanction letter, utilization and completion certificates issued by the University and acknowledgements for patent filing and approval letters, students' Ph.D. award letter, etc,.)

S.N.	Academic/Research Activity	Faculty of Sciences /Engineering / Agriculture / Medical /Veterinary Sciences	Faculty of Languages / Humanities / Arts / Social Sciences / Library /Education / Physical Education / Commerce / Management & other related disciplines
1.	**Research Papers in Peer-Reviewed or UGC listed Journals**	08 per paper	10 per paper
2.	**Publications (other than Research papers)**		
	(a) Books authored which are published by ;		
	International publishers	12	12
	National Publishers	10	10
	Chapter in Edited Book	05	05
	Editor of Book by International Publisher	10	10
	Editor of Book by National Publisher	08	08

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   2.1. The utmost Secrecy is maintained during reviewing process of the submitted paper except the editorial board of the journal.
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   - Submits the report on time
   - Provides well-founded comments for authors

- Gives constructive criticism
- Demonstrates objectivity
- Provides a clear recommendation to the editor

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   1.2. The submitted original work ought to have the traits of qualitative references.
   1.3. Any unethical **remarks and comments towards defamation and/or any lawful condition and intellectual property and/or plagiarized content,**
2. UNORIGINALITY AND/OR PLAGIARISM
   2.1. It is on the part of author/research to guarantee the unique and original work.
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USE OF ICT IN HIGHER EDUCATION

ABSTRACT

During the development of a country, higher education plays an important role to build a society with knowledge based. But in India number of challenges are there in higher education provided by universities in terms of Access, Equity and Quality. During the eleventh and twelfth Five Year Plan period, Government of India has taken several efforts to increase access to higher education by adopting state specific strategies, for higher education through Curriculum reforms, Vocational programs, Networking, Information Technology adoption and Distance Education along with reforms in governance. However in terms of Gross Enrolment Ratio India(25.2%), still lags behind the worldwide average and emerging countries like Brazil (49.4%) and China (43.7%).

Introduction:

Facts ofHE in India: The Indian Higher Education System one of the largest system in the world in terms of number of institutionsand third largest in terms of student enrolment. While several new institutions have emerged due tosignificant increase in private sector participation over the last few years, concerns remain regarding the quality of education being imparted to students.Six states have registered GER higher than national average (25.2%), with their share of students entering higher education is growingtwice as fast as overall rate. These states are Tamil Nadu (46.9%), Himachal Pradesh (36.7%), Kerala (34.2%), Andhra Pradesh (32.4%), Haryana (29%), Maharashtra (27.2%) and Punjab (28.6%). However, eight states UP (24.9%), Madhya Pradesh (20%), Odisha (21%), Bihar (14.4%), Gujarat (20.2%), Rajasthan (20.5%), Mizoram (24.5%) and West Bengal (18.5%) had GER ratio far less than the national average. Bihar has lowest GER with just 14.4% of its eligible population (in age group of 18 to 23 years) pursuing higher education.

Aishe data for year 2017-18 shows that, there are 903 Universities, 39050 Colleges and 10011 Stand Alone Institutionsand out of them 882 Universities, 38061 Colleges and 9090 Stand Alone Institutions have responded during the survey. 285 Universities are affiliating i.e. having Colleges. 343 Universities are privately managed. 357 Universities are located in rural area. 15 Universities are exclusively for women, 4 in Rajasthan, 2 in Tamil Nadu & 1 each in Andhra Pradesh, Assam, Delhi, Haryana, Karnataka, Maharashtra, Odisha, Uttarakhand and West Bengal. In addition to 1 Central Open University, 14 State Open Universities and 1State Private Open University, there are 110 Dual mode Universities, which offer education through distance mode also and the maximum (16) of them are located in Tamil Nadu. There are 500 General, 126 Technical, 70 Agriculture & Allied, 58 Medical, 22 Law, 13Sanskrit and 10 Language Universities and rest 83 Universities are of other Categories. The top 8 States in terms of highest number of colleges in India are Uttar Pradesh, Maharashtra, Karnataka, Rajasthan, Andhra Pradesh, Tamil Nadu, Gujarat and Madhya Pradesh. Bangalore Urban district tops in terms of number of colleges with 893 colleges followed by Jaipur with 558 colleges. Top 50 districts have about 32.6% of colleges. College density, i.e. the number of colleges per lakh eligible population (population in the age-group 18-23 years) varies from 7 in Bihar to 51 in Karnataka and Telangana as compared to All India average of 28. 60.48% Colleges are located in Rural Area. 11.04% Colleges are exclusively for Women. Only 3.6% Colleges run Ph.D. programme and 36.7% Colleges run Post Graduate Level programmes. There are 33.75% Colleges, which run only single programme, out of which 83% are privately managed. Among these privately managed colleges, 55.1% colleges run B.Ed. Courses only.

78% Colleges are privately managed; 64.7% Private-unaided and 13.3% Private-aided.Andhra Pradesh & Telangana have about 82% Private-unaided colleges and Tamil Nadu has 76.2%Privateunaided colleges, whereas, Assam has 12.0% and Chandigarh has only 8.0% Private-unaided colleges. 18.5% of the Colleges are having enrolment less than 100 and only 3.6% Colleges have enrolment more than 3000. Total enrolment in higher education has been estimated to be 36.6 million with 19.2 million boys and 17.4 million girls. Girls constitute 47.6% of the total enrolment. Gross Enrolment Ratio (GER) in Higher education in India is 25.8%, which is calculated for 18-23 years of age group. GER for male population is 26.3% and for females, it is 25.4%.For Scheduled Castes, it is 21.8% and for Scheduled Tribes, it is 15.9% as compared to the national GER of 25.8%. Distance enrolment constitutes about 11.0% of the total enrolment in higher education, of which 41.9% are female students. About 79.2% of the students are enrolled in Undergraduate level programme. 1,61,412 students are enrolled in Ph.D. that is less than 0.5% of the total student enrolment. Maximum numbers of Students are enrolled in B.A. programme followed by B.Sc. and B.Com. programmes.10Programmesout of approximately 188 cover 81.2% of the total students enrolled in higher education. At Undergraduate level the highest number (36.4%) of students are enrolled in Arts/Humanities/Social Sciences courses followed by Science (17.1%), Engineering and Technology (14.1%) and Commerce (14.1%) At Ph.D. level, maximum number of students are enrolled in Science stream followed by Engineering and Technology. On the other hand at Post Graduate level maximum students are enrolled in Social Science stream and Management comes at number two. Uttar Pradesh comes at number one with the highest student enrolment followed by Maharashtra and Tamil Nadu. Scheduled Casts students constitute 14.4% and Scheduled Tribes students 5.2% of the total enrolment. 35.0% students belong to Other Backward Classes. 5.0% students belong to Muslim Minority and 2.2% from Other Minority Communities. The total number of foreign students enrolled in higher education is 46,144. The foreign students come from 166 different countries from across the globe. The top 10 countries constitute 63.4% of the total foreign students enrolled.

Highest share of foreign students come from the neighbouring countries of which Nepal is 24.9% of the total, followed by, Afghanistan (9.5%), Sudan (4.8%), Bhutan constitutes (4.3%) and Nigeria (4.0%). There are more than 78.0% colleges running in Private sector; aided and unaided taken together, but it caters to only 67.3% of the total enrolment. The total number of teacher are12,84,755, out of which about 58.0% are male teachers and 42.0% are female teachers. At all-India level there are merely 72 female teachers per 100 male teachers. Pupil Teacher Ratio (PTR) in Universities and Colleges is 30 if regular mode enrolment is considered whereas PTR for Universities and its Constituent Units is 20 for regular mode. Among non-teaching staff, the share of Group-C is the highest with 40%, followed by Group-D with 28%. Group-A and Group-B comprise of 15% and 17% non-teaching posts, respectively. The average number of females per 100 male non-teaching staff is 47. 34,400 students were awarded Ph.D. level degree during 2017 with 20,179 males and 14,221 females. B.A. (23.89 Lakh)degree has been awarded to maximum number of students. B.Sc. (11.52 Lakh)is the second highest followed by B.Com. (9.39 Lakh). At Post Graduate level M.A. pass number of students is maximum followed by M.Sc. and M.B.A. The highest number of students (23.89 lakh)have graduated in Arts courses. At Ph.D. level, maximum numbers of students out-turn is in Science stream followed by Engineering and Technology. On the other hand at PG level maximum students out-turn is observed in Social Science and Management stream comes at number two. The share of Ph.D. student is highest in State Public University (31.6%) followed by Institute of National Importance (20.4%), Central University (15.8%) and Deemed University-Private (13.4%). Share of female students is lowest in Institutions of National Importance followed by State Private Open Universities, Deemed University-Government.

Challenges in HE: The challenges for India in terms ofAccess, Equity and Quality of Higher Education

- Insufficient infrastructure to meet the growing demand for higher education.
- Large Number of institutes are in urban areas where the facility of transport is less.
- Large number of vacancies of faculties in colleges.
- The courses run by university are not skill based.

- The highest number of students (23.89 lakh)have graduated in Arts courses where possibility of employment is less.
- In 2017-18, Out of the total enrolment of 3, 66, 42, 378 students, a vast majority of 2,90,16,350 students are enrolled in Under Graduate that is a sweeping 79.19%.
- The 11.23% students are enrolled in Post-Graduation which is approximately 41.14 lakh students. There are 3,110 students enrolled in Integrated Ph.D. in addition to 1,61,412 students enrolled at Ph.D. Level. There is a small share of 7.39% students enrolled at Diploma level in India that amounts to around 27.0 lakh students

ICT benefits in HE: The use of ICT can significantly strengthen HE in India. The use of ICT in Higher education addresses the challenges of Access, Equity and Quality.

The use of ICT in higher education improve the following:

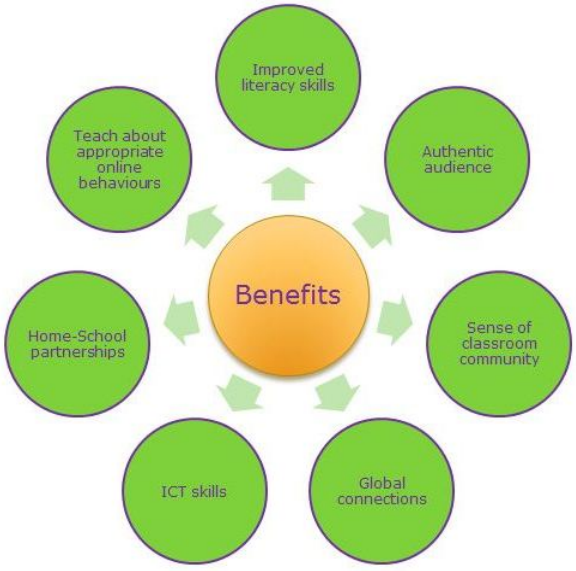
1) Improve the access to the system through online education.

2) Improve the quality of teaching especially across remote areas.

3) Increases transparency and strengthening systems, processes and compliance norms in HE Institutes as shown. ICT can enhance quality of education byincreasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment.

4) Measure the students learning participation and effectiveness.

5) Analyse student behaviour through continuous internal evaluation (CIE).



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IMPACT OF ICT IN TEACHING, LEARNING AND EVALUATION

ABSTRACT

Development in the field of Information and Communication Technologies has brought about a revolutionized change in life style of man. The world turned into a global village. Technology is used for collecting, storing, editing and passing on information in various forms. The acronym ICT is manifestation of digital instruments of manifold use in varied field. Such as personal computer is an example of the use of ICT in education. Multimedia is also a frequently used term to refer to a combination of data carriers, for example video, CD-ROM, floppy disc and Internet and software in which the possibility for an interactive approach is offered. In the field of education ICT enabled the transformation of teaching, research and learning processes at all levels. It empowers teachers and students, making significant contributions to the education fraternity. In most cases, ICT is used as a tool, for example while making assignments, collecting data and documentation, communicating and conducting research. Typically, ICT is used independently from the subject matter. In current higher learning institutions, coursework's, assignments and other work are no longer done the traditional way of paper work. They are done and submitted electronically.

Medium for teaching and learning

Today ICT has transformed the way the education is delivered. It is as a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. There are many different types in which ICT has been envisaged as a medium for teaching and learning included computer assisted learning, web-learning, computer-classes, online training, distance education, eLearning, virtual learning, digital training. ICT is used as a tool for administration and management of record such as school examination preparation and printing, examination results compilation, timetable, school fee and school attendance.

Positive influence of ICT in education

ICT revolution has shown vital impact on three fundamental aspects of education: access, quality and cost. It has advanced knowledge by expanding and widening access to education, by improving the quality of education and reducing its cost while extending the education to the remote areas through Virtual, eLearning, online and distance learning. ICT in education has provided more employment opportunities within the education system directly and indirectly through academic and non-academic staff. E-learning is a promising tool for expanding and widening access to tertiary education. Because they relax space and time constraints, ICTs can allow new people to participate in tertiary education by increasing the flexibility of participation compared to the traditional face-to-face model: working students and adults, people living in remote areas (rural), non-mobile students and even foreign students could now more easily participate in education.

Internet and online learning allows access to education to larger number of students. The constraints of the face-to-face learning experience, that is, the size of the rooms and buildings and the students/teacher ratio are eliminated. With ICT, a lesson can be reproduced and communicated very cheaply via different means like the digital recording. This has widened access to tertiary education to young people and too small academic workforce. E-learning has shown a promising way for improving the quality and effectiveness of tertiary education and learning. These promises have been derived from different characteristics of ICTs: the flexibility of the learning experience to students; enhanced access to information resources for more

students; potential to drive innovative and effective ways of learning and/or teaching, including learning tools and easier use of multimedia or simulation tools. E-learning has also led to reduce the cost of tertiary education, which is critical for expanding and widening its access worldwide. It presents new opportunities for students having difficulties with this traditional format.

Negative influence of ICT in education

One of the major impacts of ICT in education is moral decay. These include access to inappropriate material, violation of personal privacy, and being the recipient of sexual predation, pornography, harassment, stalking, or scams and dissemination of harmful or abusive material.

By use of ICT, students do not learn the basic mental arithmetic skills because they rely on electronic methods including calculators. With ICT, students tend to do much of copying and pasting instead of learning and taking their own notes. This has led to ethical issues such as plagiarism. Relying on spell check and grammar features of software's such as Microsoft word processing lead to lower literacy skills because they tend to make the students think less.

Legal and Ethical Issues on the impact of ICT in education

Ethical issues related to the use of ICT in education

It is also true that in addition to positive impact of ICT, it has created danger of misuse such as stealing software or the use of unlicensed/pirated software. This includes all aspects of making and/or using illegal copies of software. In most education environments, pirated software is rampant, mainly among the students and this raises major legal and ethical issues. One will agree that almost every second student in the field of research has recourse to at least one unauthorized or illegally acquired software involving the act of plagiarism. It is exceedingly easy to do "cut and paste" without referencing the source and without paying attention to copyright laws. This is a serious ethical issue among the education system with both student and teaching staff using other peoples work as their own.

Moreover making illegal or unethical use of ICT facilities such as cyber crimes and hacking, damaging, destroying, stealing, and illegally using ICT facilities and files that belong to others have come into vogue. In the educational institutions, the teaching academic staff most cases understand the legal and ethical issues and these can be minimized by modeling and teaching legal and ethical practice related to technology use. Students should adhere to codes of practice and apply strategies to conform to intellectual property and copyright laws including identifying and acknowledging the owner/creator of digital sources, and citing references following agreed conventions Applying technology resources to enable and empower learner with diverse backgrounds, characteristics, and abilities. Promote safe and healthy use of technology resources. They should share materials responsibly respecting self and others when working online. By this, it will minimize the problem of using other peoples work but instead venture in individual contribution through the available technology resources. The education staff should model the students so that they don't do anything that breaks laws.

Social Issues relating to the impact of ICT in education

The social impact of ICT on education include access to inappropriate material, violation of personal privacy, and being the recipient of sexual predation, harassment, stalking, or scams. Teachers with no practical preparation or experience in social, ethical, and legal issues surrounding digital technologies create another area of concern. To curb this, teacher training programs need to ensure that teachers are prepared to use technology, especially the Internet, in a safe and ethically responsible manner. This way, teachers can then lead students on exciting, educationally enriching learning adventures with the help of technology.

Through the development of these technologies people can stay inside, watch TV, play online games etcetera. This means that the amount of leisure activities that people have drastically decreased, with respect to the wide range of entertainment technologies. Many people prefer to use ICT as entertainment rather than going out. With ICT, new programs, games and films come out every second. Compared to going out with friends, the later need everyone to be free at the exact same time, you need to find an activity which everyone would like, and lastly you need good weather and in most cases no one wants to go out when it's really cold, raining and windy. With ICT we get the comfort from our own homes with the choice of thousands of things to do.

Conclusion

As the more ICT develops, more ways of development are invented. The Internet itself is something people interact hours and hours every day

on many matters related to human welfare. For example, reading blogs, chatting and communicating with friends, watching videos and playing online games, multiplayer or single player are all forms of interaction not only in education but also in every walk of life.

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AN EFFECTIVE USE OF ICT FOR EDUCATION AND LEARNING: *ICT AS A CHANGE AGENT FOR EDUCATION*

ABSTRACT

Information and communication technologies (ICT) have become commonplace entities in all aspects of life. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavor within business and governance. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. In this paper effective use of ICT for Education, along with ICT use in the teaching learning process; quality and accessibility of education; learning motivation. Learning environment. Besides, an overview of the ICT and scholastic performance is to be explored.

Introduction:

According to a United Nations report (1999) ICTs cover Internet service provision, telecommunications equipment and services, information technology equipment and services, media and broadcasting, libraries and documentation centre's, commercial information providers, network-based information services, and other related information and communication activities. According to UNESCO (2002) information and communication technology (ICT) may be regarded as the combination of 'Informatics technology' with other related technology, specifically communication technology. The various kinds of ICT products available and having relevance to education, such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counseling, interactive voice response system, audiocassettes and CD ROMs etc have been used in education for different purposes (Sharma, 2003; Sanyal, 2001; Bhattacharya and Sharma, 2007).

The 1990s was the decade of computer communications and information access, particularly with the popularity and accessibility of internet-based services such as electronic mail and the World Wide Web (WWW). At the same time the CD-ROM became the standard for distributing packaged software (replacing the floppy disk). As a result educators became more focused on the use of the technology to improve student learning as a rationale for investment. Any discussion about the use of computer systems in schools is built upon an understanding of the link between schools, learning and computer technology.

ICT enhancing the quality and accessibility of education

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore & Kearsley, 1996). Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. Thus, ICT enabled education will ultimately lead to the democratization of education. Especially in developing countries like India, effective use of ICT for the purpose of education has the potential to bridge the digital divide.

India has a billion-plus population and a high proportion of the young and hence it has a large formal education system. The demand for education in developing countries like India has skyrocketed as education is still regarded as an important bridge of social, economic and political mobility. There exist infrastructures, socio- economic, linguistic and 5 physical barriers in India for people who wish to access education Bhattacharya and Sharma, 2007).

ICT enhancing learning motivation

ICTs can enhance the quality of education in several ways, by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner centered environment. ICTs, especially computers and Internet technologies, enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. ICTs such as videos, television and multimedia computer software that 7 combine text, sound, and colorful moving images can be used to provide challenging and authentic content that will engage the student in the learning process. Interactive radio likewise makes use of sound effects, songs, dramatizations, comic skits, and other performance conventions to compel the students to listen and become more involved in the lessons being delivered. Some of the parents of the respondents opined that their children were feeling more motivated than before in such type of teaching in the classroom rather than the stereotype 45 minutes lecture. They were of the view that this type of learning process is much more effective than the monotonous monologue classroom situation where the teacher just lectures from a raised platform and the students just listen to the teacher.

Conclusion

The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of students. The overall literature suggests that successful ICT integration in education.

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USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN SCIENCE EDUCATION FOR EFFECTIVE TEACHING AND LEARNING

ABSTRACT

Science education is very important to technological development of any nation because of its numerous benefits. Effectiveness of teaching and learning is required in science education through application of ICT.The paper reviewed various applications of ICT in effective teaching and learning of science education; problems militating against full application of ICT in science education are highlighted.

Keywords: Science education, ICT, computer, internet.

Nothing is static in the world again everything changes almost every second of the day; so should be educational activities (teaching and learning). Gone are the days when teaching and learning is only based on chalk and books packed somewhere called library; today everything has gone computerized to retrieved, store and transmit information.

The world is in the era of Information and Communication Technology (ICT) where information is not restricted by time, space and channel; teaching and learning are not restricted to time, space and channel. Teaching and learning could be done in your bedroom, on the sea even in the air; teaching and learning is no longer restricted into classroom any more.

Countries of the world such as Austria, Finland, Sweden, Denmark and UK, teachers and students have a generally positive attitude towards e-learning and relatively advanced IT competences (EU, 2005). ICT is defined by Olugbenga and Adebayo (2010) as collection, retrieval, use and storage and communicating information through the use of computers and micro electronic system. UNESCO in Meleisea (2007) viewed ICT as a technology of creating, displaying, storing, manipulating and exchanging information.

Importance of ICT in our society today is enormous as underscored by Adebayo (2010) that ICTs is an indispensable part of contemporary society; allows access to information anywhere in the world; promote networking that is not restricted by boundary, language and culture; foster communities' empowerment and spread knowledge.

Applications of ICT in science education

There are many applications of ICT in teaching and learning depending on the knowledge of the user however, Williams and Nguyen (2012) classification of these application in classroom teaching includes the learning resources, instructional organization of learning and communication. The classifications made use of educational software; computer- based testing system, e-mail system, internet, telephone, radio etc. Generally ICT will be applicable in Computer Assisted Instruction (CAI); Computed Aided Design (CAD); Teleconferences and Library Computer System (LCS). There are many other general applications of ICT in education apart from those mentioned above.

Applications in chemistry education

Chemistry deals with chemicals and their reactions most of which are very dangerous to life if not handle with caution. Reactions of these chemicals in most cases are not easy to understand by students without seeing them in real term; teachers usually explain these reactions abstractly and through molecular diagram. CAI has been of tremendous help in solving this problem; software is available where students could watch this reaction on computer as in real life. Animations and videos of complex molecular structures in chemistry are available for classroom teaching for all categories of students in chemistry. For example students will find it difficult to appreciate the chemistry of atom if not supported using ICT; other area of chemistry that would be

difficult to teach and learn if not supported by ICT are quantum theory, chemical reaction , ionization, electrochemistry and many more. There are rate of reactions and graph that are so complex to teach by the teacher which ICT can help the teacher to manipulate for the student proper understanding. Many times information needed in chemistry class may not be available as at the time of the lesson; students or the teacher can access such information using internet facility at anytime.

Problem militating against application of ICT in science education

As good as ICT might seem to be to any nation yet there are some problems militating against its application even in developed countries of the world.

i. Inadequate Funding
ii. Teacher Factor
iii. Corruption and Insecurity

Conclusion

ICT is good for effective teaching and learning in science education. However, there are problems militating against the full application of ICT in science education; based on this conclusion the following suggestions are recommended:

- ICT centre should be established in all schools and colleges and fund be made available to purchase computers and other ICT equipment;
- More trained computer teachers should be employed and those science teachers who are not computer literate should be mandated to go for computer training;
- Government should make it mandatory for science and computer teachers to always; attend seminar, workshop, conference and refresher course in computer;
- Government should provide more jobs for young unemployed graduates as a measure of security for the nation;
- There should be a serious punishment for any individual or group who mismanaged or misappropriate money meant for education;
- Government should provide all science teachers with laptop;
- Government should work hard to solve problem of power failure in the country.

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A REVIEW ON GOOGLE TOOLS USED IN TEACHING LEARNING AND EVALUATION

ABSTRACT

Teaching, learning and assessment are aspects of the curriculum for which lecturers take responsibility. Having a shared understanding of these aspects is important .The biggest player in this educational technology sector is obviously Google .Classrooms are becoming more connected and learning has become more creative, thanks to the efforts of the major tech companies which are pouring their resources into bringing teachers, students and institutions on the same platform. In this paper, the details of Google tools and its use in teaching learning and evaluation process is explored.

Introduction:

To teach is to engage students in learning; thus teaching consists of getting students involved in the active construction of knowledge. A teacher requires not only knowledge of subject matter, but knowledge of how students learn and how to transform them into active learners. Good teaching, then, requires a commitment to systematic understanding of learning. The aim of teaching is not only to transmit information, but also to transform students from passive recipients of other people's knowledge into active constructors of their own and others' knowledge. The teacher cannot transform without the student's active participation, of course. Teaching is fundamentally about creating the pedagogical, social, and ethical conditions under which students agree to take charge of their own learning, individually and collectively.

Teaching can be defined as engagement with learners to enable their understanding and application of knowledge, concepts and processes. It includes design, content selection, delivery, assessment and reflection.**Learning** can be defined as the activity or process of gaining knowledge or skill by studying, practicing, being taught, or experiencing something .Learning is about what students do, not about what we as teachers do. **Assessment** is defined as the act of judging the amount of learning that took place as a result of learning and teaching."Evaluation is the collection of, analysis and interpretation of information about any aspect of a program of education or training as part of a recognized process of judging its effectiveness, its efficiency and any **other** outcomes it may have. Evaluation is a planned **systematic** and open endeavor.

In today's world of Internet, we have fast and easy access to plenty of information on almost anything. All it takes is pressing a few buttons and everything we want to know is brought to our mobile or computer screen. Classrooms are becoming more connected and learning has become more creative, thanks to the efforts of the major tech companies which are pouring their resources into bringing teachers, students and institutions on the same platform. The biggest player in this educational technology sector is obviously ***Google***. Google is obviously more famous as a powerful search engine than all its other services but you might not know that you can search for patents from different countries (stretching all the way back a couple of centuries), trends and even cultural treasures and collections at museums around the world. And that's just the tip of the iceberg.Online collaboration is now possible and made even more viable with plenty of online tools by Google. Whether you are a remote worker, a student or an office worker, having access to these editing tools, spreadsheets, messaging services and other tools and services can help make the process smoother.Google offers useful business tools that may help you to run your business in a better way. For instance, you

can get customized email domain, find a partner for your business or if you have a striking business plan, get Google to invest and support the idea into fruition. To know more about what Google has for your business take a look below at Google business tools. In this paper, how Google tools are used in teaching, learning and evaluation process.

The Google Tools are enlisted as, Google Classroom.Google Drive**, Google** Docs Google Forms, Google CS First, Google Science Fair, Hangouts on AirGoogle MapsGoogle Earth. YouTube**,** Google+**, Google** Calendar**,** Google Sites **and** Google Translator etc.

Google Classroom is the ultimate online hub for your classroom. Use it to publish assignments, create classes, make announcements, and organize digital files for your classroom. Rest assured that the information you store on Google Classroom is kept secure. It's never sold to advertisers. Neither is your student data. You also won't see any ads on Google Classroom. Another benefit of Google Classroom is that it, along with every other app on this list, is completely free. Google Classroom allows you to communicate with your students via email, without even leaving the app. You can also start a conversation with one, several, or all students within the same interface.

Google Drive: With Google Drive, you can store many different file types, including PDF files, audio, images, Word documents, videos, and more. It stores all your files in the cloud for easy access (up to 15Go for Free). Perhaps the most useful aspect of Google Drive is the ability to collaborate with others. You can share files and folders with your students, and allow them to view, download, or even create their own files to a central folder. Google Drive is a handy way to organize files that you, your pupils, their parents, and/ or your colleagues can securely access. Set up Google Drive for offline use so that you can still access your files even when you're not connected to the Internet.

Google Docs: Google Docs is often confused with Google Drive, but the two are different. The free alternative to Microsoft Word, 100% Online & Free.While Google Drive is online storage for your digital files, Google Docs is a word processing tool that you can use to create word documents. It is strikingly similar to Microsoft Word with two exceptions: Google Docs is free and it's cloud-based. When it comes to the classroom, you can use Google Docs to go paperless. You can also use Google Docs in a collaborative assignment where a group of students work on a writing project together. Google Docs comes with a built-in chat module for real time teamwork.

Google Forms: Use Google Forms to create pop quizzes and other assessments. The beauty of Google Forms is that these tests are self-grading. Life just keeps getting better. To set up a self-grading assessment; you'll start by creating a new Form in Google Drive.

Google CS First: The CS stands for Computer Science. There's little doubt that computer science is the face of the future. Through this program, Google provides all training and materials for starting and instructing a computer science club in your school– no experience needed. What a wonderful gift– teaching your students a skill that they will continue to use the rest of their lives.

Google Science Fair: This is an online competition open to students around the globe**.** Google also runs its own science fair. This online competition is open to students around the globe. Winners are awarded scholarship funding, mentorship, and an educational trip. In addition to competing on a local or regional stage, encourage your teen students to participate in the Google Science Fair this year.

Hangouts on Air: Hangouts on Air is a tool that allows you to host live broadcasts with just a webcam, a computer, and an Internet connection.Used to host guest speakers for your classroom. There are a lot of great uses for Hangouts on Air in the classroom. A favorite option is to host guest speakers for your classroom with this tool.If you want to interview or interact with a special guest, but you can't coordinate a visit, use Google Hangouts on Air to do so. With this tool, your entire class can interact with the person on the other side of the screen by taking turns to ask questions. Another option for Hangouts on Air is to teach a class remotely, which makes sense if you're collaborating with another teacher. While Hangouts on Air is a live broadcast, you also have the option to save the file as a private YouTube video.

Google Maps: It is a great companion to geography lessons.

- It's the most popular mapping tool on the Internet that provides driving directions as well as a 360 street view of locations all around the globe.
- You can use it in the classroom as a virtual atlas.
- Google Maps is a great companion to geography lessons because it gives a sense of place to words on a map.

Google Earth: This is a virtual field trip to the farthest reaches of the globe**.** Google Earth is one of the more fascinating tools available through Google.

- Use this app to explore the earth in 3D.
- This is especially useful in geography and social studies, but can even come in handy during history explorations.
- Take your students on a virtual field trip to the farthest reaches of the globe.
- In fact, you can use Google Earth in every major disciple, from computing math equations to understanding marine biology.

YouTube: With help of YouTubehigh quality videos on every topic imaginable**.** YouTube happens to be the Internet's second largest search engine, and it's true that you can find just about any answer on this popular video site. However, YouTube is also an educational resource that you should definitely consider for free, high quality videos on every topic imaginable. From Einstein's Theory of Relativity to the migratory pattern of wildebeests, you'll find a wealth of information to support your lesson plan.

Google+: It is a way to network with other educators.While there are many applications for Google's social network, one of the best reasons why a teacher should be on Google+ is to network with other educators. You may not know it, but there are several fantastic educator communities that share resources on Google+.On Google+, you can keep up with the latest trends in education, get much needed support, and participate in lively discussions with fellow educators.

Google Calendar: This is the perfect way to organize your time. Use Google Calendar to plan your daily schedule, set reminders, create a to do list, and collaborate with others. If you need to set up a parent teacher conference, use Google Calendar to help schedule and confirm. You can even use Google Calendar for as your lesson planner. Create it and then add the Google Calendar to your Classroom or Site.

Google Sites: Its use to create a website for your classroom. In addition to Google Classroom, you may choose to create a website for your classroom. Google Classroom is geared towards a student-teacher relationship. However, Google Sites is open to students, parents, and fellow colleagues. Use Google Sites to quickly set up a functional and relatively attractive website.

Google Translator: If you only know of the Google Translate tool, then you are missing out on the other Google Languages tools that are available. Apart from translation, Google makes it easy to input non-Latin languages such as Japanese, Korean, Chinese and more.

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THE USE OF ICT IN TEACHING, LEARNING AND EVALUATION

ABSTRACT

The present paper underlines the importance of ICT in the areana of education.Education since bygone ages is a very essential part of the human reformation. It is only through education we are living in the age of virtual reality. It is only power of education that can change the mind of person. Education has changed the face of the world, but If we observeminutely then we find out education, itself has gone through manychanges. Each and every country has different mode of education.But today we are breathing a very "HiTech" world.Today all segments of human life is controlled by the advancedtechnological tools.So our education system has gone through a drastic change. We are applying modern means of the technology in the education system to quench the thirst of knowledge to this techno savvy new generation.

Introduction

ICT is a generic term referring to technologies which are being used for collecting, storing, editing and passing on information in various forms (SER, 1997). A personal computer is the best known example of the use of ICT in education, but the term multimedia is also frequently used. Multimedia can be interpreted as a combination of data carriers, for example video, CD-ROM, floppy disc and Internet and software in which the possibility for an interactive approach is offered (Smeets, 1996).ICT, stands for the Information and Communication Technology. To accurately understand the importance of ICT in Education there is need to actually understand the meaning of ICT.ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.ICT permeates the business environment, it underpins the success of modern corporations, and it provides governments with an efficient infrastructure. At the same time, ICT adds value to the processes of learning, and in the organization and management of learning institutions. The Internet is a driving force for much development and innovation in both developed and developing countries. Countries must be able to benefit from technological developments. To be able to do so, a cadre of professionals has to be educated with sound ICT backgrounds, independent of specific computer platforms or software environments.

Use of ICT:-

- To maintain good linguistic competence through accuracy in language, pronunciation and vocabulary.
- To develop pragmatic competence, to understand the language form, function and state of normality.
- To enrich the discourse competence, to prepare the learner to be able to produce contextualize written text and speech.
- To acquire strategic competence to use both spoken and written language to use in a wide range of communicating strategies.
- In teaching phonetics for example, the sound of English language can be written down using the International Phonetic Alphabet (IPA) for adequate exercises. The use of minimal pair perception exercises

(sheep – ship, zeal – seal, ten – then, bird – board, shout – tout, port – pot) helps learners learn the sound of English. This can also be well practiced on pronunciation exercises with the help of software or by using CDs in language laboratory.

Usage and integration of ICT in the education system, if appropriately used can assist in addressing the key educational challenges, e.g. eLearning and m-learning technologies and alternative delivery systems for access; rich and interactive digital content to improve quality; assistive technologies to contribute to equity; and the inclusion of ICT skills in the curriculum and the use of ICT to support 21st century learning can increase relevance. Outside of the education and training institutions, ICT is being put to processing of examinations in the general management of the education system using Educational Management Information Systems.

The effective integration and utilization of ICT depends on the capacity of the system to perform and execute activities of planning, implementation and evaluation. Institutional capacity depends on adequate and skilled human resources, strategic leadership, financial resources, infrastructure, and programme management and on a conducive external environment. A comprehensive capacity audit of the education sector would need to be done to determine the capacity gaps and needs, but a cursory assessment revealed that although government commitment is high as evidenced by the policies and strategies, organizational structures and culture, lack of skills in critical areas, lack of strategic vision and planning, insufficient financial resources and inadequate infrastructure hamper the ability of the sector to integrate and use ICT effectively.

ICT is increasingly becoming a more and more powerful tool for education and economic development. Unwin (2009) contends that "ICT can be a catalyst by providing tools whichteachers use to improve teaching and by giving learners access to electronic media that make concepts clearer and more accessible". Thus, ICT is used for capacity development and citizen empowerment. Ultimately, ICT can enhance educational opportunities and outcomes for students, including students with intellectual disabilities (Anderson, 2009). As much as I agree with the literature it has always becomes a challenge to most learners as they are not able to access the computers as some schools could not afford them while others are locked up in computer labs in schools.

The main purpose of the Strategy for Information and Communication Technology Implementation in Education is to provide the prospects and trends of integrating information and communication technology (ICT) into the general educational activities. There are some unavoidable facts in the modern education; first, the ICT has been developing very rapidly nowadays. Therefore, in order to balance it, the whole educational system should be reformed and ICT should be integrated into educational activities. Second, the influence of ICT, especially internet (open source tool) cannot be ignored in our student's lives. So, the learning activities should be reoriented and reformulated, from the manual source centered to the open source ones. In this case the widely use of internet access has been an unavoidable policy that should be anticipated by schools authorities. Third, the presence of multimedia games and online games by internet has been another serious problem that should be wisely handled by the educational institutions. The students cannot be exterminated from this case.

They can have and do with it wherever and whenever they want. Schools, as a matter of fact, do not have enough power and time to prevent or stop it after school times. Meanwhile, most parents do not have enough times to accompany and control their children. So, the students have large opportunities to do with multimedia games or online games or browsing the negative and porn sites. Having been addicted, the students will have too little time to study, and even do not want to attend classes. In such situation, education institutions play an important role to eradicate these problems. One of which is by facilitating the students to do edutainment or educational games. Schools can let their students be familiar with educational games adjusted by their teachers. Besides, they can also support and facilitate their students to have their own blogs in the internet. A lot of Weblog providers are free to the users, such as WordPress.

In their blogs, the students can create and write something, like an article, poem, news, short

stories, features, or they can also express their opinion by an online forum provided in the internet. They are able to share experiences throughout their blogs to others from all over the world. I think it will be an interesting activity for them, and it will lessen their time to visit the negative or porn sites existed. By doing so, I think our young generation will get more and more information and knowledge by browsing in the internet. They can also create innovation in web design that it may be out of the formal curriculum content, but it will be useful for their future. Fourth, the implementation of ICT in education has not been a priority trend of educational reform and the state paid little attention to it. Therefore, there should be an active participation, initiative and good will of the schools and the government institutions to enhance ICT implementation at school. Fifth, the teachers should be the main motivator and initiator of the ICT implementation at schools. The teachers should be aware of the social change in their teaching activities. They should be the agent of change from the classical method into the modern one. They must also be the part of the global change in learning and teaching modification.

The followings are the aim and objectives of ICT implementation in education: 1) To implement the principle of life-long learning / education. 2) To increase a variety of educational services and medium / method. 3) To promote equal opportunities to obtain education and information. 4) To develop a system of collecting and disseminating educational information. 5) To promote technology literacy of all citizens, especially for students. 6) To develop distance education with national contents. 7) To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.) 8) To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.)

Conclusion:-

In this way we can understand the importance of ICTs in the education, nowadays it became the guiding force behind the modern education. And it is also the need of the present era to cop up with new challenges. It has a very vital and sustainable impact on the teaching and learning process, ICT has rejuvenated and revolutionised the modern education.

ICT's are making dynamic changes in society and affecting all aspects of life. The effects are being felt more and more at educational institutions. ICT's provide both Studants and Teachers with More opportulities in adapting lerning and teaching to individual needs

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ASPECTS OF USING ICT IN TEACHING, LEARNING & EVALUATION

ABSTRACT

ICT has the means to aid in the preparation of learners by developing cognitive skills, critical thinking skills, information access, evaluation and synthesizing skills. In addition, ICT provides fast and accurate feedback to learners. It is also believed that the use of ICTs in education could promote "deep" learning and allow educators to respond better to different needs of different learners The use of ICT in the classroom teaching learning and evaluation is very important.

Introduction:

The use of ICT in the classroom teaching-learning and evaluation is very important. It provides opportunities for teachers and students to operate, store, manipulate, and retrieve information, encourage independent and active learning, and self responsibility for learning such as distance learning, motivate teachers and students to continue using learning outside college hours, plan and prepare lessons and design materials such as course content delivery and facilitate sharing of resources, expertise and advice. This versatile instrument has the capability not only of engaging students in instructional activities to increase their learning, but of helping them to solve complex problems to enhance their cognitive skills.

What is ICT?:

ICT is an electronic means of capturing, processing, storing, communicating information. ICTs are generally not considered central to the teaching, learning and evaluation process. However, there appears to be a mismatch between methods used to measure effects and the type of learning promoted.

The broad definition of ICTs includes computers, the internet, telephone, television, radio and audio-visual equipment. ICT is any device and application used to access, manage, integrate, evaluate, create and communicate information and knowledge. Digital technology is included in this definition as services and applications used for communication and information processing functions associated with these devices.

ICT can be also be defined as "anything which allows us to get information, to communicate with each other, or to have an effect on the environment using electronic or digital equipment". In early education, the term ICT could include computer hardware and software, digital cameras and video cameras, the Internet, telecommunication tools, programmable toys, and many other devices and resources The literature suggests at least three reasons why ICT matters in education. First, ICT already has an effect on the people and environments that surround young children's learning. Second, these technologies offer new opportunities to strengthen many aspects of e education practice. Third, there is support and interest across the whole education sector for the development and integration of ICT into education policy, curriculum, and practice.

However, there is a clear consensus in the literature that the introduction and use of ICT education should be grounded in a clear understanding of the purposes, practices, and social context

The Importance of Using ICT in Teaching-Learning and Evaluation Process

Several studies argue that the use of new technologies in the classroom is essential for providing opportunities for students to learn to operate in an information age. It is evident, that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the workplaces of today's society. She claimed that organizations that do not incorporate the use of new technologies in institutions cannot seriously claim to prepare their students for life in the twenty-first century. This argument is supported by Grimes who pointed out that "by teaching ICT skills in higher educational institutions the students are prepared to face future developments based on proper understanding". Uses of technology can help students and teachers to develop the competencies needed for the twenty first century". ICT originally is applied to serve as a means of improving efficiency in the educational process. Furthermore, it has been shown that the use of ICT in education can help improve memory retention, increase motivation and generally deepens understanding. ICT can also be used to promote collaborative learning, including role playing, group problem solving activities and articulated projects. ICT allow the establishment of rich networks of interconnections and relations between individuals. ICT technology has the power to change the ways students learn and professors teach and evaluate. This technology can "revolutionize" the learning process. In other words, ICT extend "teachers and students capabilities, and their well determined use can transform roles and rules in the classroom. Many people recognize ICTs as catalysts for change; change in working conditions, handling and exchanging information, teaching methods, learning approaches, scientific research, and in accessing information. Teachers could use ICT to facilitate learning, critical thinking and peer discussions. It recognized that technology-based teaching may not be essential in all classes but generally it is most facilitative as a result of providing relevant examples and demonstrations; changing the orientation of the classroom; preparing students for employment; increasing flexibility of delivery; increasing access; and satisfying public demands for efficiency. "The whole purpose of using technology in teaching is to give better value to students". This better value should also impact the learners/students performance. ICT holds much promise for use in curriculum delivery. Thus, technology can effectively improve teaching and learning abilities, hence increasing learners performances.

There are some unavoidable facts in the modern education;

1. ICT has been developing very rapidly nowadays. Therefore, in order to balance it, the whole educational system should be reformed and ICT should be integrated into educational activities.
2. The influence of ICT, especially internet cannot be ignored in our student's lives. So, the learning activities should be reoriented and reformulated, from the manual source centered to the open source ones. In this case the widely use of internet access has been an unavoidable policy that should be anticipated by college authorities.
3. The presence of multimedia games and online games by internet has been another serious problem that should be wisely handled by the educational institutions. The students cannot be exterminated from this case. They can have and do with it wherever and whenever they want. Meanwhile, most parents do not have enough times to accompany and control their children. So, the students have large opportunities to do with multimedia games or online games or browsing the negative and porn sites. Having been addicted, the students will have too little time to study, and even do not want to attend classes.
4. The implementation of ICT in education has not been a priority trend of educational reform and the state paid little attention to it. Therefore, there should be an active participation, initiative and good will of the schools and the government institutions to enhance ICT implementation at school.
5. The teachers should be the main motivator and initiator of the ICT implementation at schools. The teachers should be aware of the social change in their teaching activities. They should be the agent of change from the classical method into the modern one. They must also be the part of the global change in learning and teaching modification.

Aim and objectives of ICT implementation in education:

1) To implement the principle of life-long learning / education.
2) To increase a variety of educational services and medium / method.
3) To promote equal opportunities to obtain education and information.
4) To develop a system of collecting and disseminating educational information.
5) To promote technology literacy of all citizens, especially for students.
6) To develop distance education with national contents.
7) To promote the culture of learning at educational institutes (development of learning skills, expansion of optional education, open source of education, etc.)

Benefits of ICT in Education :

1. Easy to access course materials : Course material can be uploaded on a course website and the students can study at a time and location they prefect.
2. Student motivation : computer based instruction can given instant feedback to students and explain correct answers. This can give students motivation to continue learning.
3. Wide participation : Learning material can be used for long distance learning and are accessible to wider audience.
4. Improved students writing : It is convenient for students to edit their written works on process which can in turn improve the quality of their writing.
5. Subjects made Easier to learn : Many different types of educational software are designed and developed to help students to learn commerce subjects.
6. Differentiated Instruction : Educational technology provides the means to focus on active student participation and present differentiated questioning strategies. It broadens individualized instruction and promotes the development to personalized learning plans.

Disadvantages:

1. Setting up the devices can be very troublesome.
2. Too expensive to afford.
3. Hard for teachers to use with a lack of experience using ICT tools.
4. Institutions are located in rural area.
5. No proper infrastructure.
6. Teachers have to give extra time and sometimes without any extra payment.
7. Educational softwares are mostly in English language.
8. There is a lack of computers and related resources.
9. There is much more like; language problem, electricity, financial problems, lack of trained

Findings:

The findings of this study indicate that

1. Teachers and students have strong desire for the integration of ICT into education but they encountered many barriers to it.
2. For successful integration of ICT into teaching-learning process, it can be concluded that the factors that positively influenced teachers and administrators use of ICT in education include teachers attitudes, ICT competence, computer self efficacy, teaching experience, education level, professional development, accessibility, technical support, leadership support, pressure to use technology, government policy on ICT literacy, and technological characteristics.
3. However, the presence of all factors increases the probability of excellent integration of ICT in teaching-learning process

Suggestions:

Today, ICT has made it possible to cover a large distance in very small time. It has broken all bonds of cost, distance and time. As far as rural area is concerned, there should be complete setup in every department with broadband facility. Standard teaching material should be developed. Every classroom should be equipped with projectors and LCD sources. There should have specialized short term training courses for teachers. Students are friendlier with mobile apps, so, such apps should be used to serve the students in enriching, enlightening the students and thus equipping them with the necessary knowledge for building successful careers. Students should be made aware of the affective use of these powerful

devices. There should have more ICT related grants from UGC and Universities. Government should provide electricity according to the institutions timings.

Conclusions:

1. The overall scenario of ICT for education needs more attention in rural area.
2. ICT is a big opportunity for rural students to inculcate their educational, employment and knowledge on world technological developments. They have the chance to get employment related education through ICT technologies.
3. Online activities provide more effective education and offer significant benefits over traditional methods.
4. There is full of talent available in rural area, the only thing is needed to them is opportunities. India is developing, knowledge is also the arena to develop the economy and it cannot execute without the use of ICT.
5. Most of the teachers admitted to never or rarely using ICT, while very few used the internet to gather information periodically or regularly.
6. Teachers must have adequate access to functioning computers or other technologies and sufficient technical support.
7. Redesigning curriculum and assessment tools, and providing more autonomy to colleges for optimal use of ICTs in teaching, learning and evaluation process. Very few strong examples of integration of ICT into classroom teaching learning is visible, though some institutes do use the audio visual aids and integrate teaching of some lessons.
8. Largely however, even where ICT is used in the classes, it is usually as an information source and not a part of core learning process.

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ICT IN HIGHER EDUCATION: OPPORTUNITIES AND CHALLENGES

ABSTRACT

Information and Communication Technology (ICT), being the building blocks of modern society, where education and educational institutions would play a novel and crucial role in this sensitive period of development. It is argued that the demand for ICT based teaching and learning programme will grow substantially.Presently higher education in India is experiencing a major transformation in terms of access, equity and quality. This transition is highly influenced by the swift developments in information and communication technologies (ICTs) all over the world.The introduction of ICTs in the higher education has profound implications for the whole education process especially in dealing with key issues of access, equity, management, efficiency, pedagogy and quality. At the same time the optimal utilization of opportunities arising due to diffusion of ICTs in higher education system presents a profound challenge for higher educational institutions.

Introduction

Information and Communication Technology (ICT) plays a vital role in supporting powerful, efficient management and administration in education sector and most widely used or pronounced buzzword of the computer industry. It is specified that technology can be used right from student administration to various resource administration in an education institution (Christiana Maki 2008). ICT is the modern science of gathering, storing, manipulating, processing and communicating desired types of information in a specific environment.'Computer technology' and 'Communication technology' are two main supporting pillars of this technology and the impact of these two in the information storage and dissemination is vital. Every walk of our life and the quality of work life in general are greatly influenced and determined by ICTs (Samantaray, 2000).

Today, ICT covers and controls various areas of society and human lives viz.,

- Easy communication to any part of the world.
- Rapid access to information.
- Easy access to library, library catalogues
- Health information, medical guidelines and treatment suggestions.
- On-line leisure time activities etc.

Thus ICT has developed high hopes in the modern super high way societies.

The present Scenario

The 21st century remains in crucial period for change and development and it is primarily known as information age and knowledge driven age, where education and educational institutions would play a novel and crucial role in this sensitive period of development. It is argued that the demand for ICT based teaching and learning programme will grow substantially. Probably exponentially, over the decade ICT has strong potential to increase the learning productivity in higher education; the implication is that ICT should supplement human instructors whenever possible.

So, in the days of growing influence of ICT, the new roles of educational institutions are not only to transfer information or merely prepare some literate pupil, but also to nurture them in

such way that they can face the competition in the new demanding situations of the world. No doubt, the growth and transfer of technology is confronted with a number of problems. The factors such a political will, economic strengths of a society, cultural determinations, technological complexities and the educational systems itself influence the growth and utilization of communication technologies. The factors play very important roles in the case of the developing countries, which depends on the developed countries for both expertise and financial assistants.

We know that today's youngsters will be better adapted to live in technological world if they are able to utilise existing technology rationally and efficiently and plan ahead for new technologies. Hence challenges to higher education in new learning society also cannot be ignored.

ICT in Higher Education: Opportunities

India is making use of powerful combination of ICTs such as open source software, satellite technology, local language interfaces, easy to use human-computer interfaces, digital librariesetc. with a long-term plan to reach the remotest of the villages. Community service centershave been started to promote e-learning throughout the country (Bhattacharya and Sharma,2007). Notable initiatives of use of ICT in education in India include:

1) Indira Gandhi National Open University (IGNOU) uses radio, television and internettechnologies.

2) National Programme on Technology Enhanced Learning a concept similar to the open courseware initiative of MIT. It uses internet and television technologies.

3) Eklavyainitiative : Uses internet and television to promote distance learning.

4) IIT-Kanpur has developed "Brihaspati" an open source e-learning platform (VirtualClass Room).

Premier institutions like Calcutta have entered into a strategic alliance with NIIT forproviding programmers through virtual classrooms. Jadavpur University is using a mobilelearningcenter. IIT-Bombay has started the program of CDEEP (Centre for DistanceEngineering Education Program) as emulated classroom interaction through the use of realtime interactive satellite technology.The UGC initiated scheme called "ICT for teaching and learning process" for achievingquality and excellence in higher education. Network facilities with the help of ERNET,Ministry of Information and Technology, Government of India were installed at UGC office no promote a healthy work culture. Along with this UGC launched a mega programmenamely, „UGC INFONET□, a network of Indian Universities and Colleges, by integratingInformation and Communication Technology (ICT) in the process of teaching, learning and education management. The network is managed by ERNET India and almost all theuniversities are its members. Information for Library Network (INFLIBNET), an autonomousInter University ERNET and Universities. Training programmes for the manpower wereconducted to manage the ERNET facilities and other aspects of systems including electronicsubscriptions. In addition, UGC is encouraging creation of e-content / learning material forteaching learning process and management of education in colleges and universities.

ICT in Higher Education: Challenges

i) Universities are now facing the dual challenges of managing the internal structural change that are needed to adapt to and harness the power of the ICT, on the one hand , and the meeting the changing qualitative and quantitative demands on their services from their constituents societies on the other

ii) The combination of accelerated scientific and technological developments and increasing global market competition is mandating regular and frequent updating of the knowledge and skills of working individuals and groups.

iii) Structural changes in employment are making larger business organization ''flatter'' in structure, with increasingly developed responsibilities for decision making. More employees have to work at higher cognitive levels; to have the skills to analyse, synthesise, handle information, evaluate evidence and take responsibilities for making decisions.

iv) Learning societies need more university graduates and lifelong learners with such skills rather than the traditional

qualification based on the recall of facts, principles and correct procedures.

v) One of the important points to be emphasized is that ICT is not easily available. They have to invented, produced, adopted, mastered, controlled and implemented. The people are required to be readily and mentally to produce and use such technologies.

vi) We have to ensure that the new technologies introduced in the socio economic structure of the developing societies should not destroy their existing cultures.

Recommendation

In the light of the above discussion, the paper suggests the following recommendations for improving on the current situation:

1. Effective implementation of ICT in education requires commitment from the stake holders. That is, all the stakeholders and responsible authorities including teachers and other staff should be aware of the importance of technology in developing student's learning and should strive to overcome the barriers, so that students can benefit effectively from this ICT.
2. Lacks of resources results in lack of ICT integration, which in turn results in lack of sufficient computer experience for both pupils and teachers (Rosen & Weil, 1995). The stakeholders and school authorities need to be provided with adequate facilities and resources for effective implementation of ICT.
3. The government should formulate policies for encouraging girls with respect to the adoption of ICT. Without proper empowering of women, it is not possible to implement ICT in education. Sharma (2003) states that the policy-makers must pay more attention to accommodate all sectors (and those excluded also like rural communities, women and disabled) while planning for adoption of ICT.
4. To introduce and implement computers in the classroom effectively, changing teachers' negative attitudes is essential. Therefore, if teachers want to successfully use technology in their classes, they need to possess a positive attitude to the use of technology. Such an attitude is developed when teachers are sufficiently comfortable with technology and are knowledgeable about its use (Afshari et al, (2009).

Conclusion

Information technology has been at the top of the agenda for action in the Indian educational system. Developments in the service and information society require young people to be so equipped that all of them can take part on an equal footing in the society of the future. The wide adoption of ICT calls for mindsets and skill sets that are adaptive to change. ICT integration in higher education brings a change in student and teacher learning behavior and develops higher order skills such as collaborating across time and place and solving complex real world problems. Traditional forms of teaching and learning are increasingly being converted to online and virtual environments. There are endless possibilities with the integration of ICT in the education system. The use of ICT in education not only improves classroom teaching learning process, but also provides the facility of e-learning. ICT has enhanced distance learning. The teaching community is able to reach remote areas and learners are able to access qualitative learning environment from anywhere and at any time. It is important that teachers or trainers should be made to adopt technology in their teaching styles to provide pedagogical and educational gains to the learners

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IMPLEMENTATION OFICT IN TEACHING , LEARNING AND EVALUATION

ABSTRACT

Educational scenario of world is changing every day.Formal education has now totally changed byvarious technology and introduction of ICT. Indiais a country in the stage of development. Neweducational policy was introduced in 1986 meanlystress on ICT & its uses in actual teaching learningmethods. Though ICT is not directly beneficial oran alternative for for teacher. But it helps to enhancethe quality of education we can rush the limits ofICT in education. This paper looks at whatcontribution ICT can make in teaching learning andevaluation. Learning can be made easier andpleasant through ICT. Felids where simulation isused can make any training safer andunderstandable. ICT enhances the orbits ofknowledge of faculties as well as beneficiaries.Resources are ample for learning .Every teacherequipped with ICT can be more resourceful.

Introduction

There are several factors which infuse use of ICTin teaching learning Researchers have identifiedthese factors. ICT makes teaching learning effectivewhich indulges self-efficiency, computer motivation,computer attitudes and resource sharing.Implementation of ICT in higher education stronglydepends on teachers support and attitude. Theirpositive attitudes help to adopt ICT in teachinglearning processIntegration of technology mainly depends onteachers. In present scenario every teacher of highereducation at institution must be computer literateand experienced teachers equipped with ICT canbecome immensely useful for propagation ofknowledge.

ICT computer is designed to handle wide range ofcomputer application for various purpose. Most ofsenior faculties sometime are reluctant about useof ICT. They still believe in books but there shouldbe comprehensive outlook regarding knowledgesharing and propagation.ICT makes teaching exercise pleasant. Using ICTclassroom creates interest in both students andteacher. It makes teaching a pleasant experience."Books and printed material are second importanttechnology used in educational intuition. The factthat great book are a source of great inspiration tomany needs no emphasis. Both in the institutionsof formal education and distance education, theprinted material is very powerful instructionalmedium and likely remain as the core medium ofhigher education for some time to come in spite of emergence & electronic media printed materialshave certain advantages over other technologies .They are relatively cheap to produce and the skillrequired to use them is pressed by a majority ofadult students. Further they provide flexibility tothe students and they are portable and can be usedagain & again. Though it is true but one cannot relyon printed material."

Avenues of knowledge have now become broad.Everything has totally changed now encyclopediasare less touched printed material with emergenceof Google.Now information seeking with lesspossible time has much importance. In last fewdecades new subjects have to be added to curricula.One of the most essential aspects of ICT in teachinglearning is multitasking. Multitasking puts highdemands on teachers. Our teachers must be expertin multitasking. Changed

methods of teaching andICT based curriculum expect much more than basicteaching ability.

Knowledge management expectsteacher to handle various search engine, data base,graphics, simulation every concept can be visualizeproperly with the use of ICT. Videos presentation,mock test, sharing of resources can make learninga complete experience having every newdevelopment in particular topic.As a part of new development in education ICT canbe used in skill development more efficiently.Educational scenario must be changed accordingto the need of the hour. Those who really on securedjob by taking formal education are now lookingforward toward vocational & skill based education.We need skilled candidate who will be beneficialfor industry and to develop them as entrepreneur.Minimum theory and maximum practical candevelop student into confident aspiring futurebusinessmen."The growing lag in technological adaptationbetween developed countries, the internationaltransferability of skills acquired in developingcountries educational system is approximating a limit. Statistical evidence on international migrationof skilled personal from developing to developedcountries since mid 1970s would bear tertiary tosuch trend. As a result the developing courtiers canno longer hope, let alone plan to support their figureeducation structure simply by migrationmanagement."

Role of ICT in 'Teaching and Learning' at CollegeLevel:

A Case Study:

Apart from the major traditional teachingmethod with the use of board, chalk and talk, thecollege has introduced ICT enabled teachinglearning process in the faculties of Arts, commerce and Home Science. In the faculty of Arts, AV aids,video clips, have been used as teaching methods.In the syllabus of B.A. English literature, the dramaof Bernard Shaw 'Pygmalian' and in the syllabusof B.A. III year English literature ShakespeareanRoman Play 'Julius Caesar', novel of George Orwell'Animal Farm' have been prescribed for detailedstudy. Apart From the textbook reading in the class,the dramatization of these plays have been presentedwith the AV aids and video clips. The students enjoy these presentations very effectively. Even theteachers of other subjects like Music, HomeEconomics use this technology for effectiveteaching and learning. In the faculty of Homescience, 'Seminar' presentation is a part of thesyllabus. So the students search the topics, get thereference on 'Net' and prepare power pointpresentations for their seminar especially in thesubjects like 'Human Development'. Even theteachers and students of commerce faculty use ICTand organize 'power point presentation'competitions on the current issues.

Role of ICT in Higher Education:

In an age of computer technology, ICT - Information and Communication Technology isbecoming the crucial part of education system. ThisICT enabled teaching and learning covers wide area.It includes communication devices or applicationslike T.V., mobile phones, World Wide Web, computer systems, satellite and so on. ICT in highereducation can be used for developing coursematerial, delivering and sharing contents and ideas, communication between the learners and theteacher. Traditional, an age old teaching method of chalk and talk can be replaced by ICT like videoconferencing, power point presentations, animations, video clips, AV aids, and LCDprojectors. At one click, the learners can obtain andshare the world knowledge and enhance the horizonof their knowledge. This method modifies thelearning ability of students and also helps theteachers to elaborate new concepts veryeffectively;So ICT changes the view of learning.ICT supports the learning environment to thestudents where the teachers become facilitators,coaches and mentors.

Along with the 'role of ICT in teaching andlearning', the research paper also highlights andpresents the case study of the college regarding therole of ICT in the teaching and learning process.

Conclusion

ICT based education allows better interactionbetween students and teachers. If applied withsystematic planning ICT can be Powerful means ofimparting the quality education. We can havemiraculous result if we accept and adopt ICTwithtotal commitment and devotion. Changes andinnovations are inevitable because if we want tomatch the pace with global education we must adoptICT in our higher education system.

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National Seminar on
Use of ICT in Teaching, Learning and Evaluation
(7th January to 8th January 2019)
M.S.P. Arts. Science and K.P.T. Commerce College, Manora Dist. Washim Maharashtra, India.

IMPACT ASSESSMENT OF LEARNING BY USING ICT TOOLS IN ZOOLOGY FOR HIGHER EDUCATION, A STUDY AND ANALYSIS AT COLLEGE LEVEL IN DISTRICT WASHIM. MAHARASHTRA. INDIA

ABSTRACT

ICT is generic term referring to technologies that used for collecting, storing, editing and passing on (communication) information in various forms. This study depicts the analysis and development of learning in Zoology at graduate as well as in post graduate level in two colleges of central Indian district i.e. Washim, Maharashtra. Two colleges were selected for this study i.e. M.S.P.Arts, Science & K.P.T Commerce College, Manora for graduate students while other one was S.S.S.K.R.Innani College, Karanja (Lad) for the students at graduate and post graduate level both. Study showed or concluded in fine tuned findings in students learning skills and its enhancement at multidimensional level. Introduction of information and communication technology tools among students in zoology increased the level of understanding the text along with the development of the skills of presentation by all means for their multidirectional development at all.

Key Words- *Survey, multidimensional development, College level, skills.*

Introduction:

The most important purpose which ICT tools are used for is presentation, demonstration and active involvement of students in teaching learning process along with fine and interesting way. Traditional methods and book support in text or practical applicability for students in class room as well as in laboratories always leads boredom and lethargic one and these are enough to render the process of learning slow at all for students and teachers. But on the other hand ITCs tools provide a effective and interesting environment to understand and learning in multidimensional way like effective presentation of text through power point , projector etc which ultimately enhance the interest of teacher and students. More than 200 students of graduate level were interviewed, surveyed and observed in zoology class of both the selected college. For the postgraduate level the S.S.S.K.R.Innani college had selected and student of M.Sc. in Zoology (44) students which were in first year as well as in second year interviewed and observed in terms of active involvement in class, presentation skills, Linguistic development, level of understanding, learning capabilities along with confidence level etc.

Materials and Methods:

Two colleges of districts Washim of Maharashtra state were selected for the study. Students of graduation in zoology as well as postgraduate students of zoology were selected for this findings in terms of interviewed and observation. The observations were linear and regular. The performance of students indicated the more use of ITCs tools in teachings showed better result in terms of excellent multidimensional development in students along with fine tuned understandings. 44 students of postgraduate in zoology from S.S.S.K.R.Innani College along with near about 150 students from M.S.P.Arts, Science & K.P.T Commerce College, Manora were observed carefully. On the other hand the graduation students like B.Sc I, II, and III rd year of S.S.S.K.R.Innani College were also observed.

Result and Discussion:

Parameters Indicators (PI)	B.Sc I (58)	B.Sc.I I (52)	B.Sc.II I (38)	Total (139)	% occurrence
Active Involvement (AI)	49	47	29	125	**21.36%**
Linguistic Skills (LS)	38	40	34	112	**19.14%**
Confidence Level(CL)	48	43	32	123	**21.02%**
Level of Understandings (LU)	47	40	30	117	**20.01%**
Learning Capabilities (LC)	39	38	31	108	**18.46%**
TOTAL	**221**	**208**	**156**	**585**	

Table 1: Survey Graduate Students of M.S.P.Arts, Science & K.P.T Commerce College, Manora

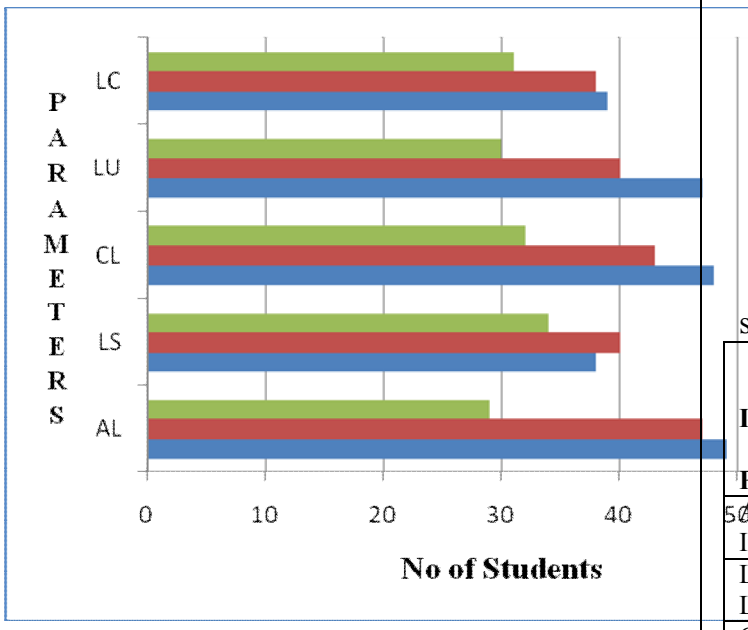

Fig1: Graphical presentation of Table 1, Survey of all graduation students of Zoology

Parameters Indicators (PI)	B.Sc I (80)	B.Sc.I I (66)	B.Sc.II I (59)	Total (155)	% occurrence
Active Involvement (AI)	64	54	49	167	**20.82%**
Linguistic Skills (LS)	62	52	48	162	**20.20%**
Confidence Level(CL)	62	52	50	164	**20.44%**
Level of Understandings (LU)	60	49	48	157	**19.66%**
Learning Capabilities (LC)	59	48	45	152	**18.95%**
TOTAL	**307**	**255**	**240**	**802**	

Table 2: Survey Graduate Students of S.S.S.K.R.Innani College Karanja (Lad)

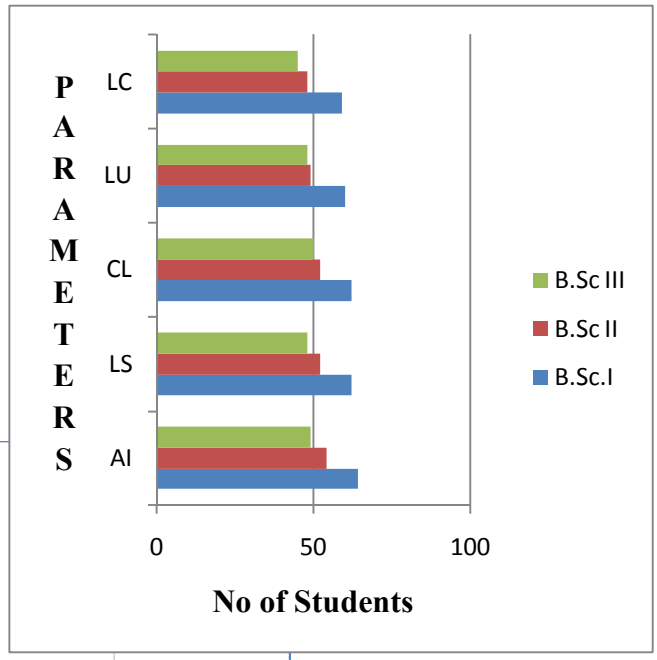

Fig 2: Graphical presentation of table 2 for survey analysis of Karanja College

Parameters Indicators (PI)	M.Sc.I (22)	M.Sc II (23)	Total (45)	% occurrence
Active Involvement (AI)	21	22	43	**21.75%**
Linguistic Skills (LS)	20	21	41	**20.00%**
Confidence Level(CL)	20	22	42	**20.57%**
Level of Understandings (LU)	19	20	39	**19.02%**
Learning Capabilities (LC)	19	19	21	**19.51%**
TOTAL	**99**	**106**	**205**	

Table 3: Survey detail of Post graduate students of S.S.S.K.R.Innani College Karanja

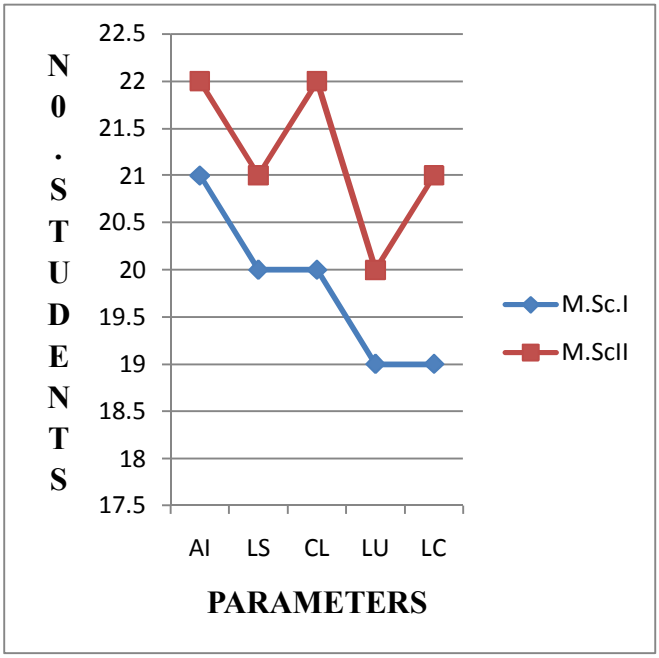

Fig.3: Data presentation of Postgraduate Students of Zoology, S.S.S.K.R.Innani College.

Overall 5 parameters indicators were observed and interviewed in both the colleges of students at graduate and post graduate level. Study showed very effective results in terms of multidimensional development in the personality of students and their learning process. In case of Graduate Students of M.S.P.Arts, Science & K.P.T Commerce College, Manora total 125 students were screened in terms of these five indicators i.e. Active involvement (21.36%), Linguistic Skills (19.14%), Confidence level (21.02%),Level of Understanding (20.00%) and Learning Capabilities (18.46%). Finally resumed those applications of ITCs tools were very effective by all means for students as well as teachers. While on the other hand in case of graduate students of S.S.S.K.R.Innani College , Karanja Lad result were like Active involvement (20.82%), Linguistic Skills(20.20%), Confidence level(20.44%),Level of understanding(19.66%) and Learning Capabilities were 18.95% recorded. Very same condition with Post graduate students were found effective changes in their personality along with multidirectional development i.e. presentation skills, understanding level of text and practical applicability along with fine tuned performance level at all.

Discussion:

Finally this study depicted the very effective results on the basis of above mentioned 5 parameters indicators in which two colleges were surveyed and compared. Study depicts that students were using mobiles more than other ITCs tools for their study purpose, making power points presentations etc. By using these tools they got effective enhancement of multidirectional development at all. Students belongs to rural areas of the colleges were less positive user of ITCs tools as they were found less favorable with these tools.

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ELECTRONIC RESOURCE DISCOVERY SERVICE IN ACADEMIC LIBRARIES

ABSTRACT

E-resources are very powerful, dynamic and convenient for the library as well as its reader for education, research and entertainment. Electronic resources are very much essential for any organization.

Keywords: Electronic Resources, Discovery Services, Academic Libraries

Introduction

Internet is a common place for finding information by the library users. Most of the library web portals, OPAC and subject gateways are accessible through internet. But selected database and searching tools provide relevant information to the users. The very important issue is the resource discovery. Libraries starting from traditional to modern are interested in the development of the resource discovery tools started form the card catalogue to OPAC. Now they are moving toward the direction of index based discovery system for in-house as well as outside resources. The modern libraries are utilizing index based discovery system for the access of resources to the users. This discovery system offers a single platform for all resources subscribed by the library. Due to ever increasing diverse information needs of the users, information explosion, global information network, and publications of diverse publishers and aggregators increase the demands of the resource discovery services at libraries. Libraries around the world are spending huge amount in the acquisition of the reading resources in the print as well electronic resources. Information technology and electronic publishing have increased electronic information resources around the world. Most of the academic libraries are subscribing electronic resources to their libraries, subscription of large collection of electronic resources, e-journals, e-books, e-database and other electronic resources which are suitable for teaching and research have created opportunities and well challenges to library and information professionals for managing and discovery of electronic resources. The library professionals' keen to work with users to ensure that the collection is suitable and effective to meet the information needs of the users. **E-resources:**

As we have observed that those documents available on the internet known as electronic resources. These resources are very powerful, dynamic and convenient for the library as well as its reader for education, research and entertainment. These resources are very much essential for any organization. There are wide varieties of electronic resources available in diverse field of the knowledge. Few e-resources are listed here as example:

- E-Journals
- E-Books
- E-Database
- Subject Gateways
- Directory
- Internet resource catalogue
- Search Engines
- Institutional websites
- Web OPAC
- Digital Archives
- FAQs
- Bulletin Boards
- Conferences proceedings
- Scholarly websites
- Virtual reference service

Features of e-resources:

- **Searching:** Electronic resources support simple, advanced and robust searching of the various documents.

• **Browsing:** It facilitates browsing of the content according to subject wise and alphabetically.

• **Linking:** Electronic resources supports linking facility inside documents as'well as outside of the document, the reference linking facilitates like cited documents.

• **Perpetual** access:It offers perpetual access of the resources from the publishers, aggregators etc. Subscribed content haveperpetual access right for accessing e-resources even the library has withdrawn its subscription.

• **Convenience:** E-resources can be easily subscribed and managed by the library professionals. It is also very convenient for the library users. The users can access e-resources without any geographical and time limit.

• **Portable:** It is very portable to carry around the world. Within one pen drive, thousands of information resources can be carried for where internet connections is not available.

• **Accountability:** Subscription of electronic resources . involved huge amount, one should be answerable for the investment.E-resources provide the usage report for the library which shows the accountability ofe-resources.

• **Availability:** E-resources are available 365 days and 24 hours. It can be accessed simultaneously by the various users.

• **Multiple usages:** It can be use by the various users simultaneously.

• **Storage and retrieval:** E-resources facilitate storage and retrieval facilities to the library users.

• **Authenticity and relevancy:** E-resources have all the features of print resources like cover page, editorial board, pear review process, etc.

• **Archiving:** E-resources agreement allows libraries to archive resource in their server for future use.

Types of e-resources:

E-resources can be categorized in various methods like subscription, document types access mode, etc. Electronic resources may be categorized on the basis of subscription as follows:

• Commercial
• Open access

Commercial electronic resources:

There are various commercial resources available on the internet. These resources are offered by the different publishers, aggregators, and vendors. Few important commercial e-resources subscribed by the major consortium in India have been listed.

Sr.No	Name of the resources	URLs
1	Pre Quest	http://www.proquest.com
2	ACM Digital Library	http://dl.acm.org
3	Capitalime	http://www.capitaline.com
4	EBSCO Business Source Complete	http://www.ebscohost.com
5	Elsevier's Science Direct	http://www.sciencedirect.com
6	Springer Link	http://www.soringelink.com

Open access electronic resources:

The few open access electronic resources are listed here for the study purpose. List includes different types of electronic resources which are accessible free of cost.

Sr.No	Name of the resources	URLs
1	DOA journals	http://doaj.org
2	DOA Repositary	http://www.opendoar.org
3	DOA Books	http://www.doabooks.org
4	Shodhaganga	http://shodhaganga.inflibnet.ac.in
5	NPTEL	http://nptel.ac.in
6	World Digital Library	http://www.wdl.org.in
7	Digital Library India	http://www.dli.gov.in

E- Resource discovery:

According to Eddie clarke "We use the term Resource Discovery to mean the process of identifying and accessing information relevant to learning, though identification (discovery) and access are best considered as separate processes. It is a basic requirement in all tiers of education, whether or not it involves electronic means (using computers, and more particularly the internet), though that is our focus. Students doing project work, teachers preparing lesson plans and technologists advising academic staff all depend on the existing knowledge base in developing their learning and teaching. We would contend that this is true even where teaching and learning is tightly associated with a particular (already well resourced) curriculum or is more vocational in nature. There is no single resource or source of information which would meet the diverse educational needs of all learners, and one best develops an understanding of any particular subject when it is considered from different viewpoints.

Features of discovery services:

- It provides resource discovery tools which includes different types of resources published by different publishers, venders etc.
- It provides end users search interface for the all the content subscribed by libraries.
- It facilitates easy integration facilities to the library collection, OPAC with wide range of digital resources which offers comprehensive collection coverage for your library users.
- Discovery services offer links facility to the full text articles.
- It offers basic and advance search facility for the library users. In the advance search, the users can use Boolean operators for fields search.
- Users can customize user interface to feel its own website.
- Offers easy integration which provides seamless and comprehensive resource discovery.
- Support to consortium for providing single search interface and management of resources.
- It allows searching rich metadata and provides full text documents from various sources.
- Information literacy skills of the users will enhance automatically when they use electronic resources for their study and research.
- Provides easiest searching facilities for your library collection which enhance usage of library resources and numbers of users.
- Capitalizing on the richness of library resources and encouraging their use.
- Offers built-in support for consortia resources.

List of resource discovery tools:

• Google Scholar,
• GetRef,
• ZETOC
• WorldCat- Discovery Service from OCLC
• WebBridge LR
• Primo and Primo Central from Ex Libris Group
• EBSCO Discovery Service from EBSCO Information Services
• Summon -from ProQuest
• ProQuest- AquaBrowser
• Blacklight, developed by the University of Virginia
• VuFind, originally developed by Villanova University
• Franklin developed by the University of Pennsylvania Libraries

Summon by ProQuest:

The summon service enhances the value of your library because of the searching facilities available for the library collection. It works as a mediator between collection and users. It offers efficient way of searching/discover entire library collection with single search interface. Majority of libraries in India are utilizing this service for resource discovery.

360 search service offered by ProQuest:

360 Search gives opportunity to use a single search box for finding the multiple resources and highly credible content that library offers. With one query, it provides single platform for your query which includes e-books, e-journals, local holdings, archives and OPAC. It offers single search box for searching all the contents of the library whether it is subscribed or not and provides direct links to full text documents if available.

Ebsco Discovery Service:
It offers searching in entire collection of libraries which includes databases, special collection, e-books, catalogue records, archives and wide range of digital collection available through their libraries. It offers basic and advanced search facilities for the collection.

ExLibris Primo/ Primo Central:
It offers one-stop discovery and delivery solution for the libraries which includes library collections, value added services and library cataloging services. It helps to bridge the gap between library system and user expectations. It offers single search interface for millions of the articles from the wide range of digital resources.

World Cat Local:
Centralize e-resource management with OCLC Web scale services. The new World Share License Manager works with the World Cat knowledge base to consolidate discovery, fulfillment and management of licensed resources. The knowledge base streamlines article/e-book sharing, enables full link resolution in World Cat Local and integrates with World Share Acquisitions to consolidate all parts of e-resource management.

Conclusion:
Libraries are subscribing various types of information resources for their users. These resources are subscribed by various publishers and aggregators. The moto of the library is to provide single platform for the access of library collection available in the various file and format. The resource discovery services are offered by various commercial institutions/aggregators for the libraries. They are facilitating the integration of library collection with wide range of digital resources for the searching of relevant information. These discovery services are providing single user interface for the library users which are very help full for library to enhance the usage of library resources.

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USE OF ICT IN THE CLASSROOM TEACHING AND LEARNING: AS A SPECIAL EDUCATIONAL NEED

ABSTRACT

The Information and Communication Technology (ICT) plays very important role in all types of working activities in various fields. ICTs stands for Information and Communication Technologies and are defined for the purpose of this primer, as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information. By the grace of this technology the human efforts have become easier and faster. In the field of education ICT plays a key role on both student and teacher sides.

The key issues of Information and Communication Technology in terms of curriculum is much wider. It gives opportunities to teachers for better understanding subjects and it gives easier ways for making the subject simpler for their pupils. In this direction it develops the way in which teachers can meet in school an opportunity for learning provided in home and community. The issue is deeply rooted in practice and also explores the theoretical understanding of the ways in which curriculum aspect and skill can be developed by the emphatic mingling of ICT in classroom.

It might be said that the special educational needs has become the part of the mainstream learners. Now days, a policy and provision for learners with special educational needs have been developed very fast. The growing impact of ICT in schools and colleges has been shown as major thing of concern for the upliftment of pupils with lower rank. With the help of such tools one can see disable pupils are working on their laptops as with alternative means of input from concept keyboards to the use of voice recognition. However laptops, however become fashionable they may be feeling easy to handle but there is the barrier of continuous work may bring adverse effect on the eye sight.

Group work can be fruitful activity for such pupils who face difficulties while solving their problems alone. Such group of eight to ten boys can give them chance to solve their problem. They can share their thoughts with each other and might be inculcate the habit of co-operation. Such activity really helpful to make pupils more social and helpful to others while their classroom hours. What is more important is not hard work but how it is used, the pedagogy that underwent the classroom world. We can cite for example, if we observe pupils working in groups it is the quality of the talk and discussion rather than the control of the keyboard that is more important. Here some lower rank students can be empowered to make a fundamental contribution alongside their peers and we can see true inclusiveness of their demonstration. But there is much more to meet their needs.

The use of internet and social media can help to develop such students across all streams' such students. Now a days learning has become the powerful tool to make these students more study oriented. A small classroom Whatsapp group can give them chance to share their point of views more rapidly and enthusiastically. Other social Medias like Face book, Tweeter and Instagram can be fruitful to inculcate the critical habits among students to share their views. As well they can be habitual to watch other's comments on their issues.

The role ITC in higher education is most important. It has becoming the initiative priority

for the success of the student and the teacher and the entire growth of the colleges. As well as installing computer labs in colleges for all streams is necessary step to go ahead and to face the challenges of the world. Creating a comprehensive aggrangement of the academic curriculum also provides us healthy start up of academic journey of the preceding session. Online education is the way of solving some critical issues might be a vigorous way to development. The 21st century has brought up much opportunity for the benefit of all human beings by the grace of the ICT based skills. We see there are many private courses run by private institutions assuring to thousands of students of both sexes. Through such institutions students are hoping for the good job without government expenses.

National Assessment and Accreditation Council plays a very important role in sustainable development of the higher educational institutions of our country. NAAC & ICT these are two terms are inter related for the growth of the higher education. With the help of ICT tools we can furnish the seven criterions given by the NAAC. These seven criterions are Curricular Aspect; Teaching learning Evaluation, Research Innovations & Extension, Infrastructure & Learning Resources, Students Support & Progression, Governance, Leadership & Management and the last criterion is Institutional Values & Best Practices. While perusing through these entire criterion the help of ICT is vital and beneficial for gaining the weight ages for our institutions.

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USE OF ICT IN TEACHING ENGLISH

ABSTRACT

This essay proposes description to help the institution, teacher and student that the role of technology is being used to ease them to achieve the objective of education. Besides, it is aimed to introduce teacher and learner about the effect of technology in language teaching and learning. At the latest decades, technology becomes the most important things in which many people regard technology as the result of science. By the technology people are eased to accomplish the complicated and sophisticated problem. Since, the objective of this essay is to describe ICT, the benefits of ICT, and explain how significant is the use of ICT in English language teaching and learning making the difficult to be the easy done, people are helped to solve their problem.

Now, ICT (Information and Communication Technology) has been used in almost all fields of life, including in education. The utilization of ICT in education has recently started to appeal the potential and significant progress in language learning. It has become a major issue in education world and has been used from preschool through to university that could facilitate students and teacher in teaching and learning process. ICT has been publicized as potentially powerful enabling tools for educational change and reform. The computers play significant role in the learning process especially in learning language. As Hartoyo stated, a computer is a tool and medium that facilitates people in learning a language, although the effectiveness of learning depends totally on the users.

English language teaching has been shaped by the search for the 'one best method' of teaching the language. Regardless of whether the focus of instruction has been reading, the grammatical rules and vocabulary of the target language (e.g. Grammar Translation Method), speaking (how to communicate the target language such as Direct Method, Audio-Lingual Method, The Silent Way, Suggestopedia, Community Language, Communicative Approach), or other issues (e.g. The Total Physical Response Method), the attempts of the teaching profession have been shaped by a desire to find a better way of teaching than the existing method. The latest method that is developing is Computer Assisted Language Learning (CALL). Some experts and practitioners of education learning language in CALL, strongly supportthe utilization of ICT in language learning to improve efficiency and effectiveness of learning that can improve the quality of understanding and mastery of the language studied. In other words, the integration of ICT in the field of language learning is inevitable known that the ICT and language learning are two aspects which support each other like two sides of the coin. The computer's ability to present material has more diverse ways than either book or video does. In addition, CALL is able to generate interaction and improve communicative competence, including providing authentic material to the class or self – learning. The method focuses in computer utilization to enhance language learning.

Integration of ICT in teaching and learning process is a topic of interest to many researchers, including education practitioners. The use of ICT can be applied in three different scopes such as: curriculum, topics, and teaching.

English is one of the difficult lessons, teacher must create interactive teaching and learning to attract students' interest. In the history

of the development of education, information technology is part of the medium used to convey the message of science to many people, ranging from printing technology a few centuries ago, such as printed books, such as telecommunications to media, voice recorded on tape, video, television, and CD. According to Kent, ICT in education point of view refers to information and communication Technology (ICT) such as computers, communication facilities and features that variously support teaching, learning and a range of activities in education.

Electronic book or e-book is one that utilizes computer technology to deliver multimedia information in the form of a compact and dynamic. Type e-book of the simplest is a mere transfer of conventional books into electronic form displayed by the computer. With this technology, hundreds of books can be stored in a single gadgetsuch as CD, DVD, MEMORY CARD, PEN DRIVE etc. A more complex book which requires more rigorous designs such as the Encyclopedia Britannica and Microsoft Encarta Encyclopedia is at its best when presented in multimedia format. Multimedia format allows not only written information but also sound, images, movies and other multimedia elements. A description of the type of music, for example, can be accompanied by footage of the sound of music so that the user can clearly understand what is meant by the renderer. It is applied in using the phonetics and for teaching pronunciations.

E-learning includes learning at all levels, formal and informal, which uses a computer network (intranet and extranet) for the delivery of teaching materials, interaction, and / or facilitation. For most of the process of learning that takes place with the help of the Internet is often referred to as online learning. ICT covers any product that will store, retrieve, manipulate, transmit or receiving information electronically in a digital form. For example, personal computers, digital television, robots etc. So ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data. Importantly, it is also concerned with the way these different uses can work with each other. Although there are varieties of definitions, but most of the scholars basically agreed that the e-learning is learning by using electronic technology as a means of presenting and distributing information. Included in the definition of educational television and radio broadcasts is a form of e-learning. Although radio and television education is a form of e-learning, it is generally agreed that e-learning reaches peak form after synergize with internet technology.This method enables learners to access learning resources provided by the speakers or facilitators whenever desired. Facilities provided include the management of students or learners, learning materials management, learning management, including management of learning evaluation and management of communication between learners with facilitators.

ICT as a whole can be described as the utility of technology to support the effort of conveying information and communication particularly in the area of education. The technique includes digital technologies mostly of electronic information – processing technologies, such as computers, internet, mobile phones, networks, broadband, and so on.

ICT is found to be advantageous in several ways as

- Technology facilitates exposure to authentic language.
- Technology provides the access to wider sources of information and varieties of language.
- Technology gives the opportunity to people to communicate with the world outside.
- Technology allows a learner – centered approach.
- Technology develops learner's autonomy.

ICT help people in order to get information and to communicate each other in wider range.

There are some kinds of technologies classified into information and communication technology commonly used in language context, such as:

- Interactive multimedia

Interactive media is the integration of digital media including combinations of electronic text, graphics, moving images, and sound, into a structured digital computerized environment that allows people to interact with the data for appropriate purposes. The digital environment can

include the Internet, telecoms and interactive digital television.

- Computer

Computer can be utilized with other multimedia learning devices or it can stand alone (a standard PC) and still serves its basic purpose as an electronic medium of language learning. Computer is an electronic device which is capable of receiving information (data) and performing a sequence of logical operations in accordance with a predetermined but variable set of procedural instruction (program) to produce results in the form of information or signals based on Oxford dictionary.

- Audio devices

Audio devices can be used with other media to form an interactive multimedia. However, it can also be utilized separately as independent tool. Audio devices include speaker, earphone, CD, and etc.

- Internet

Internet can be used as a medium of language learning through email, www (world wide web), text, audio and video conferencing.

- Television

According to Oxford dictionary, television is a system for converting visual images (with sound) into electrical signals, transmitting them by radio or other means, and displaying them electronically on a screen.

- Telephone

This telephone medium has not been widely used for language teaching because of the poor quality of analogue transmissions. However, there is new invent of digital quality and lower connection cost which potential for conference calls.

- Mobile gadget

Mobile gadgets such as cell phone and smart phone which are equipped with programs like computer, which enable it to perform as mini personal computer. By using this gadget and its internet connection, everybody could enjoy chatting, browsing, and discuss each other with the wider range. The advancement of science and technology makes the size and price of those gadgets are getting cheaper and reachable.

- Social interface

This media provides facility or example that enables an interaction between human and computer. People set up more interaction with computer in a more intuitive way with less effort-through writing, voice, touch, eye movements, and other gestures. This technology serves as the milestone of the recent development of interactive multimedia, audio-graphic computer teleconference, and interactive television via satellite.

- Interactive whiteboard

An interactive whiteboard or IWB, is a large interactive display (such as a touch screen monitor) which is connected to a computer and projector. A projector projects the computers' desktop onto the board's surface, where users control the computer using a pen, finger or other devices.

d. Current application of ICT in English language teaching and learning

ICT support the process of conveying information and communication. The ways of conveying information doesn't have to be carried out directly between the communicator and the communicant. The development of ICT makes the process of communication between the communicator and the communicant in easy ways. They can communicate through telephone, internet, e-mail, satellite, television, video conference and so on. The process of those communications applies in language learning. In language learning, there is a communication between teacher and student. The process of learning is not always carried out by subjecting teacher and students in the certain room or a certain place directly. As the example, teacher can use internet as the medium to give lessons, assignments, or other information to their students.

In context of language learning, ICT has an important role as the "media" bridging and enabling the learning process, or direct communication between students and teacher although they are not present in the same room or place in certain time. Language learning program can be created to enable students to learn the lessons with guidance, instruction, information or further explanation. ICT in language learning used as a reference-book. Computer can store unlimited lessons or references, which can be accessed anytime, anywhere and accurately.

ICT appears to give both advantages and disadvantages. ICT in language learning reduces

the intimacy of students – teacher relationship that it may negatively contribute to students' affective feelings in the process of learning. However, ICT appears as a 'bridge' to break the distance and 'survive' the learning. In case of distance, teachers can use ICT through video conference to enable them teach or monitor the students learning process. Therefore, the development of ICT is seen as a better way of teaching and learning a certain language compared to the existing methods. Through the internet, teacher or learners can obtain as many as possible sources related to the learned – language; such as text, songs, stories, etc. Those sources can contribute as models of the learned – language use in the real context and in a proper manner. In addition, computer can also be used as a more interactive aid to support the learning of language compared to that of tape recorder, or chalk and blackboard.

ICT has paved the way of individualized learning and provided freedom of learning anytime, anywhere according to needs and convenience of the learners. So, we should take proper step to integrate ICT in the field of ELT to make the learners well versed in English language skills. From the above discussions it is clear that ICT tools have changed the paradigm of English language teaching learning process. So it is essential for a teacher to be familiar with modern ICT tools and use it properly to achieve the aims of English language teaching.

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IMPACT OF ICT IN THE PROCESS OF TEACHING AND LEARNING

ABSTRACT

ICT enables self-paced learning through various tools such as assignment, computer etc as a result of this the teaching learning enterprise has become more productive and meaningful. ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers 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 audio-videotape. Edusat technology has become very powerful media for interactive participation of experts and learners and it reaches the unreachable. Emerging learning Technology (ELT) of bogging, Integrated Learning Modules, pod cast, Wikis, Enhancement of Browsers, e-learning, M-learning, U-learning have started making rapid strides in teaching learning processes.

Keywords – *Web Browsers, Technology enhanced learning, self paced learning, Instructional software, Interactive learning, Integrated Learning Module, U-learning. E-learning, M-learning.*

Introduction:

The world that awaits us is a world of huge technical change presently the world is inhabited by very large number of scientists and technologists and they are more than the scientist and technologist that have lived on it during the history of mankind. All developments mainly on the economic growth of the nation are based on updated knowledge and information into economic activity has resulted in a profound structural and qualitative change. There is a window of opportunity for Indian because youth power in India is 59 % in the age group of 15-59 %. Japan is the most ageing nation in Asia, over 10 lac citizens are over the age of 90 years. Finland which is known as the proud nation of producing NOKIA mobile and earning over 40 billion dollars per year from it is the most ageing nation of Europe.

According to Dr Kastusiranjan one of the noted scientists of India has observed that global development over the past two centuries have already demonstrated that the central role of advances in science and technology and their applications in the social economic and cultural transformation of the world is tremendous. Human experience with technology is constantly evolving and is finding expression in myriad dimension. Technology has been affecting every part of human endeavour.

India can benefit for demographic dividends. India has 550 million below the age of 25 offers an excellent opportunity to become technical force. It is huge opportunity which unfortunately we have not fully tapped and transform our learning and teaching through ICT's in the knowledge based economy.

The new ICT enables self-paced learning through various tools such as assignments, computer etc. as a result of this the teaching learning enterprise has become more productive and meaningful. 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, chat session etc.

This promotes active learning, sharing of ideas, discussion and also provides immediate feedback.

This activates paced learning and allows effective mapping of learning path ways.

This requires high quality meaningful digital content to be made available to teacher and student. Teachers particularly should possess updated knowledge and skills to use the new digital tools and resources to help students achieve high academic standards. We definitely need a vision to equip our students to meet the emerging trends. The present high tech and competitive society will sustain only through the knowledge of ICT. ICT has the capacity to store, retrieve and process e-content both fast as well as accurate. ICT represents one of the current applications of technology towards teaching- learning processes.

According to UNESCO: ICT is a scientific technological and engineering discipline and management technique used in handling information in application and association with social, economic and cultural aspects. Various agencies like NCTE, SCERT, and IASES are being equipped with necessary hardware. NCTE is in the process of developing ICT based instructional packages for teacher educators. It would use ICT enabled learning which would bring in several innovations in teacher education.

Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology. ICT has the potential to transcend the barrier and space. ICT integration in the field of education has impacted hugely in improving the quality of education. It is widely believed that ICT integration will help us in making education more accessible and affordable. Increasing role of ICT will make education more democratic that is improving the quality education services available to even students sitting in far- flung remotest corners of the country.

The new environment of interactive learner-centered approach of ICT has completely meta-morphosised the process of education i.e delivery and dissemination. The technological creativity learner will help generate sharing of knowledge to perform tasks in a better way and to develop their capacity and skills to keep pace with the rapid changes but the pace of change is so fast that what was avant-garde few years ago is just a thing of past. We must not allow the ICT related opportunities to slip out of our hands.

We must empower our youth with the latest technology to tap the latest skills and hidden potential of our youth population. There is considerable hope that technology can expand and improve education in all levels with special reference to design and content of instructional materials, delivery, and assessment and feedback.

In technology enhanced learning (TEL) teacher's role will be more challenging and definitely different from what is presently the traditional class room teaching. In the new role he will be more a director/coach or a facilitator, because the ET enhances the quality of teaching and learning by arousing inquiry, curiosity and exploration. ICT will afford opportunity to the individual for self-paced learning, which caters to learner's abilities and aptitude.

The paper attempts to discuss the role of ICT to meet the challenges of knowledge economy and to explain the development of new methodology of learning and teaching aptitude in the changing context i.e. privatization, liberalization and globalization.

One of the major advantages of using ICT's in the class room has been to prepare. The present and next generation of students for a workplace where ICT's particularly computers internet and others related technologies are becoming more and more important. These computer savvy and technologically literate students possess the desired competencies to use ICT's effectively. These knowledgeable persons possess the competitive edge in an increasingly uncertain globalizing job market. Along with the technology literacy development of specificity skills are also required. For well paying jobs specifically of skill is of the primary importance.

ICT which includes radio and television as well as other high technology newer digital devices such as computers and Internet have been treated as generally powerful enabling tools for educational change and reform. On-line teaching as innovative teaching has been accepted widely, which includes on-line net working, role of e-moderator, e-learning? Web –sites which are very popular with teachers and students are Google, Yahoo, Gmail, rediffmail.com and Wikipedia. The modern concepts of ICT have helped professionals to cope the challenges for digital information and

technology through the development of digital literacy resources. This can be built by:

(a) Acquiring Digital Media
(b) Buying Access etc

The role of computers in Education computers is generally helpful for educational activity which requires significant interaction for that instructional software should be highly interactive. Interactive learning environments are called Intelligent Testing System. Because of their interactive capability computers provide individualized and self-paced learning. SW may be customized to meet the specific requirements of the individuals depending upon their diverse background and abilities. The use of word Excel, Access, PowerPoint, animation, graphics can be utilized to enhance the learning of content. Computers are good for explaining complex processes. Computer-aided learning is not a replacement technology but a complementary tool. Computers are useful for teaching, problem solving and decision making skills.

UGC has also initiated the process of computerization of University and College libraries providing internet connectivity and now through UGC-INFONET which is planning to provide those facilities like E-access to journals, CAL and E-governance to become reality. Electronic journal may be defined as any journal, magazine, e-zine, Webzine, news letter or type of electronic serial publication which is available over the internet and can be assessed using different technologies such as World Wide Web (WWW). From the year 1980 Gopher, ftp, telnet, e-mail or listserv a few publishers namely Elsevier, Academic, Springer etc had offered access to their on-line journals free of cost.

Use of Emerging Learning Technologies (ELT):

We may have heard the names of following terms without understanding. Here are few ELT which are in use:

Blogging:

A blog (a blend of the term web log) is a type of website or part of a website. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Most blogs are interactive, allowing visitors to leave comments. The ability of readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art photographs, videos, music and audio.

Integrated Learning Modules:

Availability of open source software has enabled development of content management system and learning management system such as a Module. Integrated Learning Module (ILM) is thematically focused classes, delivered primarily over Internet. The course content is integrated and comprehensive creating a unique perspective on course themes without the potentially repetitive requirements of separate stand-alone courses. Content and language integrated learning is an approach for learning content through an additional language (foreign or second language) thus teaching both the subject and the language.

A podcast:

A podcast (or non-streamed web cast) is a series of media files (either audio or video) that are released episodically and often downloaded through web syndication. The mode of delivery differentiates podcasting from other means of accessing media files over the Internet, such as direct download, or streamed web casting. A list of all the audio or video files currently associated with a given series is maintained centrally on the distributor's server as a web feed, and the listener or viewer employs special client application software known as a pod catcher that can access this web feed, check it for updates, and download any new files in the series.

Wikis:

Ebers bach et al (2014) note that the following basic features are common in wikis:-

Editing:

Most of the wikis use the same basic page editing function such as Text editing and image, table list hyperlink and file insertion.

Links:

Each article can be linked to other articles and thus form a new network structure.

History:

A function which saves all previous version or modifications of any single page. It allows tracking of the editing processes of an article since all changes have been documented.

Recent changes:

The features can provide a current overview of a certain number of recent changes to wiki pages or all changes with in a predefined time period.

Search function:

Most wikis also offer a classic full text or title search for wiki pages. A well known wiki is Wikipedia (http:// www. Wikipedia.org) online collaborative encyclopaedias where anybody can edit update the site content as they see fit. The homepage of Wikipedia can be accessed easily on browsing the website.

Enhancement for browsers:

Web browsers are adding functionality for their uses. Del.icio.us is a programme which helps you to favorite online and then access in another computer instead of a dedicated computer. Thus these are all additional plug ins that add functionality to the browser.

Now it is an information technological era. The students are willing to learn new technologies like mobile phones, i-pod, i-phone, computer and internet. This is an era of technological creativity. To keep pace with latest trends one should make use of electronic technology in teaching learning processes. The recent technology of our world is all pervasive and omnipresent and is developing at a higher speed. Let us encourage the use of ICT in teaching-learning processes in our educational institutions.

Now U-Learning (ubiquitous) is making another leap-frog progress emerging through the concept of ubiquitous computing. After the use of computer in education the use of e-learning and mobile learning has made a transformative progress in the field of education. U-learning means everywhere, every time, every content learning (the, internet etc). Various devices retrieve the information in appropriate format (PDA, cell-phone lap top or any other technological gadgets). U- Learning consists of two components e-learning and m-learning. E-learning includes a wide range of application and processes including computer based learning, web-based learning, virtual class room, digital content. Delivery of content through e- learning is via all electronic media including internet, intranet, extranet, CD-ROM, interactive TV audio-videotape.

M- Learning is mobile learning environment and is a sub-set of e-learning through mobile computational devices, palms, windows etc.

Conclusion:

The ICT in India advance very rapidly from single channel transmission in 1962 to about hundred channels. The use of satellite Instructional Television Experiment (SITE) in 1974-75 has reached country wide classroom (CWCR). Gyan Darshan, vyas higher education channel, Eklavaya Technological channel and worldwide internet communication are providing interactive multi-media, on line learning's. IGNOU is creating a cooperative radio network known as Gyan-Vani all over the country so that everyone desirous of learning gets the benefit of it. Edusat's technology has an-in-built-mechanism for many of the existing inter related problem felt during teleconferencing. Time will not be a problem any more with the off line access to the television lectures. Through these interactive participation it-reaches the unreachable in the remotest corner and to far flung areas.

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ICT BASED TEACHING LEARNING AND EVALUATION – TODAYS NEED

ABSTRACT

Teacher can use as many resources as he/she has available at hand. A good kind of power point presentation can serve the purpose. Different types of online resources can be supplied while teaching the play like Othello—one may use pictures/ images from Flickr or google search, you tube videos, delivered lectures by scholars or can have an online workshop or webinar on the same topic. This creates an interest among students and causes to change their habits of learning. Students get complete understanding of the play with its various facets. It increases the level of confidence of students and their learning can be tested at the end of class by asking some questions, distributing handouts for the homework or they can be said to prepare a seminar or short presentation on the topic.

INTRODUCTON

During the past few years, the world has witnessed a phenomenal growth in communication technology, computer network and information technology. Development of new broadband communication services and convergence of telecommunication with computers have created numerous possibilities to use a variety of new technology tools for teaching and learning system. The integration of computers and communications offers unprecedented opportunities to the education systems with its capacity to integrate enhance and interact with each other over a wide geographic distance in a meaningful way to achieve the learning objectives. The growth of these communication and computer systems, their ease of use, the power and diversity of information transfer allow teachers and students to have access to a world beyond the classroom . It has the potential to transform the nature and process of the learning environment and envision a new learning culture. Interactivity, flexibility and convenience have become the order of the day in the ICT supported environment. ICT opens up opportunities for learning because it enables learners to access, extend, transform and share ideas and information in multi-modal communication styles and format. It helps the learner to share learning resources and spaces, promote learner centered and collaborative learning principles and enhance critical thinking, creative thinking and problem solving skills. Not only mastering ICT skills, but also utilizing ICT to improve teaching and learning is of utmost importance for teachers in performing their role of creators of pedagogical environments. While literature provides some evidence of the effectiveness of using ICT in technical considerations, little is known about which learning strategies and pedagogical framework should be used for education and training.

FACTORS AFFECTING TEACHING-LEARNING EVENTS

Learners improved in almost all cases in both literacy/ESOL skills and ICT skills and confidence. This lends strong support to the claim in the Moser Report that 'Learners who use ICT for basic skills double the value of their study time acquiring two sets of skills at the same time'. Factors affecting learning-teaching events as follows:

Learning and teaching resources: Most users found the use of ICT motivating. Mobile technologies (tablets, personal digital assistants

[PDAs], mobile phones) were found to be particularly motivating, and enabled greater flexibility in teaching, with tutors taking advantage of the mobility of the technology to move outside the classroom.

Skills acquisition: No correlation was found between changes in ICT-skills and ICT-confidence scores and changes in reading and listening scores. This suggests that the two areas of skills are being learnt independently, that is the acquisition of one is not affecting the acquisition of the other.

Age: There was a negative correlation for gains in ESOL scores for men (older learners made least progress). There were positive correlations for gains in ICT skills and confidence (older learners made most progress).

Persistence: Initial ICT-confidence scores correlated with learners' persistence. Those with lower scores were likely to attend less frequently, and were more likely to eventually drop out.

THE NATURE OF TEACHING-LEARNING EVENTS

Use of technology: Increased ICT skills and confidence were positively correlated with the amount of time learners spent using technology in the classroom. Use of the internet, PowerPoint and word processing positively correlated with gains in ICT skills.

Collaboration: Tutors were often successful in the classroom management of collaboration. However, classes where individual learners spent more time working on their own showed better gains in ICT skills than those classes where more time was spent working in small groups.

Creating new cultures: The idea of teaching and learning with integration of ICT always places pedagogy over technology. It is not the only concern to master ICT skills, but rather it involves using ICT to improve teaching and learning. The major emphasis of ICT infusion in pedagogy should be such that it tends to improve learning, motivate and engage learners, promote collaboration, foster enquiry and exploration, and create a new learner centered learning culture. It permits the move from reproductive model of teaching and learning to an independent, autonomous learning model that promotes initiation, creativity and critical thinking with independent research. Learners are expected to collect, select, analyze, organize, extend, transform and present knowledge using ICT in authentic and active learning paradigm. Teachers are expected to create a new flexible and open learning environment with interactive, experiential and multimedia based delivery system. ICT should help teachers and learners to communicate and collaborate without boundaries, make learners autonomous and allow teachers to bring the whole world into classroom activities. It is ultimately important to understand the roles of ICT in promoting educational changes. A basic principle is that the use of ICT changes the distribution and ownership of information resources in the space of teaching and learning and thus changes the relationship among educational participants. While designing any innovative teaching and learning environment using ICT, the teacher should always keep the learning at the center of all activities, pedagogy should be at the heart and integration of pedagogy-technology should be the central focus.

In designing learning materials using ICT productivity tools certain pedagogical principles needs to be considered carefully. Mere ICT tools by themselves do not make good pedagogy. The moot question is how should the learning environment is designed using ICT as tools? The use of ICT should satisfy the diverse needs of all kinds of learners characterized by all kinds of socio-cultural conditions including the diversity of multiple intelligences. Teachers should continue to learn through their lives new ways of using technology for the growth of their learners as well as the very systems of education. The critical question in education is- in what ways ICT can enhance learning and teaching practices

MAJOR KEY PROCESSES IN TRANSFORMING TEACHING AND LEARNING

Broadly ICT tools help to open up opportunities for learning by enabling four major key processes in transforming teaching and learning as follows:

Access ideas and information from diverse sources through *searching, locating, selecting, and authenticating* material in a wide range of multimedia forms.

Extend ideas and information through *processing, manipulating, analyzing & publishing* material in different multimedia forms.

Transform ideas and information into new or different forms through *synthesizing, modeling,*

simulating and creating material in many multimedia styles and formats; and

Share ideas and information across *local, national and international* networks by interacting electronically with others in actual and/or delayed time.

It has been observed that **Access, extend, transform and share represent key processes** by which students learn and become independent learners and self-starters. Through the processes learners express their creativity and imagination. These processes can be applied in all areas of learning and in all levels of education. There are three broad categories of educational software namely, Generic tools for learning, Content-based resources and Interactive instructional courseware. Starting from productivity tools to simulation & modeling, there are various generic tools that help learners to access, extend, transform and share information. Content-based resources help learners to access a vast source of educational resources that effectively can be integrated with the curriculum objectives. Interactive instructional coursewares are basically self-paced learning materials. These programs are helpful to learners to control their learning at their own place and convenience.

KEY ADVANTAGES TO LEARNERS

The integration of ICT with teaching and learning has produced some of the significant positive gains in learners' knowledge, skills and attitudes by providing the following key advantages:

• Explore and represent information dynamically and in many forms.
• Become socially aware and more confident.
• Increase motivation.
• Communicate effectively about complex processes.
• Develop better understanding and broader view of processes and systems.
• Greater problem solving and critical thinking skills.

E-LEARNING

The link between distance learning and telecommunications is becoming even stronger, yielding new solutions to old problems, innovative educational resources and new teaching/learning practices. One of the most innovative and promising outcomes of this relationship is e-learning and online education, notably a process whereby teachers and students are linked up in an electronic media/computer network.

BLOGS

Blogs or classroom web logs are becoming increasingly popular with teachers and teacher education. Many experts predict that blogs will eventually become more successful teaching tools than web sites. A blog is a web page made up of usually short, frequently updated posts that are arranged chronologically-like a "what's new" page of a journal. The contents and the purposes of blogs vary greatly from links and commentary about other web sites to news about a company/person/idea, photos, poetry, mini-essays, project updates, even fictions. A crucial blog mission is to link to other web sites, or, sometimes even other blogs.

CONCLUSIONS

As we become increasingly supported by ICT, teaching and learning will not be the same as before. We will have to make use of the rich and exciting opportunities offered by the new technologies in education to reach our training goal and mission. One of the objectives of the present paper is to provide better understanding and appreciation of the role of ICT in teaching and learning system. Several viewpoints of integrating ICT in teaching and learning system have been discussed. Learning is not a transfer of knowledge, rather an active.

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THE ROLE OF ICT IN QUALITY EDUCATION

ABSTRACT

The notion that teaching and learning can be taken out of the confines of existing schools and colleges, that teaching can be individualized and insensitive to geoclimatic distances is one which has emerged out of the telecommunications revolution sweeping across the world in the 1980s and 1990s. And yet, the urban – rural divide in terms of access, equity, and resources will continue to be the main issues that Indian educators, particularly adult educators will have to address as the needs of the learning community in the new social, economic and political contexts will change. In the new educational system, there are likely to be four levels of learners. The first level will consist of students, who, able to afford the high cost of education, will obtain it from either public or private institutions of higher education. Today, from the time we awaken in the morning to the time before we sleep, we are surrounded by media, such as newspapers, radio, television, and computers. Sometimes we are not even aware that we are surrounded by these media. All these media come under the overall umbrella of what are known as today's ICTs. Knowing and using ICTs is important in today's fast changing knowledge society, but we very often are confused about what these media.

Introduction.

In this research I tried to give an introduction to media information and communication technologies (ICTs) and to their use in education, with particular reference to developing countries. A close look at the ICTs is critical particularly in the context of global development goals, the increasing demand of education for all, and the inability of existing educational systems to meet such a demand without support from the ICTs. The unit discusses the role of ICTs in education, their characteristics, strengths and weaknesses, and success factors when using ICTs in education.

The Power of Information and Communication Technologies (ICTs)

Today, from the time we awaken in the morning to the time before we sleep. we are surrounded by media, such as newspapers, radio, television, and computers. Sometimes we are not even aware that we are surrounded by these media. All these media come under the overall umbrella of what are known as today's ICTs. Knowing and using ICTs is important in today's fast changing knowledge society, but we very often are confused about what these media are.

Nature and Definition of Information and Communication Technologies (ICTs)

Information and Communication Technologies (ICTs) are often associated with the most sophisticated and expensive computer based technologies. But ICTs also encompass the more conventional technologies such as radio, television and telephone technology. While definitions of ICTs are varied, it might be useful to accept the definition provided by United Nations Development Programme (UNDP) : 'ICTs are basically information-handling tools- a varied set of goods, applications are services that are used to produce, store, process, distribute and exchange information. They include the 'old' ICTs of radio, television and telephone, and the 'new' ICTs of computers, satellite and wireless technology and the Internet. These different tools are now able to

work together, and combine to form our 'networked world' – a massive infrastructure of interconnected telephone services, standardized computing hardware, the internet, radio and television, which reaches into every corner of the globe'. When we talk of ICTs, we refer not only to the latest computer and Internet based technologies, but also to simple audio visual aids such as the transparency and slides, tape and cassette recorders and radio; video to cassetters and television; and film.

These older and more familiar technologies are referred to under the collective heading of "analogue media" while the newer computer and Internet based technologies are called the "digital media." However, in today's world, with the increased convergence or blending of the engineering designs and with the coming together of the satellite and the computer, the dividing lines between these different media are becoming blurred and consequently, the way people define and refer to ICTs is also getting blurred. Often, the definition of ICTs is also done in terms of "old" and "new" as if to distinguish between the analogue and digital. But what is "old and what is "new"? Livingstone (1999), in an extensive exploration of the idea of newness, has argued that the notion of "new" can either be seen with reference to the "newness of technology" or in the context of "what's new for society about these media. Livingstone further argues that what is new for the western world is not necessarily so for the rest of the world.

Within a social context, the introduction of radio or television may be as "new" as the introduction of Internet. While there is much euphoria about the ICTs, after more than half a century of research, social scientists are till sceptical about tall and ill-defined claims about potential societal changes that may follow a technological innovation. This means that 'new' cannot merely be defined either in terms of time and time scales or in terms of the technology innovation. countries. The form of this flow will become clear only when GATS comes into full force after rounds of negotiations among participating countries. Then, more than now, knowledge is expected to become a tradable commodity; and it will be essential that Indian educators keep pace with the change, or else perish in the face of competition from multinational forces in all fields of education and learning, including abdult learning. At the same time, changes in the capabilities, needs, and interests of the user; changes in the medium and its content, the close interdependence of the media and the competition of each medium to survive, and changes in the availability and attractivencess of accessible alternatives; interact freely with social, economic and political and technological contexts. The learner community: India's demographic mosaic consists of an increasing demand for education for a population, half of which is below 15 years of age, 75 percent rural, a literacy rate of about 60 per cent; and a linguistic break-up of 15 different Everyday, you are exposed to different media, from the time you get up in the morning to the time when you go to sleep. Think about the different media or ICTs you are exposed to; and list them into categories of "old" and "new". Write down the reasons for your listing in two columns against old and new.

Strengths and Weaknesses of ICTs

Like all innovations that we have come to accept, ICTs also have strengths and weaknesses. We should list these because it is important to know what they are especially if we are to plan and use them effectively. some of the strengths of the ICTs include TM Individualization of learning: This means that people learn as individuals and not as a homogenous group. ICTs allow each individual to relate to the medium and its content. TM Interactivity: Interactivity is the way in which a person can relate to the content, go forward and backward in the content, start at any point depending upon prior knowledge insted of always is a sequential way. TM Distance and climate insensitive: It does not matter where you are, or how the weather is, you can still access and learn from ICTs. TM can serve multiple teaching functions and diverse audiences: ICTs, especially the computer and Internet based can be useful in drill and practice; to help diagnose and solve problems, for accessing information and knowledge about various related themes. TM HGGigh speed delivery, wide reach at low cost: There is instant delivery of information. TM Uniform quality: If content is well produced and is of good quality, the same quality can be delivered to the rich and the poor, the urban and the rural

equally and at the same low cost. But ICTs also have weaknesses which we must understand. Some of these include TM High infrastructure and start up costs:

|If costs money to build ICT systems and to maintain them. TM Tend toward centralized uniform content in economies of scale : The larger the numbers, the lower the cost. This means that sometimes we try to reach large numbers so we make content common, not taking into account individual differences. TM Are not ideally location and problem sensitive : Address problems in a general way, but cannot, without special effort. Solve local and culturally sensistive problems. TM Problems of reach, access, remain: Not everyone has equal access; so not everytone benefits equally from the use of ICTs. TM Tend to create new class of knowledge rich/knowledge poor :| Those who have access and knowledge through the media become richer and those who do not become poorer, widening the 'knowledge or digital gap' between rich and poor. TM Essentially delivery systems: A medium is different from the content; and often we forget that we can deliver any content, because ICTs are essentially meant only to deliver content, not to change attitudes or bring about behaviour change. TM Hard to assess impact : Learning from ICT delivered content is difficult to asses since such learning is of a multidimensional and long term kind,

Types of Media/ICT Technologies used in Education Synchronous Media Asynchronous Media Audiographics Audio and video tapes and CDs Audio conferencing, as in a E mail telephone conference computer file transfers Broadcast radio and television Virtual conferences Teleconferencing Multimedia products, off line computer conferencing such as what web bsed learning formatats and Internet telephony rather than from immediate learning assessment as in a classroom test. TM Officers, trainers need reorientation and retraining: Just as people learn to use ICTs, trainers and officers also need traning something they sometimes resent. TM Call for attitudinal change to understanding of teaching and learning : These are different media and have a different way of teaching from what we are accustomed to therefore, they need different ways.

As an individual you still are unsure about the potential ofo media such as radio and television for adult learning. But, you have been told by your superior offecer that from the next financial year, radio and television will be used for adult learning. What are the arguments that you would come up with to support your views if a) you are required to convince others that the should also try to use radio and television. b) You would have to convince your superior of the ineffectivencess of these media. of understanding what teaching and learning is all about And so, they are a mixed bag and it is necessary that we recognize both their stgrengths and weaknesses, before planning to use them in our adult learning setup. It is more important that we recognize because if we use a technology thinking it to be ideal one, but not recognizing its limitations, we are likely to fail in our effort and then to believe that all ICTs are useless and inadequate in education.

To conclude we can say ICTs are the part and parcel of the moden education. It also very powerful tool of the student centric education. It is full of wonders, it will bring desired result in the education system. I think all teacher fraternity must be utilised this modern tools of teaching and learning advancement.

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A SURVEY ON ADVANTAGES AND DISADVANTAGES OF ICT IN HIGHER EDUCATION IN INDIA

ABSTRACT

The authors consider the role of information technologies in education and researchin the modern information society of India is increasing day by day. Information and communication technologies (ICT) have become commonplace entities in all aspects of life. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of Endeavour within education and governance. Education is a very socially oriented activity and quality education has traditionally been associated with strong teachers having high degrees of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. In this paper, a literature review regarding the use of ICTs in education, advantages and disadvantages of ICT is provided.

Keywords: ICT, Education, Learning, Knowledge, Research, Advantages & Disadvantages.

Introduction:

In this 21st century, the term "technology" is an important issue in many fields including education. This is because technology has become the knowledge transfer highway in most countries. Technology integration nowadays has gone through innovations and transformed our societies that has totally changed the way people think, work and live (Grabe, 2007). As part of this, schools and other educational institutions which are supposed to prepare students to live in "a knowledge society" need to consider ICT integration in their curriculum (Ghavifekr, Afshari & Amla Salleh, 2012).

According to Daniels (2002) ICTs have become within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. However, there appears to be a misconception that ICTs generally refers to _computers and computing related activities'. This is fortunately not the case, although computers and their application play a significant role in modern information management, other technologies and/or systems also comprise of the phenomenon that is commonly regarded as ICTs. Pelgrum and Law (2003) state that near the end of the 1980s, the term _computers' was replaced by _IT' (information technology) signifying a shift of focus from computing technology to the capacity to store and retrieve information.

Advantages of ICT in Higher Education and Research

1. ICT enhancing teaching and learning process

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research (Yusuf, 2005).ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change

(Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005). In a rapidly changing world, basic education is essential for an individual be able to access and apply information. Such ability must find include ICTs in the global village.

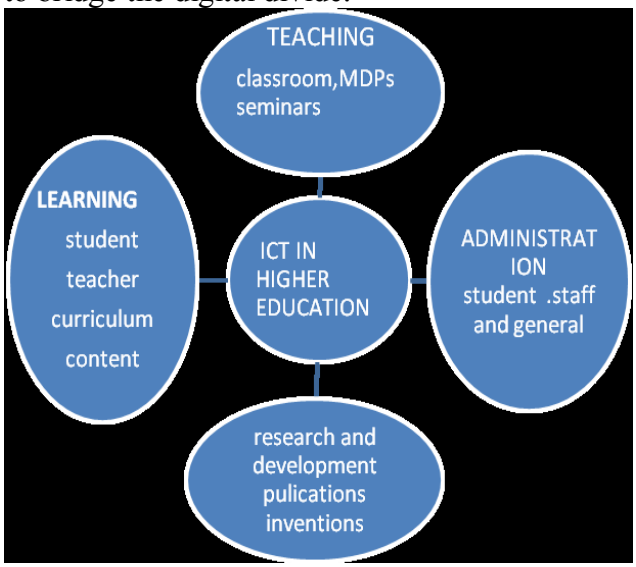
Conventional teaching has emphasized content. For many years course have been written around textbooks. Teachers have taught through lectures and presentations interspersed with tutorials and learning activities designed to consolidate and rehearse the content. Contemporary settings are now favoring curricula that promote competency and performance. Curricula are starting to emphasis capabilities and to be concerned more with how the information will be used than with what the information is. Teaching and learning can further be improved by replacing of conventional teaching instead of the usual age old method of chalk and talk for teaching by innovative methods like power point presentations and animations, modeling and simulations, video clips and using AV aids, LCD projectors etc. This enhances the learning ability of the student and also helps the teacher to elaborate the difficult concepts effectively within a short time span. The integration of information and communication technologies can help revitalize teachers and students. This can help to improve and develop the quality of education by providing curricular support in difficult subject areas. To achieve these objectives, teachers need to be involved in collaborative projects and development of intervention change strategies, which

2. ICT enhancing the flexibility, quality and accessibility of education

India has a billion-plus population and a high proportion of the young and hence it has a large formal education system. The demand for education in developing countries like India has skyrocketed as education is still regarded as an important bridge of social, economic and political mobility (Amutabi and Oketch, 2003). There exist infrastructure, socio- economic, linguistic and physical barriers in India for people who wish to access education Bhattacharya and Sharma, 2007). This includes infrastructure, teacher and the processes quality.

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore and Kearsley, 1996). Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace.

Mobile technologies and seamless communications technologies support 24x7 teaching and learning. Choosing how much time will be used within the 24x7 envelope and what periods of time are challenges that will face the educators of the future (Young, 2002). Thus, ICT enabled education will ultimately lead to the democratization of education. Especially in developing countries like India, effective use of ICT for the purpose of education has the potential to bridge the digital divide.



3. Use of ICT in Administration

ICT in administration of educational institutions play a major role in efficient utilization of existing resources and simplifies the administration tasks (e.g. in student administration, staff administration, general administration etc.) by reducing the paper work and replaces the manual maintenance of record keeping to electronic maintenance of

records which helps in easy retrieval of information and modify information.

4. Use of ICT in Research

Integration of ICT in higher education enhances the quality of research work and more number of individuals enrolled in the research work in various fields. ICT facilitates the links across the world in all subject matter and made social networking. It saves time, money and effort to the researchers in their research studies. The collection and analysis of large data becomes easier through the availability of various software. The unprecedented growth in bandwidth and computing power provide opportunities for download huge amount of data and can perform complex computations on them in a fast manner to get an accurate and reliability of data.

Disadvantages of ICT in education:

Any new thing is a two edge sword .While using of any new technology there is drawback of that technology, some of the following drawback of use of ICT in education.

1. Lack of standard education:

One of the great challenges for quality control in education is lack of standards for parameters to measure the quality of education. For the solution of this all the accreditation bodies like NAAC,NBA,AICTE,CBSE and other authorities must sit together and circulate a standard list of parameters to decide the quality of education. Development of ICT has changed the epic centre of knowledge and hence in many of the cases student is more informed than the teacher. Teachers lack adequate qualification and training and their lesson plans are most often outdated or irrelevant.

Lack of trained teacher:

One of the important drawbacks is lack of trained teachers to exploit ICT proficiently. Most of the teachers are not willing to introduce new technologies to themselves first and subsequently to their students. There is resistant from teachers, basically from older teachers as compared to younger ones, to apply ICT in their subject. Hence teachers need to update their knowledge and skills as per change in the curriculum and technologies. At present, ICT in school education is strictly limited to a handful of elite schools. India as well as all over the world like lack of learning materials, teachers, remoteness of education facilities, high dropout rate etc (UNESCO,2002). Innovative use of Information and Communication Technology can potentially solve this

2. ICT Supported Infrastructure and Lack of Resources:

The effective use of ICT would require the availability of equipments which are not available in all the educational institutions. Besides, ICT requires up-to-date hardware and software. High-speed internet connection is another prerequisite for integrating ICT into the teaching-learning situation. But unfortunately internet access is very poor.

4. Insufficient Funds: Effective implementation of technology into education systems involves substantial funding. ICT-supported hardware, software, internet, audio visual aids, teaching aids and other accessories demand huge funds. Afshari, Bakar & Su-Luan et al. (2009) state that efficient and effective use of technology depends on the availability of hardware and software and the equity of access to resources by teachers, students an administrative staff. These costs are in most cases substantially high and cannot be provided by the stake holders.

5. Social and Cultural Factors: Mc Donald (2001) has suggested that the emergence of English as a dominant language of science, technology, business and interactional relations, as well as education and training, would ensure the availability of globally useable knowledge products.

6. Lack of Knowledge and Skill: According to Pelgrum (2001), the success of educational innovations depends largely on the skills and knowledge of teachers. Teachers' lack of knowledge and skills is one of the main hindrances to the use of ICT in education both for the developed and underdeveloped countries (Mamun, & Tapan, 2009; Pelgrum, 2001). Integrating technology in the curriculum requires knowledge of the subject area, an understanding of how students learn and a level of technical expertise (Morgan 1996).

7. Lack of Time: Teachers are burdened with heavy workload. In these circumstances teachers don't have time to design, develop and incorporate technology into the teaching learning situation (Beggs, 2000; Ihmeideh, 2009). Research studies reported lack of time as one of the biggest

constraints to the integration of ICT into the teaching learning. Teachers need time to learn how to use the hardware and software, time to plan, and time to collaborate with other teachers.

Conclusions:

In order to conclusion I have notice that there is many benefits of ICT in higher education rather than drawback. Higher education institutions have to play important roles in the community and can be perceived as models for society in the pursuit of sustainable development. Higher education should not only critically reflect on learning environments and learning processes for students, they should also reflect on their role in creating an infrastructure that supports and enhances lifelong learning processes. The wide adoption of ICT calls for mindsets and skill sets that are adaptive to change. The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn ICT integration in higher education brings a change in student and teacher learning behavior and develops higher order skills such as collaborating across time and place and solving complex real world problems. To gain the optimum impact of ICT in education, certain issues: why teachers integrate technology; how ICT implementation could be effective; what the requirements are to achieve effective ICT implementation need to be addressed.

It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of students. The overall literature suggests that successful ICT integration in education. I suggest use of ICT in education and research in india will be increase in future. Now the rural student also well aware about digital platform and in future the percentage of ICT use in education will be increase.

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TEACHING OF COMMERCE WITH ICT: A NOVEL APPROACH

ABSTRACT

ICT has transformed the ways human beings communicate as well as do things. It has widely impacted different sectors like tourism, transportation, telecommunication, governance, etc. In education also, it is playing a vital role from admission process to evaluation process. It has significantly revolutionized teaching process. It has made teaching more interesting, interactive, collaborative and useful by enriching the teaching methodology of almost every subject including commerce. Unfortunately, teachers of commerce seldom realize the importance of ICT in teaching of commerce and so hardly utilize ICT during teaching and thus generally teach commerce by using lecture method with a little or no help of ICT. So, the present paper is a humble attempt to understand the novel approach of teaching of commerce with ICT, highlighting on the relevance of ICT in teaching of commerce and on the suggestions for promotion of ICT in teaching of commerce for the betterment of teachers as well as students.

Keywords: *Teaching of Commerce, ICT*

Introduction

We are truly living in an ICT (Information and Communication Technology) inspired digital society and digital economy. Now-a-days, ICT has become talk of the day. Everybody, from street vendors to governments, from students to academicians, from daily wager to corporate, has embraced ICT with open hands and heart, be it smart phones, internet or computers. Today, India also, like many other countries, is embracing ICT in most of arenas especially education as education is experiencing more positive changes in its system because of the use of ICT. "Research proves that appropriate use of ICT can catalyze the paradigmatic shift in both content and pedagogy that is at the heart of education reform in the 21st century" (Bransford, 1999). With the help of ICT, many Indian educational institutions are digitalizing a gamut of educational services not only of teaching but also of administration. Some of such online and offline digitalized form of services are delivering lectures, providing study material, marking attendance of students and teachers, giving admission, accepting fee, conducting examination, doing evaluation, declaring results, maintaining records, issuing books from library using barcodes, communicating with students and teachers, etc. The UGC Notification (Minimum Standards & Procedure for Award of M. Phil. / Ph.D. Degree, Regulation, 2009) dated 1st June 2009 has also mandated submission of electronic version of theses and dissertations by the researchers in universities with an aim to facilitate open access to Indian theses and dissertations to the academic community world-wide. Online availability of electronic theses, through centrally-maintained digital repositories, not only ensures easy access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. This would overcome serious problem of duplication of research.

To be precise, ICT is playing a vital role in each and every endeavour of education, especially teaching. It has made teaching more interactive and collaborative setting aside the monotonous traditional teachers-speaking and students-listening approach. It has brought positive revolutionary

changes in the teaching methodology of many teachers of many subjects. But unfortunately, teachers (Teachers of commerce) hardily utilize ICT in teaching of commerce and thus teach commerce, a practical subject, in a theoretical manner by using just lecture method only, without giving any practical knowledge i.e. hands-on experience of the subject. It leads to inadequate learning experience in students (students of commerce) resulting in low employability not only of graduates but also of even among post-graduates. They face difficulties not only to get any job but also to start any business. In their daily life, they feel problem in dealing with banks, insurance companies, broking firms, sales tax/income tax departments, etc. This vicious cycle of ignorance about practical knowledge of commerce needs to be stopped. With the uses of ICT, a lot can be done to bring improvement in the teaching of commerce. So, let's understand the novel approach of teaching of commerce with ICT, highlighting on the relevance of ICT in teaching of commerce and on the suggestions for promotion of ICT in teaching of commerce for the betterment of

Commerce

Commerce is a very broad subject. It is related with the commercial or economic education as it focuses on knowledge and skills that make students successful businessmen, financial analysts, bankers, accountants, IFAs, etc. It is a very important subject as it transforms students from simple and ordinary persons to extraordinary entrepreneurs who are able not only to earn their own livelihood and to lead a graceful life but also to provide livelihood to others by running big businesses and thus by generating millions of jobs for millions of unemployed people. It is such a comprehensive subject, comprising of theory as well as practical, that it has been described differently by different scholars so there is no single universally accepted definition of commerce. Let's have a look on some of the definitions given by the following scholars:

H. G. Shield: "Real commerce education is economic education-economic education, not of academic sort, long on theory and short of facts, but economic education which will give the student knowledge of the basic realities of business life and relationships. The basic science of business is economics and without a through grounding and awareness of economic problems much of the material included in secondary school."

Nicholas: "Commerce is kind of training which prepares the individuals to enter business occupations to achieve their primary aims."

ICT

ICT is an umbrella term that encompasses all communication technologies such as internet, wireless networks, cell phones, satellite communications, digital television, etc. that provide access to information. It is also such a comprehensive term, consisting of theory as well as practical, that it has been described differently by different scholars so there is no single universally accepted definition of commerce. Let's have a look on some of the definitions given by the following scholars:

Blurton: "ICT is an accepted acronym of the word information communication technology. It is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information."

Daintith: "A branch of engineering dealing with the use of computers and telecommunications equipment to store, retrieve, transmit and manipulate data."

Relevance of ICT in Teaching of Commerce

ICT is very much relevant in teaching (teaching of commerce). It has the capability and potential to make teachers more self-sufficient, more capable, more competitive, more updated, more social, etc. in the following ways:

- It makes teachers' task of teaching more easy, interesting and innovative by incorporating multimedia (images, videos, colors, animation, etc.) besides just plain text.
- It enables teachers to help students to retain the learnt material for a longer time by involving multiple senses of students like touch, visual and auditory.
- It helps teachers to present their teaching material in a systematic way by using PPTs (Power Point Presentations) so that they may not stray away from their topic while teaching students.
- It helps teachers to record their lectures by availing recorders so that students may listen to them as many times as they wish to understand the matter clearly and deeply as per their needs.

- It improves teachers' on-campus and off-campus communication with students by offering a variety of mediums of communication like instant messaging, social media, e-mail, video conferencing, etc. to suit their needs.
- It makes teachers' teaching process economical in terms of time, money and energy by providing mike, speakers, LCD, projectors, recorded videos of lectures, etc. to handle a large number of students at the same time.
- It enables teachers to help students in drill and practice of difficult portion of commerce by providing various teaching modules of commerce using CAI (Computer-Assisted Instructions).
- It helps teachers not only in drafting, organizing and maintaining various documents easily and effectively by offering special features of MS Office like editing, spelling check, alignment, font coloring, font size and many more but also in saving their precious time by providing the search option for finding the exact location of the file, in case they forget it.
- It ensures teachers about the safety of their official confidential data by providing passwords, login access, etc. to prevent unauthorized access to it.
- It helps teachers to do research work in a better way with more accuracy and convenience by providing various accounting software like SPSS, MS Excel, etc.
- It helps teachers to keep themselves aware about the updated rules and regulations issued by various organizations (RBI, SEBI, IRDA etc.) and government ministries (Finance, Commerce, Corporate Affairs etc.) by visiting their websites.
- It enables teachers to enhance their understanding towards the latest development of commerce taking place in their own as well as in other countries of the world by establishing and maintaining their professional networks across the whole world by availing the mediums of social networking sites, mobile apps (Whatsapp etc.), emails, video conferencing, etc.
- It enables teachers to give students the practical knowledge of the following aspects of commerce:

Suggestions for Promotion of ICT in Teaching of Commerce

"A teacher can never truly teach unless he is still learning himself. A lamp can never light another lamp unless it continues to burn its own flame."

Rabindra Nath Tagore To inspire students to adopt ICT in learning, teachers will have to adopt it first in teaching in true letters and spirit. The following suggestions may be advocated for the promotion of ICT among teachers of commerce so that they may be able to exploit its benefits judicially in teaching of commerce:

- Teachers may be sensitized towards use of ICT in teaching of commerce through seminars, conferences, workshops so that they may adopt positive attitude towards the use of ICT in teaching of commerce.
- Teachers may be helped out for clearing and removing their doubts about the safety of ICT particularly in case of net-banking and e-commerce so that they may take full advantage of it in teaching of commerce without any hesitation and fear.
- Teachers may be given adequate training of ICT so that they may use it judicially in teaching of commerce.
- Teachers may be guided to come forward first to make themselves familiar and comfortable with the latest happenings of ICT in commerce- be it online-shopping, online-banking, online-payment of bills of electricity, water, telephones, credit cards, etc. so that later on they may teach and inspire students to learn and utilize these upcoming new trends of commerce in true sense.
- Teachers may be provided digital infrastructure by installing computer systems in class rooms, computer labs, libraries, faculty hostels, senate hall, teachers' rooms etc. so that they may start using them frequently.
- Teachers may be provided 24*7 free and fast-paced Wi-Fi internet facilities so that they may access it any time without any inconvenience.
- Teachers may be provided accounting software like Tally and research software like SPSS to

have a hands-on experience of using them so that they may use them properly in their daily life and may teach the same to students.

- Teachers may be encouraged to visit the websites of important organizations like RBI, SEBI, ICAI, Finance Ministry, HRD Ministry, UGC, etc. for getting information related to latest developments of commerce so that they may update themselves and their students with the latest data.
- Teachers may be inspired to visit frequently the websites of those prominent universities and institutions of repute in India and in abroad that are very much dedicated to commerce like Shri Ram College of Commerce, etc. so that they may have updated information about latest happenings in the field of commerce taking place in these organizations.
- Teachers may be encouraged to download mobile applications related to business newspapers, subject dictionaries, etc. so that they may become e-readers.
- Teachers may be encouraged to use digital stationary like e-paper for writing so that they may become habitual of using it instead of using just paper stationary and thus may go digital day by day.
- Teachers may be given research works/projects on latest developments of commerce like e-commerce, m-commerce, etc. so that they may explore them minutely in a systematic way and thus may teach the same to students.
- Teachers may be allocated adequate free time in the school time-table so that they may spare some time for the acquisition, maintenance and development of ICT skill-sets during school time itself.
- Teachers may be allocated adequate funds so that they may utilize them for the acquisition, maintenance and development of digital resources required in teaching of commerce.

Conclusion

ICT is playing a very important role in each and every endeavour of education. It is helping in executing distant education effectively. It is helping in research work also not only by inviting research papers for seminar/ conferences, etc. through websites but also by publishing and sharing them online. Realizing the benefits of ICT in education, today, many educational institutions are providing Wi-Fi facility to their teachers and students for utilizing the available services of ICT. UGC has also asked all universities to start online admission process from the session 2016-17. But the area of education which is extremely influenced by ICT is teaching. It has revolutionized teaching by modifying instruction strategies of many subjects including commerce. Unfortunately, teachers of commerce seldom realize the importance of ICT in teaching of commerce and so hardly utilize ICT during teaching and thus generally teach commerce by using lecture method with a little or no help of ICT. So, the present paper focuses on the relevance of ICT in teaching of commerce and on the suggestions for promotion of ICT in teaching of commerce for the betterment of teachers as well as students. Thus, it recommends teaching of commerce with ICT to make the teaching of commerce more effective, more useful, more practical and ultimately more successful.

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THE APPLICATION OF GOOGLE CLASSROOM AS A TOOL FOR TEACHING AND LEARNING AT M. M. COLLEGE, DARWHA

ABSTRACT

The present study aims to discuss the advantages of Google Classroom, activities can be perform and how to create the Google Classroom and the main objective of this study is to explore active response towards Google classroom of the students of M. M. College, Darwha and the various activities performed in these classrooms. The results prove that majority of the students satisfy with the Google Classroom's tool that were introduced in the class where all ratios are satisfactory. In particular, comparative performance is good in the areas of ease of access, perceived usefulness, communication and interaction, instruction delivery and students' satisfaction towards the Google Classroom's learning activities.

Introduction

Google Classroom is a blended learning platform for schools that aims to simplify creating, distributing and grading assignments in a paperless way. Google Classroom is a free application designed to help students and teachers communicate, collaborate, organize and manage assignments, go paperless, and much more. It was introduced as a feature of Google Apps for Education following its public release on August 12, 2014.(Kahn, 2014)

This is the only application that Google has developed specifically for students and teachers, and they want it to be your go-to assignment manager for Google Drive and beyond. Assignment creation and distribution is accomplished through Google Drive while Gmail is used to provide classroom communication. Students can be invited to classrooms through the institution's database through a private code that can then be added in the student interface or automatically imported from a School Information Management System.(Izenstark & Leahy, 2015)

Google Classroom integrates with students' and teachers' Google Calendars. Each class created with Google Classroom creates a separate folder in the respective Google service where the student can submit work to be graded by a teacher. Communication through Gmail allows teachers to make announcements and ask questions to their students in each of their classes. Teachers can add students directly from the Google Apps directory or can provide a code that can be entered for access to the class by students.

In contrast to Google's regular services, Google Classroom does not show any ads in its interface for students, faculty, and teachers, and user data is not scanned or used for advertising purposes.

Advantages

1. **Easy to use and accessible from all devices.**

   Even if you are not a Google user, using Google Classroom is a piece of cake. Apart from being delivered through the Chrome browser, which makes it accessible from all computers, mobile phones, and tablets, it makes it really easy for you to add as many learners as you like, create Google documents to manage assignments and announcements, post YouTube videos, add links, or attach files from Google Drive. Learners will find it equally easy to log in, as well as receive and turn in assignments.

2. **Effective communication and sharing.**
One of the greatest advantages of Google Classroom is Google Docs; these documents are saved online and shared with a limitless number of people, so when you create an announcement or assignment using a Google doc, your learners can access it immediately through their Google Drive, as long as you have shared it with them. Furthermore, Google Docs are easily organized and personalized in Google Drive folders. In other words, you no longer need emails to share information; you just create a document, share it with as many learners as you want, and voila.
3. **Speeds up the assignment process.**
How about creating an assignment and distributing it with just a click of a button? And how about learners turning in the completed assignment in a matter of seconds? Assignment process has never been quicker and more effective, as in Google Classroom you can easily check who has submitted their assignment and who is still working on it, as well as offer your feedback immediately.
4. **Effective feedback.**
Speaking of feedback, Google Classroom gives you the opportunity to offer your online support to your learners right away; this means that feedback becomes more effective, as fresh comments and remarks have bigger impact on learners' minds.
5. **No need for paper.**
There might be a day that grading papers would be impossible to imagine; Google Classroom is certainly interested in getting there as soon as possible. By centralizing eLearning materials in one cloud-based location, you have the ability to go paperless and stop worrying about printing, handing out, or even losing your learners' work.
6. **Clean and user-friendly interface.**
Staying loyal to clean Google layout standards, Google Classroom invites you to an environment where every single design detail is simple, intuitive, and user-friendly. Needless to say, Google users will feel right at home.
7. **Great commenting system.**
Learners can comment on specific locations within pictures for a variety of online courses. Furthermore, you can create URLs for interesting comments and using them for further online discussion.
8. **Is for everyone.**
Educators can also join Google Classroom as learners, which means that you can create a Google Classroom for you and your colleagues and use it for faculty meetings, information sharing, or professional development.
9. **Ease of Use:** Quick and convenient set up, easy to log in, easy to receive and turn in assignments.(Pappas, 2015)
10. **Accessibility:** Allows for the use of screen readers for low vision users. Google classroom Mobile app works with VoiceOver on iOS and TalkBack on Android.
11. **Access:** Tool is delivered through the Chrome browser, which makes it accessible from all computers, mobile phones, and tablets.
12. Users have ability to annotate documents directly on their devices in Google classroom.
13. **Impact on Student Learning:** Tool help create groups based on readiness, interest, reading level, or other factors for teaching and learning.
14. Since Google Classroom is an LMS that integrates Google Apps for Education, It will tie in Google Docs, Google Slides and other Google apps along with other Grading tools (exclusive to Google classroom only).
15. Eliminate distractions by giving quizzes in locked mode.

Learning Activities

For Teachers

- Allows teacher to design digital team based learning activities.
- Work on the same lesson plan at the same time with a colleague using Google Docs.
- Store your lesson plans in your school's shared Google Drive so that anyone at your school can find and access them.
- Create a folder for your grade level to share resources.
- Assign and grade coursework securely—and reuse or collaborate.
- Keep materials and resources organized in the Classwork page.
- Track when students turn-in work.
- Highlight student exemplars: An announcement in Google Classroom can attach

student exemplars from the assignment folder in Google Drive.

- Invite a Googler into your class to do a guest lecture through Video Chat on the importance science. Or invite a grandparent who lives in a another state to read to the class during story time.
- Give better feedback faster using the comment bank.
- Post, comment, and facilitate classroom discussions.
- Manage and view guardians, students, and co-teachers on the People page.

For Students

Math

- **Model mathematics with Google Draw**: Collaboratively create virtual manipulatives, such as Algebra Tiles, in a Google Drawing. Distributing the drawing as each student receives a copy allows students to model their mathematics.
- **Collaborative reasoning:** Prior to providing students the algorithm for solving a problem, students can use a collaborative Google Document or Slides presentation to reason out possible solutions to a problem. Attach a document in Google Classroom as "Students can edit file."
- **Provide peer tutoring:** Students in upper grades can tutor and support students in lower grades through the creation of a Google Classroom class for this purpose.

Science

- **Create a Discussion on Specific Topic:** In Google Classroom, you have a stream that appears by default when you login to your class. This stream can be utilized to collect student opinions by creating discussion topics and new posts.
- **Weather/environment lab.** Science classes can connect with one or more classes in another city, state, province or country and gather data about the weather or environment around them. Log it in a Google Spreadsheet with a page for each location. Compare and contrast the world around you.

Reading

- **Weekly reading record:** The students in the school usually have a reading diary that they use to record information about times that they read during the week. They take it home as well as using it at school. A form can be created (See example: Google Form) by the children as a place to enter data about their reading. We hear "I haven't got my reading diary," so many times during the year, this way they have no excuses and can access it from any computer. Alternatively a class form could also be setup to gather together everyone's record.

Writing

- **E-Portfolio:** As the platform is based on Google Drive for uploading documents and assignments, it is also facilitated to implement the e-portfolio method. Both teachers and students can create folders and documents that can be shared between each other. If the students work in groups, they can create their own shared folder. This way the group's' work will be available to all the members of the group, even if one or more are absent. As everything happens in the cloud, everything can be done asynchronous.
- **Student collaboration on writing projects:** Google Classroom doesn't only support using e-portfolios, but with the power of Google Docs, the students can also work together in new ways on Google Docs.
- **Spelling Tests:** For your weekly spelling test use simple 1-10 or 1-20 numbered Google Form (See example: numbered form) with a name question and ask the children to type in their answers as you read out the list of words. Once these are submitted apply formula to judge if they are correct or not and it becomes self-marking.

Other

- **Google Maps Scavenger Hunt with QR Codes:** A fun way for your students to learn about maps and famous landmarks (or landmarks in your city) is to create QR codes using Google Maps and QR Code Generator. It's so easy and your students will love this activity. You can present the

activity in the form of a scavenger hunt. More advanced or older students can do this by themselves.

- **Response to Intervention:** Different Google Classrooms can be created for students to join based on student needs. Students needing additional support or students needing additional challenges can join a Google Classroom class around intervention of a particular topic.(Adjunct & Hocutt, 2015)

How to create a class with Google Classroom

Creating classes is the first step for teachers who want to set up an online space with Google Classroom. Thankfully, this is easy to do. Here's how.

1. Navigate to https://classroom.google.com.
2. Choose the "I am a Teacher" option.
3. Click the "+" sign in the top right-hand corner next to your Google account.
4. Select "Create Class", then give it a name and a section, and click "Create".

Customize the appearance of your class:

When you create your class for the first time, you are given a default header image. This is the image that students will see when they click on your class to access assignments and announcements. You can customize this image with a few quick steps.

1. Hover your mouse over the banner image.
2. Look for the **Select Theme** link in the bottom right-hand corner.
3. Click **Select Theme** to open a gallery of photos you can choose for your class.
4. Choose a photo from the gallery, then click **Select Class Theme** to change your header image.

Google Classroom at M. M. College, Darwha

From the academic year 2018-2019 we have started to use Google Classroom in our college and the initial response from the students is good enough to carry on the use of it. Students who have smartphones found the classroom very innovative, easy to use and informative.

Class wise analysis of students is given in table no. 1

Table No. 1: Class wise Analysis of Students

Sr. No.	Class	Total Students Enrolled		Total	No. of Students Participated		Total Participants
		Girls	Boys		Girls	Boys	
1	B. A. I	84	248	332	11 (13.10%)	46 (18.55%)	57 (17.17%)
2	B. A. II	45	63	108	0 (0%)	2 (3.17%)	2 (0.02%)
3	B. A. III	53	79	132	10 (18.87%)	18 (22.78%)	28 (21.21%)
4	B. Com. I	48	66	114	1 (2.08%)	6 (9.09%)	7 (6.14%)
5	B. Com. II	46	28	74	5 (10.87%)	8 (28.57%)	13 (17.57%)
6	B. Com. III	31	51	82	2 (6.45%)	7 (13.73%)	9 (10.98%)
7	B. Sc. I	127	121	248	18 (14.17%)	38 (31.40%)	56 (22.58%)
8	B. Sc. II	88	66	154	22 (25.00%)	19 (28.78%)	41 (26.62%)
9	B. Sc. III	82	36	118	15 (18.29%)	15 (41.67%)	30 (25.42%)

10	M. A. Marathi I	21	6	27	0 (0%)	0(0%)	0(0%)
11	M. A. Marathi II	20	4	24	0(0%)	0(0%)	0(0%)
12	M. A. Political Science I	40	35	75	11 (27.5%)	15 (42.86%)	26 (34.67%)
13	M. A. Political Science II	39	13	52	13 (33.33%)	5 (38.46%)	18 (34.62%)
14	M. A. Sociology I	60	24	84	0(0%)	0(0%)	0(0%)
15	M. A. Sociology II	31	10	41	0(0%)	0(0%)	0(0%)
16	M. Com. I	62	26	88	0(0%)	0(0%)	0(0%)
17	M. Com. II	38	14	52	0(0%)	0(0%)	0(0%)
	Total	**915**	**890**	**1805**	**108 (11.80%)**	**179 (20.11%)**	**287 (15.90%)**

From the analysis of data presented in table no. 1 it is found that out of 17 classes 11 classes are found active. From theses 11 classes M. A. Political Science I class has highest percentage of students participated i.e., 26 (34.67%), followed by M. A. Political Science II class has second highest number of students i.e., 18 (34.62%), B. Sc. II class is in the third position with 41 26.62%) students and so on, Overall out of total 1805 students enrolled in the college 287 (15.90%) students are participated in the Google Classroom.

Another form the analysis it is also found that out of total 890 boys students 179 (20.11%) students were participated in the classroom which is the highest percentage of participation as compare to the girls students, out of total 915 girls students enrolled in the college only 108 (11.08%) were participated in the Google Classroom.

Activities Performed

In these classes of Google Classrooms number of activities were performed at M. M. College, Darwha they are as follows.

- Notices
- Time Table
- Syllabus
- Subject News
- Question Papers
- Expert Guidance
- Educational Videos
- Guest Lecture
- Assignments
- Instructions
- Feedback through Google Form

Conclusion

This paper found thattough it is initial stage out overall students are satisfy with of Google Classroom's thus show it is effective as an active learning tools. The research effort shows that we are constantly determine through observations, surveys, and analyses of student demography and course design to what leads to a greater student's satisfaction on method of learning. This approach, in turn, will contribute to the training of online instructors in methods and the designing of educational support programs that allow students to succeed in the online environment. It is timely that Google classroom's tools should be integrated into the teaching and learning of data mining software, not solely because it is a useful utility tool. More importantly it is pedagogical tool that will enhance the teaching and learning of data mining and related application.

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ROLE OF ICT IN HIGHER EDUCATION

ABSTRACT

Education is a socially oriented activity and important instrument for social and economic transformation. The higher education, particularly, in India, is experiencing a major transformation in terms of access, equity and quality. The transition is highly influenced by the developments in Information and Communication Technology (ICT). ICT has become the integral part of the teaching-learning process. The use of ICT undoubtedly, improves the claas room teaching-learning process. It provides e-learning facility. Effective use of technology can motivate students, make our classes more dynamic and renew teacher enthusiasm as they learn new skills and techniques of teaching.

Key words: ICT, Higher education, e-learning.

INTRODUCTION

According to Dr. Babasaheb Ambedker (Bombay, Legislative Council Debate 27 July 1927) "The University is a machinery whereby education facilities are provided to all those who are intellectually capable of using those facilities to be the best advantages but who cannot avail themselves of those facilities for want of funds or other handicaps in life." The teacher community in the education system shapes the behavior; minds and the social and human values of the student community. Effective use of technology can motivate students, make our classes more dynamic and interesting and renew teacher enthusiasm as they learn new skills and techniques. The demand for skilled and competent workforce is ever increasing in the contemporary globalised society. In order to increase the access to higher education and improve its reach to remotest part of the country the contribution of ICT is on increase.

DEFINATIONS

Information and communication technology (ICT)

ICT is defined as a 'diverse set of technological tools and resources used to communicate, and to create, disseminate store and manage information.' These technologies include computers, the internet, broad-casting technologies (radio and television), and telephony. However it must be recognized that ICT may never replace the relationship between teacher and learner which is crucial to the learning and development process.

The Open University of United Kingdom (UKOU) is the first educational institution in the world wholly dedicated to open and distance learning. Similarly, Indira Gandhi National Open University in India combines the use of print, recorded audio and video broadcast radio and television and audio conferencing technologies.

E-Learning

It is most commonly associated with higher education and corporate training. E-learning encompasses learning at all levels that uses the information network – the internet – for the course delivery, interaction and /or facilitation. It is also known as online learning. Web based learning is a subset of e-learning. It is also referred to as learning using an internet browser.

Blended learning

It reflects to learning models that combines traditional classroom practices with e-learning solutions. The students in a traditional class can be assigned both print based and online materials. A web based training course can be enhanced by face to face interaction.

Open and distance learning

Open and distance learning is defined by the commonwealth as a way of providing learning

opportunities that is characterized by the separation of teacher and learner in time and place or both; the use of variety of media, including print and electronic; two way communications that all one learners and tutors to interact; the possibility of occasional face to face meetings and a specialized division of labour in the production and delivery of courses.

MAJOR ICT INITIATIVES IN HIGHER EDUCATION

Various initiatives in the recent past portrayed the role that ICT plays in the higher education development. Several projects have reduced the costs, and it also has increased transparency. India has taken up major initiatives in terms of content delivery and furthering education through Information and Communication technology. For example Gyan Darshan was launched in 2000 in broadcast educational programs for school kids, university students and adults. Similarly Gyan Vani was another such important step with broadscast programs contributed by institution such as IGNOU and IITs .Under the UGC country wise classroom intiative, education programs are broadcast on Gyan Darshan and Doordarshan national channel every day. E-Gyankosh which aims at preserving digital learning resources is a knowledge repository launched by IGNOU in 2005.Almost 95% of IGNOU's printed material has been digitized by uploaded on the repository. The national programme for technology enhanced learning (NPTEL) launched in 2001 is another joint initiative of IITS and IISC which education through technology. Sristi, the society for research and initiatives for sustainable technologies and institutions is facilitating the use of ICT for strengthening the capacity of grass roots inventors, innovations and entrepreneurs engaged in conserving bio diversity and developing eco-friendly solutions to local problems.

BENEFITS OF ICT IN HIGHER EDUCATION

Use of ICT in education presents a unique opportunity to solve multitude of challenges quickly as well as at low rate. Here is an overview of advantages of an ICT.

1 Motivation

The internet can act as a motivating tool for many students. Young people are very captivated with technology. Educators must capitalize on this interest excitement and enthusiasm about the Internet for the purpose enhancing learning. For already enthusiastic learners, the internet provides them with additional learning activities not readily available in the classroom.

2. Fast communication

The internet promotes fast communication across geographical barriers. Students can join collaborative projects that involve students from different states, countries or continents.

3. Co-operative learning

The internet facilitates co-operative learning, encourages dialogue and creates a more engaging classroom. For example, a LISTER V for our class will allow students to get involved in class discussions through e-mails in a way not possible within four walls of classroom.

4. Research materials

Apart from communication, research is what takes many people to the internet. There are many resources on the internet than the school library can provide.

CONCLUSION

ICT play vital role as a strong agent for change among many educational practices i.e. conducting online exam, pay online fees, accessing online books and journals. Thus ICT in Higher education improves teaching learning process, provides the facility of online learning to thousands to thousands of learners who cannot avail the benefits of higher education due to several hurdles, such a time, cost, geographical location etc. Once again ICT serve to provide the means for much of this activity to realize the potential it holds.

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USE OF ICT IN TEACHING AND LEARNING OF ENGLISH LANGUAGE

ABSTRACT

Language is a means of communicating thoughts and feeling. Though not only means language is purely human and non-instinctive method of communicating ideas, emotions and desire by means of a system of voluntary produced symbols. The knowledge of nature of language can be learnt through drill, practice, exercise etc. A skill has been described as "knowledge put to active use". Developments of modern technology have made significant impact on all spheres of human life. The impact has been rather prominent in case of service activities such as banking, health, transportation, education and libraries. Teaching itself is an art. An art which, according to many teachers and researchers, is constantly changing depending on the era we live and teach in.

Introduction

Today, the computer and internet technologies have brought into the learning and teaching of English language indisputable transformation/revolution. Teachers therefore must combine the knowledge of the ICTs with practicing or professional knowledge in order to bring innovations into the classroom. The various traditional methods of teaching the language skills (listening, speaking, reading and writing) for instance still remain important for teachers of English Language. However, ICTs tenable the teacher to modify teaching and learning strategies in order to create student centred learning environment instead of the traditional teacher centred which persisted for long.

Aims and objectives of teaching English

Aims:

1. To understand spoken English:- The students should be able to understand spoken English required in ordinary conversation, exchange of greetings, receiving orders and directions, listening to lectures, and talks etc.
2. To speak English:- A student is required to produce sounds with proper stress and intonation.
3. To understand written English:- Our students when they leave the college, to be able to understand the written English the books, magazines, newspapers they are able to comprehend material published in English and to be able to read books with understanding.
4. To write English:- Writing English is in no way less than speaking English. In teaching English we aim to enable to our students to write in English letters, applications, descriptions and accounts of events. To be able to make statements through English.

Objectives:

I.A.C. Strong once proclaimed, " For us who speak English, English is everything……English is not a subject, English is our life.

Four fold objectives of language teaching.

1. Semantic:- related to understand
2. Phonetic:- deals with sounds, spelling, pronunciation
3. Graphic:- related to writing

Language as a skill subject:

Language is a skill subject and the five basic skills are listening (understanding), speaking, reading, writing and talking (communicating). According to O'Jesperson, "Language is a set of human habits, the purpose of which is to give expression to thoughts and feelings." And according to the Michael West, "A language is not a subject which can be taught, it is a subject which must be learnt."

All the four skills would be given equal importance

1. **Listening**:- it is generally considered a passive skill whereas speaking is considered an active skill. However, listening is not totally passive and it is also an active skill because it involves decoding a message and understanding it.
2. **Speaking**:- The practice in speaking may be started by the teacher with dialogues, proper tone and intonation correctly and we should ensure that his own spoken English is good
3. **Reading:**- like listening, it is a decoding process. But it is a very complex process and involves many physical, intellectual and often emotional reactions. It is good source of self-education. Reading helps in knowing words, news, important information through newspapers, journals and books etc.
4. **Writing:** - writing is different from speaking. To write is learning to use grammar with ease and facts in some sequential order as tools. It is to train the students in expressing himself effectively in good English.

THE POWER OF ENGLISH LANGUAGE

We are teaching English and learning English, but why do we want to teach English, in contrast with other foreign languages? The given answer is that English is the most widespread language in the world. It is difficult to guess exactly how many English speakers there are. However, according to estimation, there are more than 350,000,000 native English speakers and more than 400,000,000 speakers of English as a second language or foreign language. English Language Teaching (ELT).

Modern technology Audio Visual aids in Language Context

There are some kinds of technologies classified into information and communication technology commonly used in language context, such as:

To convey some concepts more efficiently and successfully to students the teacher takes help of some aids such aids are called audio-visual aids.

The word audio refers to the hearing and the word 'visual' to seeing. By giving aid to the ears and eyes, they help in making the impression of the lesson permanent on the students' mind.

Importance of Audio-Visual aids in teaching of English

English is a foreign language; students cannot understand it as they understand their mother tongue. Therefore, teaching of English becomes different for us. In the teaching of language, the main purpose of the use of audio-visual aid is to enable the teacher to make his lesion effective and interesting. The teacher to give a clear idea ot the student through audio-visual aids.

Types of Audio-Visual Aids:

1. A chalk board:- It is most common teaching aid used by the teacher for writing important points, drawing, illustration, solving problems and so on.
2. Charts and pictures :- (i) Charts – sometime charts are needed by the teacher to supplement his actual teaching. (ii) pictures – for example, portraits of great men of English will be the great help in teaching of English provided reference is made to them.

Interactive multimedia

Interactive media is the integration of digital media including combinations of electronic text, graphics, moving images, and sound, into a structured digital computerized environment that allows people to interact with the data for appropriate purposes. The digital environment can include the Internet, telecoms and interactive digital television. Multimedia as a concept has diverse definitions. Some scholars consider multimedia as devices that combine texts with images. Multimedia can be used as devices that incorporate text, graphics, animations or real video into English lesson.

Computer

Computer can be utilized with other multimedia learning devices or it can stand alone (a standard PC) and still serves its basic purpose as an electronic medium of language learning. (Hartoyo, 2012:29).

Computer is an electronic device which is capable of receiving information (data) and performing a sequence of logical operations in accordance with a predetermined but variable set of procedural instruction (program) to produce results in the form of information or signals based on Oxford

dictionary. It is consist of CPU, monitor, keyboard and some other apparatus.

Audio devices

Audio devices can be used with other media to form an interactive multimedia. However, it can also be utilized separately as independent tool. Audio devices include speaker, earphone, CD, and etc.

Internet

Internet can be used as a medium of language learning through email, www (world wide web), text, audio and video conferencing.

Television

It is more important and its one of the most teaching aids. According to Oxford dictionary, television is a system for converting visual images (with sound) into electrical signals, transmitting them by radio or other means, and displaying them electronically on a screen.

Telephone

This telephone medium has not been widely used for language teaching because of the poor quality of analogue transmissions. However, there is new invent of digital quality and lower connection cost which potential for conference calls.

Mobile gadget

Mobile gadgets such as cell phone and smart phone which are equipped with programs like computer, which enable it to perform as mini personal computer. By using this gadget and its internet connection, everybody could enjoy chatting, browsing, and discuss each other with the wider range. The advancement of science and technology makes the size and price of those gadgets are getting cheaper and reachable.

Social interface

This media provides facility or example that enables an interaction between human and computer. People set up more interaction with computer in a more intuitive way with less effort-through writing, voice, touch, eye movements, and other gestures. (Hartoyo,2012:34) This technology serves as the milestone of the recent development of interactive multimedia, audio-graphic computer teleconference, and interactive television via satellite (National Broadband of Employment, Education and Training, 1993:5).

Interactive whiteboard

An interactive whiteboard or IWB, is a large interactive display (such as a touch screen monitor) which is connected to a computer and presentation. A presentation projects the computers' desktop onto the board's surface, where users control the computer using a pen, finger or other devices.

Application of ICT in English language teaching and learning

ICT defined as technology which the function is to support the process of conveying information and communication. The ways of conveying information doesn't have to be carried out directly between the communicator and the communicant. The development of ICT makes the process of communication between the communicator and the communicant can be conveys in easy ways. They can communicate through telephone, internet, e-mail, satellite, television, video conference and so on. The process of those communications applies in language learning. In language learning, there is a communication between teacher and student. The process of learning is not always carried out by subjecting teacher and students in the certain room or a certain place directly. As the example, teacher can use internet as the medium to give lessons, assignments, or other information to their students.

Ways in modern technology can be used for language learning:

a) Presentation

Power point presentation is also good for teaching spoken English. Documentation of formal speech or debate can be made on CD-ROMS. The students in a large class for instance can be taught the art of public speaking through slide presentations with power point presentation. The use of power point presentation enables almost all the students to see the points projected in slides and sometimes even images accompanying the texts. After the presentation, the students will be made to watch formal speech or debate on certain issue/topic that has been documented. This will offer them training in public speaking and expressing themselves in English Language. As an activity, the large class can be grouped in order to have formal speech presented by each group or debating teams representing the groups. Doing this will widen the students' vocabulary as well as elaborate sentence structures.

b) Email

The emergence of the internet has revolutionalized the humans communicate and do things. Many teachers have started to utilize the internet to

facilitate teaching and learning. Teachers of English language are not exceptions. Email can be used by a teacher to reach many students at a distance once the students provide their email addresses. The teacher can use email to send learning materials to students; give assignment; assess and post the feedback to the students' email boxes. Through the use of e-mail for instance, the students interact with their lecturers and friends at a distance. By sharing files, students collaborate and work together with their lecturers and colleagues. In this way, there is transformation from traditional teacher-centred approach which makes learners passive receivers to students-centred or democratic approach which makes learners active discoverers and explorers.

c) Publishing

ICT tools exist to help teachers and learners or students to publishing or linked in their work in a local area network. ICT may use by the teacher and learners to help them publish their work in these ways:

- Word – processors and Desk Top Publishing (DTP) software
- Doing audio recording and editing tools to record interview, discussions, learning material and etc
- Using digital camera and camcorder to record presentations, drama, role play, and so on
- Power point can be used as the medium to publish presentations
- Web pages using web authoring tools

d) Website for Teaching English

Website as an internet technology is an essential tool that the teaching can use to facilitate the teaching and learning of English Language in a large class. It provides a lot of opportunities for teaching and learning. The teacher for instance can combine offline and online teachings in order overcome some of the challenges of teaching and learning in a large. Teachers of English in large classes can use the website for different purposes in order to facilitate the teaching and learning of English Language. In a large class, distribution of prepared or developed learning materials may be difficult as it will waste a lot of time. In addition, there is the tendency that the class will be ruddy as students may scramble for the materials. The teacher can post the material to his website for the students to download for use in the class. However, the students should be given two or three days to down load the materials before conducting the lesson. Website materials for teaching English language may include texts for reading such as novels, plays poems e.t.c or samples of writing tasks such as letters, essays, memorandums or emails. Beginning teachers may as well browse websites for teaching English to find prepared materials that are relevant to the topic being treated. Lesson plans, exercises and reading materials are available on English language teaching websites e.g www.teachingenglish.org.uk

e) Videodiscs

Teaching literature Videodiscs contain authentic documentations that if manipulated well by the teacher will facilitate learning and teaching of English in Large classes. This technology helps the teacher to bring almost real life situation into the classroom. Interactive videodiscs are suitable for teaching literature

f) Teaching of writing

Students of Tertiary institutions where English is used as language of Education study English for Academic purposes or communication skills at entry point. Writing is one of the Language skills taught at the entry point to improve the students' proficiency in English being language of Education so that they can function well in their fields of study. The teacher can utilize power point presentations and Videodiscs to teach the different writing tasks that students may be engaged in. Proper utilization of technologies in the teaching and learning of English changes the teacher's role from transmitter of knowledge as in the traditional classroom to a consultant.

The virtual learning environment (VLE)

The virtual learning environment (VLE) has transformed the way in which pupils learn and teachers teach. The virtual learning environment is a global website that allows pupils to access their work and their curriculum from anywhere in the world. It is rights-protected and therefore only parents, students and staff will be able to log in. Pupils work can be set, collected and marked via the VLE, saving on a great deal of paperwork and collection and deadline dates. This, in turn, can empower pupils and inform their own learning. Pupils are able to make more decisions, as tasks

will be completed at their own pace and potentially in their own time.

Video conferencing

In schools video conferencing can be used for formal teaching, using guest teachers, multi-school projects and community events. Once connected, pupils can see the other person on a TV screen and ask questions. The equipment required includes a TV monitor, camera, microphone, speaker and a compressed video system which can be transmitted through an Integrated Services Digital Network (ISDN). Video conferencing can provide pupils with the opportunity to learn in different ways, which might include a focus on a particular topic being covered in English class at examination level. This could be arranged with another English class department where teachers can offer particular expertise within an examination syllabus allowing for the sharing of information.

The use of YouTube

YouTube is a video-sharing website where users can upload, view and share video clips. It uses Adobe flash video technology to display a wide variety of user-generated video content, including movie clips, television clips and music videos, as well as amateur content such as video blogging and short original videos. Most of the content on YouTube has been uploaded by individuals, although media corporations including the BBC offer some of their material via the site. The wide range of topics covered by YouTube has turned video sharing into one of the most important parts of internet culture. YouTube is fast becoming an effective medium for gaining and presenting images in schools.

How to rejuvenate a literature class

Poetry:

Through slide shows the teacher can put up the poetry on screen. The writer's image can be shown. An audio can be played where the poetry is recited, made more interesting if the poet himself/herself recites. Students perhaps may be interested in listening to the author's voice.

Fiction:

Techniques similar to those in poetry can be applied here. In addition, movies based on novels can be shown in full or some important scenes can be presented and discussed. The themes, characterization, historical context, narration can be discussed through slide shows and presentations. Youtube can be integrated—of course with caution—to introduce certain memorable scenes from movies based on novels. Through this students can be introduced to the works of great directors.

Drama:

In addition the techniques mentioned already, staged plays can be shown through ICT tools and the minute intricacies of a play can be discussed. As a result the use of light, sound, stage setting and props all will come live before the students and thus would have a lasting impact on them.

Literary Theory:

This is an area which most students dread. Their fear can be done away with by the use of ICT. The theorists can be shown on screen, their interviews or recorded lectures can be played. The ideas can be applied to literary texts and hence their relevance be made clear. Examples, pictures and other such devices can be used to make students alert and attend to it with interest.

Others:

Indian Writing in English, African, American literature and other such areas can be taught through ICT. History of English literature can be shown in tabular forms. Video conferencing can be facilitated so that interaction can take place among students, research scholars and teachers not just within India but across the world. This would make them aware of the literary scenario elsewhere, keep them up-to-date, bring in different points of views and interpretations and enhance their knowledge. Research scholars would be helped if through cloud computing or through other technology, resources are made available at one place.

CONCLUSION

The use of ICTs in language teaching has countless benefits. The development in the use of ICT, like language lab, videos, satellite broadcast, videoconferencing and web seminars have support the richness and quality of education both on and off campus. It harnessed several views of scholars which established the fact that ICTs are indispensable tools that facilitate the teaching and learning of English Language. The paper has pointed out how multimedia technologies such as the videodiscs, CDROMS, DVD, and power point projectors can be applied in the teaching of different aspects of English Language such as

literature (plays, prose or poems), writing, vocabulary development and grammar. It has as well highlighted how e-mail, websites and e-library can be utilized by the teacher of English Language to facilitate teaching and learning.

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TEACHING OF COMMERCE WITH ICT: A NOVEL APPROACH

ABSTRACT

Today, ICT has transformed the ways human beings communicate as well as do things. It has widely impacted different sectors like tourism, transportation, telecommunication, governance, etc. In education also, it is playing a vital role from admission process to evaluation process. It has significantly revolutionized teaching process. It has made teaching more interesting, interactive, collaborative and useful by enriching the teaching methodology of almost every subject including commerce. Unfortunately, teachers of commerce seldom realize the importance of ICT in teaching of commerce and so hardly utilize ICT during teaching and thus generally teach commerce by using lecture method with a little or no help of ICT. So, the present paper is a humble attempt to understand the novel approach of teaching of commerce with ICT, highlighting on the relevance of ICT in teaching of commerce and on the suggestions for promotion of ICT in teaching of commerce for the betterment of teachers as well as students.

Introduction

We are truly living in an ICT (Information and Communication Technology) inspired digital society and digital economy. Now-a-days, ICT has become talk of the day. Everybody, from street vendors to governments, from students to academicians, from daily wager to corporate, has embraced ICT with open hands and heart, be it smart phones, internet or computers. Today, India also, like many other countries, is embracing ICT in most of arenas especially education as education is experiencing more and more positive changes in its system because of the use of ICT. "Research proves that appropriate use of ICT can catalyze the paradigmatic shift in both content and pedagogy that is at the heart of education reform in the 21st century" (Bransford, 1999). With the help of ICT, many Indian educational institutions are digitalizing a gamut of educational services not only of teaching but also of administration. Some of such online and offline digitalized form of services are delivering lectures, providing study material, marking attendance of students and teachers, giving admission, accepting fee, conducting examination, doing evaluation, declaring results, maintaining records, issuing books from library using barcodes, communicating with students and teachers, etc. The UGC Notification (Minimum Standards & Procedure for Award of M. Phil. / Ph.D. Degree, Regulation, 2009) dated 1st June 2009 has also mandated submission of electronic version of theses and dissertations by the researchers in universities with an aim to facilitate open access to Indian theses and dissertations to the academic community world-wide. Online availability of electronic theses, through centrally-maintained digital repositories, not only ensures easy access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. This would overcome serious problem of duplication of research. To be precise, ICT is playing a vital role in each and every endeavour of education, especially teaching. It has made teaching more interactive and collaborative setting aside the monotonous traditional teachers-speaking and students-listening approach. It has brought positive revolutionary changes in the teaching

methodology of many teachers of many subjects. But unfortunately, teachers (Teachers of commerce) hardily utilize ICT in teaching of commerce and thus teach commerce, a practical subject, in a theoretical manner by using just lecture method only, without giving any practical knowledge i.e. hands-on experience of the subject. It leads to inadequate learning experience in students (students of commerce) resulting in low employability not only of graduates but also of even among post-graduates. They face difficulties not only to get any job but also to start any business. In their daily life, they feel problem in dealing with banks, insurance companies, broking firms, sales tax/income tax departments, etc. This vicious cycle of ignorance about practical knowledge of commerce needs to be stopped. With the uses of ICT, a lot can be done to bring improvement in the teaching of commerce. So, let's understand the novel approach of teaching of commerce with ICT, highlighting on the relevance of ICT in teaching of commerce and on the suggestions for promotion of ICT in teaching of commerce for the betterment of teachers as well as students. Commerce is a very broad subject. It is related with the commercial or economic education as it focuses on knowledge and skills that make students successful businessmen, financial analysts, bankers, accountants, IFAs, etc. It is a very important subject as it transforms students from simple and ordinary persons to extraordinary entrepreneurs who are able not only to earn their own livelihood and to lead a graceful life but also to provide livelihood to others by running big businesses and thus by generating millions of jobs for millions of unemployed people. It is such a comprehensive subject, comprising of theory as well as practical, that it has been described differently by different scholars so there is no single universally accepted definition of commerce. Let's have a look on some of the definitions given by the following scholars:

H. G. Shield: "Real commerce education is economic education-economic education, not of academic sort, long on theory and short of facts, but economic education which will give the student knowledge of the basic realities of business life and relationships. The basic science of business is economics and without a through grounding and awareness of economic problems much of the material included in secondary school."

Nicholas: "Commerce is kind of training which prepares the individuals to enter business occupations to achieve their primary aims."

ICT

ICT is an umbrella term that encompasses all communication technologies such as internet, wireless networks, cell phones, satellite communications, digital television, etc. that provide access to information. It is also such a comprehensive term, consisting of theory as well as practical, that it has been described differently by different scholars so there is no single universally accepted definition of commerce. Let's have a look on some of the definitions given by the following scholars:

Blurton: "ICT is an accepted acronym of the word information communication technology. It is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information:

Daintith; "A branch of engineering dealing with the use of computers and telecommunications equipment to store, retrieve, transmit and manipulate data."

Relevance of ICT in Teaching of Commerce

ICT is very much relevant in teaching (teaching of commerce). It has the capability and potential to make teachers more self-sufficient, more capable, more competitive, more updated, more social, etc. in the following ways:

It makes teachers' task of teaching more easy, interesting and innovative by incorporating

1.multimedia (images, videos, colors, animation, etc) besides just plain text.

2.It enables teachers to help students to retain the learnt material for a longer time by involving multiple senses of students like touch, visual and auditory.

3.It helps teachers to present their teaching material in a systematic way by using PPTs (Power Point Presentations) so that they may not stray away from their topic while teaching students.

4. It helps teachers to record their lectures by availing recorders so that students may listen to them as many times as they wish to understand the matter clearly and deeply as per their needs.

5. It improves teachers' on-campus and off-campus communication with students by offering a variety

of mediums of communication like instant messaging, social media, e-mail, video conferencing, etc. to suit their needs.

6. It makes teachers' teaching process economical in terms of time, money and energy by providing mike, speakers, LCD, projectors, recorded videos of lectures, etc. to handle a large number of students at the same time.

7. It enables teachers to help students in drill and practice of difficult portion of commerce by providing various teaching modules of commerce using CAI (Computer-Assisted Instructions).

8. It helps teachers not only in drafting, organizing and maintaining various documents easily and effectively by offering special features of MS Office like editing, spelling check, alignment, font coloring, font size and many more but also in saving their precious time by providing the search option for finding the exact location of the file, in case they forget it.

9. It ensures teachers about the safety of their official confidential data by providing passwords, login access, etc. to prevent unauthorized access to it.

10. It helps teachers to do research work in a better way with more accuracy and convenience by providing various accounting softwares like SPSS, MS Excel, etc.

11. It helps teachers to keep themselves aware about the updated rules and regulations issued by various organizations (RBI, SEBI, IRDA, etc) and government ministries (Finance, Commerce, Corporate Affairs, etc) by visiting their websites.

12. It enables teachers to enhance their understanding towards the latest development of commerce taking place in their own as well as in other countries of the world by establishing and maintaining their professional networks across the whole world by availing the mediums of social networking sites, mobile apps (Whatsapp, etc), emails, video conferencing, etc.

13. It enables teachers to give students the practical knowledge of the following aspects of commerce:

i) How to file income tax returns online;
ii) How to deposit several taxes online;
iii) How to register businesses online;
iv) How to raise funds online;
v) How to trade in stock exchange online;
vi) How to do Net Banking;
vii) How to do commercial correspondence through e-mails;
vii) How to prepare, maintain and evaluate financial records in electronic form;
ix) How to test hypothesis using SPSS and other research softwares;

Thus, the list is endless and ever evolving…

Suggestions for Promotion of ICT in Teaching of Commerce

"A teacher can never truly teach unless he is still learning himself. A lamp can never light another lamp unless it continues to burn its own flame." - Rabindra Nath Tagore

To inspire students to adopt ICT in learning, teachers will have to adopt it first in teaching in true letters and spirit. The following suggestions may be advocated for the promotion of ICT among teachers of commerce so that they may be able to exploit its benefits judicially in teaching of commerce:

1. Teachers may be sensitized towards use of ICT in teaching of commerce through seminars, conferences, workshops so that they may adopt positive attitude towards the use of ICT in teaching of commerce.
2. Teachers may be helped out for clearing and removing their doubts about the safety of ICT particularly in case of net-banking and e-commerce so that they may take full advantage of it in teaching of commerce without any hesitation and fear.
3. Teachers may be given adequate training of ICT so that they may use it judicially in teaching of commerce.
4. Teachers may be guided to come forward first to make themselves familiar and comfortable with the latest happenings of ICT in commerce- be it online-shopping, online-banking, online-payment of bills of electricity, water, telephones, credit cards, etc. so that later on they may teach and inspire students to learn and utilize these upcoming new trends of commerce in true sense.
5. Teachers may be provided digital infrastructure by installing computer systems in class rooms, computer labs, libraries, faculty hostels, senate hall, teachers' rooms etc. so that they may start using them frequently.
6. Teachers may be provided 24*7 free and fast-paced Wi-Fi internet facilities so that• they

may access it any time without any inconvenience.

7. Teachers may be provided accounting softwares like Tally and research softwares like SPSS to have a hands-on experience of using them so that they may use them properly in their daily life and may teach the same to students.
8. Teachers may be encouraged to visit the websites of important organizations like RBI, SEBI, ICAI, Finance Ministry, HRD Ministry, UGC, etc. for getting information related to latest developments of commerce so that they may update themselves and their students with the latest data.
9. Teachers may be inspired to visit frequently the websites of those prominent universities and institutions of repute in India and in abroad that are very much dedicated to commerce like Shri Ram College of Commerce, etc. so that they may have updated information about latest happenings in the field of commerce taking place in these organizations.
10. Teachers may be encouraged to download mobile applications related to business newspapers, subject dictionaries, etc. so that they may become e-readers.
11. Teachers may be encouraged to use digital stationary like e-paper for writing so that they may become habitual of using it instead of using just paper stationary and thus may go digital day by day.
12. Teachers may be given research works/projects on latest developments of commerce like e-commerce, m-commerce, etc. so that they may explore them minutely in a systematic way and thus may teach the same to students.
13. Teachers may be allocated adequate free time in the school time-table so that they may spare some time for the acquisition, maintenance and development of ICT skill-sets during school time itself.
14. Teachers may be allocated adequate funds so that they may utilize them for the acquisition, maintenance and development of digital resources required in teaching of commerce.

Conclusion

ICT is playing a very important role in each and every endeavour of education. It is helping in executing distant education effectively. It is helping in research work also not only by inviting research papers for seminar/ conferences, etc. through websites but also by publishing and sharing them online. Realizing the benefits of ICT in education, today, many educational institutions are providing Wi-Fi facility to their teachers and students for utilizing the available services of ICT. UGC has also asked all universities to start online admission process from the session 2016-17. But the area of education which is extremely influenced by ICT is teaching. It has revolutionized teaching by modifying instruction strategies of many subjects including commerce. Unfortunately, teachers of commerce seldom realize the importance of ICT in teaching of commerce and so hardly utilize ICT during teaching and thus generally teach commerce by using lecture method with a little or no help of ICT. So, the present paper focuses on the relevance of ICT in teaching of commerce and on the suggestions for promotion of ICT in teaching of commerce for the betterment of teachers as well as students. Thus, it recommends teaching of commerce with ICT to make the teaching of commerce more effective, more useful, more practical and ultimately more successful.

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THE ROLE AND BENEFITS OF ICT IN TEACHING & LEARNING PROCESS

ABSTRACT

Nowadays, most highly developed countries mainly investments are made in the area of ICT as a key instrument and within the area of education in the teaching & learning process. With the world moving rapidly into digital media, information the role and benefits of ICT in learning & teaching is become more and more important. Information and communication technologies (ICT) can plays a number of roles and benefits in teaching & learning process such as developing the kind of graduates and citizens required in the society, improving educational outcomes, enhancing and improving the quality of teaching and learning process.

KEYWORDS: *ICT, learning and teaching process, benefits.*

1. INTRODUCTION

Information and communication technology (ICT) is increasing the quality of student learning is the main goal of the learning process, therefore it become the integration and use of technology in schools & college especially in the educational process to have good results. Due to their learning most successful situation should be created for this process to be easy for them. So the whole process of technology addition in teaching is that the students to have easy access to the information. The quality education is fundamental need of the society. There are number of effective teaching & learning methodologies in practice. Technology is the most effective way to increase the student's knowledge. Here comes the role of ICT in the education sector. Being an academician I cannot imagine education without ICT. Nowadays ICT specially an internet plays imminent role in the process of integrating technology into the educational activities. ICT is just a piece of a large puzzle under the heading of "ways of securing and facilitating high quality Educational life at school and home" for student [1]. Thus, it improves the overall efficiency of the delivery of education in schools and educational management institutions at the national, state, provincial and community level. The role and benefits of ICTs in education aims to improve the quality of teaching and learning process.

2. ROLE OF ICT IN TEACHING AND LEARNING PROCESS

The roles of ICT in teaching and learning process for promoting students intellectual qualities through higher order thinking, problem solving, improved communication skills and deep understanding of the learning. It also promoting a supportive, interactive teaching and learning environment by creating broader learning communication and therefore provide learning tools for students especially those with special needs. Using computer generated graphics to illustrate relationships of all kinds especially dynamics processes that cannot be illustrated by individual pictures. Improving school attendance levels and enabling the creation of a new and more effective program. Ensuring that more successful interactive learning surroundings are created through the use of a student centered activity oriented teaching and learning approach. ICT plays an effective role via creating motives, deepening and expanding learning and sustaining learning as well as removing pervasive boredom and creating subjective skills for accounting [2]. ICT increasing

self-confidence skill among students in teaching activities and group and participatory learning via providing opportunities in the teaching style and providing communication skills between instructor and the trainee while facing the student with the skill of problem solution and through re-teaching learning curricula in which students have problems (even in online forms) and also seeking issues and discovery of solutions and vague points as well as subjective questions by way of educations and information under web. Through increasing critical thinking among learners and cooperation and participation in learning, ICT leads to an expansion of students and instructors' thinking skills thus, ICT, via teaching social skills, brings about conditions wherein the instructor shares his/her own information with others through social communications e.g. emails, Bluetooth, What's App, SMSs and modern social networks and thus reinforces social communication anytime and anywhere based on the learner's responsibilities for positive teaching and learning approach for building a good nation.

3. BENEFITS OF ICT IN TEACHING AND LEARNING PROCESS

In the ICT setting, students can strengthen their own aesthetics sense via participating in producing and representing multimedia, evaluating them and manipulating and simulation. It looks what is formed and growth in our country's schools is concentration and appointment of technology deputies at schools as well as creation of a "reliable" network for students, schools & college staffs which establishes suitable facilities in an interactive virtual world ranging from awareness of school educations to questions and answers related to the learning and teaching process and complementary learning of official and unofficial lessons among the instructors and trainees. As well as lesson's electronic content as a subset of ICT can be utilized in this process. Today, in all subjects of basic and humanities sciences, one can fortunately make use of ICT's advanced tools in completing the ICT's nature in discussion of the quality and quantity of learning and teaching as well as learning professional and value based issues at schools and homes anytime anywhere via facilitating access for all to learning opportunities at the expense of eliminating limitations arising from gender, race, social and economic success of learners within the learning process. ICT is able to develop and nurture human sources needed by the era of knowledge and information through rational thinking for applying their own special tools in the direction of problem solutions. The benefits of ICT based on information through centralized supervision and decentralized implementation, creating schools and other educational and cultural entities in reducing costs incurred by access to rare information. The other benefits that is increasing speed of conveying learning and teaching, increasing learning accuracy, reducing physical size of information domain, avoiding teachers' exercise of tastes, creating full time work. Given mentioned issues, particularly, increasing speed which results in more work and conduct of full time work, system's efficiency will rise and as a result leads to a reduction of costs for the state and students [3]. One of the benefits of ICT for graduates and citizens required in the society, improving educational outcomes, enhancing and improving the quality of teaching and learning process for developing and building good nation. ICT can be considered as a sub field of educational technology. Suitable use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology [4].

4. CONCLUSION

This paper investigates the role of ICT one of the importance is to promote students intellectual qualities through higher order of thinking, problem solving, improved communication skills and deep understanding of the learning tools and concept to be taught, role & benefits of ICT in teaching and learning process were also discussed teaching & learning process and also such as developing the kind of graduates and citizens required in the society, improving educational outcomes, enhancing and improving the quality of teaching and learning process.

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ICT: ENGLISH LANGUAGE PROFICIENCY

ABSTRACT

This research paper tries to throw light on the use of simulation / dissimulation process of learning through the best innovative practices and case studies experiments. The teaching and learning process of a language, in general at the higher education enhances student's intellect and contribute to the development of his/ her personality. Students at higher education must develop strong Information and Computer Technology (ICT) Competencies and problem solving abilities coupled with good analytical and logical skills to survive in competitive age.

Key Words

Internet, Laboratory, Tele-conferencing, MSMP Activity, C.D. –ROM, Face book

Introduction

Information and Communication Technologies (ICTs) are a diverse set of technological tools and resources to create, disseminate, store, bring value addition and manage information. The ICT sector consists of segments as diverse as telecommunications, television and radio broadcasting, computer hardware, software and services and electronic media, for example, the internet and electronic mail (United Nations 2005:1).

In today's constructivist era, the learner is the core part of education. Teacher should use constructivist methods of teaching English subject, where the construction of new understanding and readiness to learn plays an important role to fulfill the objectives of teaching a language. The basic objective of teaching English is to enable the students to learn to use English language. The **Association for Education Communications and Technology (1977)** has defined Computer-Assisted Instruction (CAI) as a method of instruction in which the computer is used to instruct the student and where the computer contains the instruction which is designed to teach, guide, and test the student until a desired level of proficiency is attained. There has been a dramatic increase in the capabilities of computers, along with reduced cost, that has influenced an increase in the various forms of computer-delivered instruction

Internet Lessons

Language teaching has its own technology to support irrespective of the teaching-learning methodology adopted. Communicative language teaching has become very popular with emphasis on learners engaging in authentic and meaningful interaction. This has paved the way for the use of the internet as a means of learning and teaching languages. It is always known that, to impart quality education, teacher must keep themselves abreast of the latest development in their field and this is made easy through technology. The internet has uncountable websites to help them to enhance their regular lesson through animations and simulations.

Language Laboratory

A language laboratory is an instructional technology tool consisting of a source unit that can disseminate audio materials to any number of students at individual seat or carrels. It assists English language teacher to felicitate, mentor and

coach, rather than lecture. Learners participate in group discussion, mock interviews and make presentation or speeches in order to build confidence by using English language effectively. Speech sound, pronunciation, voice modulation, accent corrections are effectively taught, tested and remedial measures are suggested.

Audio-visual aids in teaching English

The use of audio-visual aids has acquired tremendous importance in modern English teaching. They are used to awake the concentration of the students and to diminish the boring and dullness of the students in the class, by providing direct sense experience. The aids help in communication of the accurate idea, developing the power of observation and independent judgment in the students. Epidiascopes, slides, filmstrips, O.H.P. tape-recoreder, T.V. are used for this purpose.

Tele-conferencing

Tele-conferencing is one of the widely used technologies in modern world of teaching. This technology has made that easy to reach students at any time anywhere, without bearing the hassles of distance. Workshop, orientation can be organized just for the nearest study centres of the students. Teacher can direct communicate and share their knowledge with the students. So tele-conferencing is one of the most useful innovations of modern teaching technology. In this, participants actively and reasonably ask questions with keen observations, sharp thinking. Tele-conferencing is more beneficial to the teachers in that there is more scope of learning multi varieties such as self showing interactions.

Manuscript supported Memorized Presentations (MSMP Activity)

The students are imparted the topics for writing manuscript with PowerPoint presentation. the students speaks occasionally looking at the manuscript when he stutters for points. This PowerPoint presentation enhances the confidence, minimizing the class phobia of the students.

C.D. –ROM material

The strength of CD-ROM material is to create a situation in which learners can interact with the learning materials and reference materials. This control allows learners as individuals to approach the material with their own agendas and their own actions. Learner using CD-ROM materials are not passive; they need to think about the language, engaged with it and respond to it.

DynEd

DynEd software has different skill-based course which accelerate English language learning.

Face book

Face book can be utilized to develop learning strategies that enhances students' motivation, improves learners' participation, triggers up social skills that stimulates cognitive skills and increases self-directive learning. It can create virtual atmosphere for the learner where he/she can overcome the hesitation that hampers English learnability. The students sometimes comment on other's snaps in English and never bother of mistakes as they know there is nobody to laugh at them.

Android Applications

In the world of globalization, modern technology has been so common in the society that every niche of society use it. The students and the teacher can use the applications of English language which are easily and freely available at android market of the mobile phone. Self-organized learning environment (SOLEs) in English language learning is helpful in this context.

Conclusion

As change is the law of nature, the teacher of 21st century should shed traditional concepts and techniques of classroom teaching and should adopt the recent and innovative teaching techniques. These modern technologies simply enhance teaching if used aptly. Hence so as to compete with the other countries, India teacher has to adopt such techniques and skills to change socio-economic scenario of the nation.

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E-RESOURCES: UTILITIES IN LIBRARY

ABSTRACT

The paper focuses on the various aspects of E-Resources. Digital technology has made it more easy, speedy and comfortable to apply the stored intellect. Electronic resources are easily accessible in remote areas. Electronic resources solve storage problems and control the flood of information. Print sources are being digitized. Electronic information sources are becoming more and more important for the academic community. The advent of technology has made the libraries to add new things to its collection. The more prominent among them is the e-resources. This paper presents an overview of few advantages and disadvantages.

Keywords: E-Resources, E-Books, E-Journals E-Newspaper and E-Thesis

Introduction:

The digitization of information in print media has brought a new concept altogether in all the fields of the human life and this has market the beginning of " information era" **.** An electronic resource is defined as a resource which requires computer access or any electronic product that delivers a collection of data, be it referring to full text bases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These may be delivered on CD ROM, on tape, via Internet and so on**.** These are more useful due to inherent capabilities for manipulation and searching, providing information access is cheaper to acquiring information resources, savings in storage and maintenance etc. and sometimes the electronic form is the only alternative. The developments in scientific publishing and the pricing policies of publishers posed new challenges and opportunities for academic libraries in purchasing and managing the serials within their restricted budget.

An E-resource refers to those materials that require computer access, whether through a personal computer mainframe or handheld mobile device E-Resources used to any time information available. It provide up to data and quick information. The e-resources like E-Journals, E-Books, E-Paper, E-Image, E-Paper, E-Database, E-Audio, E-Magazine, WWW, CD-ROM, E-Thesis, E-Research Report, Help & Tutorials, and Digital Repository. E-resources are part of the "Invisible Web" which is essentially information accessible through the Internet but normally can't be found on Google. Most E-resources are not freely available to everyone on the World Wide Web and they may not appear on search engines like Google. An E-resource can be e-book, journal or newspaper that has been made available in electronic format and it can be a bibliographic or full text database that allows us to search for relevant articles in our subject area. However a number of e-resources are available, but as per the study E-journal, E-book, CD-ROM and E-Newspaper are most widely used.

Definition:

According to AACR2, 2005 Update, an electronic resource is: "Material (data and/or program(s)) encoded for manipulation by a computerized device. This material may require the use of a peripheral directly connected to a computerized device (e.g., CD-ROM drive) or a connection to a computer network (e.g., the Internet)." This definition does not include electronic resources that do not require the use of a computer, for example, music compact discs and videodiscs.

According to Library and Information Technology Glossary "Term used to describe all of the information products that a library provides through a computer network... .."
According to Wikipedia, Electronic Resources means "Information (usually a file) which can be stored in the form of electrical signals, usually on a computer; Information available on the Internet".
According to Gradman glossary, "A publication in digital format which must be stored and read on a computer device. There are two types: Direct access: these are physical objects such as CD-ROMs, diskettes, computer tapes, and computer cards, containing text, images, software etc…"

Types of E-Resoures

E-Journals: Electronic journals also known as ejournals, e-journals and electronic serials, are scholarly journals that can be accessed using computer and communication technology. It means that they are usually published on the web. They are a specialized form of electronic document they provide material for academic research and study, and they are formatted approximately like journal articles in traditional printed journals. Journals can be categorised as online only journals, online versions of printed journals, online equivalent of a printed journal and equivalent of a printed journal. Most commercial journals are subscription based or allow pay per view access. Many universities subscribe in bulk to packages of e-journals to provide access to them to their students and faculty. Now, many journals are available as online open access journals. These journals require no subscription and offer free full-text articles to all.

E-Book: An e-book or eBook is also known as electronic book, digital book and e-edition. It is a book length publication which contains text of text, images, or both, and produced on Published through, and readable on computers or other electronic device. An e-book is in digital form. E-book can also be defined as an electronic version of a printed book, but e-books can and do exist without any printed equivalent. E-books are usually read on dedicated e-book readers or tablets using e-reader applications. Personal computer and many smart phones can also be used to read e-books. It is very simple and easy to purchase and download e-book through the internet. It is exactly like purchasing any other product. As e-book formats emerged and proliferated, some garnered support from major software companies such as Adobe with its PDF format, and others supported by independent and open-source programmers.

E-Newspaper: e-newspaper is a newspaper that exists on the World Wide Web or internet and holds the information electronically. It may exist either separately or as an online version of printed newspaper. E-newspaper much like hard copy newspapers and have same legal boundaries such as privacy and copyrights. For example, Times of India, Hindustan times in India provide latest and most updated news electronically.

E-Image: An e-image is a system of photography using a sensor placed behind a camera lens to translate an image into an electronic signal which can be stored on a disk or magnetic tape for playback on a VCR or video disk player and viewing on a television screen. Electronic image is an image represented as a 2-dimensional array of brightness values for pixels.

E-magazine: E-magazine is a magazine published on the World Wide Web. Some online magazines may refer to themselves as electronic magazines or e-magazine to reflect their readership, demographics or to capture alternative terms and spellings in online searches. Many large print publishers now provide digital reproduction of their print magazine titles through various online services for a fee. These service providers also refer to their collections of these digital format products as online magazines and sometimes as digital magazines.

E-database: An e-database is an organised collection of information of a particular subject area. The information of an e-database can be researched and retrieved electronically. It can easily be accessed, managed and updated on a daily, weekly, monthly or quarterly basis. E-databases can be classified according to types of contents: full text and bibliographic.

- Full text: A full text database is a database that contains the complete text of books, magazines, newspapers, diagrams and tables.
- Bibliographic: Bibliographic database only contain only citation information of an article such as author name, journal title, publication date and page numbers.

E-Audio: e-audio for we to download free of charge to our e-reader or other digital device such

as a mobile phone or MP-3 player. For example, Dolby E is an audio encoding and decoding technology developed by Dolby Laboratories. It allows up to eight channels of audio to be compressed into a digital stream that can be stored on a standard stereo pair of audio tracks.

E-paper: E-Paper is a portable, reusable storage and display medium that looks like paper but can be repeatedly written on refreshed, by electronic means- thousand or million of times. E-paper will be used for applications such as e-books, enewspapers, portable signs and rollable displays. It is created with mechanical tools such as an electronic pencil. Both of these technologies enable a black and white display. Philips is working on a type of e-paper that will be full coloured; Text and images are displayed through a rotation of the bead that occurs in response to an electrical impulse. A full rotation displays as black or white and a partial rotation displays as gray shades.

World Wide Web: The World Wide Web is a system of interlinked hypertext documents accessed via internet. With a web browser one can view web pages that may contain text, images, videos and other multimedia and navigate between them via hyperlinks. The World Wide Web had a number of differences from other hypertext systems that were available before it. The Web required only unidirectional links rather than bidirectional ones. This made it possible for someone to link to another resource without action by the owner of that resource. It also significantly reduced the difficulty of implementing web servers and browsers. Viewing a web page on the World Wide Web normally begins either by typing the URL of the page into a web browser or by following a hyperlink to that page or resource. The web browser then initiates a series of communication messages, behind the scenes, in order to fetch and display it. As an example, consider accessing a page with the URL http://example.org/wiki/World_Wide_Web.

CD-ROM: The full form of CD-ROM is Compact Disk- Read Only Memory. It is a non-volatile memory. It is an optical disk capable of storing large amounts of data up to 1 GB, although the most common size is 650 MB. CD-ROMs are similar to audio CDs and the data can be stored and accessed from CD-ROMs in the same way. Discs are made from a 1.2 mm thick disc of polycarbonate plastic, with a thin layer of aluminium to make a reflective surface. CDROMs are popularly used to distribute computer software, including video games and multimedia applications, though any data can be stored. Some CDs hold both computer data and audio with the latter capable of being played on a CD player, while data is only useable on a computer. CDROM sector contains 2,352 bytes; it is divided into 98 24-byte frames.

E-Thesis: An e-thesis or electronic thesis describes a thesis in digital form that is generally accessed via the internet. Access to, and storage of, electronic theses is usually facilitated by open access repositories such as the UCC (Uniform Commercial Code) institutional repository, CORA. UCC is developing an e-thesis programme to ensure that postgraduate research conducted in UCC is widely disseminated. In many countries, a move has been made in recent years to electronic submission of theses, in parallel with hard-copy submission, enabling theses to be searchable and readable online. E-thesis is stored in CORA, the UCC institutional repository. This is an open access repository based on DSpace software. There is no file size limit imposed on etheses in CORA. However, it is worth noting that Google Scholar can only index PDF files lower than 5MB.

E-Research Report: Membership of the Electronic Records Research was restricted to participants in the Austin area. Although meetings were held during the work week at state agencies, participants often used their own time for researching the issues and writing the reports. If available, funds could reimburse participants attending meetings outside their home area as well as pay administrative help. Some comments about the recommendations in this report indicate that agencies and universities would welcome a pilot study for implementing an electronic records management program within a Texas agency. Setting up such a study would require more funds. Texas is fortunate to have both a large technology vendor community and a university community.

Digital Repository: A digital repository is a mechanism for managing and storing digital content. Repositories can be subject or institutional in their focus. A repository can support research, learning, and administrative processes.

Repositories use open standards to ensure that the content they contain is accessible in that it can be searched and retrieved for later use. UEA Digital Repository is a digital archive of research and enterprise output produced by staff and research postgraduates of Universities. Digital Repository records are also findable through Primo One Search. This is a framework for organizing digital content and delivering the content to its consumer in convenient ways. A digital repository is an application or a set of applications that allow users to add, manage and disseminate digital content.

Help and tutorials: A computer tutorial is an interactive software program created as a learning tool. Access quick, self directed and practical help on finding and using information. Starting Out and Researching strands comprise of a mix of useful information, searching tips, step by step help, video demonstrations, interactive tutorials, glossary and more detailed, printable Information Skills Help sheets. An online tutorial is a gathering of Web pages designed to help teach us something. A Web page design tutorial is an online tutorial designed to teach us Web page design. We can learn everything there is to know about designing a Web page from the HTML code. Tutorials can be used for both school and business purposes and are written for basic, intermediate, and advanced users. Even smart computer programmers use tutorials. Most software development programs include a tutorial for creating a "Hello World!" program, which is the most basic program that can be created with the software.

Need of E-Resources:

E-Resources enable the librarian to provide better service to the user community. The few considerable points are mentioned bellow;

- To get access to an information source by the more than one users.
- E-Resources can be searched quickly.
- These can be found easily by the user.
- These resources can be stored in huge amount.
- Amount of time spent on the E-Resources use.
- Analyses the purpose of using e-resources by respondent
- Know different types of e-resources commonly used by respondents
- To collect, store, organize information in digital form.
- To promote efficient delivery of information economically to all the users.
- To encourage co-operative efforts to save and share the investments in research resources, computing and communication network.

Utilities of E-Resources:

- E-publishing may be less costly than paper.
- E- Resources are created in any file format like text, audio, video and images.
- E-resources are available for 24 hours of a day and save library space.
- The E-resources search is easy because of user friendly interface.
- They provide users faster, more convenient and anytime access from home, campus or library.
- E-resources can be accessed by the support of advanced search and retrieval system.
- The content can be reproduced, forwarded, modified and leading to problem with copyright protection and preserving authenticity.
- The electronic environment enables to library to integrate with other libraries and make use of their resources also.
- Those who have limited time to access to the libraries can effectively access to the libraries by dialing up process.
- The libraries provide access to very large amount of information resources.
- Libraries are focused on providing access to primary information.

Advantages of E-Resources:

The reasons for actually embarking on the purchasing of electronic resources are generally accepted because of the ease of usability, readability, affordability and accessibility. The following are the advantages of e-resources over the print media

a) Multi-access: A networked product can provide multiple points of access at multiple pints round the clock and to multiples simultaneous users.

b) Speed: An electronic resource is lot quicker to browse or search, to extract information from, and to integrate that information into other material and

to cross-search or reference among the different publications.

c) Functionality: E- resources will allow the user to approach the publications to analyze its content in new ways by clicking of the mouse on search mode.

d) Content: The e-resources can contain a vase amount of information, but more importantly the material can consist of mixed media i.e. images, video, audio animation which could not be replaced in print.

e) Mobility

f) Savings physical Space

g) Convenience

h) Saving time& money

Disadvantages of Electronic Resources:

Now, more and more people prefer e-resources to traditional ones, because it can save their time and money. However, with various e-resources flooded in, more and more people are aware of the disadvantages of e-resources.

a) The fact that, e-resources require special devices or personal computers can be looked as a disadvantage. Many e-resources are typically produces to be compatible for certain software which in turn may be not easily available. Since e-resources are dependent on other equipment's, certain hardware or software failure may affect it. Unless the hardware, Internet connection or battery power that is required by an e-resource reader is readily available, then its electronic document is useless. In addition, e-resources depending on hardware and software and are more easily damaged than a printed book.

b) E-resource reading devices are surely more expensive than printed books. All devices of e-resources require power. There is a growing concern that the e-resources at present may not be accessible or compatible to the futureS e-resources software or devices.

c) Screen glare and eyestrain are a serious concern for many potential users of e-resource technology. A major worry of reading from an e-resource reader could hurt the eyes. The display resolution of computer screens and electronic devices is considerably less than the print quality produced by a printing press.

d) Reading from a computer lacks the familiarity and comfort of reading from a book. A paper book can be opened and flipped; through, while an electronic text is more difficult to navigate.

e) E- Resources have unreliable life span. Paper has a much longer life span than most digital forms of storage. Because of the rapid development of new computer systems it is difficult to judge whether the software or hardware will become outdated. As new hardware is developed, structures must be put into place to allow for the migration of existing materials to the new platforms so that they can still be accessed. Methods of preserving the electronic document must also be developed. A high degree of reliability of the equipment must be a part of the electronic devices that handle the replacements for printed books.

f) Many titles that are available in traditional print books are not yet available in an electronic book format.

g) New technologies always require time, experience, and money in order to take full advantage of its capabilities.

Conclusion:

The implementation of e-resources proves accurate to the age old standard that "Every reader should get information at any time" The use of e-resources is helpful to ensure exhaustive and pinpointed information. The e-resources provide themselves various search options to the user and library manages. Using of e-resources enable the library to save space of library and time of the users. . E-resources are useful for libraries as well as each and every users of the society who are starving to get a variety of information through the globe. The Developments in the information and Communication Technology services are available in the present made wonderful changes in the library operations. Its advantages are for technocrats, usage of the electronic products improve the knowledge of user. E-mails alerts carry the information for the individual to become aware of the user. Enhancement in Infrastructure like high speed network, wi-fi in the campus, LAN portals at various rights to use points in the campus and also in departments can be prepared to improve the practice effectively

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USE OF ICT AS TOOL FOR EFFECTIVE TEACHING AND LEARNING IN SCIENCE EDUCATION ESPECIALLY WITH REFERENCE TO CHEMISTRY & BIOLOGY

ABSTRACT

Effectiveness of teaching and learning is required in science education through different application of Information and Communication Technology.Science education involves the study of chemistry, biology or physics. This paper is based on various applications of ICT in effective teaching and learning inChemistry and biology was highlighted.

Keywords:*ICT, science education, Chemistry, Biology,computer &internet.*

Introduction:

ICT is defined by Olugbenga and Adebayo[1] as collection, retrieval, use and storage and communicating information through the use of computers and micro electronic system.Science education is acquiring both scientific knowledge and education to be able to share this scientific knowledge with individual or community who are not traditionally in science. Use of computer has enhanced meaningful and developed learning environment in Chemistry and Biology[2, 3].Despite successful computerutilization in classroom, practices are still relatively rare.Now a day's many countries have increased the number of computers in schools and Colleges.

Now that students are losing their interest in learning, we need a modern way of teaching and learning so that student academic achievement in science can improve in all our institution. Science is dynamic, new discoveries are coming up every day both in science and in teaching method; we can only benefit from these new development when we are connected to the world through ICT. It is not an overstatement if one says "without ICT scientific knowledge would not be taught adequately in any school or college of the world". Countries of the world such as Austria, Finland, Sweden, Denmark and UK, teachers and students have a generally positive attitude towards e-learning and relatively advanced IT competences.

The use of ICTs in Science education like biology and Chemistry have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of students[4].

Many researches have been devoted to ICT to understand the factors that can influence learning such as the multimedia effect – in which students learn more deeply from words and pictures than from words alone, the coherence effect – in which students learn more deeply when extraneous material is excluded rather than included, the spatial contiguity effect – in which students learn more deeply when printed words are placed near rather than far from corresponding pictures and the personalization effect – in which students learn more deeply when words are

presented in conversational rather than formal style[5]. (Mayer, 2003).

Application of ICT in Science Education:

There are many applications of ICT in teaching and learning depending on the knowledge of the user. Use of ICT in classroom teaching includes the learning resources, instructional organization of learning and communication. It include use of educational software; internet, computer- based testing system, e-mail system, telephone, radio etc.Generally ICT will be applicable in Computer Assisted Instruction; Computed Aided Design; Teleconferences and Library Computer System.

Computer Assisted Instructionincludes interactions in between students and teachers can be presented on computers in the form of text or in multimedia forms; this could include photograph, video lectures, speech, animations and music. This program could involve questions posed to students, returned feedback and additional questions could follow based on the student's responses.Computed Aided Design is used to design a plan or a product which could be architecture in nature or in automobile. This is commonly used in industry for mass production of scientific and other equipment to reduce cost of production, reducing energy and time in production.

In Teleconferencing Teachers and students can view, take part in conferences and take part in a debate in the comfort of their offices or home through this medium. Through satellites, transmission of conference proceeding from far distance could be made available within few seconds without travelling at reduced expenses.Many library are computerized in such a way that students and teachers need not to stress themselves searching for books in the shelves again. Many books and journals are already archived in the library database and any information on such books and journal could be retrieved in a matter of seconds.

Applications of ICT in biologyTeaching and Learning:

Computers help students visualize objects that are difficult or impossible to view. For example, computers can be used to display human anatomy, internal structure of human and animal cells. Software are already developed which shows actions of viruses and bacteria which if teacher were to teach such; apart from the danger poses to both teacher's and student's health these microorganisms cannot be well learnt without seen them in action. Law is already promulgated in some part of the world against killing animal for experimental purpose instead models and computer animation could be used by students for experiment in life science. Many plants in botany, animals in zoology and insects in entomology can never be found here in Nigeria, yet must be learnt by students; with ICT all these are made available to students as if they are in real forms. Computer Assisted Instruction, like word processors, spreadsheets, and databases, is used to collect, organize, analyze, and transmit information. These tools also facilitate communication among students, between students and instructors, even beyond the classroom experience to distant students and instructors.

Applications in ICT in chemistry Teaching and Learning:

Chemistry is a subject which deals with chemicals and their reactions most of which are very dangerous to life if not handle with caution. Reactions of these chemicals in most cases are not easy to understand by students without seeing them in real term; teachers usually explain these reactions abstractly and through molecular diagram. Computer Assisted Instructionshas been of tremendous help in solving this problem; software is available where students could watch this reaction on computer as in real life. Animations and videos of complex molecular structures in chemistry are available for classroom teaching for all categories of students in chemistry. For example students will find it difficult to appreciate the chemistry of atom if not supported using ICT; other area of chemistry that would be difficult to teach and learn if not supported by ICT are quantum theory, chemical reaction , ionization, electrochemistry and many more. There are rate of reactions and graph that are so complex to teach by the teacher which ICT can help the teacher to manipulate for the student proper understanding. Many times information needed in chemistry class may not be available as at the time of the lesson; students or the teacher can access such information using internet facility at any time.

Conclusion:

ICT is good for effective teaching and learning in science education; ICT have many applications in teaching and learning in biology and Chemistry that can make easier learning of difficult concepts in biology and chemistry.

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ROLE OF ICT IN FACULTY DEVELOPMENT

ABSTRACT

ICT is a scientific, technological and engineering discipline and management techniqueused in handling information, its application and association with social, economic and cultural matters (UNESCO, 2002). ICT stands for Information and Communication Technologies. ICT is a part of our lives for the last few decades affecting our society as well as individual life. ICT which is now broadly used in educational world. Teacher, Student, administrator and every people related to education are popularly used ICT. Teacher use ICT for making teaching learning process easy and interesting.A competent teacher has several skills and techniques for providingsuccessful teaching. So development and increase of skills and competencies of teacher required knowledge of ICT and Science & Technology. In modern science and technological societies education demands more knowledge of teacher regarding ICT and skills to use ICT in teaching –learning process.The knowledge of ICT also required for pre-service teacher during theirtraining programme, because this integrated technological knowledge helps a prospective teacher to know the world of technology in a better way by which it can be applied in future for the betterment of the students. Nowadays ICT□s are transforming schools and classrooms a new look by bringingin new curriculum based on real world problems, projects, providing tools for enhancing learning, providing teachers and students more facilities and opportunities for feedback. ICT also helps teachers, students and parents to come together. Continuous and Comprehensive Evaluation (CCE) helps students as well as teachers to use more technology for making teaching learning more attractive for the betterment of our future generation. Teachers must know the use of ICT in their subject areas to help the learners for learning more effectively. So, the knowledge of ICT is very much essential for the both prospective teachers as well as in-service teachers also. This will help teachers to know integrated technology with classroom teaching. This paper discussed about the role of ICT in 21st Century's teachereducation.

Keywords: *ICT, technology, pre-service, in –service, student teacher, teacher training.*

Introduction:-

Today's age of 21st Century and it is also the age of information and technology (IT).

Every aspects of life are related to science and technology. Huge flow of informationis emerging in all fields throughout the world. Now information and technology is popularly using in educational field for making teaching learning process successful and interesting for students and teacher both. In 1998, UNESCO World Education report refers about student and teachers must have sufficient access to improve digital technology and the internet in their classroom, school teacher educational institutions. Teachers must have the knowledge and skills to use new digital tools to help all students achieve high academic standard.

The quality of professional development of teacher education depends on the extent of ICT integration in teacher education programme.

According to UNESCO (2002) "ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters".

Teachers are at the core of any living society. Technologies play an important role intraining programme of teachers. Students accesses knowledge and information through TV, digital media, cable network, internet and social media i.e. Facebook, Twitter, What's- app, Linked-in, I-go, Line, We-chat etc. ICT is very important for Pre-service teacher education programme in the 21st Century. Without proper knowledge of ICT teacher cannot perform in his/her class room and it could not be said to be a complete one.

Need and Significance of the study:-

The scenario of the classroom is changing. There is a technological gap between theprogress of the society and instructional activities of the teacher in the classroom. If we see in our society on the one hand technology has revolutionized our society and on the other hand the teaching learning activities at school level have remained so far away from technology. In our classroom the knowledge is imparted by the teacher in an ancient way, a teacher centric mode which is most of the time boring and not to gain interest to the student. But present 21st Century's education is student centric education. Students learn from multi sources and for this reason use of ICT &Multimedia is very much essential in educational field and simultaneously teacher's knowledge of ICT and Multimedia also required. So present study has great need and significance because this study shows roles of ICT teacher's education.

Objective of the study:-

The objective of the present study is –

To find out the roles of ICT in 21st Century's Teacher Education.

Methodology:-

This present study is based on secondary sources like books, Articles, Journals,
Thesis, University News, Expert opinion and websites etc. The method used is
Descriptive Analytic method.

Why do we use ICT in teacher Education?

The classroom is now changing its look from the traditional one i.e. from one way totwo way communication. Now teachers as well as students participate in classroom discussion. Now Education is based on child centric education. So the teacher should prepare to cope up with different technology for using them in the classroom for making teaching learning interested. For effective implementation of certain studentcentric methodologies such as project-based learning which puts the students in the role of active researches and technology becomes the appropriate tool. ICT has enabled better and swifter communication; presentation of ideas more effective and relevant way. It is an effective tool for information acquiring-thus students are encouraged to look for information from multiple sources and they are now more informed then before. So for this reason ICT is very much necessary for Teacher Education.

Recent Trends in Teacher Education:-

Based on various changing needs of our society now emphasis is also given to thevarious educational theory and educational practices. According to these theories and practices changes are also undergo in teacher education also. It is natural that teacher education must include new technology. Teachers should also know the right attitudes and values, besides being proficient in skills related to teaching. As we know the minimum requirement of any training programme is that it should help the trainee to acquire the basic skills and competencies of a good teacher. Now-a-days new trends in teacher education are Inter-disciplinary Approach, Correspondence courses, orientation courses etc. Simulated Teaching, Micro Teaching, Programmed Instruction, Team Teaching are also used in teacher education. Now-a-day Action Research also implemented in Teacher Education.

ICT acts as the gateway to theworld of information and helps teachers to be updated. It creates awareness of innovative trends in instructional methodologies, evaluation mechanism etc. for professional development.

Different Strategies for applying ICT in Teacher Education:-

i) Providing adequate infrastructure and technical support.
ii) Applying ICT in all subjects.

iii) Applying new Pre-service teacher Education curriculum.
iv)Using application software, using multimedia, Internet e-mail, communities, understanding system software.

Role of ICT in 21st Century's Teacher Education:-

- ICT helps teachers in both pre-service and in-Service teachers training.
- ICT helps teachers to interact with students.
- It helps them in preparation their teaching, provide feedback.
- ICT also helps teachers to access with institutions and Universities, NCERT, NAAC NCTE and UGC etc.
- It also helps in effective use of ICT software and hardware for teaching –learning process.
- It helps in improve Teaching skill, helps in innovative Teaching.
- It helps in effectiveness of classroom.
- It also helps in improving professional Development and Educationalmanagement as well as enhances Active Learning of teacher Trainees.
- It is now replacing the ancient technology. As we know now-a day's studentsare always have competitive mind. So teacher must have the knowledge of thesubject. This can be done through ICT.
- ICT helps teachers in preparation for teaching. In order to introduce ICT inpre-service teacher education different methods and strategies are applied.
- Different tools are used such as word processing, Database, Spreadsheet etc.
- Various technology based plans are used to help the teachers for their practiceteaching.
- ICT prepares teacher for the use of their skills in the real classroom situationand also make students for their future occupation and social life.
- ICT used as an, assisting tool for example while making assignments,communicating, collecting data & documentation, and conducting research.
- Typically, ICT is used independently from the subject matter.
- ICT as a medium for teaching and learning. It is a tool for teaching andlearning itself, the medium through which teachers can teach and learners canlearn. It appears in many different forms, such as drill and practice exercises,in simulations and educational networks.
- ICT as a popular tool for organisation and management in Institutions.
- Teachers must provide technological support to learn using motion picture,animation, simulation training which helped student teachers to give modelpresentation. If the teacher is highly equipped with technology, the studentwill also be equipped with technology.
- It removes the traditional method of teaching and prepare teacher to applymodern method of teaching.
- ICT is plays an important role in student evaluation.
- ICT is store house of educational institution because all educationalinformation can safely store through ICT.
- ICT helps Teacher to communicate properly with their students. So ICT bridgethe gap between teacher and students.
- ICT helps Teacher to pass information to students within a very little time.
- ICT helps Teacher to design educational environment.
- ICT helps Teacher to identify creative child in educational institute.
- ICT helps Teacher to motivate students and growing interest in learning.
- ICT helps Teacher for organizational preconditions (vision, policy andculture).
- It is also helps Teacher for their personnel support (knowledge, attitude,skills).
- ICT helpful for technical preconditions (infrastructure).
- ICT helpful for designed learning situations which are needed for bothvocational education and the training of future teachers (in the teacher traininginstitutes).
- Teacher training institutes can develop their curriculum using ICT.
- With the help of ICT Teacher training institutes can develop communicationnetwork.
- Teachers learn most from their own networks (learning from others) with thehelp of ICT.

Conclusion:-

Teaching occupies an honourable position in the society. ICT helps the teacher toupdate the new knowledge, skills to use the new digital tools and resources. By using and acquire the knowledge of ICT, student teacher will become effective teachers.

ICT is one of the major factors for producing the rapid changes in our society. It canchange the nature of education and roles of students and teacher in teaching learning process.

Teachers in India now started using technology in the class room. Laptops, LCDprojector, Desktop, EDUCOM, Smart classes, Memory sticks are becoming the common media for teacher education institutions.

So we should use information & communication Technology in Teacher Education in21st Century as because now teachers only can create a bright future for students.

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IMPACT OF ICT IN TEACHING LEARNING AND EVALUATION

ABSTRACT

The ICT act as collaborative tools between the students and the teachers ICT enables teachers and learners to access computer systems to develop skills, interact with their peers, colleagues, and the global society. In the early 19th century the importance of ICT can be traced back in the early by Skinner a behaviorist. Skinner's paper on "teaching Machine" has a strong approach in designing instructional learning by the teacher. Skinner introduced concept of computers as a teaching tool. Furthermore Bullard suggest that the teaching and learning process will generate a new way of teaching with computers, constituting a shift from a teacher-centered to learner-centered pedagogy technique Students studying in higher classes are already familiar with social media such as Twitter, Face book and the ubiquitous nature of mobile applications. Continuous professional teacher development is required to focus on the attainment of information technology pedagogical knowledge to further the use of ICT on the teaching. The present paper explores the use ICT tools and open e-resources and its impact on Teachers and Students.

Keywords
T/L Process, ICT tools, open technological e-resources, Teaching Methodology etc,

Introduction

As we know Teaching-Learning Process is the third key indicator of Criterion II of Teaching learning and Evaluation. Quality of learning provided in the institution depends largely on teacher readiness to draw upon such recently available technology supports and also the initiative to develop such learning resources to enrich teaching learning; on teacher's familiarity with Learning Management Systems (LMSs), other e-resources available and how to meaningfully incorporate them in one's scheme of teaching-learning. With technology development, extensive use of digital materials and changing needs of modern learners a traditional classroom-based approach becomes less and less efficient. To remedy this situation, the schools and colleges adopt Leaning Management Systems allowing teachers to realize various pedagogical models, deliver personalized learning, engage and connect students. LMSis open source software is concerned it is playing a vital role in education in recent times. The free software movement was launched in the year 1983 and that was followed by a group of individuals who advocated that the term free software should be replaced by open-source software (OSS) in 1998 which is more comfortable .using IT in Education and they include security, ability to capture the learning, working with large numbers of students and the inability to handle a wide range of digital media such as video, documents, spreadsheets, presentations etc.ICT to be used effectively in the learning process, the ICT tools have to be seen as a shared resource leading to collaborative activities, hence increasing the working knowledge of the teacher and improve the teaching and learning process.The purpose of the paper was to aware about the ICT tools available and open free e-technological online resources and its use in teaching and learning process to foster effective and interactive teaching.

Need of Awareness about use of ICT

The main reasons why teachers are not prepared enough to teach an ICT class is because of their insufficiency of ICT knowledge. So it is essential that Teachers were trained with ICT skills on manipulating their computers. Awareness to use the Internet pedagogically in the teaching and learning process. The concept of ICT in the curriculum is still very new and this term poorly understood.

ICT learning Tools

The New strategies for the teaching-learning community formulation is essential because the people in different conditions for developing the competence using the e-devices and using ICT for learning. Using open resources and ICT tools helps to create an active learning environment in the class room and will be beneficial for students. Here it is the list of ICT tools with their use and purpose in T/L process is as follows:

- **LCD /DLC Projectors:** PowerPoint presentation, picture display,
- **Laptop, Desktop**,: video lessons, showing animated videos, lesson presentation,
- **Google/ Google Scholar**: Teaching students to find academic materials on the Web.
- **Virtual lab software**: Showing practical scientific videos Virtual Labs can be made more effective and realistic by providing additional inputs to the students like accompanying audio and video streaming of an actual lab experiment and equipment.
- **Phones, tablet pc and other mobile devices:** Reference in the classroom, showing real images to student.
- **Multi-media-centre**:The Multimedia Center infuses technology into School of Education courses as an instructional lab. Students can use the Multimedia Center during open lab hours. Students can receive technical support for their assignments etc.
- **Interactive Board:**An interactive board emulates both a mouse and a keyboard. The user can conduct a presentation or a class almost exclusively from the whiteboard.
- **Lecture Capturing System:** Lecture recording, is a general term for a wide variety of techniques to maintain artifacts of classroom activity and distribute them to students. (Nashash& Gunn, 2013).
- **Own YouTube channel**:First create a own ***channel*** and ***start*** posting lecture videos, PPT lectures etc. and provide links of these lectures to students through what'sapp and Google classroom.

Need of Technology enabled Learning and Open e-Resourcess

The Government of India is keen to use the technological resources in helping its mission to make Higher Education accessible to all deserving students. In this regard, it has launched its National Mission on Education through Information and Communication Technology (NMEICT) in 2009 to provide the opportunity for all the teachers and experts in the country to pool their collective wisdom for the benefit of every Indian learner. Present endeavor in this direction has been mainly towards providing the infrastructure and network to the institutions of higher education. The digital resource development and utilizing the digital resource into quality certified programmes and courses need to be fully exploited by the universities. It is obvious that emphasis on ICT is a crying need as it acts as a multiplier for capacity building efforts of educational institutions without compromising the quality.

Open e-Resources

Some of the available software tools/methods can be used for the purpose of self-learning such as:

NPTEL: Video & Text lectures: NPTEL is the open source learning, video based course developed by major IITs (Delhi, Mumbai, Kanpur, Kharagpur and Madras) All Engineering and physical sciences undergraduates/postgraduates in the country; all teachers /faculties in science and engineering Universities in India.

SAKSHAT: One Stop Education Portal .The facility of Talk to a Teacher online for interacting with him / her off-line has been active on it.

e-Kalp: This project on 'Creating Digital-learning Environment for Design' also called 'e-kalpa' is sponsored by the Ministry of Human Resources, Government of India as part of the National Mission in Education through Information and Communication Technology.

Virtual Learning Environment: VLE, an online environment of e-resources caters to several disciplines taught at undergraduate and postgraduate level. It is an initiative of Institute of Life-Long Learning, University of Delhi.

Swayam: This is an **instrument for self-actualization** providing opportunities for a life-long learning. Here learner can choose from hundreds of courses.

Swayamprabha: Higher Education: Curriculum-based course contents at post-graduate and under-graduate level covering diverse disciplines such as arts, science, commerce, performing arts, social sciences and humanities, engineering, technology, law, medicine, agriculture, etc. The SWAYAM PRABHA is a group of 32 DTH channels devoted to telecasting of high-quality educational programmes on 24X7 basis using the GSAT-15 satellite. The channels are uplinked from BISAG, Gandhinagar. The contents are provided by NPTEL, IITs, UGC, CEC, IGNOU, NCERT and NIOS. The INFLIBNET Centre maintains the web portal.

e-pathshala: In 1961 for qualitative improvement in school education ,The National Council of Educational Research and Training (NCERT) is an autonomous organization set up by the Government of India to assist and advise the Central and State Governments on policies and programmes

e-PGPathshala: It is an initiative of the MHRD under its National Mission on Education through ICT (NME-ICT) being executed by the UGC. The content and its quality being the key component of education system, high quality, curriculum-based, interactive e-content in 70 subjects in various disciplines of social sciences, arts, fine arts and humanities, natural & mathematical sciences, linguistics and languages have been developed by the subject experts working in Indian universities and other R & D institutes across the country.

Google Classroom: Online ICT based Teaching Learning Tool fulfills the requirements of LMS. Teachers can create and collect assignments totally paper less. Teachers can Post Video Lectures from open resources (NPTEL/SWAYAMPRABHA /e pgpathshala/IIT/IISC etc.). Teachers can send Links to the PDF as Lecture Notes, Teachers can upload lecture captured to you tube Teachers grade to given Assignment & Ask questions, It is safe and secure and free of cost. Furthermore it is very useful for all official activities i.e notices, orders, letters etc. within a click.

Teaching Methodology with use of ICT tools and free Technological resources

Following are the ways the teachers can make their lecture more interactive and effective in classroom,

- Using Interactive board instead of blackboard.
- By Presenting subject related Video Lectures from Swayamprabha.
- Especially for post graduate students subject related video lectures should be presented using NPTEL as well as e-pgpathshaala etc.
- Teachers can provide Assignment to students and grade them on Google classroom.
- Teachers can interact with students online by asking questions with one option/Multiple options through Google Classroom**.**
- Teachers can create their own YouTube Channel and uploads their PowerPoint lecture presentations, captured lectures to the channel. Teachers can share the links of lectures uploaded to the students by Google Classroom.
- Teachers can share the carrier oriented social links related to the communication skills and personality development PDF and videos etc. to the students.
- Teachers can post any notice or academic documents just in one click to the students through Google classroom.
- Teachers can upload their daily lecture notes just after completing the lecture through Google Classroom.

CONCLUSIONS:

Using above mentioned methodology it is sure that students are benefitted by enriching their knowledge and the can access the internet and understand the concept of ICT properly. So our students can go to global level in higher education in all directions. The teaching and learning process will generate a new way of teaching with computers, constituting a shift from a teacher-centered to learner-centered pedagogy technique Students studying in higher classes are already familiar with social media such as Twitter, Face book and the ubiquitous nature of mobile applications. Continuous professional teacher development is required to focus on the attainment of information technology pedagogical knowledge to further the use of ICT on the teaching.

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AN IMPACT OF ICT ON EDUCATIONAL FRAMEWORK: AN OVERVIEW

ABSTRACT

Nowadays, Information and Communication Technology (ICT) is becoming an essential part of the education system. It has been changing many aspects of the lives. These changes have compelled to the educational institutions as well as teachers to rethink their roles, teaching and vision for the future. ICT has opened new challenges for quality education. In this research paper we tried to emphasize the importance of ICT in education framework and particularly to enrich teaching, learning and evaluation. It also highlights the impacts and benefits of ICT in education, its limitations in education systems.

Keywords: ICT, education system, roles of ICT, teaching, learning and evaluation.

Globalization has brought numerous changes in our life. Our education framework moved from our ancient legacy of Gurukula to the modern day university framework. Today, education has turned into all-encompassing process covering all facets of life- societal, cultural, political, national, and so on. Today's age is the age of ICT, which has been spreading the information in the most dependable and simplest way. Teaching-learning and evaluation is the foundation and core of our educational framework.

Education has been playing a crucial role in building the society. The education is the basic thing for the welfare of an individual and the society. There are many ways to increase the learner's (student's) knowledge, and the ICT is one of the most effective ways. The ICT means Information and Communication Technology. The ICT includes radio, television, satellite, mobile phones, computer, internet etc. In the current scenario, we are making vast use of information and communication technology. One can't live a life without the use of ICT.

Basically, we use ICT for educational framework to sustain and enhancing the learning of the students. According to UNESCO, "ICT is a scientific, technological and engineering discipline and management technique used in handling information in application and association with social, economic and cultural aspects". In this regard, Anu Sharma remarks, "Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology" (Anu Sharma et al., 2011).

Objectives of ICT:

1. To improve learning pace and achievements.
2. To enhance gaining of information, proficiency of people requisite for better living and sustainable development.
3. To apply the belief of long-term education.
4. To boost the diversity of learning system as well as proficiency rate through distance education.
5. To promote technology literacy among citizens.
6. To give equivalent significance to slow and exceptional children.

The Benefits and Role of ICT in Education:

ICT is one of the most powerful tools for widening educational opportunities. The use of ICT is making the major impact on the learning of students and teaching approaches. Several studies

disclose that the students who use ICT get more knowledge than those who do not use. Actually, ICT acts as an assisting tool. The role of ICT in teaching- learning and evaluation is speedily becoming one of the most important and widely discussed issues in today's education system. If ICT is used properly; it improves teaching-learning and evaluation to greater extent.

According to Swati Desai, The main roles of ICT in education are as follows. "ICT is store house of educational institution because all educational information can safely store through ICT. It acts as an assisting tool for teaching and learning itself" (Swati Desai, 2010 and Baishakhi Bhattacharjee et al., 2016). It helps teachers to communicate properly with their students. By doing proper use of ICT, Teachers can encourage students as well as develop their interest in learning. It improves innovative teaching skills and makes the classroom teaching very effective. In this way, the ICT plays an important role in teaching- learning and evaluation. The proper use of ICT is beneficial in many respects no doubt, but it has some limitations too.

Conclusion:

So, there is a vast impact of ICT on education. ICT helps expand access to education, motivate to learn, facilitates the acquisition of basic skills, and can transform the learning environment. Thus, it helps improving the quality of education. ICT has tremendous potential for education. ICT enables a teacher to reach out widely and effectively. It helps teachers and institutions to be more modern and dynamic. Ultimately, we can say, the proper use of ICT enriches the teaching- learning and evaluation framework.

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THE ROLE OF ICT IN HIGHER EDUCATION

ABSTRACT

Information and Communication technology is a force that had change many aspects of the way we live .If one was compare Such fields as Teacher,doctor,advocate,Tourism,Travel,business, Banking, Engineering and architecture,The impact of ICT across the past two or three dectes has been enormous. The ways these fields operate today is vastly different from the ways they operated in the past.But when one looks at education far less change than other fields have experienced.A Number of people have attempted to explore this lack of activity and influence.

Introduction:-

There have been a number of factor impending the wholesale uptake of ICT in education across all sectors.these have included such factors as a lack of funding to support the purchase of the technology,a lack of training among established teaching practioners,a lack of motivation and need among teachers to adopt ICT as teaching tools. But in recent times ,factors have emerged which have strenghthened and encouraged moves to adopt ICTs into classrooms and learning settings. These have emerged which have included a growing need to explore efficiencies in terms of program delivery,the opportunities for flexible delivery provided by ICTs. The capacity of technology to provide support for customized educational programs to meet the needs of individual learners.

The impact of ICT on what is learned:-

Conventional teaching has emphasized content.For many years course have been written around textbooks. Teachers have taught through lectures and presentations interspersed with tutorials and learning activities designed to consolidate and rehearse the content. Contemporary settings are now favouring curricula that promote competency and performance.Curricula are starting to emphasise copabilities and to be concerned more with how the information will be used than with what the information is.

A.Competency and performance-based curricula:-

1) access to a variety of information sources;
2) access to a variety of information froms and types;
3) student-centered learning settings based on information access and inquiry;
4)learning environments centred on problem-centred and inquiry- based activities'
5) authentic settings and examples; and
6) teachers as coaches and mentors rather than content experts.

Contemporary ICTs are able to provide strong support for all these requirements and there are now many outstanding examples of world class settings for competency and performance-based curricula that make sound use of the affordances of these technologies many years,teachers wishing to adopt such curricula have been limited by theire resources and tools but with the proliferation and widespread availabilityof contemporary ICTs,many restrictions and impediments of the past have been removed.And new technologies will continue to drive these forms of learning further.As students and teachers gain access to higher to support these quality learning setting will cotinue to grow

B.Information literacy

Another way in which emerging ICTs are impacting on the content of education curricula stems from the way in which ICTs are dominating so much of contemporary life and work.Already there has emerged aneed for educational

institutions to ensure that graduates are able to display appropriate levels of information literacy,the capacity to identify and issue and then to identify,from it.The drive to promote such developments stems from general moves among institutions to ensure theire graduates demonstrate not only skills and knowledge in theire subject domains but also general attributes and generic skills.Traditionally generic skills have invilved such capablities as an ablity to reason formally,to solve problems,to communicate effectively,to be able to negotiate outcoms,to manage time,project management,and collabration and teamwork skill.The growing useICTs as a tools of everyday life have seen the pool of generic skills expanded in recent years to include information literacy and it is highly probable that future developments and technology applications will see this set of skills growing even more.

The impact of ICT on how students learn:-

Just as technology is influencing and supporting what is being learned in schools and universities,so too is it supporting changes to the students are learning.Moves from content-centred curricula to competency-based curricula are associated with moves away from teacher-centred froms of delivery to student-centred froms.Through technology-facilitated approaches,contemporary learning settings now encourage students to take risponsibility for their own learning. In the past students have become very comfortable to learning through transmissive curriculum. The growing use of ICT as an instructional medium is changing and will likely continue to change many of the strategies employed by both teachers and students in the learning prominence in universities and schools worldwide.

A.Student-centred learning:- technology has the capacity to promot and encourage the transformation of education from a very teacher directed enterprise to one which supports more student-centred models. Evidence of this today is manifested in:

1) The proliferation of capability,compentency and outcomes focused curricula

2) Moves towards problem-based learning

3) Increased use of the web as an information source, Internet users are able to choose the experts from whom they will learn

The use of ICT in educational settings,by itself acts as a catalyst for change in this domain. ICTs by their very nature are tools that encourage and support independent learning. Students using ICTs for learning purposes become immersed in the process of learning and as more and more students use computers as information sources and cognitive tools,the influence of the technology on supporting how students learn will continue to increase.

B. Supporting knowledge construction:-

The emergence of ICTs as learning technologies has coincided with agrowing awareness and recongnition of alternative theories for learning. The theories of learning that hold the greatest way today are those based on contructivist principles.These principles posit that learning is achived by the active construction of knowledge supported by various perspectives within meaningful contexts.In constructivist theories,Social interactions are seen toplay acritical role in the processesof learning and cognition.

in the past,the conventional process of teaching has revolved around teachers planing and leading students through a series of instructional sequences to achive a desired learning outcome.Typically these froms of teaching have revolved around the planned transmission of a body of knowledge followed by some forms of interaction with the content as ameans to consolidate the knowledge acquisition.Contemporary learning theory is based on the nation that learning is an active process of constructing knowledge rather than aquiring knowledge and that instruction is process by which this knowledge construction is supported rather than a process of knowledge transmission.

The strengths of constructivism lie in its emphasis on learning as a process of personal understanding and the development of meaning in ways which are active and interpretavive. In this domain learning is viewed as the constructivist of meaning rather than as the memorisation of facts.learning approaches using contemporary ICTs provide many opportunies for constructivist learning through their provision and support for resource-based,student centred setting and by enabling learning to be related to context and to practice. As mentioned previously, any use of ICTs in learning setting can act to support various aspects of knowledge construction and as more and more

students employ ICTs in their learning processes, the more pronounced the impact of this will become.

Conclusions

This paper has sought to explore the role of ICT in Education as we progress into the 21st century.In particular the pepar has argued that ICTs have impacted on educational practice in education to date in quite small ways but that the impact willgrow considerably in years to come and that ICT will become a stonge agent for change amonge many educational practieces.Extrapolating current activities and practices,the continued use and development of ICTswithin education will have a strong impact on what is leared;How it is learned;Who is learning and who is teaching.

The Upshot of all this activity is that We should see marked improvements in many areas of educational endeavour.Learning should be become more relevant to stakeholders needs, learning outcomes should become more deliberate and targeted,and learning opportunities should diversity in what is learned and who is learning.At the same time,quality of programs as measured by fitness for purpose should continue to grow as stakeholder groups find the offerings matched to theire needs and expectations.

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USE OF E-LEARNING MODULES IN TEACHING ENGLISH LANGUAGE

ABSTRACT

British Govt. imparted status to English in all walks of life; thus, English became official language of courts, banks and administration in India. Those days there was not a single rich language with Indians useful to unify all states. Therefore English, rich in all respects, became a popular means of communication. In pre-Independence era English occupied a privileged place for it was the language of administration, a medium of instruction at school, college and university level, and a compulsory language for employment. In school curriculum the task of a teacher was not to impart subject knowledge of a particular subject to the students but to use it to strengthen their ability of English communication.

Introduction

With the attainment of Independence in 1947, the position of English in the academic Curriculum and in the national life came to be seriously questioned. The absolute importance of English declined. C. Rajagopalachari said, "We in our anger against the British people should not throw away the baby (English language) with the bath water (English people)." Pt. Jawaharlal Nehru observed,

> Indian languages have suffered psychologically and otherwise because of English, yet they have gained a great deal too from contacts with the wider world …however, English cannot be in India anything but a second language in future.

Thus, the status of English, which was of high order during British rule, had gone under a great change after independence. English language which served as a great unifying force in the struggle for independence and in the awakening of masses from ignorance, as per the dictation of Constitution, came to be recognized as 'an official language of the union of India' until Hindi would be enriched so as to replace it (English). Keeping aside the controversial issue of the importance of English in Indian life, with the passage of time, importance of English is marked ever growing in the context of new developments in the fields of science, technology, industry, marketing and service sector. Today English is important to us for it is a national link language; it is the world's lingua-franca; it is a library language; and it is a compulsory language for prospects of employment in multi-national companies.

Today English has become 'Lingua Franca' of the world; hence learning communicative skills of Spoken English became essential in contemporary age to talk with a person not knowing your mother tongue. 'Lingua Franca' is a common language to the speaker and listener belonging to different language societies. As English has become a language of knowledge and technology, mastering English communication skills has become inevitable in the curriculum of today's school and higher education.

Hypothesis

'E-Learning Module' is a very useful device in class-room teaching and distance education today. The objective of this paper is to enumerate utility of 'E-Learning Module' as ICT tool.

What is ICT?

'ICT' means 'Information Communication Technology'. Modern Science and Technology have developed many ICTs that make teaching interesting and facilitate the process of learning. The list of ICTs is pretty long, but some of the important ICTs very often used in schools and colleges are: PPT Presentation, Interactive Board, Over Head Projectors, Slides, Educational Films, Cartoon Shows, Audio-Visual Aids, Handouts, Exercise Work Books, etc.

Any ICT device, electronically developed, could be used for making of 'E-Modules.'

There are 10 ICT items I would like to prescribe for classroom teaching and distance education. They are in no particular preference; some of the items are very often used in class-room teaching and others are merely a pipe-dream.Some of the ICT items are enlisted hereunder:

1- A social media output channel to connect with students, parents and fellow classrooms outside your 4 walls …
2- A desktop computer for you to access online resources. There was a day when I taught in a classroom with no PC!
3- USB or Wifi access for document sharing and device connectivity. Again, rewind just 7 or 8 years ago …
4- A projector with interactive whiteboard functionality or television screen connectivity.
5- A presentation clicker for classroom mobility. The best one I've found is Logitech.
6- A visualiser or document camera for displaying student work, or presenting live feedback.
7- Tablet devices for teacher and student e.g. iPad.
8- Recording hardware e.g. microphone, headphone and speakers.
9- A digital camera for showcasing work in film or photographs.
10- A few show-off gizmos; e.g. data-logging; remote control vehicles/robots/buzzers and lights!

What is 'E- LearningModule':

E-learning is now very much part of class-room teaching and distance education. E-learning refers to electronically mediated learning in a digital format (using computers and the internet) to enhance or facilitate teaching and learning process (Bullen, 2006). This definition covers the use of technologies to supplement face-to-face teaching and distance education.

Need of 'E-Modules' in Teaching English Language:

E-Modules make teaching-learning activity very interesting and they involve the taught in learning process. There are two phases in the life of a college going student:

1- Childhood Stage:
In the childhood stage, a child learns through 'Imitation'. It views, observes, and assimilates whatever it sees and hears. A child's academic performance in this stage of learning strengthens its memory. At the onset of the teenage period the childhood stage ends. The knowledge gained by a child in this stage serves the role of 'Reservoir' in the second stage ie 'Adolescence Stage'.
2- Adolescence Stage:
The Adolescence Stage covers the period of 'Teenage Life'. With many physical changes, the growing child in this phase is subjected to many psychological changes. The major change is the development of 'Logical Reasoning'. Under the impact of logical reasoning faculty the child accepts only that which is logically convincing to him.

The students admitted in colleges for higher education belong to the latter stage of learning. An effective teacher prepares his model-lesson-plan which is reason based and competent to facilitate student's learning process. E-Modules definitely expose students to the reasonably convincing life situations to which the students identify very closely.

Use of E-Module items in 'Remedial English Teaching Class':

Students admitted in a higher education class are hailing from heterogeneous categories of age, economic class, and psychology. They pass the board exams but do not possess sufficient knowledge of English Grammar; as a result they lag behind in the process of mastering English language learning skills.

UGC has provided sumptuous financial assistance for colleges to start 'Remedial English Class'. The objective behind this scheme is to elevate the standard of the weak students at par with that of the average student of the class. This scheme of UGC provides opportunity for weak students to acquire language learning skills:

1- Listening
2- Speaking
3- Reading
4- Writing.

Illustrative PPTs for teaching 'Inter-Change of Degrees':

Yeshwant Mahavidyalaya, Wardha

Welcomes You to Remedial English Class

.....

Transformation of Sentences

Trans + Formation = Changing form of a sentence without changing its meaning

e.g. 1- John is not my enemy
2- Jane doesn't hate John
3- Boys are not talkative
4- Girls cannot be silent
(silent .. Talkative .. Friend .. Love)

Interchange of Degree of Comparison

Degrees: 1- Superlative, 2- Comparative, 3- Positive

1- C: Ahmad is taller than Anand.
P: Anand is not so tall as Ahmad.

2: C: You can walk more quickly than Peter.
P: Peter cannot walk so quickly as you.

3- S: Mahesh is the cleverest boy in the class.
C:Mahesh is cleverer than any other boy in the class.
P: No other boy in the class is so clever as Mahesh.

2- S: Madras is one of the biggest cities in India.
C: Madras is bigger than most other cities in India.
P: Very few cities in India are as big as Madras.

Change the following degree of comparison

1- Bombay is bigger than Mysore.
2- The Pacific is the largest ocean in the world.
3- Anil is as strong as Kapil.
4- David bowls faster than Harry.
5- My pen isn't so good as yours.
6- *The Hindu* is one of the best newspapers.
7- You know him better than I.
8- Mr. Joshi works harder than any other clerk in office.
9- Very few boys are as honest as Gopi.
10- A wise enemy is better than a foolish friend.
11- You can't run as fast as Ahmad.
12- Akbar was greater than most other kings.
13- I get up as early as you.

Efficacy of using E-Modules:

E-Modules are very useful in class-room teaching and in distance education as they provide opportunity for students to elevate their learning standard at par with that of the average students. Use of e-modules helps a teacher in making his teaching effective for following advantages:

1- Developing Class-Room situation

2- Engraving 'Teaching Items'' in the minds of students
3- Developing the class into 'Homogeneous Category'
4- Making the teaching-learning process effective and result oriented

Conclusion:

Education must keep pace with the changing horizons of life. When every mode of work is becoming digital, education cannot be outside the impact of the science and technology today. It is said by a prominent author that our life is conditioned by the age we live in; and when world is going digital we cannot use the age old and outdated pedagogical tools.

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THE ROLE OF ICT IN QUALITY EDUATION

ABSTRACT

In this paper I tried to present a glimpse and nature of ICT, its importance & its mandatory need foreducation, which is indispensable. Education since bygone ages is a very essential part of the human reformation. It is only through education we are living in the age of virtual reality. It is only power of education that can change the mind of person. Education has changed the face of the world, but If we observed minutely then we find out education, itself has gone through many more changes. Each and every country, culture and continents has different mode of education. In our nation if we peep into the Vedic Agethen we find out "Guru Kul System" of education, if take a tour of Arabian culture then we traced down"KhankaiSyetem" and in Western world we can find advance system of education. All these system tried tomake their teaching and learning process more attractive and lively by availableresources. They attemptedto character building by various ways. But today we are breathing a very "HiTech" world. Many agesknown by technology of their time therefore present age is called age of the computer, android and robot.Today all segments of human life is controlled by the advance tools and technologies. So our educationsystem has gone through a drastic change. We are applying modern means of the technology in the educationsystem to quench the thirst of knowledge to this techno savvy new generation.

Introduction

ICT is a generic term referring to technologies whichare being used for collecting, storing, editing andpassing on information in various forms (SER,1997). A personal computer is the best knownexample of the use of ICT in education, but the termmultimedia is also frequently used. Multimedia canbe interpreted as a combination of data carriers, forexample video, CD-ROM, floppy disc and Internetand software in which the possibility for aninteractive approach is offered ICT,stands for the Information and CommunicationTechnology. To accurately understand theimportance of ICT in Education there is need toactually understand the meaning of ICT.ICTs standfor information and communication technologiesand are defined, for the purposes of this primer, asa diverse set of technological tools and resourcesused to communicate, and to create, disseminate,store, and manage information.

Usage and integration of ICT

Usage and integration of ICT in the education system ICT, if appropriately used can assist inaddressing the key educational challenges, e.g. eLearning and m-learning technologies andalternative delivery systems for access; rich andinteractive digital content to improve quality;assistive technologies to contribute to equity; andthe inclusion of ICT skills in the curriculum andthe use of ICT to support 21st century learning canincrease relevance. Outside of the education andtraining institutions, ICT is being put to processingof examinations in the general management of theeducation system using Educational ManagementInformation Systems.The effective integration and utilization of ICTdepends on the capacity of the system to performand execute activities of planning, implementationand evaluation. Institutional capacity depends onadequate and skilled human resources,

strategicleadership, financial resources, infrastructure, andProgramme management and on a conduciveexternal environment.

A comprehensive capacityaudit of the education sector would need to be doneto determine the capacity aps and needs, but acursory assessment revealed that althoughgovernment commitment is high as evidenced bythe policies and strategies, organizational structuresand culture, lack of skills in critical areas, lack of strategic vision and planning, insufficient financialresources and inadequate infrastructure hamper the ability of the sector to integrate and use ICTeffectively.Information and Communication Technology (ICT)is a principal driver of economicdevelopment andsocial change worldwide. Nevertheless, technologyalone can only be an enabler, not driver ofdevelopment. Further, use of Information andCommunication Technology (ICT) in developing countries is seen as an effective way to improve thepopulation's life and well-being. In particular, ICT applications on the education system might changethe future of the underdeveloped worldfundamentally through the connections to 'the flatworld' (Friedman2005). However, there are somechallenges which the developing world faces in itsefforts to adopt ICT in the education sector. Thesechallenges are limitations related to cost, internetaccess, trained staff and adequate policy. This paperdiscusses the use of ICTs in education in developingcountries with a focus on India. The paper highlightsthe use of ICTs in education, the benefits and rolesof ICTs in education, Integration of ICT intoclassrooms.is not enough to impact student learning.That said, specific applications of ICTcan positivelyimpact student knowledge, skills and attitudes, aswell as teaching practices, school innovation, andcommunity services"

Roles of ICTs in Education

ICT is increasingly becoming a more and morepowerful tool for education and economicdevelopment. Unwin (2009) contends that "ICT canbe a catalyst by providing tools whichteachers useto improve teaching and by giving learners accessto electronic media that make concepts clearer andmore accessible". Thus, ICT is used for capacitydevelopment and citizen empowerment. Ultimately,ICT can enhance educational opportunities andoutcomes for students, including students withintellectual disabilities (Anderson, 2009). As muchas I agree with the literature it has always becomesa challenge to most learners as they are not able toaccess the computers as some schools could notafford them while others are locked up in computerlabs in schools.

The main purpose of the Strategy for Informationand Communication Technology Implementation inEducation is to provide the prospects and trends ofintegrating information and communication technology (ICT) into the general educationalactivities. There are some unavoidable facts in themodern education; first, the ICT has beendeveloping very rapidly nowadays. Therefore, inorder to balance it, the whole educational systemshould be reformed and ICT should be integratedinto educational activities. Second, the influenceof ICT, especially internet (open source tool) cannotbe ignored in our student's lives. So, the learningactivities should be reoriented and reformulated,from the manual source centered to the open sourceones. In this case the widely use of internet accesshas been an unavoidable policy that should beanticipated by schools authorities. Third, thepresence of multimedia games and online gamesby internet has been another serious problem that should be wisely handled by the educationalinstitutions. The students cannot be exterminatedfrom this case.They can have and do with it wherever andwhenever they want. Schools, as a matter of fact,do not have enough power and time to prevent or stop it after school times. Meanwhile, most parentsdo not have enough times to accompany and controltheir children. So, the students have largeopportunities to do with multimedia games or onlinegames or browsing the negative and porn sites.Having been addicted, the students will have toolittle time to study, and even do not want to attend classes.

In such situation, education institutions playan important role to eradicate these problems. One of which is by facilitating the students to doedutainment or educational games. Schools can let their students be familiar with educational gamesadjusted by their teachers. Besides, they can also support and facilitate their students to have theirown blogs in the internet. A lot of Weblog providers are free to the users, such as WordPress.In their blogs, the students can create

and writesomething, like an article, poem, news, short stories,features, or they can also express their opinion byan online forum provided in the internet. They areable to share experiences throughout their blogs toothers from all over the world. I think it will be aninteresting activity for them, and it will lessen theirtime to visit the negative or porn sites existed. Bydoing so, I think our young generation will get moreand more information and knowledge by browsingin the internet. They can also create innovation inweb design that it may be out of the formalcurriculum content, but it will be useful for theirfuture. Fourth, the implementation of ICT ineducation has not been a priority trend ofeducational reform and the state paid little attentionto it. Therefore, there should be an activeparticipation, initiative and good will of the schoolsand the government institutions to enhance ICTimplementation at school. Fifth, the teachers shouldbe the main motivator and initiator of the ICTimplementation at schools. The teachers should be aware of the social change in their teachingactivities. They should be the agent of change fromthe classical method into the modern one. They mustalso be the part of the global change in learning andteaching modification.

The followings are the aim and objectives of ICTimplementation in education:

1. To implement theprinciple of life-long learning / education.
2. Toincrease a variety of educational services andmedium / method.
3. To promote equal opportunitiesto obtain education and information.
4. To developa system of collecting and disseminating educationalinformation.
5. To promote technology literacy ofall citizens, especially for students.
6. To developdistance education with national contents.
7. Topromote the culture of learning at school (Development of learning skills, expansion ofoptional education, open source of education, etc.)
8. To promote the culture of learning at school (Development of learning skills, expansion ofoptional education, open source of education, etc.)

Conclusion.

In this way we can understand the importance ofICTs in the education, nowadays it become theguiding force behind the modern education. And itis also the need of the present era to cop up withnew challenges. It has a very vital and sustainableimpact on the teaching and learning process, ICT has rejuvenated and revolutionized the moderneducation.

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IMPORTANCE OF ICT IN ECONOMIC GROWTH OF INDIA

ABSTRACT

Information and Communication Technologies (ICTs) play a pertinent role in Economic growth and development of India. India is a country of more than 500 villages consisting 60 percent of its total population. So from the development point of view, it has been the main focus of the government to include all the disadvantaged and weaker sections of the society into the arena of equal growth and opportunities to all by providing better services of infrastructure, agricultural development, financial services and public health services etc. to the rural area of the nation. All the decisions whether political, social, economic, cultural and behavioral today depends on the ability to access, gather, analyze and utilize Information and Knowledge. So this paper aims at examining and analyzing the impact of ICT on economic growth of India.

Keywords: *ICT, Economic growth, Mobile Ecosystem*

Introduction

ICT means the way we get the information, we use the information and we communicate the information. It is the digital device that makes information accessible across the globe. It is the duct that imparts information and knowledge to individuals in order to get them economically and socially empowered. It is the most effective tool of the development process that will lead to facilitate the environment conducive for the better life of rural people. In this direction, the government of India is taking many relevant steps to bring the whole nation under a single umbrella. It is having an ambitious objective of improving the citizen-government interaction at all levels by the electronic mode (e- Governance) by 2020. The Indian Information Communication Technology (ICT) industry is contributing significantly to the national economy in various ways and in the time to come it is expected to be a sector in which India can achieve a comparative advantage. That's why almost all states of India are targeting this sector as driver of economic development.

Evolution of Indian ICT Sector

The Indian IT Industry consists of software industry and information technology enabled services (ITES), which also includes business process outsourcing (BPO) industry. The Indian ICT sector has evolved in three phases: up to 1984, 1984–1990 and post-1990. In the first phase, the state tried to run the industry resulting in no commercial sector along with attempting to establish its own technological trajectories. In 1970's the Indian economy was state controlled and remained antagonistic to the software industry. The Import tariffs were high like 135% on hardware and 100% on software. Even the exporters were not eligible for bank finance. In the second phase, the government felt that software was a practicable option for income generation and technological efficiency enhancement. In 1984, Government introduced New Computer Policy (NCP-1984) which reduced import tariffs on hardware and software to 60%. In the third phase, the software export industry progressed by leaps and bounds, heavily promoted by both national and state governments. Consequently, the export-dominated growth model ignored the hardware sector and its huge potential. Though the ICT sector is growing in all domains, it is primarily driven by software services and telecom services. Until the 1990s, due to the excessive controls

imposed by the state, there were little incentives for private firms to invest in R&D. The Indian ICT sector is dominated by the larger players with the only top 200 firms contributing about 86% of the total revenues. Multinational firms are also investing their Indian R&D centers. Technologies, Wipro, and Micro land have set up their offices in these cities. As a result, Indian IT Industry's contribution to the world's information technology sector is of highest reputation. From time to time various schemes have been introduced by the government of India to make all government services available to the citizens of India through electronic media. In this direction, national e-Governance Plan (NeGP) was introduced by the government in 2006. Recently Digital India is a major campaign launched by the government of India to increase the use of technology to connect and empower the people in areas relating to the education, health, employment, labor and commerce that will help to make the government more transparent.

Role of Mobile Industry in Economic Growth and Job Creation

Companies operating in the mobile ecosystem of India generate value addition which is calculated as direct economic contribution of mobile network operators and the mobile ecosystem to GDP of India. In 2014, the mobile ecosystem contributed a value addition of INR250,000 crore (2% of GDP), of which the greater part came from the mobile operators alone contributing directly a total of INR126,000 crore (1% of GDP). In addition, mobile operators and the ecosystem helped to provide direct employment to nearly 2.2 million people in 2014 in India along with 1.9 million additional jobs that were supported indirectly in other industries which depend on the economic activities of the mobile industry. Consequently, mobile technology has transformed the way economic activities are carried out in various sectors of the economy by easing ways of doing business and allowing more effective and efficient ways to access and communicate information. So we can say that it has become a key driver of economic growth and development.

Conclusion

Thus from the above analysis it can be concluded that ICT industry has contributed a lots in promoting the economic growth of the nation through employment generation, direct GDP contribution and exports revenue generation, playing a significant role in the development of the country. In addition, this sector has played a prominent role in emergence of new services, Workforce transformation and Business innovation. The emergence of the industries like the Facebook app industry alone created over 1,82,000 jobs in 2011. ICT has also helped to the rise of entrepreneurship, by making it much easier for self-starters to access best practices, marketing legal and regulatory information and investment resources. It has contributed in the promotion of the researches and innovations also. As the internet provides the new ways of reaching out, approaching and serving to customers though which it helps to improve efficiency, increasing competition and streamline business processes. Therefore it demands for major initiatives by the Government to help ICT industry to grow even more rapidly as it is one of the key drivers of the economic growth of the nation.

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USE OF ICT IN PHYSICAL EDUCATION

ABSTRACT

Key skills through physical education are developed through use of ICT in PE classes to enhance, enrich and enable activities within the curriculum. e.g. using video cameras to record a sequence in gymnastics and then developing speaking and listening skills in pairs/groups (cooperating/team working) to discuss areas for improvement. 21st century teachers of PE use ICT to enhance the learning and teaching environment and promote the pupils learning experiences and ultimately to raise standards of attainment.

Introduction :

Worldwide research has shown that ICT can lead to improved student learning and better teaching methods. A report made by the National Institute of Multimedia Education in Japan, proved that an increase in student exposure to educational ICT through curriculum integration has a significant and positive impact on student achievement, especially in terms of "Knowledge"; "Practical skill" and Presentation skill" in PE subject study. There are many education technology solutions provided in the world which may cause confusion among educators about how to choose the right ICT solution. 21st century teachers of PE use interactive whiteboards for classroom teaching to reflect on prior learning and then using discussion with pupils to set new learning outcomes so they have ownership of their own learning. E.g. use of visual footage of the previous lesson to enable the pupils to highlight their own areas for development and set their own challenges for the next lesson/unit of work. Using video on the IWB for pupils who are visual learners is also as good technique to use to explain and demonstrate the task to be undertaken.

Multimedia learning theory :

There is a growing body of evidence that use of ICT in the classroom can enhance learning (Meiers,2009). Computer-based multimedia learning environments consisting of images, text and sound - offer a potentially powerful setting for improving student understanding. However, all multimedia resources are not equally effective, so the challenge teacher's face is how to assess and select multimedia resources that best promote meaningful learning. How can we use words and pictures to help students explore the history of PE how the techniques and skills in various games and sports can be developed and understood? Mayer and Moreno (2002) discuss the cognitive theory of how learners process multimedia information. This theory can be used to guide teachers to assess and select the most effective multimedia resources for learning in the classroom. The most substantial gains in pupil attainment are achievable where the use of ICT is planned, structured and integrated effectively. Also, teachers need to be aware that there are time when the use of ICT is appropriate for a particular task and other times when different media are more appropriate. The advantages and disadvantages of ICT tools for PE needs are as below:

Advantages :

1. Through ICT, images can easily be used in teaching and improving the retentive memory of students.
2. Through ICT, teachers can easily explain complex instructions and ensure students' comprehension.
3. Through ICT, teachers are able to create interactive classes and make the lessons more enjoyable, which could improve student attendance and concentration.

Disadvantages :

1. Setting up the devices can be very troublesome;
2. Too expensive to afford .
3. Hard for teachers to use with a lack of experience using ICT tools.

Classroom Utilization of Technology

Specialized Software

The greatest value of computers may reside in the ability to provide improved support to classroom instruction, and the variety of software programs for such use continues to grow. Commercial and shareware programs are available to track grading, student athletic performance, and fitness; conduct health assessments; and monitor research projects, among other functions. The availability of hypertext, where selected words in the text of a document can be used as links to other points in a document, has made such software development much easier.

Multimedia & CD/ROM

Computer have integrated learning with multimedia presentations. Traditional encyclopedias and reference books have been replaced by compact discs with read-only memory (CD-ROM or CD) that contain pictures, sound, and video, as well as the standard text. In PE students can observe and listen to the mechanics of movement in slow motion and play over those parts they do not understand. Instructional topics remain traditional, but the delivery is nontraditional and allows the student to move at her/his own pace (Gold, 1991). Computer- assisted instruction (CAI)provides students with an alternative to classroom settings and free the instructor from rote processes that are better handled by the computer. Mohnsen (1995) identified a number of reasons for using CAI in physical education. Among them were suggestions that CAI provides students with the "why" behind health- related fitness; it provides unlimited practice, review, and remediation; students stay actively involved; and it meets a variety of student needs. CAI, if individually developed, requires considerable time on the part of the instructor, but this is compensated for by increased learning time available in the classroom. Using CAI an instructor can develop or acquire a series a series of supportive and reinforcing software. For example, students in a nutrition class might participate in a CAI- based eating habits survey that provides students with information about their nutritional habits, collates data for the entire class, and provides the teacher with a report to use as a teaching tool.

Computers and Satellites :

Classrooms around the world can now be connected using technologies that include computers, interactive television, satellites, and the Internet. The linking of computer technology through the use of the technique has been used to link university professors to PE teachers, students, and other students who are all physically distant from each other's.

Conclusions :

In general, PE is still faced with the difficulty in fully harnessing the potentials of digital literacy and ICT diffusion. Success stories abound such as those presented above but these are limited to those with ample access to digital infrastructure and ICT-open minded teachers and administrators with the help of the private sector and other education stakeholders. PE students recently lags behind the global standards for digital literacy delivery, but its full educational potential cannot be realized without the radical changes in curricula and teaching methodologies." A more radical curricular reform should be learner-centered and skill-based with a "clearly articulated and measurable curricular/pedagogical goals and objectives" (Tinio,2002).

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IMPACT OF ICT IN TEACHING LEARNING & EVALUATION

ABSTRACT

In many countries, Information& Communication Technology (ICT) has a lucid impact on the development of educational curriculum.ICT has transformed teaching & learning processes from being highly teacher dominated to student-centered, and that this transformation will result in increased learning gains for students, creating and allowing for opportunities for learner to develop their creativity &Problem-solving abilities. The present study intends to collate the finding from a review of an array of available literature related to impact of ICT on teaching learning and evaluation process.

INTRODUCTION

Information and Communication Technology or ICT, is often used as an extended synonym for Information Technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications, computers as well as necessary software, Middleware, storage and audio visual system which enable users to access, store, transmit and manipulate information.

Information communication technology has the power to transform society. The impact of ICT on business is particularly significanr.it empowers people to share knowledge and advice instantaneously.ICT can enhance the quality of education in several ways by increasing learner motivation and engagement by facilitating the acquisition of basic skills and by enhancing the teacher training.ICT are also transformation tools which when used appropriately can promote the shift to a learner centered environment.

Now a days the role of information & Communication technology (ICT) in the education sectors plays an important role especially in the process of empowering the technology into the educational activities.Various tools of ICT'S - Print, Audio-Video, Cassettes, radio & T.V broadcast, computer & internet may be used for presentation & demonstration.

ICT can be used effectively in a range of different ways to improve teaching learning by individual pupils, by groups and by the teachers to focus attention. Modern educational technology can improve the social, economic and political development with a particular emphasis on helping poor and marginalized people and communities. It aims to help in international development by bridging the digital divide and providing equitable access to technologies.

OBJECTIVES:-

- To find out usage of ICT by teachers during the teaching and learning process.
- To analyze the present status of use of ICT
- To identify the barriers and supporting features on use of ICT

BENEFITS OF ICT:-

Key benefits of ICT based educations are:-

- Promotes Learning
- Enables self paced learning
- Provides access to wide range of upto date learning materials
- Enriches learning through a combination of video, audio, images text and animation.
- Enhances learning through interaction & collaboration.
- Provides a platform that engages students.

APPLICATION OF ICT:-

ICT development assistance and projects vary depending on the categorization of the areas of work. Thus sectors are mainly following:-

- Infrastructure which covers the both the vertical and horizontal infrastructure projects.
- Industry, agriculture and natural resources sector.
- Social sector which consist of health and education.
- Private sectors.

SUGGESTIONS:-

There are several suggestions in developing ICT technique in teaching learning and evaluation process. These are as follows:-

- The government may use a range of methods to encourage teachers to use ICT in their teaching to ensure equal learning opportunities for all students.
- This study identifies a need for more training opportunities.
- Digital learning environment in the form of model or ICT learning platform should be offered to teachers.
- Provide suggestion box & recommendation to be read by principals involved with ICT decisions and proper action follow.
- Discussion with college website.
- Organize staff development programme regularly to share knowledge & skill on ICT.
- Conduct Monthly meetings on discussion regarding ICT use.
- Each classroom should have at least one computer with internet and LCD projector.
- Teachers should be aware of the benefits of ICT.
- ICT related course should be integrated in teaching practical courses.

CONCLUSION:-

- As the evidence, it does seem that we are witnessing the reconfiguration of pre existing learning activities and opportunities for the majority of children and young people. Where once children went to the library to get a book for their homework, now they also search online.
- Considering how fast the world is moving in the development procurement & of information & communication technologies. It should make immediate step to catch up it. It want to keep in track.
- ICT brings lot of advantages & it brings a great impact for human & business daily life. Therefore ICT development is the best choice in helping to stay in track.

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USE OF ICT IN TEACHING LEARNING ENGLISH LANGUAGE AND LITERATURE

ABSTRACT

Traditional language learning is now a day becoming an outdated thing. With emerging modern technology language learning particularly, foreign language learning is becoming an interesting thing. With more access to modern technology tools English language learning is becoming easier . New emerging technology like Mobile assisted language learning, computer assisted language learning, availability of e-library, e-dictionary and online learning management system making it easier for students as well as teacher to learn and teach English language. Availability of high speed Internet MP3, MP4 format High definition Videos with subtitle is helping the modern learners to learn this language. In this study I will focus on how we can integrate modern tools and technique available for English Language learning.

KEY WORDS: *- ICT, MALL, CALL , Language Learning, E- Library E-Dictionary*

Introduction

The word ICT stands for Information and communication Technology.Use of information and communication technology is becoming commonplace now. We simply cannot imagine our existence without information and communication technology.it surrounds us in every sphere of our life,from school education to space technology everywhere there is a use of ICT. ICT is used in Science and Technology, accountancy, Judiciary, intelligence department, defense and even in film making. Information and communication technology is vastly used in science fiction movies.As the days are passing we are getting more used to with the modern technology,we are using it for minimizing our workload and pressure it creates. As we are advancing our working effectiveness is also improving. We are moving forward from approximate to exact and resourceful to skilled. We are adopting skill in every aspects of our life.We are using ICT in the field of Banking transactions and communication technology. We use web, email, social networking sites and so on. All these facilities are available to us because of advances in Information and communication technology .Knowledge and resources available to us can be utilized for improving our performance as a teacher of English Language. Learning as a second or third language English comes to us as a teacher or as a student with many difficulties and challenges. With the help of Information and communication technology whether as a teacher or as a student we can overcome all such difficulties and problem specially as a teacher or student of English language.

Use of ICT in Drama

Drama as a literary genre is a performing art. We just cannot imagine what is written in the text is actually happening on the stage. We can make our lecture on drama a lively one if we use drama based on adaptation of literary works. There are various dramas by Shakespeare which are adapted as a movie .Similarly Dramas by G.B. Shaw can be understood in a live presentation instead of reading out a text such as Pygmalion. Real Characters from Drama, setting, Scene, Dramatic Devices as soliloquy and aside can be well understood when we watch a live show instead of reading a text. Dramas like Harold Pinter's 'Birthday Party' and

'Waiting for Godot by Samuel Beckett can be enjoyed with full interest if we are watching it enacted rather than reading it.

ICT in Fiction

Fiction is literary genre written according to various perspectives. It is a narrative with plot characters and setting at various geographical locations. In a novel there may be a sudden shift of setting from one place to another place this thing can be better described by use of ICT. Novels like Alice's adventure can best be understood by film adaptation. It would very much be liked by teenagers.

ICT in Poetry

Poetry is a literary genre which is vast in terms of subject matter and emotions expressed. Many things are there in a poem which may not be known to us can be shown to us by using ICT. Take the example of Daffodils by Wordsworth. The flowers of Daffodils may not be known to Indian readers, if we show those flowers in the crowd the exact effect of poem will be heightened. Students will easily grasp the meaning of that poem if animated those flowers as dancing as mentioned in that poem. Similarly there are pattern poems which can better be understood if we keep the text of the poem according to the pattern.

Mobile assisted language learning(MALL)

Mobile assisted language learning is language learning or enhanced through the use of hand held mobile devices. MALL has evolved to support student's language learning with the increased use of mobiletechnologies such as mobile phones (cellphones) MP3 and MP4 players, PDA's and devices such as the iPhone or iPad. With MALL students are able to access language learning materials and to communicate with their teachers and peers at anytime , anywhere. (Website, 2018) Lots of mobile apps are available in Google's play store and apples istore for learning English language. (http://www.playstore.com, 2018)

Some apps are free and some are paid but it adds charm to our language learning. Apps are available to us according to our need there are apps for beginners and advanced learners. Learners from nursery to high-school level can be benefited by using these apps.

Computer Assisted language learning

Computer assisted language learning is briefly defined in seminal work by Levy as 'the search for and study of applications of the computer in language teaching learning. Call embraces a wide range of information and communication technology application and approaches to teaching and learning foreign language. Computer assisted language learning puts a strong emphasis on student-centred materials that allows learners to work on their own . Such material can be structured and unstructured but they naturally embody two important features: interactive learning and individual learning .CALL is essentially a tool that that helps teachers to facilitate the language learning process.It can be used to reinforce what has already been learned in the classroom or as a remedial tool to help learners who requires additional support. (website, 2018)

Use of YouTube in learning English

YouTube is an amazing tool for learning language .we can look for online language course and they are all free. Once you start watching videos to learn your target language ,YouTube will automatically recommend others that are suitable for your level. We can look for TV shows and movies in our target language. You just need pay your attention to the TV shows or film. Look up and write down words you don't understand, and will be willing to play the video several times until you fully understand it. By doing all these things we can learn a lot from a single TV episode. YouTube is a fantastic source of both films and TV shows almost any language we think of. Fortunately, there are many videos in foreign language with subtitles or transcript ,which you can read while listening to the audio. By doing this we can keep up with what is being said and won't find ourselves lost in a series of words or phrases we don't understand. When we are learning a language , native speaker talking at normal speed can seem fast paced. We will begin to learn what is being said after practice. Until, we are not able to decipher what is being said we can slow down that video or listen it repeatedly. We can improve our listening skill by finding music in the langnage we are learning. The beauty of the YouTube is that we can play these songsfor free as many times as we like, until we memorize that song. similarly we can upload our own practice video . (Youtube language learning, 2018)

e-library

As we are advancing forward we reading habit is also changing. In the earlier days we use to prefer reading books in physical forms but now we have lots books in the form of PDF, audio format , e-publication AZW format used in Amazon , LIT format developed for Microsoft reader software, ODF and Mobipocket e-book format. Project Gutenberg is good platform for the readers of English language. E facility is available in many famous library as oxford university press ,Cambridge university and many famous library all over the world. We can download lots of books from any language from pdfdrive.net .There are digital libraries in our India also. Digital library of IIT Kharagpur is famous in India. If we don't get books free of cost, there is a facility to borrow books online from digital library.

e-Dictionary

Dictionary as we conceive it is a big of words, it is difficult to use in physical form. We need to turn lots of pages in order to find a particular word. Similarly we must know phonetical transcription in order to know the exact pronunciation. All these difficulties can be overcome by using dictionary application, online dictionary, thesaurus and Encyclopedia. It is quite easier to find word meaning bybjust typing spelling, instead of turning various pages. Accessing word pronunciation is very much easier in dictionary application, since it supports audio output. Difference in British pronunciation and American pronunciation is quite easier. Similarly, pronunciation of particular word which we cannot understand simply by reading phonetical transcription, can easily be accessed by online help

Use of ICT in Evaluation

Traditional evaluation is too time consuming and requires too much space to store collected material. It also requires physical presence of students and teachers. Whereas online evaluation tools don't need too much time, no space to store collected material and don't need physical contact between teacher and students . Evaluation process will be more accurate than manual valuation. Data will be stored for longer period. It also means environmental protection if we use paperless work in teaching learning and evaluation. Learning management software such as Brihaspati, Google classroom , Moodle is quite helpful in educational institutions. Testmoz.com is a good tool to conduct online examination.

Conclusion:

Traditional ways of language learning are now becoming things of past, we need to keep pace with the changing technology and expectations of the society. We need adopt modern tools and techniques available for teaching and learning English language. While teaching drama, Poems or fiction modern teaching aids can be immensely beneficial to us. Mobile assisted language learning , computer assisted language learning are useful for the self- learners at their own space. E-Dictionaries and e-Books are paving a new way for the rural folk for acquiring foreign language skills.

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UTILITY OF ANDROID MOBILE APP TO CALCULATING MOLAR CONCENTRATION TO MAKE OUR LIFE IN LAB EASY.

ABSTRACT

The Intend of this paper is to manipulation of mobile app for educational purpose. Solution Calculator Lite is convenient tool for calculating molecular weight of commonly used chemical compounds, for making solutions and diluting solutions from a stock solution. It also has a tool with detailed information about all 118 chemical elements. This app is free to download on Android operating system and aims to help estimate amount of solute and solvent for solution preparation in laboratory while practical.

KEYWORDS: *Molar concentration, Android mobile App.*

INTRODUCTION

Effective educational reform only occur when change in the curriculum and in pedagogical innovations like the use of digital media in education system. Today, we face a world of continuous innovation in technology [1]. With the development of technology changing both people's lives and people's relations within societies, education is also undergoing innovation and necessary reform [2]. Technology play important role in all areas of education is no exception. Students is now rarely without a android phone, In classroom context , android phone and tablets are often seen as a problem because use of these items can easily distracted students and disturb the learning process[3].Nowadays use of digital technology helping students acquired knowledge through various apps. The internet is driving force for much use of technology. There are so many android mobile applications available for students as well as teachers also learn so many innovative thing, for example Chirality-2 application cover multiple aspects of introductory organic chemistry,3-D sym op, mass spectroscopy data[4]. In this paper the App solution calculator Lite is presented. This App is designed to calculate molar concentration and molecular weight of number of compounds. There are six features namely Make, Dilute, Calc MW, Elements, MW List, About. This app would helpful to medical, botany, chemistry students, also to researchers and teachers for quicker accurate results and save more time. It is available for free worldwide on Android(Google Play store)operating system.

METHODS

Make

If we enter the final concentration desired volume and molecular weight of compound select appropriate unit then press "Calculate" button. It gives how much amount of compound is needed to make the required strength of solution. Eg. for 1M solution of NaOH to make 1000ml of solvent 40gm of NaOH is required shown inFigure.

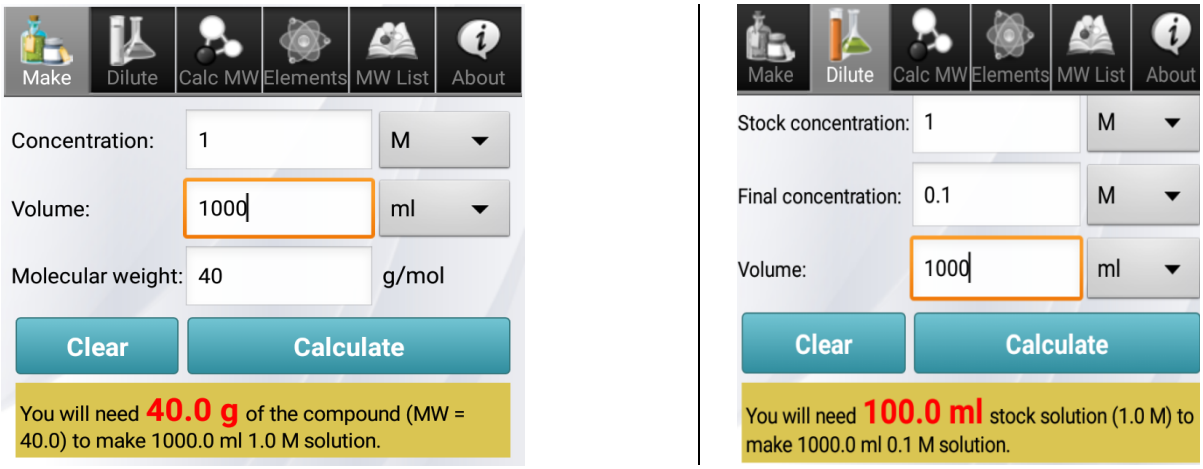

Figure 1. Screenshots from the app showing amount of NaOH and Stock solutions.

Dilute

If we enter desired final concentration, stock solution concentration, and volume of final solution then select appropriate unit and press "Calculate" button. Eg. For preparation of 0.1 M NaOH (Final Concentration) from 0.1M NaOH (Stock solution) Need 100 ml of stock solution (0.1M) to make 1000 ml 0.1 M solution shown in Figure.

Calc MW

This option is for retrieve information about molecular weight and molecular formula of all elements. we can use this option when just need information about molecular weight and molecular formula of elements.

Elements

This option is very useful because detail information of elements can retrieve .In that gain details about atomic number, atomic weight, group, period, name origine, density, melting point, boiling point, electronegativity , abundance, earch crust, discovery year,electronic configuration, energy, heat and other details of the elements.

Molecular weight list

is the option for molecular weight list of some commonly used chemical compound.

About

In this feature there are three options fist is Rating/Comments, Email Us , Upgrade to Pro.

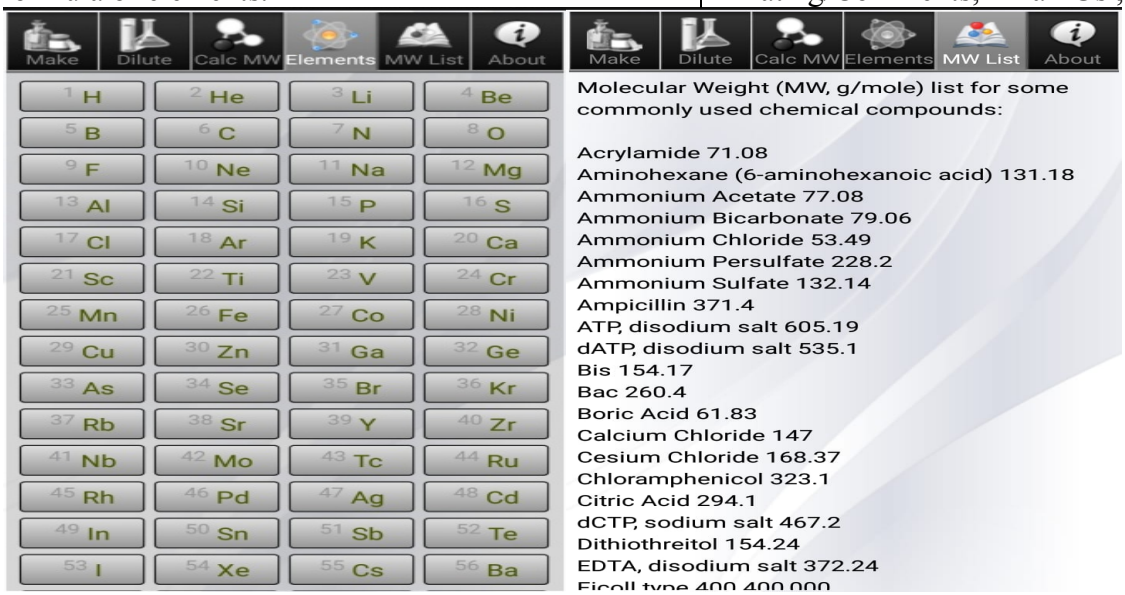

Figure 2. Screenshots from the app showing details information of elements And Rating.

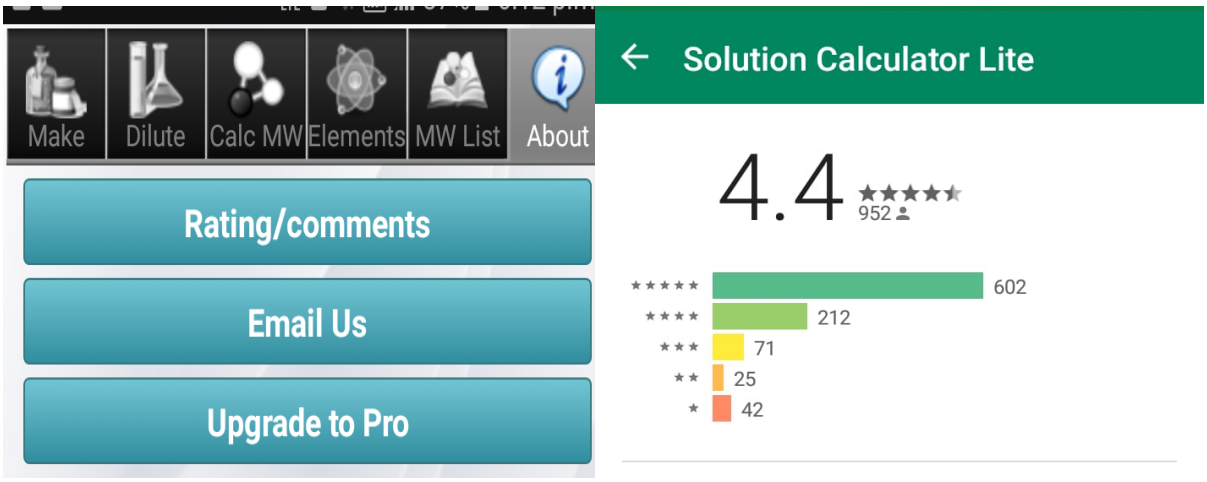

Figure 3.Screenshots from the app showing details information of Rating from reviewer.

Key points

- Mixtures with uniform composition are called homogeneous mixtures or solutions.
- Mixtures with non-uniform composition are heterogeneous mixtures.
- The chemical in the mixture that is present in the largest amount is called the solvent, and the other components are called solutes.
- Molarity or molar concentration is the number of moles of solute per liter of solution, which can be calculated using the following equation:

  {Molarity}= mol sulute / L of solution
- Molar concentration can be used to convert between the mass or moles of solute and the volume of the solution.

Introduction: Mixtures and solutions

In real life, we often encounter substances that are mixtures of different elements and compounds. One example of a mixture is the human body. Did you know that the human body is approximately 57% water by mass? We are basically an assortment of biological molecules, gases, and inorganic ions dissolved in water. I don't know about you, but I find that pretty mind-boggling!

If substances are mixed together in such a way that the composition is the same throughout the sample, they are called homogeneous mixtures. In contrast, a mixture that does not have a uniform composition throughout the sample is called heterogeneous.

Homogeneous mixtures are also known as solutions, and solutions can contain components that are solids, liquids and/or gases. We often want to be able to quantify the amount of a species that is in the solution, which is called the concentration of that species. In this article, we'll look at how to describe solutions quantitatively, and discuss how that information can be used when doing stoichiometric calculations.

Summary, Results and conclusion

Mixtures with uniform composition are called homogeneous solution. Mixtures with non-uniform composition are heterogeneous mixtures. The chemical in the mixture that is present in the largest amount is called the solvent, and the other components are called solutes.

Molarity or molar concentration is the number of moles of solute per litre of solution, which can be calculated using the following equation:

{Molarity}= mol solute / L of solution

Molar concentration can be used to convert between the mass or moles of solute and the volume of the solution.

This study shows that feedback from various reviewer and their comments overall attitudes towards this app were positive with an overall rating 4.4.Out of 952review 602 had five stars, 212 four stars,71 three stars,25 two stars and 42 one stars, it means respondents had positive (63.36 %) (22.6%) (7.45 %) (2.26 %) and (4.41 %) these review reported according to 4.4 rating (63.36 %) is too good for any app. Reviewer strongly agree that app is useful and play important role in their work.

Survey of some comments from reviewer “It good app” [Comment from Pallavi Jadhav on dated 01/12/2018] “Nice and great help me a lot in

my job"[Comment from Suryati Mohd]. Reviewer suggest some amendment" Normality and percentage calculator is not there please add'' [Comment from Shrikant Kekane on 07/02/2016] "Great app, would be nice to have normality percentage concentration as well''[comment from Greg Allen on 03/05/2016]. By review and comments this app is seem to be more useful, fruitful to teachers, Students and researchers. Technology is a panacea, and many of traditional problems associated with education. No matter how amazing the sophisticated the smart phone. It is important that when the new technologies are developed educator to enhance and encourage learning.

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E- SERVICES OF LIBRARY IN E –EDUCATION SYSTEM

ABSTRACT

The present paper discuss in learning, its meaning, role of libraries in needs of e- learning modules forms, technologies, components motivating factors virtual communication tools. Internet is a treasure and ocean of world wide information. Internet is not only a medium for digital communication but also the world's largest repository of information. It provides access to variety of commercial and noncommercial information sources including on-line journals, books, newsletters, library catalogues, OP AC'S, full text databases etc. The study provides overview about the present status, development prospects of the electronic education, its different types i. e. on-line education, virtual education, e-learning methodology, e-learner and components like e- learning tools , e-learning resource, on-line resource and storage media, e-digital resource, e-learning web sites, e-library, virtual library, on-line library. Hear also discloses the effectiveness, qualities, cost effectiveness, economics, various e-learning program, future of e-learning and its various aspects, prospects and different feathers of the electronic education.

Introduction: Libraries have changed from mere static storehouse of knowledge to dynamic service centers. The internet is blurring the traditional roles of creators, suppliers and distributors of scientific information and injecting a long overdue element of competition. The concept of information is ageless, information Technology is the savoir of mankind. The method of classroom learning is changed to e-learning. It has played a major role on library and information science professionals. This topic focuses in the context of college libraries and their rapidly developing use of information and communication technology. Its key focus and emphasis is on how the college libraries influence the changes to teaching and learning that will result from an e- education environment. Understanding the impact of e-teaching ,e-learning and e-education is seen as fundamental to moving us forward so that we can make greater use of the opportunities provided by the .internet. E-teachers are considered central to the move towards-education and the way in which ICT is integrated in the academics. College libraries are the forefront of knowledge when it comes to systems and services that suit the needs of the information seekers. It remains for them to act at the institutional, national and international level to ensure that this knowledge is brought to bear in e-learning to the benefit of teachers and learners directly. India is the largest democratic country in the world and population wises second, population is the biggest problem for systematic development its moves towards the dangers make, due inadequate development in primary education, in this regards India had passed the 83rd amendment bill in the constitutions to making elementary education as fundamental right. This amendment has improved the literacy rate, quality of line and control the population rate, because India has the largest number of illiterates in the world, its nearly half of its population is below the literacy line. In the age of information technology and globalization of the world, all topmost premier organization are provide electronic education, on line and virtual education. In information technology has play the power full role to prompt the education. Due to education technology towards the distance learning/on-line education

and many e-leaner has getting professional qualifications through the internet.

E-Education:- During the last decades there have been phenomenal growth in the electronic education, the number of leaner's are benefited by the use of on-line universities/education institutes services through the world wide web and telecasting and broadcasting, such as in India ZED-TV (Z-education) and IGNOP are telecasting the its educational. The e- education involves-teaching and e-learning along with the various other administrative and strategic measures needed to support teaching and learning in an online environment. It will incorporate a local, regional, national and international vision of education. An college library must have an effective e-learning strategy must be a good combination of the technology and the content it carries. It must also focus on critical success factors that include building a learning culture, marshalling true leadership support, deploying nurturing business model, and sustaining the change throughout the organization. Again, e-learning compasses both the acquisition as well as use of knowledge distributed and facilitated by electronic. E learning have been made possible by the use of the Internet education, its provides the learning is no more limited to classroom sessions and give the path for exertive, expect us and pinpointed education, it also empowerment of the learner from the different ways i.e.

- Internet Learning
- CD- based Learning

Internet- E-learning:- Internet is predominated and developed the education especially in higher education and education research etc. due to this technology e-learners are move from traditional learning to e-learning, on -line education. It would also be beneficial for the working people and people who are always in traveling they can get his college, library and notebook with his laptop .Internet provide the facilities of dissemination of education through the worldwide web, e-learning has been made possible to collect information by the use of Internet. The e-learners can get his or her course syllabus, course materials, assignments and project report and views of the expert through the internet and also submitted has quires, assignment and project through the internet .e-learner or on-line learner can also get the wide range of information in the sense of learning thorny internet in to access information in the way of pinpointed, exit us, expeditious, access any time, access anywhere, learning without limitations, exploration, experience, engagement easy to use, time saving. In this regards the e-learners can learns through the internet and it can also be use for the following purposes i.e.

- Browsing brochures of academic Organization
- Consulting courseware
- Consulting course materials
- Consulting Instructors manual
- Consulting learning manual
- Consulting course syllabus
- Consulting course assignments
- Consulting course project
- Consulting on-line library
- Consulting Library catalogues
- Browsing electronic journals reports books, videos, CDs etc
- Reading newspaper
- Deciding topics of research of research work
- Participation on news group/bulletin

E-Learning Initiatives in India:- During the year 2003, Indian Government launched an ambitious project of E- learning and E- governance. The aim of this project is to take E-learning to schools in every district across the country. A number of private companies and institutes such as NUT, APTECH, Institute of Management Technology, Ghaziabad, Gurukul Online Learning Solutions started offering E-learning programmes in various disciplines including computer science and information technology. Gyandarshan Educational Channel-A joint venture ofMHRD, Information and Brodcasting Prasar Bharati and 1GNOU launched Gyandarshan on 26th January 2000. It is an exclusive educational TV channel in India, working jointly with SIET, NOS, DST,NCST etc. and at present it transmits educational programs round the clock. EDUSAT a consortium of three universities vi Mumbai University, Madras University and Calcutta University provides education to millions of people at their doorstep. It is the world's first educational satellite in India launched in 20th September 2004. It enables information to be broadcast in local languages and dedicated to distance learning in India.

E-learning through TV:- During the last decade in India has a very fast growth in the e-education

through the Doordarsan and some private television transmission channels are transmit the educational programs for distance learner its taken the key role to provides about the course wise programs through the TV some most important e-learning institutes like Zed education, NCERT and 1GNOU in providing Cable TV education on the television for the distance education institute.

E-learning through Radio:- Radio broadest the educational program for the e-learning or distant Lerner like Akas wani has provides the broadcasting the educational program for e-learning or distant Lerner science the last decade in India. Some private radio station also involves in the broadcasting the educational program for full time that's why in the field of e-learning program makes the tremendous and very fast growth in the e-education through the radio broadcast the educational programs for distance leaner its taken the key role to provides information about the course wise programs through the radio some most important e-learning institutes like Zed education, NCERT and 1GNOU is providing the programs for the distance learner and e-learner.

Virtual e-learning education:- Virtual education system in possible due to the network and Internet in provides faculties for sharing if information e-learning institutes and e-learners. Open universities and correspondence courses can made a network for e-learning and on-line educational institute through the computer network. Present open universities have adopted the following communication mode use for providing the course material, teaching and of training.

Networks of study Centers- open universities have provide study material through the study centers.

Computer Networks- open universities have provided study material as data base on Internet through the website.

Digital e-learning education: The mode of digital education is an electronic database, e-book, e-journals and some other e-resource, which is available in the form of CD Rom, floppy, pen drive, magnetic tape, DVD, or through email, file transfer etc.

Distance learning

E-learning tools:- E-Learning tools are very important for e-learner it's referred by the e-learning as library and lab. Internet has available so many e-learning tools, which support the e learning for on-line education i.e. courseware designs. Instructors manual, learning manual and assignments, projects, syllabus, course ware other then this on-line education has huge numbers of tools are available which support the on-line learning i.e. on-line library, on-line search and on-line training. Internet also a big tool for a learning, its provides services - E-mail/hot mail/telnet, FTP, Video Conferencing, file transfer, web search, and bulletin board in as electronic message system for distance learner.

E-Learning Web site:- The basic objective of www of is to browse the information across, internet hypermedia technology can also provides facilities to the remote login e-learning to browsing and access information across from the globally. This technology is also used in the on-line education. Internet has a so many e-learning web site available for distance education it can provides the online information to their learners, so many e-learning can get their professional qualification through the e-learning institutes e-learning institutes web page working as a public relation tool. To provides a venue for one-way communication. The e-learning institutes web page dedicated to give the facilities to the e-learning to they can get whole range of e-learning information resources and services through the internet such as online recourses are available in the e-learning institutes and their libraries etc. It means it is extremely helpful for the distance user or remote user to know about different type of on-line resources of e-learning institutes and its activities through the internet.

E-learning web page:- Web page designed for display the detail and different type of information through the pull-down menus, dialog boxes, graphical menus, related web links and icons. Most of the e-learning institutes web page in provide the resource search facility to the learning in his or her own particular fields and reference. It is willing to give answer of and query of the registered e-learning and they en have give the whole range to information about the e learning. Some most popular e-learning web page is as fallows On-line E-learning resource: Internet communication technology provides the facilities to e-learning sharing and Access information. Electronic resources are transmitted data in the internet at our fingertips on more then a few clicks. On-line

search on Internet is active is started since last few years ago. But it has changed the face of information and retrieval all over the world. The World Wide Web has change the way of life. On-line resources are very useful and effective tool for resource sharing, access and Searching information across the world though the Internet searches engines or web search. Engines. E- Library/ Virtual Library: Library beyond the library walls its open for all and information access across the global through the www.Librarian those provide information or facilitate the access information on Internet its makes the virtual thing system. In modern concept the following library system are developed on computer

• **Electronic Library:** An electronic library is one which has its collection in electronic forms such as hard disc, optical media like CD-ROMs, DVDs and Microforms etc.

• **Digital Library:** The term digitization refers to the conversion of printed materials in to an electronic form. Digitization solved the traditional library problems such as conservation, preservation, storage and space.

• **Virtual Library:** A virtual library is a library without walls, spread across the globe from where on is able to retrieve the whole world information through a properly networked workstation. Virtual library is providing facilities such as search library catalogue Information search, bibliographic search etc. Library can also provide the electronic deliveries of require information through the electronic mail File transfer, Video conferencing and delivered the photocopy of the required document to the distance Learner.

E-libraries provides the following facilities to distance learner

- On-line resource search
- On-line inter library lone
- On-line library network link
- On-line Union catalogue
- On-line journals g.
- On-line Library Services
- On-line library Database
- On-line Library resource I
- On-line CAS/SD

E-book Internet has so many e-book available for on line search download the free of cost of wide range of e-books like.

- www.ebookcornpiler.com
- www.planetebook.com
- www.free-ebooks.com
- www.promo.net/pg/
- www.nightkichen.com
- www.ebookland.com
- www.ebookpeanutpress.com
- www.pyramidsofmars.com
- www.memoware.com

On-line Storage: An on-line storage service is a very important tool for e-learner to storing of useful document and file etc. It considerably saves the files at a secure place and down loading them later on the different location. On-line storage services provide the facility to Learner to use enough free storage space, file sharing and storing the data for later use across all over the world through the computing device. Learner also determined the performance of the sites in delivering fast access to the data storage, providing the facilities to the user downloading and uploading of document

Education web sites: Educational web sites provide information about course, admission procedure, examination dates, and distance learner of distance learning. The Universities also provide their results, detailed Information about the educational Institutes, its course, faculty, admission guidelines, fees. Hostile, Prospectus & Library catalogues etc through its web sites. Which provides its educational program its web sites? Some Important educational institutional and on-line education system already provided its educational programs through the Internet.

Some Important educational institutional web sites

- www.acelearner.com
- www.aptechomlievarsity.com
- www.blackbord.com
- www.educationbangalove.com
- www.egurucool.com
- www.iitpt.com
- www.lifelonglearning.com
- www.netvarsity.com
- www.zeelearn.com
- www.ivlu.com

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ADOPTION OF ICT IN DEVELOPMENT OF TEACHING PROFESSION

ABSTRACT

Improvement of teaching and learning by using Information and communication technologies has been started by Government. Government provides ICT infrastructure, equipments and professional development to improve education but the ICT adoption and integration in teaching and learning is not getting well response from the Teachers.The present paper will provide a review of personal, institutional and technological aspects that are going favor and prevent Teachers interest in using ICTs in teaching and learning methodology. There are some obstacles in improvement of teachers these can be lack of ICT skills, teacher confidence, Pedagogical training of teachers, availability of suitable software, and availability of access to ICT, traditional education system and curriculum. By knowing the degree to which these obstacles resist and offer the changes to individuals, institutions can resolve the problem.

Keywords: ICT, Teacher's view, Classroom, Institution.

INTRODUCTION

Innovation and change are not new, of course. Good educational leaders are constantly innovating as they strive to improve teaching and learning to obtain the best educational outcomes for students. Nor is the study of innovation and change in educational contexts new, and consequently there is a rich store of studies to draw upon for guidance. The rapid growth in Information Communication and Technologies (ICT) have brought remarkablechanges in the twenty-first century, as well as affected the demands of modern societies. ICT isbecoming increasingly important in our daily lives and in our educational system. Therefore, thereis a growing demand on educational institutions to use ICT to teach the skills and knowledgestudents need for the 21st century. Realizing the effect of ICT on the workplace and everyday life,today's educational institutions try to restructure their educational curricula and classroomfacility, in order to extend across the existing ICT gap in teaching and learning. In the improvement and development of teaching and learning process the restructurers would require acquiring an effective ICT having knowledge specific subject curriculum to the previously present dominant environment. This will also contribute to the enhancement of professional development of teachers. Government'sinvestment in ICT has helped in acquiring and using ICTs in teaching and learning.The educational authority investing much in ICTs implementation, but then also it has been observed that not much increment has been seen as compared to the commercial development. Several surveys carried out by many teachers to inquire about which obstacle are preventing the teachers to implement the use of ICTs and which are favoring them for the same.

PARAMETERS INFLUENCING TEACHERS' ADOPTION AND INTEGRATION OF ICT

Before the review of aspects influencing the adoption and integration of the use of ICT byteachers, the concepts of adoption and integration are described. Rangaswamy& Gupta, (2000)describes adoption as the decisions that individuals make each time that they consider taking up an innovation. Similarly, Rogers (2003) defines adoption as the decision of an individual to makeuse of an innovation as the best course of action available. Rogers (2003) argues that theprocess of adoption starts with initial hearing

about an innovation to final adoption.The two important elements ofteaching and learning which are content and pedagogy must be joined when ICT is usedin lesson. If students are offered series of websites or ICT tools (e.g. CD ROMs,multimedia, etc) then the teacher is not integrating ICT into teaching since he/she is not facing the pedagogical issues. Similarly, Williams (2003) described ICT integration as the means ofusing any ICT tool (Internet, e-learning technologies, CD ROMs, etc) to assist teaching andlearning.

Personal Characteristics

Personal characteristics such as educational level, age, gender, educational experience,experience with the computer for educational purpose and attitude towards computers caninfluence the adoption of anICT. Teachers are ready to adopt andintegrate ICT into teaching and learning activities, but teachers' preparedness to integrate ICTinto teaching determines the effectiveness of the ICT and not by its existence in theclass room. The attitudes of teachers towards ICT greatly influence theiradoption and integration of computers into their teaching. According to (Russell & Bradley, 1997),anxiety, lack of confidence and competence and fear often implies ICT takes a back seat toconventional learning mechanisms. Therefore, an understanding of personal characteristics thatinfluence teachers' adoption and integration of ICT into teaching is relevant.Teachers' attitudes to successfully initiate and implement educational ICT in school's program dependstrongly on the teachers' support and attitudes. It is believed that if teachers perceived ICTprograms as neither fulfilling their needs nor their students' needs, it is likely that they will notintegrate the ICT into their teaching and learning. Among the aspects that influencesuccessful integration of ICT into teaching are teachers' attitudes and beliefs towards ICTKeengwe and Onchwari, (2008). If teachers' attitudes are positive towardthe use of educational ICT then they can easily provide useful insight about the adoptionand integration of ICT into teaching and learning processes. Research has shown that teachers' attitudes towards ICT influence their acceptance of the usefulness of ICT and its integration into teaching.

Computer self-efficacy

Research has been conducted on teacher's self-efficacy and reported to have greater effect on their use of ICT. Self-efficacy is defined as a belief in one's own abilities to perform an action oractivity necessary to achieve a goal. More correctly, self-efficacy is theconfidence that individual has in his ability to do the things that he strives to do. Thusteachers' confidence refers both to the teacher's success on using ICT foreducational purposes and on how far the teacher perceives success as being under his control.

Teaching Experience

Though some research reported that teachers experience in teaching did not influence their useof ICT in teaching, most research showed thatteaching experience influence the successful use of ICT in classrooms (Wong & Li, 2008;Giordano, 2007; Hernandez-Ramos, 2005). Gorder (2008) reported that teacher experience is aspect influencing teacher's adoption and integration of ICT significantly correlated with the actual use of ICT. In her study, she revealed that effectiveuse of computer was related to technological comfort levels and the liberty to shape instruction toteacher-perceived student needs.

Institutional characteristics

Institutional aspects help to improve teachers existing attributes. According to Vannatta&Fordham (2004), teachers time committed to teaching and amount of ICT training arereliable aspects of ICT use in classroom. Therefore, an understanding ofinstitutional characteristics that influence teacher's adoption and integration of ICT into teaching isrelevant.

Professional development

Teachers' professional development is a key factor to successful integration of ICTinto classroom teaching. Teachers may adopt and integrate ICT into their teaching when training Programs concentrate on subject matter, values and the ICT.Teachers' understanding of contentknowledge and how to apply ICT to support students' learning and attainment are joinedto their increase in knowledge level, confidence and attitudes towards ICT. Educators whointegrate ICT with new teaching practices gained through professional

training cantransform the performance of the students.

Accessibility

Access to ICT infrastructure and resources in schools is a necessary condition to the integrationof ICT in education, Effective adoption and integration ofICT into teaching in schools depends mainly on the availability and accessibility of ICT resourcessuch as hardware, software, etc. Obviously, if teachers cannot access ICT resources, then theywill not use them. Therefore, access to computers, updated software and hardware are keyelements to successful adoption and integration of ICT. Inadequate computers were not great barriers to ICT use intheir teaching, but improved availability and fairness of access to ICT resources byteachers, students and administrative staff is essential.

Technical support

Jones (2004) reported that the breakdown of a computer causes interruptions and if there is lackof technical assistance, then it is likely that the regular repairs of the computer will not be carriedout resulting in teachers not using computers in teaching. The effect is that teachers will bediscouraged from using computers because of fear of equipment failure since no one would givethem technical support in case there is technical problem. Becta (2004) agreed that "if there is alack of technical support available in a school, then it is likely that technical maintenance will notbe carried out regularly, resulting in a higher risk of technical breakdowns.ICT support in schools influence teachers to apply ICT in classrooms without wastingtime troubleshooting hardware and software problems.

Technological Characteristics

ICT characteristics influence the diffusion processes of an innovation and are significantAspects impacting an innovation adoption. Evidence suggests that innovation attributes: relativeadvantage, compatibility, complexity, trial ability and observability as perceived by individualsinfluence the rate of adoption.

CONCLUSION

The rise of technologies has complicated its adoption and integration by teachers in classroom.The key factor in the studies isteachers' attitudes toward ICT or intentions to use ICT in their classrooms. Ifteachers have negative attitudes toward ICT, providing them with excellent ICT facilitiesmay not influence them to use it in their teaching. Therefore, teachers need to be assured that ICT can make their teaching interesting, easier, more fun for them and students, moremotivating and more enjoyable.Finally, aspects (barriers) that discourage the use of ICT by teachers were also reviewed. Theseaspects categorized are into teacher-level, school-level and system-level barriers. Teacher-levelbarriers include lack of teacher ICT skills; lack of teacher confidence; lack of pedagogical teachertraining; lack of follow-up of new and lack of differentiated training programmers. So these are some obstacles in improvement of teachers,lack of ICT skills, teacher confidence, Pedagogical training of teachers, availability of suitable software, and availability of access to ICT, traditional education system and curriculum. By knowing the degree to which these obstacles resist and offer the changes to individuals, institutions can resolve the problem.

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NEED OF E-LITERACY IN ELECTRONIC ERA

ABSTRACT

The present paper highlights the importance of Information Literacy programme in this world of electronic era. Because of a large production of electronic reading materials there is an explosion of electronic information. All important elements of higher education including students, teachers & researchers are always in need of right information at the right time in their respective fields. They are confused about how to utilize e-resources for their purposes. In such circumstances information literacy programme can be proved to be a great boon for them. Information literacy programme enlightens the users. An attempt has been made to elaborate the meaning of information literacy, its relation to e-resources, meaning, importance and use of e-resources, need of information literacy programme, crucial things and methods of running of this programme as well as the advantages of it.

Keywords: Information Literacy, E- Resources, electronic Information.

INTRODUCTION

21st century is not only the age of information but also the age of application of information. In this age of Information Technology because of a large of electronic reading materials there is an explosion of electronic information. In such circumstances the librarian should adopt the responsibility to make available the electronic means & information to his readers by running successfully information literacy programme for them.

Students, teachers & researchers need update information in their respective fields. How to use E- Resources is a big problem for them. In order to search desired information available in the form of electronics, i.e. E-Journals, E-Books, CD-Rom Data Base a lot of time is wasted. A lot of information can be collected on Internet after pressing different kinds of key-words. Obviously a valuable time is spent to get specific information. To save this time information literacy programme is must. Through this user can be driven to his desired information in minimum time by skillfully operating E-Resources & web sites. Librarian should provide the knowledge to the users though information literacy programme how to travel from valuable information to specific knowledge.

DEFINITIONAL ANALYSIS

Information:

Information is a Symbol or set of symbols which has the potential for meaning.

Information literacy

Information Literacy means to know one's information needs, to fulfill them, to select proper means, to search the desired information, analyze the information and the skill to use the electronic information.

Information literacy is the set of skills needed to find, retrieve, analyzed and use of information.

Information Literacy & e-resources

Information literacy is related to information technology skills, but has broader implications for the individual, the educational system, and for society. Information technology skills enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals. Information literacy literates individuals and necessarily develops some technological skills in them.

E-resources:

Any electronic product that delivers a collections of data, it may be text referring to full text databases, electronic journals, image collections and others multimedia collections. These may be delivered on CD-ROM on tape via the Internet, www and on a high speed multimedia personal computer that has more power than the early main frame computers. The University of Glasgow defines the term" E be called on E-Resources".- Resources as any resources that are available over the internet.

WHY ELECTRONIC RESOURCES?

This is the age of globalization, industrialization and liberalization. The world has become a global village. Anyone can access information by sitting in the corner of his house through internet. Books in the libraries are now available in digital form. In this era the libraries are undergoing through changes. The libraries are providing information through electronic sources. In the same way the books are also published in the digital form. Scholars and writers publish their research articles and books on internet. The users also prefer electronic books instead of hard copies.

WHO NEED INFORMATION LITRACY?

The concept of Information Literacy may seem too broad and overwhelming. Why should students learn all this? In order to get proper guidance to pursue their research, they want to remove the obstacles which are caused by lack of understanding about the research process. We only want to introduce students to those skills which will allow them to succeed in their future chosen paths.

This is essential not only for college students but also for all of us, in our personal life as professionals. Being information literate ultimately improves our quality of life as we make informed decisions when buying a house, choosing a school, hiring staff, making an investment, voting for our representatives, and so much more. Information Literacy is, in fact, the basis of a sound democracy.

WHY IS INFORMATION LITERACY IN ELECTRONIC ERA

Information literacy is the solution to Data Smog. It allows us to cope by giving us the skills to know when we need information and where to locate it effectively and efficiently. It includes the technological skills needed to use the modern library as a gateway to information. It enables us to analyze and evaluate the information we find, thus giving us confidence in using that information to make a decision or to

1. **NEED OF INFORMATION LITRACY**

- Because of explosion of E-resources.
- Use of new E-resources in Library.
- Various methods of using E-Resources.
- Ignorance of readers about E-Resources.
- Use in new research in minimum time.

2. **COMPONANTS OF INFORMATION LITRACY PROGRAMME**

While running Information Literacy Program in conventional / traditional library it is expected from the librarian that he would provide the information about the library facilities, how to use reference book in study, how to extract /collect other information from them what does reference book mean? How to visit different sections of library & provide information? Now a drastic change has been occurred in the nature of a library, i.e. E-Resources are being used abundantly in a library. Therefore, Dr. S.R. Rangnathan have suggested the five laws which nature is changed in the following manner.

- Every E-Resource should be usable.
- Opportunity should be given to every reader to use every E-Resource.
- Every E-Resource should have users.
- Time should be saved by using every E-Resource.
- E-Resources as well as means of operating them must be increased in a library.

In this era of library science a powerful change must have been occurred. For this purpose the following components can be involved in information Literacy programme.

- To provide information of E-Resources available in Library.
- To help how to use E-Resources & seek information from it.
- To provide knowledge about website, search engine on Internet.
- To increase to use of E-Resources by providing computer based training through computer literacy programme.

ADVANTAGES OF INFORMATION LITRACY PROGRAMME

- Skill of identifying one's information need & how to achieve it effectively will be developed.
- In higher education Quality in research will be achieved, time will be saved by using E-Resources.
- Information will be provided about E-Resources available in Library & its uses.
- E-Resources, i.e. E-Books, E-Journals on internet.
- Information of E-will is easily available.

CONCLUSION

In this era of Information and technology everyone should be literate about the use E-Resources for desired & specific information. He should literate the reader about E-Resource. Use of E-Resource should be abundantly increased by the users. Today Libraries are equipped with modern technology. Any information is mode available in no time on internet. Running Information Literacy Programmer successfully means enlightening the readers about E-Resources. So that every reader will get knowledge about search of information of use & analysis, furthermore, readers will effectively use E-Resources & will enhance quality of research. In this world of globalization when efforts are done to enhance the quality of higher education it would be a little effort by the librarian to do the same. We should keep pace with the changing world otherwise we will be thrown away from this world of competition.

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E-LEARNING IN HIGHER EDUCATIONSYSTEM : SOME MAJOR ISSUES

ABSTRACT

The Internet has developed into a tool that is pivotal in world communications. The convenience offered by the Internet and other Information and Communication Technology (ICT) has accelerated the emergence of an information society and knowledge economy. ICT advancements and the impending knowledge society have impacted on theeducational environment through the implementation of electronic learning (e-learning) systems. E-learning provides students with an anytime/any place independent learning environment. This has altered, and will continue to affect, teaching and learning contexts in educational institutions across the world.

Introduction:

In today's rapidly changing electronic world (e-world) the key to maintaining theappropriate impetus and momentum in organizational and academic environmentsis knowledge. In this situation continuous,convenient and economical access to training and qualifications assumes thehighest priority for the ambitious individual or organization. This requirement can be met by e-learning, one of the fastest growing areasin the high technology sector. Numerous names are used to denote learningactivities supported by the Internet and other ICTs. These include Web-based learning, online learning, Asynchronous Learning Networks and Blended learning.

Meaning:

Broadly speaking, e-learning is a network technology-based mode of educationthat uses a mix of computer and other ICTs, across time and place constraints todeliver instruction and provide access to information resources. It can involve delivery systems such as videotape, interactiveaudio-video, CD-ROMs, DVDs, video-conferencing, e-mail, live chat, useof the Web, television and satellite broadcasts. Access to these resources means students can do coursework at a time of their convenience, so learning may happen synchronously or asynchronously.Blendedlearning involves a combination of traditional face-to-face and online technology-based learning.

Characteristics of E-Learning:

E-learning makes information and knowledge accessible to those who need it, when they need it—anytime, anywhere. To put it in amore pedagogical frame, e-learning has the following characteristics:

i) **Remote Learner-Teacher:** In the e-learning environment, the learner and the teacher need not to travel to a common physical location for the purpose of education. They can be away from each other, yet achieving the goal of education through technological means.

ii) **Learner Centered:** E-learning can be personalized to the learner, or as it is called customized to the needs of the learner. Unlike the classroom-based learning the e-learner can choose his/her learning module.

iii) **Course Material:** The teacher (aptly called as facilitator) and or his institution prepares course material. This includes curriculum, courseware, assignments, glossaries, citations to other online and offline resources, quiz, lecture presentations, examination questions, etc.The course material is made available in the electronic format; most of the time online. The course

material is made interactive by inbuilt exercises, simulationsetc. It is made more understandable by the use of animation.

iv) **Multimedia Nature:** The course material being in electronic format can be in textual, audio or video format. A typical course material can combine all these features.

v) **E-communication:** All notices, announcements regarding admission, submission, examination, results, etc.are sent through Internet/are made available on websites. As the administrative work is carried out online it becomes fast and accurate.

vi) **Use of Internet:** Counseling/educational instructions are provided interactively through Internet-based services such as, blogs, chat-rooms, peer and expert discussion groups, e-mails, etc. The online courses also provide links to useful resources on the Internet and Intranet. Internet empowers both the learner as well as the instructor.

vii) **Anywhere Learning:** E-learning provides remote access to learning facilities through the ICT. As such the e-learnercan learn from the place of his convenience, even from home, office, while travelling, or literally from anywhere. In the globalised world the work style is changing. People are expected to work from anywhere and anytime. The e-learning suits to this philosophy.

viii) **Anytime Learning:** The time is not a constraint to the e-learner, one can learn anytime that suits his schedule. It is truly 24x7 learning system.

ix) **Just-in-Time:** The c-learning (classroom learning)adopts the philosophy of just-in-case. So what is taught and studied in c-learning is on the thinking that such and such knowledge, skill may be needed in future. On the contrary the e-learning is arranged to develop skills, which are needed at the particular time.

x) **Multiple Collaborations:** In e-learning there emerge multiple collaboration, i.e., teacher-student; student-student, as well as teacher-teacher. Multiple collaborations also include collaboration between the content development experts and the technology people.

xi) **Learner's Active Participation**-learning is impossible without active participation from the learner. If the learner does not respond to the initiatives of the teacher the learning purpose remains unattained.

xii) **Facilitates Lifelong Learning:** Being self-paced, e-learningcandevelop skills in the e-learner which can be useful to him for lifelong learning.

Major Issues:

Though there are various benefits in e-learning as described earlier yet there are number of barriers in implementing e-learning. Some of major issues relating to e-learning which need immediate attention are:

i) **Issues Related to Teachers:**

In online environment, a teacher has to be an administrator as well as instructor. Basically, a teacher has to have four main skills of an administrator, facilitator, technical supporter, and evaluator. They should have administrative skills to ensure that theprogrammeruns smoothly. General feeling among teachers is that for implementing e-learning programmesthey have to work in addition to the routine work of traditional teaching. Sothey need to be supported and facilitated in terms ofresources to ensure that e-learning courses aredeveloped appropriately and needs of the students areoptimally met. They should get help and support throughthe transition period before e-learning courses becomecommonplace. It takes more time on the part of facultymembers to develop content and provide online versions of content therefore; teachers should be given incentives and appreciations from accreditation agency for engaging in e-learning applications. Professional development of teachers is a prerequisite for any e-learning programme to be sustained over a period of time. The teachers should be offered training at regular intervals so that they are well versed with latest technologies and protocols and are ever prepared to embrace

and implement e-learning in their teaching work unhesitatingly. The administrators and faculty members have an indifferent attitude towards introducing innovations in education. They feel they will not be rewarded for the additional work and efforts which they take. The university authorities and accreditation bodies should give some recognition or incentive to those who initiate ICT-enabled teaching and learning procedures.

ii) Issues Related to Institutions:

Institutions often have to cope with shrinking budgets and weak infrastructure to engage in any sort of innovations with regard to teaching and learning. Complaints about quality assurance has acquired lot of importance in higher education sector. The national bodies like NAAC and NBA (of AICTE), which provide guidelines for development and maintenance of quality assurance and procedure should also develop and set benchmarks for e-learning programmes. The accreditation bodies should clearly cover areas such as course structure, development, student support service, teaching and learning, and assessment and evaluation. Presently, the online degrees have the less credibility and recognition in the society and the market. More concerted efforts should be taken for wider recognition from accreditation bodies of the country, which in turn would help to gain more learner interest ine-learningprogrammes.

iii) Issues Related to Students:

It should be widely communicated among the student community and that e-learningprogrammes are at par with the traditional ones. This will certainly encourage the students to go for online courses.

Generally the institutions, universities complain of paucity of funds and dwindling of budget, which prevent them from implementing e-learning programmes. To overcome this problem, some policy needs to be laid down and a certain percentage of university budget should be earmarked for piloting and implementing e-learningprogrammes. The students are also found not to be techno savvy so they avoid taking e-learning courses.

Those students who are comfortable with e-technologies and spent hours in chatting and surfing also have a negative mindset in applying the same for the purpose of education and training. The students need to have skills of critical thinking, research and evaluation as there is abundance of information in electronic environment. Students are highly independent and need to be immensely motivated to learn. The e-learners perform as well as the learners in the conventional system; but there is higher incidence of drop outs. The learning outcomes are affected by e-learning system quality, e-learning readiness, and e-learners' competencies. Efforts should be taken to improve up one-learners' online learning skills of self direction, met cognition, and collaboration. The e-learners should also get adequate learner support system to succeed. They may not know how to participate in discussion forums, bulletin boards, make use of blogs, wikis, podcasts andvodcasts and so on so forth; they doubt if they will get teachers' support. For this, training sessions, user awareness and orientation programmes should beorganised before e-learning courses are launched. Students may take time to get accustomed to the newe-learning environment. They should be told how to access and use courseware and other electronic resources; pop-up boxes in the courseware can be incorporated in order to provide advice and guidance to the learners.

Conclusion:

ICT will control the entire world in twenty first century. We have to include the technology in our teaching learning process at large scale according to the changing environment to reach the learner .Government of India has taken initiatives in this regard like Swayamprabha DTH channel, Digital India Programmes, SWAYAM Portal, NPTEL etc. Whatever initiatives taken by government may be, it is the individual

contribution supported by management and teachers concerned makes it successful and useful.

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AN EFFECTIVE USE OF ICT IN CHEMISTRY EDUCATION

ABSTRACT

Information and communication technologies (ICT) have become very common entities in all aspects of life. Across the last fifteen years the ICT has tremendously changed the methods of nearly all the field. Education is a socially oriented activity and the quality of education is improved by including ICT in this field. The role of ICT in education is becoming more and more important and it will continue to grow in next years. In this paper, a literature review regarding the use of ICT in Chemistry education was provided. Chemistry is very wide branch of science and to collect the knowledge of it and to learn chemistry in very easy way ICT plays very important role. To learn stereochemistry, spectroscopy, practical, instrumentation and in research field ICT helps lot.

Keywords: *ICT, Chemistry, Stereochemistry, Spectroscopy, Research.*

INTODUCTION:

What is ICT?

ICT is an electronic means of capturing, processing, storing, communicating information. ICTs are generally not considered central to the teaching, learning and evaluation process. However, there appears to be a mismatch between methods used to measure effects and the type of earning promoted. The use of ICT in the classroom teaching-learning and evaluation is very important. It provides opportunities for teachers and students to operate, store, manipulate, and retrieve information, encourage independent and active learning, and self-responsibility for earning such as distance learning, motivate teachers and students to continue using learning outside college hours, plan and prepare lessons and design materials such as course content delivery and facilitate sharing of resources, expertise and advice (1).

The rapid advances recently made in ICT, particularly in the Internet, have very important implications for us, as chemical educators. As we begin the 21st century it is almost impossible to imagine what ICT will be like by the end of the century. We can already start to see how these advances are changing our ideas about traditional education, distance education, just-in-time learning and the importance of life-long learning. Advances in ICT will mean an enormous increase in the amount of information available to our students as they study their courses and as they move into the workplace, but this must not be the limit of our expectations. If we wish to provide our students with a quality education in chemistry, we must consider more than mere transmission of information and facts. We must take account of what the educational research tells us about learning; namely that students learn best by: building on pre-existing knowledge; active learning; learning with understanding; and adopting a metacognitive approach Unfortunately the widespread uptake of educational research is much slower than that of technology(2).

The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound

impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved academic achievement of students(3).

The Effectiveness of ICTs in Education

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

• ***Anytime, anywhere***. One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning)

• ***ICTs help prepare individuals for the workplace.***

One of the most commonly cited reasons for using ICTs in the classroom has been to better prepare the current generation of students for a workplace where ICTs, particularly computers, the Internet and related technologies, are becoming more and more ubiquitous. Technological literacy, or the ability to use ICTs effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalizing job market.

• ***Access to remote learning resources***. Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons, mentors, experts, researchers, professionals, business leaders, and peers—all over the world(4).

ICT IN CHEMISTRY

Chemistry is an incredibly fascinating field of study. In simplest terms, **Chemistry is the science of matter and the changes that take place with the matter**. Chemist is people who can transform the matter into amazing things. Chemistry is often referred to as the central science because it joins together Physics and mathematics, biology and medicine and the earth and environmental sciences. Chemistry is the most productive of all the sciences. It has been growing much faster than for instance the world population during the past 100 years. The most fascinating aspect of chemistry is that chemists not only describe and explain our world as it is but are also changing and extending this world through producing or making new chemical substances i.e. matter(5).

1. ICT IN CHEMISTRY EDUCATION

In chemistry education, ICT can provide solutions to many of the problems afflicting chemistry educationand thus help enhance the quality of chemistry education in our country. For example, the regular and more frequent revision of chemistry syllabi is a very big challenge in the university system. The process is very cumbersome and time consuming as it requires going through various statutory bodies besides soliciting the opinion of various subject experts. ICT can be of great help in thisregard. Through emails, discussion forums, video conferencing etc. experts across the country in the specialized field of chemistry can work in a collaborative manner towards regular up gradation and improvementinsyllabi.

ICT indeed can also play a pivotal role in enhancing the quality of chemistry teaching-

learninginthecountry.Traditional classroom teaching, as we all know, is basically a talk-and-chalk method. Howsoever bright a teacher may be, this method of teaching does have certain limitationsinthesensethatmanycomplex concepts cannot be well explained just on the board and one does feel that had there been some technological aids, teaching and learning could have been moreeffective. ICT can help in overcoming these limitations by supplementing the present conventional mode of teaching-learning with e-learning. To introduce e-learning in chemistry one needs to develop high quality multi-media enriched e-content in chemistry. This content could be in the form of e-Lessons, e-Quizzes, e-Labs and e-Lectures. While e-Lessons provide quality content with multi-media enriched value.

The concept of e Lectures or live lectures enables the best faculty members to reach out to students across the country, thereby not only connecting classrooms but also giving students quality learning material. Multi-media enrichment of e- learning material helps communicate difficult concepts in simpler ways and thus, offers unique advantages in the field of chemistry education. For instance, text alone does not allow learners to visualize the 3D organic molecules to understand their reactions andmechanisms.Software's for drawing and visualizing 3D chemistry structures, plotting graphs, predicting NMR/UV/IR, interactive periodic table, animations and simulations can enable teachers to provide a way by which learners can understand chemistry in an exciting manner.Use of e-labs and virtual labs in chemistry can make the teaching-learning more greener as it can reduce the use of chemicals. Through e-labs, pre-lab study and revision of experiment can be done by students on screen rather than performing the experiment again and again in the lab.

2) ICT IN CHEMISTRY RESEARCH

The exponential growth of chemistry knowledge poses a very serious challenge for researchers in chemistry. A researcher needs to do literature survey of his research field and this task is becoming more and more difficult in view of the fast growing knowledge. There are at present more than 8000 chemistry journals in the world and manually going through even someof them is a very tedious job. ICT has a solution for this challenge in the form of electronic databases. The printed chemistry journals are now slowly losing their significance as primary source of information and their place is now gradually being taken by searchable electronic databases. These are becoming the real source of information in the 21stcentury and are going to be extremely useful for researchers.Using the search functions of theseDatabases just by a click of the mouse one can get the relevant information on the screen(5).

Conclusion:

ICT plays a vital role in our daily life it solves the different problems of daily life. The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can foster better teaching and improved academic achievement.

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ROLE OF ICT TOOLS IN CLASSROOMS AND ITS IMPORTANCE FOR TEACHING, LEARNING AND EVALUATION

ABSTRACT

ICT tools like computers, laptops, desktops, data projector, software programs, printers, digital library, scanners and interactive teaching box are now a day's used in classrooms, these ICT tools can improve the learning process in several ways. ICT tools can increase the student's interest and engagement because of their effectiveness. The world of technology is advancing very rapidly. Technology is continuously changing. The initial reaction to change is resistance. Resistance makes for slow change led to progress. Learners must have the ability to adapt to changes.

Keywords: *computers; laptops; data projector; digital library*

Introduction:

One will need ICT tools and skills to become a true Open University learner. Students can use laptops, computers so that they can communicate with tutor and also with the other students. They can acquire the knowledge that they require for their studies [1-4].

Research methodology:

In the classroom different types of technology can be used such as electronic whiteboards, flipped learning, desktops and laptops, projectors, television, computer networking. The electronic whiteboards are of immense importance for group teaching. The electronic whiteboards can be used in the way that, the teacher can project a diagram from a laptop onto the board and can draw on to it so that the students can grasp it fast [5].

Flipped learning is important modern day technology that we are using in the classrooms. In the flipped learning students can use their computers or mobiles to watch lectures hosted on school servers before the classroom sessions. Later they make discussions in the classroom on the videos. Digital library is a collection of textual, numeric, graphic, audio, video data stored in digital form, indexed and logically linked for ease of retrieval. The various components of digital library are textual data, numeric data, graphic data, photographs, audio, video data and the digital library provides us safe storage and multiple access of material. The digital library help us to access knowledge, information from anywhere in the world. The ICT tools offer economies of scale that is moreover, access to very large amount of information can be obtained at low incremental cost per student. It offers mass customization by providing improved convenience for both students and faculty on 'any time' and 'any place' basis. Not only that it also proves facility in which learners can exchange their ideas and views and get clarification from experts /resource persons. Internet tool is most widely known tool of ICT. In the past libraries held the keys to research and knowledge in the future net worked desktop will allow much of the same access when and where the user desires it. It eases the time limits and space for educational activities [6].

Importance:

Any technology which increases the rate of learning would enable the teacher to teach less and the learner to learn more. Different ICT tools aid of in the understanding of difficult concepts and processes. ICT tools aids in collaboration and group work. When we use technology into lessons, students are expected to get more interested in the lessons that they are studying. As the interest of the students increase we can expect improved knowledge retention [7].

Conclusion:

ICT tools like computers, laptops, desktops, digital library help to improve interactive learning experience. These ICT tools not just stimulate but also motivate learners for learning.

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IMPORTANCE OF ICT IN EDUCATION

ABSTRACT

This paper attempts to highlight the importance of ICT and its mandatory need for education, which is indispensable. ICT that is INFORMATION & COMMUNICATION TECHNOLOGY includes computers, the Internet, Broadcasting technologies (radio and television), Telephony. Policy-makers, educationists, non-governmental organizations, academics, and ordinary citizens are increasingly worried with the need to make their societies competitive in the evolving information economy. Globalization and innovations in science and technology have led to an increased use of ICTs in all sectors. Uses of ICTs in education are extensive and are constantly growing worldwide. ICTs can empower teachers and learners, making significant contributions to learning and achievement.

Keywords: ICT, education, learning, technology, educational tools, advantages

Introduction

To precisely understand the importance of ICT in Education there is need to actually understand the meaning of ICT. ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. ICT adds value to the processes of learning, and in the organization and management of learning institutions. The Internet is a dynamic force for much development and innovation in school and colleges. Education institutions must be able to benefit from technological developments. To be able to do so, a cadre of professional teachers has to be educated with sound ICT backgrounds, independent of specific computer platforms or software environments. Technological developments lead to changes in work and changes in the organization of educational institutions and required competencies are therefore changing. Gaining in importance are the following competencies: critical thinking, generalist (broad) competencies, ICT competencies enabling expert work, decision-making, handling of dynamic situations, working as a member of a team, and Communicating effectively. In recent years there has been a groundswell of interest in how computers and the Internet can best be harnessed to improve the efficiency and effectiveness of education at all levels. Many institutions now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy. One of the aims of education is to access the best educational facilities necessary to prepare young people to play full roles in modern society and to contribute to a knowledge nation. Young minds are enlightened to accept new ideas, show creativity, develop critical thinking and above all, enable themselves to absorb surrounding information for informed decision-making at any stage of life. In this regard, computer studies or ICT becomes immensely important. There are two very different and distinct aspects of ICT in education: 1. One is teaching ICT itself, and 2. The second is using ICT as an augmented tool to the existing teaching methods which is more important. This second aspect can be extended further by making computers available to student at home for work and play both, so that the digital divided can be bridged and natural disadvantage of underprivileged students can be neutralized. This philosophy behind projects such

as one laptop per student Education sector can be the most effective sector to anticipate and eliminate the negative impact of ICT. Technology (internet) in another side can be the most effective way to increase the student's knowledge. Being aware of the significant role of ICT (internet) in our life, especially in the educational activities, education authorities should be wise enough in implementing the strategies to empower ICT in supporting the teaching and learning process in the classroom. ICT is not just the bloom of the educational activities, but also it will be the secondary option to improve the effective and meaningful educational process.

Purpose of ICT Teaching and Learning

The main purpose of the Strategy for Information and Communication Technology Implementation in Education is to provide the prospects and trends of integrating information and communication technology (ICT) into the general educational activities. There are some unavoidable facts in the modern education; First, the ICT has been developing very rapidly nowadays. Therefore, in order to balance it, the whole educational system should be reformed and ICT should be integrated into educational activities. Second, the influence of ICT, especially internet (open source tool) cannot be ignored in our student's lives. So, the learning activities should be reoriented and reformulated, from the manual source centered to the open source ones. In this case the widely use of internet access has been an unavoidable policy that should be anticipated by schools and college authorities.

Institutions must facilitate the students to do edutainment or educational games. They can also support and facilitate their students to have their own blogs in the internet. In their blogs, the students can create and write something, like an article, poem, news, short stories, features, or they can also express their opinion by an online forum provided in the internet. They are able to share experiences throughout their blogs to others from all over the world. It will be an interesting activity for them. By doing so, young generation will get more and more information and knowledge by browsing in the internet. They can also create innovation in web design that it may be out of the formal curriculum content, but it will be useful for their future. The implementation of ICT in education must be given as priority for having educational reforms. The teachers should be the main motivator and initiator of the ICT implementation at education institutions. The teachers should be aware of the social change in their teaching activities. They should be the agent of change from the classical method into the modern one. They must also be the part of the global change in learning and teaching modification.

Aims and Objectives of ICT Teaching and Learning

The followings are the aim and objectives of ICT implementation in education: 1) To implement the principle of life-long learning / education. 2) To increase a variety of educational services and medium / method. 3) To promote equal opportunities to obtain education and information. 4) To develop a system of collecting and disseminating educational information. 5) To promote technology literacy of all citizens, especially for students. 6) To develop distance education with national contents. 7) To promote the culture of learning at school and college (development of learning skills, expansion of optional education, open source of education, etc.) 8) To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.)

Advantages of ICT in Teaching and Learning

The growing emphasis on the need to show concrete benefits has led to more attempts to evaluate the impact of computers in classrooms. But evaluating ICTs in education is particularly hard, for a number of reasons.

In this era of Knowledge-based society, technical education has assumed an indisputably significant role. The new developments in information technologies have opened-up fresh prospective in teaching and learning. These ICT enabled methods helps the teachers to offer quality e-content; both - education in classroom situation and to a large number of population in a structured, flexible, interactive, blended and open way.

In this information age we will learn about the emerging trends in education, benefits and change in the role of teachers as e-tutors in using ICT for Teaching and Learning. And various issues, challenges, education policies, economic and infrastructural aspects of using ICT in formal Teaching and Learning. We will also learn about

the use of ICT as classroom technology for information presentation through overhead and LCD projector, Television, electronic board etc. And use of ICT for related administrative tasks of TL process such as record keeping, lesson plan development, information presentation and basic information search on Internet. The second important aspect is the way we will integrate ICT indoor learning system. We will identify various learner-centered learning mode such as Individualized, Project type, collaborative, blended and flipped learning, mobile learning, small scale and Large scale learning. The third important aspect is to integrate appropriate pedagogy of ICT into Teaching-Learning Process in various learner-centered learning modes and Identify various state of art technologies that allows easy access to e-contents and e-tutors. The fourth important aspect is to identify the emerging trends in Learning Management System (LMS) platforms for implementation of Small Private Online Courses (SPOCs) and Massive Open Online Courses (MOOCs) in technology enabled learning. The last but not the least important aspect is to address the ethical Issues- intellectual property rights or copyright handling issues, legal, security and other issues related to ICT enabled teaching and learning.

We would use variety of e-Learning components such as video lectures, presentations, self-instructional materials such as e-books, reference materials, research papers etc. We can interact with tutors through discussion forum; raising your doubts and clarifying them.

ICTs are potentially powerful tool for extending educational opportunities, both formal and non-formal, to previously underserved constituencies—scattered and rural populations, groups traditionally excluded from education due to cultural or social reasons such as ethnic minorities, girls and women, persons with disabilities, and the elderly, as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.

Anytime, anywhere. One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning).

Access to remote learning resources. Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at anytime of the day and by an unlimited number of people. This is particularly significant for many schools in developing countries, and even some in developed countries, that have limited and outdated library resources. ICTs also facilitate access to resource persons—mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

One of the most commonly cited reasons for using ICTs in the classroom has been to better prepare the current generation of students for a workplace where ICTs, particularly computers, the Internet and related technologies, are becoming more and more ubiquitous. Technological literacy, or the ability to use ICTs effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalizing job market. Technological literacy includes digital age literacy (consisting of functional literacy, visual literacy, scientific literacy, technological literacy, information literacy, cultural literacy, and global awareness), inventive thinking, higher-order thinking and sound reasoning, effective communication, and high productivity.

The potential of ICTs to promote the acquisition of these skills is tied to its use as a tool for raising educational quality, including promoting the shift to a learner-centred environment.

As a teacher, we can handle enormous data all the time. Data refers to facts, events, activities and transactions which have been recorded. Data is the raw material from which information is produced. Number of boys and girls in our class is a factual

description of your classroom. This is an example of data related to the students in the class. In this sense, data is a description of the world. Information is making meaning from the data. Based on the data, we can conclude if girls are more in number in your class. This conclusion is information. In other words, information is processed data. Most of the decisions taken in and around the world by and large are based on the data and information. Information is the key guiding force of the world today.

For a wider use of the information, the information must be communicated to people. It is only when the information reaches the intended audience, the purpose of creation of information as well as its communication would be served .

CONCLUSION

- ICT is one of the forms of technology that are used to transmit, process, store, create, display, share or exchange information by electronic means..
- ICT has interspersed every walk of our life. From business, banking, entertainment, public service to education. In education, the ICT use has changed the landscape of educational practice. Every aspect of classroom, i.e., teaching, learning, assessment, student data management, library services and so on have become ICT integrated.
- The two major reasons for the extensive use of ICT in educational practices are paradigm shift in favor of constructivism which put more emphasis in interactivity in learning and emergence of ICT with the features of provision to express oneself freely and synchronous interactivity.
- Major reason for such a widespread use of ICT in various sectors, and various educational practices is the speed, accuracy, versatility and cost involved with ICT

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PROFESSIONAL DEVELOPMENT OF TEACHERS THROUGH ICT: SCOPE AND CHALLENGES

ABSTRACT

Teacher is considered to be the architect of the nation. In other words, the future of the nation lies in the hands of teacher. By the latest developments in the information and communication technology the role of teacher in the process of teaching and learning has increased many fold and has become more complex as such teachers are to equip themselves with latest technology then only they coup up the new challenges in the field. Teacher professional development would also include training in the adaptation to the evolution of change of the profession of teachers and managers of education systems. Present paper will acquaint the teachers with ICT platforms like SWAYAM, MOOC, Social Media Network, Web 2.0 Technologies, Online groups, Web Conferencing, Online video channels which will be useful for teachers' professional development. Similarly some of the challenges in using ICT for professional development of teachers have also been discussed.

Key words: *ICT, professional development, scope, challenges*

Introduction

ICT stands for Information and Communication Technology and defined as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. Today, technology has increasingly become a vital element for firms to compete and develop. The world of today is considered as a global village through the use of ICT in different educational, political, economic and social sectors. Almost in all situations or tasks, we find the integration and the use of technology to solve problems.

ICT is considered as one of the pillars upon which quality education for all can indeed it become a reality, because of its unique capacity to bring the world together, even the most remote and disadvantaged of communities (Ndongfack, 2010). The introduction of ICT into schools and in the learning process was driven by global forces which are beyond the school-based decision making (Voogt et al., 2013).

Teacher Professional Development (TPD) is 'a systematized, initial and continuous, coherent and modular process of professional development of educators in accordance with professional competency standards and frameworks'. Teacher professional development would also include training in the adaptation to the evolution of change of the profession of teachers and managers of education systems.

Effective ICT use in education increases teachers' training and professional development needs. However, ICTs can be important tools to help meet such increased needs, by helping to provide access to more and better educational content, aid in routine administrative tasks, provide models and simulations of effective teaching practices, and enable learner support networks, both in face to face and distance learning environments, and in real time or asynchronously. Effective teacher professional development should approximate the classroom environment as much as possible. "Hands-on" instruction on ICT use is necessary where ICTs are deemed to be vital components of the teaching and learning process. In addition, professional development activities should model effective practices and behaviors and

encourage and support collaboration between teachers. On-going professional development at the school level, using available ICT facilities, is seen as a key driver for success, especially when focused on the resources and skills directly relevant to teacher's everyday needs and practices. ICT enriches teaching by enhancing the initial preparation by providing good teaching and training materials, simulators, recording and feedback mechanisms. ICT has removed the barriers of space, time and place between teacher and learner. It has established a healthy and interactive relationship between teachers, schools, institutions, and universities and enabled teachers to expertise rich resources in cyber space.

1. **SWAYAM: An online learning Platforms**

Internet is a host for a large number of learning opportunities. Some of them give learning opportunities by offering complete online courses. The online learning platform may supply the reading materials as well as opportunity to post your learning. The Ministry of Human Resource Development (MHRD), Government of India in collaboration with All India Council for Technical Education (AICTE) has recently started a platform SWAYAM to offer various courses that are useful for teachers as well as students. The teachers are required to complete orientation, refresher and short term courses for their career advancement. The online refresher-training course for teachers in different discipline is available on this platform. The training is conducted in online mode. 75 National Resource Centers in varied disciplines prepared the modules of the refresher courses. Registration for these courses is free. The cost of teacher training has been reduced by the didactic software and intelligent tutoring systems.

You could see a course title "Innovation and Best Practice in Educational Skills", from https://swayam.gov.in/courses.

2. **Massive Open and Online Courses (MOOCs)**

Today a host of platforms is available which offers open and online courses, again many of them are free. The essential feature of MOOC is that it is offered through online learning platforms, to anyone interested in learning, to any number of participants, at a fixed given timeframe in a modular form. Usually, a course in a MOOC would long anywhere between 6 to 16 weeks. The course contents are structured on a weekly basis. The course participants are expected to go through the readings, videos, workshops, activities, assessment exercises to complete a course. The MOOCs are different from the online learning platforms in a sense that in MOOCs, one would be able to enroll into a full-fledged course, consisting of course structure, instructional video, guided interaction, monitored evaluation, grading of the tasks completed etc. In other words, the MOOCs provide a complete learning experience online. An online learning platform, might only provide e-content, assessment tasks which are not graded, and an interaction platform.

There are many MOOC platforms. Some of the free and paid platforms are discussed below.

a. **Coursera:** Coursera is a for-profit, educational technology company that offers MOOCs. Coursera works with top universities and organizations to make some of their courses available online and free, and offers courses in many subjects. This can be accessed at the following link: https://www.coursera.org/. An example of a course in Coursera is "Ecology: Ecosystem Dynamics and Conservation" an open and paid course offered by American Museum of Natural History and Howard Hughes Medical Institute. For obtaining a certification, one has to pay; otherwise the course is open and free. Following link will take you to the course. You have to sign up for the course by providing your e-mail id.

b. **edX:** edX is a MOOC provider. It hosts online university-level courses in a wide range of disciplines to a worldwide student body, including some courses at no charge. It also conducts research into learning based on how people use its platform. edX differs from other MOOC providers, such as Cousera in that it is a nonprofit organization and runs on open source software. Following link would take you to edX home site. https://www.edx.org/

c. **National Programme on Technology Enhanced Learning (NPTEL):** It is a project of MHRD created to provide quality education to everyone interested in learning from the IITs. NEPTL was initiated by seven Indian Institute of Technology i.e. Mumbai, Delhi, Kanpur, Khargpur, Madras, Guwahati and Roorkee. From March 2014 onward, NPTEL

started offering online certification courses. In every January and July, 250-300 courses are offered online free of cost. An example of a course in NPTEL is "Wild Life Ecology" is offered by IIT Kanpur.

The link for NPTEL home page is https://onlinecourses.nptel.ac.in/explorer

Other popular MOOC platforms are:

- Open learning - https://www.openlearning.com
- Future Learn - https://www.futurelearn.com/
- Stanford Online - http://online.stanford.edu/
- NovoEd - https://novoed.com/
- MOOC-Ed - https://place.fi.ncsu.edu/

3. Social Media Networks

Social media networks provide teachers with opportunities to get connected with people who are working in areas connected with educational practice. Most highly valued use of such a network is sharing ideas. Spaces such as Twitter (https://twitter.com/), LinkedIn (https://in.linkedin.com/), Facebook (http://www.facebook.com/) and Google+ (https://plus.google.com/) offer instant opportunities to follow and learn from authors, educators, educational leaders and professional heroes who not only share information and resources but frequently initiate and invite direct engagement. Simply following people who would otherwise only be names in textbooks or journal articles is one legitimate way to be in these spaces. Through social media networks, we also have legitimate opportunities to engage with these individuals and to learn directly from them.

Social media-based platforms provide access to professional organizations and resources of value to adult learners. Online communities created in these social media spaces provide opportunities to share resources, spark questions that expand collective learning and make connections that sometimes lead to employment offers, consulting requests and collaboration opportunities.

Some educators compile much learning from social networking and organize them in Personal Learning Networks (PLN). Examples for such PLN see the links:

- Educator PLN- http://edupln.ning.com
- Powerful Learning Practice- https://plpnetwork.com
- Classroom 2.0- https://www.classroom20.com
- EdChat- edchat.pbworks.com/w/page
- EdWeb.net- https://home.edweb.net

4. Web 2.0 Technologies (Blog, Wiki, and Podcasts)

Web 2.0 technologies such as blogs, wikis, and podcasts have been considered as 'social software' because they are perceived as being well connected, allowing users to develop web content collaboratively and open to the public. Web 2.0 tools are easy to use and quickly developed and organized. Thus, they allow powerful information sharing and straightforward collaboration. Further, these tools have advantage of requiring minimum technical skills to use their features. Hence users can focus on the information exchange and collaborative tasks without bothering about technical knowledge.

a. Blog: Following a blog written by others in the profession is a good way for one's professional development. Since, blog also provides opportunities to interact asynchronously, there is a possibility of social learning. Since interaction is asynchronous, responses would be more reflective rather than spontaneous.

Writing blog is another way of engaging in professional development. Systematic, articulated writing is only a product of thoughtful engagement in the profession.

b. Wiki: Wiki is another web 2.0 technology where teacher could contribute and hence engage in professional development. Wiki is a

type of interactive website where the webpages are editable by the users of the site. Users are able to edit existing pages and add new pages to the site. This allows groups to collaborate on the creation of web based information. The wiki users can keep the content improving till the members of the community are satisfied with the content. Since putting together information on a particular topic requires research, synthesis and presentation of the idea for others that helps teachers develop their knowledge on the area they are exploring, makes a wiki a powerful tool for professional development.

Useful wiki for teachers:

- Wikipedia - https://en.wikipedia.org/
- Wikimapia - http://wikimapia.org/
- WikiHow - http://www.wikihow.com/

c. Social bookmarking: Social bookmarking, an online service through which adding, annotating, editing and sharing bookmarks of online resource is possible. Let us illustrate its use for teachers. Indian Freedom Movement is one of the topics of History in Social Sciences. A teacher could identify various online sources and shortlist the most useful ones. Now, the teacher could give an annotation (brief description) for each of the sources. This collection of sources is useful to every teacher teaching the topic. Sharing such a collection of sources is easy when social bookmarking service is used. Since there is no one good collection, collaboration among teachers would help in reviewing the collections, adding new sources to the list of annotations. Some of the most popular social bookmarking service providers are Diigo, stumble upon, delicious.

You may see links of few social bookmarking service providers

- Diigo - https://www.diigo.com/
- StumbleUpon - http://www.stumbleupon.com/
- Delicious - https://delicious.com/

5. Online groups

WhatsApp groups are popular among teachers. WhatsApp group is an example of online groups. There are other ways to connect people through formation of groups. One of them is a mail group. People having mail ids in a common domain can be brought together. For example people having g-mail account can be grouped together to form a google group. Similar mail groups can also be formed among people with mail id in yahoo domain. Another category of online groups is instant messaging. WhatsApp and Hike are popular instant messaging groups. Instant messaging service is very popular among communities for two reasons. First, it is available in the form of a smartphone application (app), hence easily accessible to many. Second, it has a feature of providing real time interaction. In other words synchronous interaction feature of instant messaging makes interaction very lively and hence very popular. All these online groups help teachers to share information and provide platforms for conversations. Every member of a group can post information to the group in variety of forms. The posting could be a text message, image, video, or even an audio file. Documents are frequently photographed and posted in groups. This flexible feature of online groups is its strength as well its weakness. Since posts can be in many formats, there is wider participation in the group interaction. Since there is no scrutiny while posting, there would be indiscriminant posting in the groups. For example, a Science Teachers' WhatsApp group is expected to interact on issues of Science teaching and learning. Posting a joke in such a group would be inappropriate. Group members could arrive at certain norms for posting in groups so that interaction is fruitful.

6. Web-conferencing:

Web conferencing has become popular for delivering professional development to teachers. Whenever an expert, be it a subject expert, pedagogic expert or a teacher expert needs to be invited from a far off place, webinars are found to be a good tool for hosting such interactions. Web conferencing allows us to connect and communicate in real-time with people in different locations through internet. It allows people to reach in a conversation crossing state, national and international boundaries, crossing various time zones. Web conferencing combines graphics, such as Power Point Presentations, with voice and/or

video. It also includes a range of interactive tools such as polling/voting, chat and a 'hand raising' feature to indicate that you have a question or comment. It may also include document sharing, a whiteboard and web surfing features. As a participant, we see information on our computer screen and hear the presenter and other participants through telephone or internet.

No additional equipment is required to organize a web-conference. A computer to browse and a relatively high speed internet connectivity like broadband are sufficient. Participants will be given a web address. Participants can register and join the session. Web conferencing combines the power of visuals with the voice and has the advantage of being accessible to anyone who has an Internet connection.

Some of the better known services of webinar are provided by Elluminate, WebEx, Centra (now Saba) and Adobe Connect. Dimdim, Yugma and WizIQ are currently popular free services.

7. **Online Videos/ Teaching Channels**

There are many platforms like YouTube (https://www.youtube.com/) which provide thousands of videos which can be embedded in the lesson. They are popularly known as teaching channels. These not only enrich the content for teachers but also provide a rich learning experience by exposing students to professionally made educational videos.

Another video lesson platform is MIT Blossoms (https://blossoms.mit.edu/). This source provides rich learning experiences to students of high school. This video Library contains over 100 math and science lessons, all freely available to teachers as streaming videos and Internet downloads and as DVDs and videotapes.

Challenges in Use of ICT for Professional Development

When teachers are presented with a new technology, challenges include:

1. **Attitude toward use:** Teacher's positive or negative feeling about performing the target behavior (e.g., using a system). Basically, teachers' attitudes too many of these factors will depend upon how easy they perceive using ICT tools to be on a personal level as well as for teaching in the classroom.
2. **Behavioral intention:** The degree to which the teacher has formulated conscious plans to perform or not perform some specified future behavior.
3. **Social influence processes** (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use) as determinants of perceived usefulness and usage intentions.
4. **Limited time:** The implementation of ICT-related activities requires a lot of time. The curriculum and the evaluation system are designed in such a way that they do not allow for teachers to have time to use ICT since they have to focus on covering the required content. This is one of the main reasons that teachers avoid to experiment with ICT integration and engage in reflective activities on the benefits of technology.
5. **Lack of Infrastructural facilities:** Appropriate rooms or buildings available to house the technology. In countries where they are many old buildings, ensure proper electrically wiring, heating/cooling and ventilation and also security and safety will be needed. Availability of electricity and telephony in most developing countries where there still large areas without a reliable supply of electricity and the nearest telephones are miles away.
6. **Cultural challenges:** Diversities of culture in different part of the world are also challenges in introducing ICT in education. English is the dominant language of the internet. Research has shown that an estimation of 80% of online content is in English. A large proportion of educational software produced in the world market is in English also. In most countries where English is not the first language this represents a serious barrier in integrating ICTs use in education system. Using the example of India, the majority all the websites in the world are in English. This situation limits the information access for some people who has lack or no ability in English language.
7. **Capital Investment:** One of the greatest challenges in ICT integration in education is

balancing educational goals with economic realities. ICTs in education require large capital investments. Due to financial difficulties, government in some part of the world specially developing countries priority is the rehabilitation of school buildings and teacher welfare.

8. **Lack of effective training:** ICT for education on the other hand has not yet been considered a priority. In term of human resources, the constraints are due to the lack of trained teaching manpower and lack of motivation among educators to adopt and integrate ICT as a tool into their teaching or educational curriculum. Extra effort and time involve in the use of ICTs in education.

Conclusion

The various online platforms are available offering hundreds of either free or paid courses, but it needs proper publicity. Despite the positive self-perceptions of teachers' competence, they face difficulties such as classroom management, number of students, and hardware-software issues regarding the effective use of technology, especially cutting edge technology, in the classroom. The management and policy makers should make an arrangements of ICT enabled institution. Finally, considering the rapid development of technology and its indispensability in education, ICT teachers should be provided with regular in-service training to allow them to keep up with cutting-edge technology. This could be achieved by offering updated professional development programs to teachers on an annual basis.

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ORGANIZING INFORMATION OF E-RESOURCES IN LIBRARY

ABSTRACT

The Paper Traces origin & defines e-resources. Identifies types of e-resources. Deals with the issues of e-collection development policy and problems that can be encountered in e-collection building, access along with preservation problems & strategies.

Keywords *: Organizing Information, E- Resources, Library Services.*

Introduction :

Academic Libraries have a particular contribution to accomplish the goals of the institution. It serves more than repositories for materials & knowledge; they are of an access point to acquiring knowledge & skills. In recent years, academic users have become more dependent on article databases & electronic journals to obtain information pertinent to their needs. In India, especially higher education has tremendous growth in providing quality education for past two decades; most of the universities & colleges are providing pin pointed electronic information to their users. It is right time to evaluate or access the library electronic collections. E-Resources have been used to gate accurate information within second. E-resource plays a vital role as information repositories in promoting the use of information. E-resources give solutions to the challenges of the traditional libraries such as storage of data in digital form, means of processing & communicating information. In the world of globalization every country should prove its ability to develop its teaching institutions to that libraries play a key role in the concerning institutions. We can use those deficiencies by providing the library services & effective use of its resources by adopting E-resources.E-resources will provide the library service to a buy user at his residing place & at any time. E-resources have been used to get accurate information within second. The internet has emerged as the most powerful medium for storage & retrieval of information. Since past few years free online information sources like e-journals, e-books, e-data- bases, have increased considerably. the traditional library systems are going to transfer into digital library systems. In modern age books, journals & many other information materials are seen in electronics forms.

Definition :

According to Barker, there are three types of documents used in digital resources e.g. static, online, & traditional data. Static are the most basic they contain fixed information & never change. Dynamic documents also contain fixed information but also able to change their own words form, the way embedded material is presented to users such as multimedia CD-ROMS. E-resources are part of the "Invisible Web" which is essentially information accessible through the internet but normally can't be found on Google.

Special Features of E-Resources :

E-resources have some distinct features which differentiate them from traditional resources. E-resources on the internet are further distinct by the nature of the information on the net itself. The features of 21st century information & media are, -

- High compact storage.
- Easy of transmission, communication & storage.
- Easy of reproduction, multiplication & transmission.
- Contents can be very easily detached from its media or container.
- Easy of migration of contents from one medium to another.
- Hypertext & multimedia.

- It consist of various types of file format such as image, audio, video etc. which gives added value to the information.
- It integrates various publishers resources enhancing content size, with the minimum requirements & at the least cost.

Types of E-Resources :

- E- Documents.
- E- Books.
- E- Journals.
- E- Database.
- E- Thesis & Dissertations.
- Internet
- On-line Public Access Catalogue (OPAC).

Importance of E-Resources :

The role and importance of e-resource in next generation is incredible because they are Electronic information resources in CD format include abstracting & indexing services, encyclopedia, dictionaries, yearbooks, back volumes and many other reference works. It is used to store large amount of structured data internet & web resources include various documents like e-books, e-newspapers, e-articles, websites, e-databases patent etc. accessible quickly and any time anywhere. Another reason why they are more convenient is because they are compact and easily transferable from one place to another. E-resources make use of the maximum utilization of electronic devices through modern information technology. Modern libraries are in for transition stage from manual to electronic system. Libraries of information centers are no longer self sufficient but are linked through electronic network of various types. The e-resources are more convenient for users because of their ease of use, saving time and accessible everywhere and any time provided the users are accustomed to them with availability and awareness of ICT.

Conclusion :

The rapid development in information communication technology has facilitated the convergence of new electronic devices & formats. information has been embedded in a variety of ways and forms in various kinds of electronic resources. Rapid changes in information seeking behave & use of Internet & on-line access of E-resources have become the vital part of various information needs. The users develop the skills and knowledge to use the e-resources & services. The on-line journals i.e. E-journals are the most important for the research community. E-resources in connection with internet have become a sign of modern age being a valuable tool for teaching, learning & research. E-research in prime way to achieve the information sharing need by very effectively. In present day, prices of printed format journals are increasing, in such situation e-resources plays vital role in information age. E-resources plays a very vital role in research & academic activities. The development and growth of electronic/networked resources has provided a wide range of opportunity for access to greater variety of research in libraries. The e-resources is becoming more and more important, for the academic community in accessing information at the right time and in the right form.

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USE OF ICT IN TEACHING LEARNING AND EVALUATION

ABSTRACT

Today's education is related to many aspects of life such as social, cultural, political, economic, national, etc. So, to developed interest towards this aspect of life in our youth we should make our education interesting and easiest and this is possible by using information an communication system. Teaching – learning and evalution is the base and center of our education system. So, the use of ICT in teaching learning process is a relatively new phenomenon and it has been the educational researchers focus. The use of ICT in the teaching – learning is very important because the ICT has opened new avenues like online learning, e-learning, Virtual University, e-coaching, e-education, e-journal, etc. The ICT brings more rich material in the classrooms and libraries for the teachers and students. In the country like India we need the use of ICT in education to develop country.

INTRODUCTION:-

We are in digital era. It is difficult to think of any event in our daily life that is not using information & communication Technology. Technology has brought about an immense change in our everyday life. How education sector can be exception to this alteration? India had great ancient heritage education system of Gurukula. The main characteristics of Gurukula system were dedicated and knowledgeable teachers, individualized and learner centre teaching, and self-motivated students eager to learn. This system changed due to increase in number of students and now we moved towards modern day education system. Toays education is related to many aspects of life such as social cultural, political, economic, national, etc. so, to develop interest towards this aspect of life in our youth we should make our education interesting and easiest and this is possible by using information and communication system. Teaching-learning and evaluation is the base and center of our education system. So, the use of ICT in teaching learning process is a relatively new phenomenon an it has been the educational researcher's focus.

In this article we are going to explore the concept of in Information an communication Technologies (ICT) inteaching-learning and use of ICT in evaluation.

USE OF ICT IN TEACHING-LEARNING:-

Several studies argue that the use of new technologies in the classroom is essential for providing opportunities for students to learn to operate in an information age and it is true, by teaching ICT skills in higher educational institutions the students are prepared to face future developments based on proper understanding.

The use of ICT in the classroom teaching – learning is very important because the ICT has opened new avenues like Online learning, e-learning virtual University, e-coaching, e-education, e-journal, etc. The ICT brings more rich material in the classrooms and libraries for the teachers and students. It has provided opportunity for the learner to use maximum senses to get the information. It has broken the monotony and provided vaariety in the teaching – learning situation. ICT provides Online interaaction facility, Students and teachers can exchange their ideas and views, and get clarification on any topic from different experts, practitioners, etc. It helps learners to broaden the information base. ICT provides variety in the presentation of content which helps learners in concentration, better

understidning, aand long retention of information which is not possible otherwise. The learners can get opportunity to work on any live project with learners and experts from other countries. Also, on INTERNET many websites are available which may be utilized by teachers and students for understadning different concepts, improving vocabulary, developing reasoning and thinking etc. ICT can help in preparing students for many examinations.

USE OF ICT IN EVALUATION:-

At present the paper pencil tests are conducted for evaluating the academic performance of students. These tests are conducted in the group setting. The content coverage is poor and students cannot use them at their own. These tests are evaluated by the teaches an they may not give feedback immediately to each and every student. It may be due to this that students are unable to know their weaknesses as and do not make any attempt to improve upon them. The ICT can be used in the evaluation. One such attempt has been made by Sansanwal and Dahiya who developed computer based test in research methodology and statistics. It has been entitled as Test your Understanding : Research Methods and Statistics". This test can be used by individual student to evaluate his learning. The student can instantaneously get the feedback about the status of his understanding. If the answer is wrong, he even can get the correct answer. It goes a long way in improving the learning and teacher has no role to play in it. It is up to the students to use it. Such tests can be uploaded on the website for wider use. The students from other institutes can also make use of it. Not only the students even the teachers can also use it to assess their own understanding of the subject. If used by teachers before teaching the toppic they can prepare the topic properly. Such software can be used for internal assessment. Thus ICT can be used dto improve the quality of pre as well as in-service teachers training.

In most of the European countries, the use of ICT in education and training has become a priority during the last decade. Because the use of ICT in teaching learning has positive impact on students performance in schools and colleges. The innovations that ICT has brought in teaching learning process include : E-learning, e-communication, quick access to information online student registratino, online advertisement, reducedd burden on keeping hardcopy, netweorking with resourceful persons, etc. Due to this students interest develope towards education.

ICTs save large amount of time, money and energy making the process of teaching – learning and evaluation more fascinating and all involving with a smoother application. In the country like India, we need to have an abundance of resources and at the same time an expert teacher community to implement and to reach at the very rural outset where most of the illiterate population residues. And this target can only be accomplished through the impressive and active use of ICTs in education.

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AN EFFECTIVE USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) IN RESEARCH

ABSTRACT

The purpose of this paper aims to pile up the findings and key points of an efficient use of ICT in Research and Extension .This paper come into being to choke out the effective use of ICT and value relevant ways in national and international Research and extension. The paper suggests that ICT in analysis isn't a method for academic development however additionally the way of socio-economic development of the state.

Keywords:*ICT, Research, Extension.*

1.Introduction: :

Ensuring universal service and access to info and communication technology (ICT) may be ahigh national objective in several countries, usually enshrined in Research. Computer-based systems have nice potential for Research. The speedy development of knowledge and Communication Technology (ICT), notablythe web, is one in allthe foremost fascinating phenomena characterizing the data Age. Researchshouldn'tsolely be judged by whether or not or not it'sprintedwithin the journals(Boaz and Ashby, 2003).ICTs have to be compelled to be seen as "an essential side of teaching's cultural toolkit within theordinal century, affording new and transformative models of development that reachthe character and reach of Researchwhere it takes place". ICT is Associate in Nursingdescriptor that stands for info Communication Technologies, that has all technologies for the manipulation and communication of knowledge (Swati Desai, 2010). The findings from these Research studies canfacilitateto guage its effectiveness on Research learning outcomes and implications for extension and additionalanalysis. Guruprasad et al (2012), in their paper tried to explainthe importance e-resources info dissemination throughout the globe by erudite scientific pursuits. Ulka Toro (Gulavani) and Milind Joshi (2012), in their paper the ICT and better education is that thetoday'swould like in enhancing Research capabilities and supply for adequate infrastructures backed by capability building. In combining each qualitative and quantitative ways, a bigger degree of accuracy and validity within the results of studies is obtained, therefore strengthening the findings and implications recommend by the scientist. Quality of Researchdoesn't limit to solelythe utilization of ICT, it'sdecoding and analyzing knowledgesimply and timely.

2. Role and edges of ICT within the field of Education :

Role of technology in teaching and learning is speedilyturning intoone in allthe foremostnecessary and widementionedproblems in up to date education policy, if ICT is correctly used; it holds nice promise to boost teaching and learning additionally to shaping hands opportunities.

3.Objectives of ICT in analysis:

- Improvement in Review of Literature.
- Inflated acquisition of information.
- To push and facilitates the Research on National and International Level.
- To implement the principle of ICT for Research and analysis purpose.

4.Discussion:

Literature review explores the dynamic role of ICT within the work of analysis. It investigates howeveranalysis overtime applicable ICT applier as analysis tools. ICT researchers investigates that e-journals is that thenecessary sources of scientific eruditeinfo, e-journals, proportion of preference of the utilization pattern of e-journals from publisher thatarea unitaccessibleon-linewill be of nicefacilitate to the analyzers in their research activity.

5. Limitations:

The analysis during thisResearch was distributed from the SCOPUS information, which suggestswhich will exist differentcompletely different documents in different sources. It might enrich this Research considering further databases. Moreover, it ought totake into account for additional researches to formAssociate in NursingthoroughgoingmatterResearch of texts to getconsiderably indicators on the subject, Research approaches, methodstyles and findings of the articles during this topic of interest.

6. Conclusion:

The combination of ICT in Researchshould be supported four elementary aspects are: access, creation, assortment and association of the contents in Research.ICT has nice contribution creating avail the e-journals access, e-libraries, all differentinfo and news dynamic of the Research pattern i.e. digitalization of the Research has all inflated the understanding of the coed, and thereby enhancing and makingthe coed skills. The study contributes to the mandatoryanalysis on ICT within theeducational and Research.

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USE OF ICT IN TEACHING OF MATHEMATICS IN HIGHER EDUCATION

ABSTRACT

In the current curriculum of mathematics is the expectation that mathematics teachers will integrate technology in their teaching. However, teachers have not been given importance of ICT for preparing their instructions. This paper reports on a study conducted to explore the possibility of ICT use in mathematics teaching at college levels. Preliminary results showed that mathematics teachers do not integrate ICT in their mathematics instruction. Among the major perceived barriers identified were: Lack of knowledge about ways to integrate ICT in lesson and Lack of training opportunities for ICT integration knowledge acquisition. To overcome some of these barriers, opportunities of professional development arrangements for pre-service mathematics teachers were explored. Findings from the study revealed specific features of a professional development scenario that matters for ICT integration in mathematics.

Keywords: *Professional development, Computer competencies, Mathematics education.*

1. Introduction

In the past 15 years there has been a significant increase in information communication technology (ICT) investment in education, so students and teachers now have a much wider access to ICT than before (OECD, 2015). The reason for the investment is the belief that introducing ICT will improve teacher productivity, student outcomes, and prepare students for a world where technology is an important part of life. Governments have also mandated the importance of ICT in education.

Recent research has shown that teacher integration of ICT into mathematics classroom has an impact on student outcomes (Hegedus, Tapper, & Dalton, 2016). It aims at developing in the student the ability and willingness to perform investigations using various mathematical ideas and operations. As part of their forms the curriculum places a lot of emphasis on Information and Communication Technology (ICT) as a tool for teaching mathematics (MOESS 2007). It is therefore, designed to meet expected standards of mathematics in many parts of the world. In spite of government efforts, mathematics has not undergone much change in terms of how it is presented. These reflect consistently in low achievement levels in mathematics among students at the college levels.

The overall goal of the present study was to explore the feasibility of ICT use in mathematics classrooms as part of an ongoing research project to design a professional development programme for pre-service teachers. The relevance of this study was to (1) provide an understanding of the context of mathematics teachers regarding ICT integration in mathematics lessons and (2) determine the features of an ICT intervention that fits the realities that can prepare pre-service teachers to effectively design and implement ICT in teaching mathematics. The study was guided by the following questions:

1. What are the barriers of ICT use in teaching mathematics in Higher education?

2. What are the needs of pre-service and in-service mathematics teachers in teaching mathematics with ICT in Higher education?
3. What are the opportunities of ICT use in the teaching of mathematics in Higher education?

Technology is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function. It can also refer to the collection of such tools, machinery, modifications, arrangements and procedures.

Prospective of ICT for mathematics education

Some portable equipment also enables the study of mathematics to move out of the classroom and to incorporate fieldwork investigations (Moseley and Higgins 1999).The use of graphic calculators and computerized graphing in mathematics speeds up the graphing process, freeing people to analyse and reflect on the relationships between data (Hennessy 2000; Clements 2000; Hennessy et al. 2001). Specialists software such as Computer Algebra Systems (CAS), Dynamic Geometry Systems (DGS) and Mathematics curriculum software improve pupil's skills and understanding in algebra, allow pupils to manipulate and measure shapes leading to higher level of learning among them (Hennessy et al. 2001; Clements 2000).

2. History of use of technology in mathematics

The use of technology when studying mathematics is not a new issue, since humankind always has been looking for solutions to avoid time consuming routine work. The use of technology has a long history in mathematics education. Starting from magic slate, book, magic lantern, Blackboard, OHP, radio, Slide rule video tape, Television, Calculator, computer, Interactive Board, Apple I pad all come under technology. Paper money and coins, beans, bears, buttons, and other small items are helpful for counting and computation skills. Straws, grouped by tens, are great for teaching Mathematics. Geo boards are useful for introducing geometric concepts. Clinometers are useful for teaching and learning of Trigonometry. An abacus allows children to conceptualize math formulas by working with tangible objects.

3. Why to use technology?

Our aim was to encourage far higher levels of active student engagement, where knowledge is obtained by sharing, problem-solving and creating, rather than by passive listening. This classroom enables both active engagement and equal access," by lead researcher, Liz Burdof Britain's Durham University.

Change of Scenario: Mathematics is regarded as the queen of all Sciences. For long, the role of Mathematics was limited to purely academic domain. Now, the role of Mathematics is not restricted to purely academic domain. It has entered the domain of Technology and Industry. New fields in Mathematics such as Operation Research, Control theory, Signal Processing and cryptography have been generated which need technology. Technology can reduce the effort devoted to tedious computations and increase students' focus on more important mathematics.

Technology focuses Student's thinking: Technology can be useful to the extent it focuses student thinking in ways that are germane, not extraneous. In primary school, it is important to learn to do arithmetic fluently. Using technology to do this thinking for the student would be inappropriate. In secondary school, however, students have mastered arithmetic and should be focused on more advanced skills and concepts. Computational support can be very important.

Use of technology makes Ideas Tangible.

Researchers have found that when technology makes abstract ideas tangible, teachers can more easily • Build upon students' prior knowledge and skills.

• Emphasize the connections among mathematical concepts.

• Connect abstractions to real-world settings.

4. Digital technologies / information communication technologies

For thousands of years, humans made presentations using only the tools they were born with: their voice and body. That was followed by tools such as chalkboards and projectors, and then by digital tools such as PowerPoint. More recently other tools have emerged, such as Sliderocket, Prezi, Glogster, Animoto, and Magic Magnify. Since the 1980's, the importance of computer support in the teaching and learning of mathematics has been emphasized more and more. Information and Communication Technology

(ICT) is basically an umbrella term that encompasses all communication technologies such as internet, wireless networks, cell phones, satellite communications, digital television computer and network hardware and software; as well as the equipment and services associated with these technologies, such as videoconferencing, e-mail and blogs etc. that provide access to information. There are various types of technologies currently used in traditional classrooms. Among these are: Radio, television, audio tape, video tape, slide projector, overhead projector, Google class room, cloud method are of passive learning when interaction of the learner is less.

5. Computer in the classroom: Having a computer in the classroom is an asset to any teacher. With a computer in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new websites.

Class blogs and wikis: There are a variety of Web 2.0 tools that are currently being implemented in the classroom. Blogs allow for students to maintain a running dialogue, such as a journal, thoughts, ideas, and assignments that also provide for student comment and reflection. Wikis are more group focused to allow multiple members of the group to edit a single document and create a truly collaborative and carefully edited finished product.

Wireless classroom microphones: Noisy classrooms are a daily occurrence, and with the help of microphones, students are able to hear their teachers more clearly. Children learn better when they hear the teacher clearly.

Mobile devices: Mobile devices such as clickers or smart phone can be used to enhance the experience in the classroom by providing the possibility for professors to get feedback.

Interactive Whiteboards: An interactive whiteboard that provides touch control of computer applications. These enhance the experience in the classroom by showing anything that can be on a computer screen. This not only aids in visual learning, but it is interactive so the students can draw, write, or manipulate images on the interactive whiteboard.

Digital video-on-demand: Digital video eliminates the need for in-classroom hardware (players) and allows teachers and students to access video clips immediately by not utilizing the public Internet.

Online media: Streamed video websites can be utilized to enhance a classroom lesson.

Online study tools: Tools that motivate studying by making studying more fun or individualized for the student.

Digital Games: The field of educational games and serious games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students. There are many other tools being utilized depending on the local school board and funds available. These may include: digital cameras, video cameras, interactive whiteboard tools, document cameras, or LCD projectors.

5.1 Soft ware used for teaching learning Mathematics

- Graphic Calculators
- Dynamic graphing tools (Geo-gebra)
- Dynamic geometry tools
- Microsoft Excel / spreadsheet
- Microsoft Mathematics
- Geo-Gebra
- Auto shape
- Mat lab

5.2 Learning resource centre (Indian system of Education)/Websites

Thousands websites provide e-resource for both offline and online teaching –learning. IGNOU (http://www.ignou.ac.in/) The Indira Gandhi National Open University (IGNOU), http://www.ncert.nic.in/NCERTS/textbook/textbook.htm The website is a e-resource for syllabus, online text books, other publications such as sample question papers and multimedia packages which helps both the students and teachers in teaching learning Mathematics. http://www.ciet.nic.in Central Institute Of Educational Technology(CIET provides information of educational technologies viz. radio,TV, films, Satellite communications and cyber media either separately or in combinations. www.cbse.nic.in & http://www.icbse.coml provides information regarding online application for different examinations such as Mathematics Olympiad. http://www.mathplayground.com/ ASB_Meteor Multiplication. html is a very good website which allows the learner to motivate

learning Mathematics through different game. http://cbse.meritnation.com/cbsesignup2? Mncid = Adwords_Banner_Test & gclid = CJnSm9yj2LMCFQV66wodpnQAgg http://www.ixl.com/math/algebra-1/ absolute-value-and-opposites http://mathforum.org/library/ Lesson Plan http://illuminations.nctm.orgis a very interactive website for Geometry. http://www.discoveryeducation.com/searchlite/page/Mathematics/Geometry/Worksheets. There are some other useful sites provide wonderful mathematical investigations for our students and answers to the many perplexing questions that invariably arise in the classroom, for general teaching- learning mathematics. Researchers have found that the move from traditional paper-based mathematical notations to on-screen notations (including algebraic symbols, but also graphs, tables, and geometric figures) can have a dramatic effect. In comparison to the use of paper and pencil which supports only static, isolated notations, use of computers allows for "dynamic, linked notations" with several helpful advantages.

5.3 Impacts on Student's Learning Process

Appropriate use of ICTs allow Learners to have the freedom of choice to decide their own time, place, pace, or path to study. Learning materials that are enhanced with various media such as sound, narration, video, animation, graphics etc. provide learner's choices to enhance their different intelligence or learning styles. If designed and implemented properly, ICT-supported education can promote the acquisition of the knowledge and 21st century skills such as Creativity, critical thinking and problem solving. Learners are able to exchange ideas more personably and directly.

The new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy to one that is learner centered.

5.4 Technology helps teacher in lesson Planning

The ease and speed of obtaining information on the Internet definitely helps the teacher users to empower themselves.

1. It gives teacher the opportunity to learn current innovations in teaching from other Countries that may be utilized in his/her her class to strengthen pupils' self-esteem. It adds further information about the topic he/she is teaching. He/she can make the content more colorful and purposeful by integrating slide show and videos related to the topic. He/ She can successfully impart education characterized by imparting instructions, collaborative learning, multidisciplinary problem-solving and promoting critical thinking skills as highlighted by National curriculum framework 2005 (NCF 2005)

5.5 Technology provides evaluation tools.

Technology provides different assessment tools such as Checklists, rating scales and rubrics to assess the 21st century skills such as creativity, problem solving, decision making and leadership skills which are criteria for project based learning. The rubrics for Research Report document, Power point presentation, Role Play helps the user The teachers can access number of printable worksheets for Mathematics. Checklists, rating scales and rubrics are readily available in some educational websites. The students can do self evaluation through different online tools and get immediate feedback for correction. The advantages include:

1. Instant feedback to students
2. Greater flexibility with respect to location and timing
3. Improved reliability.
4. Improved impartiality
5. Greater storage efficiency
6. Enhanced question styles which incorporate interactivity and multimedia.

5.6 Collaborative learning

There are a lot of internet sites providing interactive learning tools for students. Blogs, Forums, Communities, Webcast, Pod Cast, User Groups, Picassa (Google) and Flickr (Yahoo), W3Schools.com, Wikis, Web conferencing, Video Conferencing, Chat, E-mail, Instant Messaging, Bulletin Board, Data Conferencing, Shout Box, Image Board, YouTube, Slide Share, Think quest, Schools online ,e-pal and British Council Schools online. Seeing what your friends are doing, and being able to fully participate in group activities, offers new ways of working in class, the researchers say. The findings published in the journal Learning and Instruction, show that children using these Synergy Net classrooms improve in both mathematical flexibility and fluency, while children working on traditional paper-based activities only improve in flexibility.

5.7 Barriers of use of Technology:

• Not enough or limited access to computer hardware & computer software
• Lack of time in college schedule for projects involving ICT
• Lack of adequate technical support for ICT projects
• Not enough teacher training opportunities for ICT projects
• Lack of knowledge about ways to integrate ICT to enhance curriculum
• ICT integration is not a school priority
• Students and Teachers do not have access to the necessary technology at home

5.8 Curriculum Increasingly the specification of modern laptop and e-book portable computers is such that virtually all of the major mathematical technologies now run on them. Similarly there have been significant improvements in broadband Internet connections and collaborative tools. The expansion of pupil's access to technology is less of an issue than the leadership and management of the resources at college level. If digital technologies are to be embedded in the mathematics curriculum then the knowledge and skills required by both teachers and learners to use them should be explicitly specified.

6. Conclusion:

In order to educate students to be life-long learners and successful contributors to the new global market, educators must change the way they teach and the way students learn. Curriculum and assessment in school mathematics should explicitly require that all young people become proficient in using digital technologies for mathematical purposes. High-stakes assessment needs to change in order to encourage the creative use of digital technologies in mathematics classes in colleges. What needed in colleges are student-led mathematical modeling, problem solving and computer programming which makes use of the powerful Mathematical digital technologies that are widely used in society and the workplace. Here highlight areas that require further attention to enable teachers use ICT in mathematics teaching. In particular, a professional development scenario that will assist pre-service and in-service teachers develop skills on ways to integrate ICT in their teaching processes was one of the significant issues identified by the researchers. Such a programme need not differ in content but in format for both groups of teachers. This will ensure that teachers will be able to use existing hardware and software in creative and situation specific ways to design ICT resources to accomplish their teaching goals. Among their recommendations, effective use of ICT needs to be optimized through extensive programmes of teacher support to improve mathematics and science teaching.

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(7th January to 8th January 2019)
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ICT BASED TEACHING- AN INNOVATIVE TECHNIQUE IN LANGUAGE TEACHING

ABSTRACT

21st Century is the century of Information Communication Technology. Many Challenges have become the part and parcel of our life due the introduction of Advanced Technology. With the emergence of Information Communication Technology, the use of teaching aids has become more technology oriented. The time has gone where one has to wait for information and opportunities. Today the scenario is changed. Now we don't need to wait for information and opportunities. We see the extensive use of ICT in all the spheres of knowledge. ICT makes the world change its traditional outlook. Teaching in past and teaching in present makes a difference due to the available technological resources. Today an English teacher cannot rely on traditional method of teaching. The teacher of language needs to understand the psychology of the students. A classroom is the group of students of different capabilities. The teacher must introduce new techniques to enhance the interest of students towards language learning. Hence it is mandatory for the teacher to use ICT in language teaching. This research paper aims to focus on ICT based teaching as an innovative technique in language teaching.

Keywords: *ICT, Kindle, Vooks etc.*

Introduction: As we all know, English language teaching- learning became the most discussed matter because of the increasing use of English in all the fields of life. The experience of English language teaching in urban and rural classrooms for the teacher is different. Obviously the reasons are numerous. While teaching English language, teacher has to understand the environment, culture, background and level of intellect of the students. A decade ago, teaching was done through traditional blackboard, chalk and duster method. With the emergence of ICT and ICT based tools, teaching got new dimensions for giving new and innovative learning experiences to the students. India is a multi-lingual country where a student has to focus on his mother tongue, national language and English language. For the students, it becomes difficult to get acquainted with English as it is not their native language. If a student is not familiar with English then learning and teaching of this language becomes a difficult task for him and a teacher. Hence new methods must be applied in teaching so as to create conducive atmosphere for learning English language. Use of appropriate teaching methods in the classroom create proper environment for the learners to learn easily and quickly the techniques of the language. Effective and Innovative teaching methods lead to reduce monotony of the students also helps to keep away stereotype lectures. The most prominent objective of teaching methodology is effective learning by the students and avoidance of the stereotype lectures in the classroom. We may say that lecture method can be used regularly in classrooms but other methods can also be used at regular intervals to make lectures more interesting. Therefore it is the responsibility of the English teacher to give new learning experiences to the students rather than using age old lecture method on frequent basis. ICT provides various facilities to teach English language. E-learning, web, using audio-visual clips from the web quests and treasure

hunts, using CD- ROMs, professional training on the web for online teaching, audio-video conferencing and text chat, learning management systems and software on desktop computers can lead to effective teaching methods. A teacher can develop his own e-contents to teach his students digitally. Kindle, Vooks are the new approaches towards making English teaching-learning more interesting and beneficial. If the student fails to attend to the regular lecture on particular content, can study the same with the help of ICT based tools. Use of Power-Point presentation in teaching Language is the effective way which enables the students to know and grasp the contents of language than the oral one. For the effective use of ICT in teaching, a teacher is needed to have competent knowledge of ICT and ICT based tools.

Conclusion: Information Communication Technology has great impact on English language teaching and learning in Indian classrooms. Teaching through ICT based tools is more effective as ICT has significant potential for improving student's language skills. A student learns English easily and quickly through ICT based teaching than the stereotype lectures. This Technology helps to develop eagerness towards learning language and carry it out throughout their life. It is a fact that the use of ICT is increased in our day to day life. The possibility cannot be denied that those who do not use ICT in teaching may be replaced by those who use ICT skillfully. No doubt, ICT will never take the place of a teacher. As a teacher, one must fulfill the demands and expectations of the students and change himself with the changing time.

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IMPACT OF ICT IN TEACHING, LEARNING AND EVOLUTION

ABSTRACT

Today's age of 21st Century and it is also the age of information and technology (IT). ICT stands for Information and Communication Technologies. It is a part of our lives for the last few decades affecting our society as well as individual life, which is now broadly used in educational world. Teacher, Student, administrator and every people related to education are popularly used ICT. One cannot depend on only the same Hugh blackboards, an overhead projector and video-graphed concepts as either because the transaction of curriculum is poor or the tools used in its transition lack application and skill. Every aspects of life are related to science and technology. High flow of information is emerging in all fields throughout the world.

Introduction

Now information and technology is popularly using in educational field for making teaching learning process successful and interesting for students and teacher both. In 1998, UNESCO World Education report refers about student and teachers must have sufficient access to improve digital technology and the internet in their classroom, schools and teacher educational institutions. Teachers must have the knowledge and skills to use new digital tools to help all students achieve higher academic standard. The quality of professional development of teacher education depends on the extent of ICT integration in teaching method. According to UNESCO (2002) "ICT is a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters". Teachers are at the base of any living society. Technologies play an important role in training program of teachers. Students gain knowledge and information through TV, digital media, cable network, internet and social media i. e. Facebook, Twitter, Whatsapp, Linkedinn, Igo, Line, Wechat etc. ICT is very important for Pre-service teacher education programme in the 21st Century. Without proper knowledge of ICT teacher cannot perform in his/her class room and it could not be said to be a complete one.

Why do we use ICT in Teaching Profession?

The main agent of ICT programs has been the 'computer faculty', a poorly paid, ill-equipped person, with some superficial knowledge about computers rather than any grounding in education. Technological resources that are available for teaching and learning specially include computer hardware and software, in addition to the growing range of peripherals, which include video, CD-ROM and electronic communication media. The rapidly changing nature of computer technology continues to expand the range of resources available for any subject- specific learning. Educators must be imaginative, flexible and willing to renew their vision of teaching and learning if they are to fully realize the potential of educational technology.

The classroom is now changing its look from the traditional one i. e. from one way to two way communications. Now teachers as well as students participate in classroom discussion. Now Education is based on child centric education. So the teacher should prepare to cope up with different technology for using them in the classroom for making teaching learning interested. For effective implementation of certain student centric methodologies such as project-based

learning which puts the students in the role of active researches and technology becomes the appropriate tool. ICT has enabled better and swifter communication; presentation of ideas more effective and relevant way. It is an effective tool for information acquiring-thus students are encouraged to look for information from multiple sources and they are now more informed then before. So for this reason ICT is very much necessary for teaching pattern.

Recent Trends in Teaching Profession

Based on various changing needs of our society now emphasis is also given to the various educational theory and educational practices. According to these theories and practices changes are also undergo in teacher education also. It is natural that teacher education must include new technology. Teachers should also know the right attitudes and values, besides being proficient in skills related to teaching. As we know the less requirement of any training program is that it should help the trainee to acquire the basic skills and competencies of a good teacher. Now-a-days new trends in teaching method are Inter-disciplinary Approach, Correspondence courses, orientation courses etc. Simulated Teaching, Micro Teaching, Programmed Instruction, Team Teaching are also used in this pattern. Now-a-day Action Research also implemented in teaching pattern. ICT acts as the gateway to the world of information and helps teachers to be updated. It creates awareness of innovative trends in instructional methodologies, evaluation mechanism etc. for professional development.

Different Strategies for applying ICT in Teaching Profession

i) Providing adequate infrastructure and technical support.
ii) Applying new Pre-service teacher Education curriculum.
iii) Applying ICT in all subjects.
iv) By using application software, using multimedia, Internet e-mail, communities, understanding system software.

Role of ICT in Teaching Profession

- ICT also helps teachers to access with institutions and Universities, NCERT, NAAC NCTE and UGC etc. It also helps in effective use of ICT software and hardware for teaching – learning process.
- ICT helps teachers in both pre-service and in-Service teachers training. It also helps in improving professional Development and Educational management as well as enhances Active Learning of teacher Trainees.
- ICT helps teachers in preparation for teaching. In order to introduce ICT in pre-service teacher education different methods and strategies are applied. Different tools are used such as word processing, Database, Spreadsheet etc. Various technology based plans are used to help the teachers for their practice teaching.
- ICT used as an 'assisting tool' for example while making assignments, communicating, collecting data & documentation, and conducting research.
- ICT helps Teacher for organizational preconditions (vision, policy and culture). It is also helps Teacher for their personnel support (knowledge, attitude, skills).
- ICT helpful for designed learning situations which are needed for both vocational education and the training of future teachers (in the teacher training institutes).
- ICT as a medium for teaching and learning. It is a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. It appears in many different forms, such as drill and practice exercises, in simulations and educational networks.
- Teachers must provide technological support to learn using motion picture, animation, simulation training which helped student teachers to give model presentation. If the teacher is highly equipped with technology, the student will also be equipped with technology.
- ICT helps Teacher to pass information to students within a very little time, it helps Teacher to design educational environment, it helps Teacher to identify creative child in educational institute.
- Teacher training institutes can develop their curriculum using ICT. With the help of ICT

Teacher training institutes can develop communication network.

Future of ICT in Teaching Profession

The role of interactive multimedia in a perspective where learning is part of schooling, working or in living. ICT also includes web TVs, Net PCs, and Web-Based Education that offers accessibility, flexibility and innovativeness in teaching and learning. ICT integrated teacher education is more important to Indian education system that is committed to maintain global partnership as well as leadership in knowledge-based society.

ICT especially in the 21st Century context of teacher education fulfills the following things.

I. ICT fulfills the needs of learners by providing items and packages of higher standard and interest.
II. It helps in transforming the definition of literacy, learning and knowledge; a definition that increasingly includes multimedia digitized literacy.
III. It envisages excitement to the learner's eyes, ears, and more importantly the head.
IV. Develops the ability of self-learning and interacting individually, as the learner attains vast experiences effectively, efficiently and expeditiously.
V. ICT-empowered simulated situation minimizes dangers in the real world' e.g. practical in science, pilot training driving etc.
VI. ICT is a powerful new development with ambitious role in teacher pattern, Digital and Internet-based multimedia transforms the present trend in the field. It takes just a computer to play multitude of media enabled programs and packages.
VII. Multimedia provides a kind of control over the learning environment to the teachers and they experience learning from their failures and ill practices.
VIII. ICT facilitates the learner to have control on lesson, pace the sequence, content, feedback, which in turn enhances the efficiency of learning. Unlike books, it is interactive in nature and creates motivation and interest among the learners, in turn meeting the individual unique needs effectively and efficiently.

Conclusion

Teacher is considered to be the architect of the nation. In other words, the future of the nation lies in the hands of teacher. This shows the importance of teacher. One can realize how important education is which makes one a teacher. Teaching method is looked after by a systematic operation of various agencies involved in it. In our country, no system is free from problems; teacher education in not an exception to it. In present scenario, teachers need to help their students in: how to learn, how to grow in future, how to develop study skills, how to conduct fundamental research, how to examine, evaluate and assess information and also how to question and then dismantle unauthentic structure of knowledge and cognition if need be. This is necessary if the teachers really want to survive in the ICT world of education. All these expectations may be met only though need-based, goal-oriented and meaningful in-house discussion, conferences, symposia, workshops, refresher and orientation courses, crash courses, capsule courses and subject-based courses, interdisciplinary and holistic approaches to education and quality research and by enriching the existing libraries and making use of the user-friendly. The teacher educators and individual teacher ought to sincerely and persistently work hard toward this goal. By the latest developments in the information and communication technology the role of teacher in the process of teaching and learning has increased many fold and has become more complex as such teachers are to equip themselves with latest technology then only they coup up the new challenges in the field.

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IMPACT OF ICT ON ENGLISH LANGUAGE TEACHING

ABSTRACT

English has reached to the four corners of the world. It is a global language today. It is the second language of most of the countries in the world and it is flourishing in the countries where the local language is other than English. The proficiency in English language is the need of time. The use of ICT in English teaching and learning is increasing day by day. However, as English became the accepted international language of technology and commerce, it created a new generation of learners who knew especially why they were learning a language. English has suddenly gained a great influence in this fast changing world. The general effect of which could be seen in English language teaching.

Key Words: *ICT, Language, Teachng, communication*

Introduction:

The age of globalization and privatization has ushered in a new demand for English in various walks of life. English being the global language today commands an enhanced sense of sophistication, appropriate vocabulary, proper sentence structure, new expressions and situational phraseology and so on. The skillful use of language seems to rule today's scenario which is full of transactions that are transnational and trans-border. Language and communication skills are the tools for learning and we may use them for acquiring both informal and formal learning.

The present age is the age of enormous and unprecedented expansion in scientific, technical and economic activity on an international scale. This rapid progress has soon generated a demand for a new international language. The effect was that a whole ass of people want to learn English, not for the pleasure or prestige of knowing the language but because English is the key for gaining technological, scientific and commercial knowledge. Previously, reasons for learning English have not been well defined. If asked, why to learn English, the answers used to be vague and ambiguous like, knowing a foreign language usually regarded as a sign of a well-rounded education or learning a language is to learn to speak is its own justification.

As there is a marked difference between the rural and urban students so far as the language is concerned and also a kind of difference could be noticed between those who have access to technology and those who do not have. Since most of the nations in the world are still continuing traditional system of education, there is a dire need to reinvigorate and revise our curricula to meet the challenges of our age. These changes should be made from primary to higher education level.

The impact of ICT has made English Language popular and flexible. The new generation is using it frequently and effectively and therefore, English stands between L1 and L2 today. English has become a tool for empowerment in multilingual, multicultural and multiracial society of India. The language is still inaccessible to large sections of the Indian society. It is necessary to create conducive English language learning atmosphere devising new curricula. While experts agree there is no substitute for a real teacher, CD-ROM sales and those of other computer based teaching programs are soaring.

Internet has made online communication part of our daily life. Its impact on education can be felt many grass-root initiatives ranging from equipping schools with hardware capacity to

introduce curricular requirement for communication skills. Literacy theorists and educators have been among the first to pay attention to such impact and to make efforts to infuse network communication into literacy education. Two burning issues literacy educators have to confront with are how to redefine literacy in the internet age and how to teach literacy accordingly.

The overall purpose of teaching and learning should be to develop our skills of language learning viz. Listening, Speaking, Reading and writing besides training the learners in life-skills and making them understand the day to day problems of life. Moreover, critical, interpretative and aesthetic aspects of language are also to be acquired. It is therefore imperative that language and literature curricula have to be experience oriented, pragmatic and practical. The learners are expected not only to know the mechanism of the language but also the soft skills of the language. There should be a shift in communication towards interpersonal communicational skills so that we can produce employable students. There is also a need for industry –institute collaboration to meet the challenges of globalization and intercultural professional environment.

Conclusion:

English language has removed the cultural and linguistic barriers in multicultural and multilingual nations therefore the competency in language provides material and social gain as an advantage. One must have proper expertise of the language. It can open innumerable avenues for international communication and business, science and technology, travel and tourism besides, linguistic and literary study and research. English language has the capacity to bring the whole world together. The proper use of ICT in teaching can bring tremendous changes in the lives of learners.

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IMPACT OF ICT IN TEACHING LEARNING AND EVALUATION

ABSTRACT

In the postmodern era of 21st century, we are surrounded by several new, innovative and advanced things such as computers, Internet, mobiles etc. These audio-visual aids, collectively known as multimedia, have greatly affected our life. It is also a fact that no sphere of life has left untouched from it. Each field of life has come under its impact. The public as well as private life of person has a very slight curtain of difference in terms of sharing of information at both the levels. In this age, the teaching and learning process has also been pacing up with the increasing use of technology in the field of teaching. The Blogs, Twitter, e-journals, e-books etc. have made it easy to get the information. The teaching and learning of English by using all these means in proper way has created its own place as most of resources for learning are available in English. This is a golden opportunity for the teacher of English to impart soft skills among his pupils by applying easy, innovative and creative techniques with the help of audio-visual aids in classroom.=

Introduction

We are living in the twenty first century as well as in digital technology. Information and Communication Technology (ICT) is a force that has changed many aspects of the way we live. The paper concentrates over impact of ICT in Teaching, Learning and Evaluation. ICT has three components that is Information, communication and technology. Language learning deals with all three components.

1. Information: Information means being able to acquire, transmit and exchange the information.**2.Communication**: Communication means learning how to communicate in one or many languages when receiving transmitting and sharing information.**3.Technology**: Technology is related to language learning in term of learning environment and the tools.ICT has added a different variable to communication which is a different form of communication and a different form of literacy and illiteracies.

Importance of Language

In this world of Information Technology teaching method should improve according to pupil and changing circumstances in globalization trade So with the help of sources like OHP (Overhead Projector), LCD, Internet, Computer, students participation in education should increase.

Language has plays very important role in the human being development. There is no option at the international level except English though each region uses various languages. In Indian education sector the education has been imparting in different languages urge for completing education process. At the same time English has very important place. With this view different types as well as medium are used to teach English language.

Human beings has very important place in economic system. So that Government continues tries to develop human being through various shades. Except this educational development is very special aspect in the development of human beings.

According to Government, there is need to market in various sectors. Educational facilities are made on language, science, technology, management and economy These all sectors are provides the facilities for development of human beings.

Language learning through ICT

ICT has positive effects on second language learning i.e.(English) The impact of language learning is highly developed on the way, it is used the teachers motivation and his 'Savoir –faire'.

Using ICT the following impacts seems to be the most obvious in favour of second language learning.

1 ICT increases learners motivation and enhances personal commitment and engagement.

2 ICT allows to react upon and enables the use of daily news, it offers access to authentic materials on the web.

3 ICT enables to focus on one specific aspect of the lesson as vocabulary and Pronunciation etc.

4 Lectures become more interesting and less ordinary which boosts learners engagement.

5 Possibility to use alternately skills, as text and images, audio and video clips.

6 A quick feedback is made possible.

Text of ICT and Influence

The process of reading and influence of the text has changed by the second language curriculum. The ways of the student's access of the texts also changed. Multimedia texts challenge the notion of the English language and literacy as being about words, sentences and type of the text. The verbal aspect of communication is only part of what is being communicated in the text of multimedia. Reading multimedia texts therefore requires now ways of reading and new reading skills. These include the ability to read images, icons, hyperlinks formatting conventions and site maps. ICT has also changed the ways in which student's access texts.

Place of English Language Teaching in India

Among Indians the motivation to learn English has mostly been of the instrumental kind to learn it ; so as to earn a living and some social standing, and for extending the horizon of one's awareness. Until about decade of the Nineteen Sixties, one could not pass the school final examination in India unless one passed in English. Now this motivation is also becoming integrative with the culture.

India has long tradition of language teaching. It has successfully used the direct method, the bilingual method, the structural method, language through literature and the reading method. The communicative approach to language teaching is also being tried out.

Bilingual Method

The bilingual method and social wordlists were used mostly in the early years of English in India and became absolute by the middle of the eighteenth century. For its limited objective it became quite successful. It was like the holophrastic stage in child language acquisition extended conversation or communication was not possible, but the act of communication was accomplished. It created a feel for the language be sides a minimum functional vocabulary on which the extended language could be built most wordlists were prepared before the mid-eighteenth century, by then learners were moving to dictionaries and grammar books and were attempting translations of longer texts.

After the successful completion of an experiment with the bilingual method of teaching English to a group of Kannada speaking children at Mysore Sastri reports that- children from the control group who had been taught English through their mother tongue had an average score of 75.2%. The success of such experiments at the central institute of English and foreign languages, Hyderabad and elsewhere has revive interest in the bilingual method.

Evaluation

English has been not the language of European or American countries, but has become the language of third world people It is an International and link language. It is spoken all over the world and is wildly accepted It is used as a second and third language in many third world language like in India, China, Zimbabwe and Kenya etc. It is being taught and studied in our country but an average Indian students is not able to either English or communicate in English to a reasonable level of proficiency and fluency. Again the position of students from rural areas is so worst.

The findings from this showed most of the students knew the various benefits which ICT can provide to them. However, many students still lack of awareness on the use of ICT resources to help them especially in learning English. Therefore it is crucial for the teachers in colleges to encourage

and guide the students to use ICT tools and provide the students language development. Before the teachers are able to guide the students successfully Most importantly, the students must change their attitudes towards the use of ICT in learning before they can successfully learn from the ICT tools. Result also showed majority of the students perceived positive attitudes towards use of ICT. However, students claimed they faced certain circumstances such as lack of English proficiency and lack of training on ICT.

Language Teaching: A New Dimension

The participation of students in various activities in class room can be improved by employing new techniques and methods of teaching. The use of multimedia can be made to make the subject of English more live and interesting. The students generally have a kind of fear of English among them. And the teacher by using these tools can certainly remove the fear from the minds of his students and create a sporty spirit in them towards learning of English. The students can be brought closer to English language by showing them pictures, giving exercise, showing video clips English conversation, showing blogs of famous personalities. The exercise can be given by dividing them into groups and by asking to do it by allowing discussing the matter with members of the same group. In this method, the teacher can boost the confidence of his students in communicating among the students themselves as well as their teacher of English.

Internet and Its Use

The world of human being has widened up to the fullest of extent in terms of circulation of information through Internet. The Internet has made available the treasure of knowledge to all from all walks of life and from all the corners of world. The people from different countries can share and get the information at the same time. The e-games, blogs, e-books, language games, grammar games etc. have reduced the distance of world, classroom and one's own closet. Thus the use of modern technology and learning tools, instruments, audio visual aids has made the learner more efficient in learning process.

Online Language Games and Learning of English

Today on Internet, there are many grammars, vocabulary, crossword games for improving one's knowledge of English language. This helps the learners learn English in easier way. They can play the game and can know their score of marks after the game is over. There are several websites which make such games available free of cost for users. Through these activities, the students get familiar to many new words in English. By way of forming sentences in English, completing incomplete sentences, solving riddles in crossword game etc., the students can improve their understanding of construction of English sentences. This method can be used in classroom to create interest among the students in learning English as a 'language" rather than a 'subject.'

E-Books and E-Journals

The students can enrich their knowledge of English by going through the books which are available in their 'e' form on internet. Some e-books and e-journals are available free of charge. These online books, magazines, journals etc. are available with specialized aspects of language and literature such as criticism, grammar, contemporary literary streams, literary forms, poetry, phonetics, experiments with language etc. The teacher of English by referring his students to such books can also bring them the massive world of knowledge. The students also can get their knowledge updated with the help of these books which are available them all time.

Conclusion

One cannot remain dependent on the traditional method of teaching and learning. In the digital era of today, the teacher needs to change his classroom from traditional to innovative one. The students from all walks, strata and background of society need to be trained with practical knowledge of English which will open them the avenues to get proper job in the job market. Teaching mere prose and poetry without soft skills and proficiency in English would hinder their way in practical life. Therefore, the students can certainly be trained today by making effective use of technology. The availability of resources, audio visual aids, Internet etc. has opened the doors of abundant information to all the people. By adopting new, innovative and sporty ways of teaching, the teacher of English can easily impart the knowledge of English among his students.

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(7th January to 8th January 2019)
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AN OVERVIEW OF TOOLS OF ICT USED IN SPORTS

ABSTRACT

There is need for physical educators to use ICT for facilitating learning because it is related human development and physical education is related to learning through movement. Fundamentally, physical education aims at improving human performance and enhancing human development through selected physical activities meant to fulfill these outcomes

Introduction

Information Technology (I.T) that will shape the information world is the fusion of computers and telecommunications technologies. The digital technology has influence on all aspect of human life and physical education is not an exception. ICT may include personal computers, laptops, printers, LCD projectors, palm devices, fax machines cell phones, digital cameras, internet and intranet.

To use these ICT devices, users must be ICT compliant.

Need for using ICT in Physical Education

ICT can be used to improve the quality of physical education programme. Physical education concerns activity science and movement education. ICT media such as videos digital camera, television and internet stores and transmits information on a range of physical activities such as aerobic dances, cycling, aquatics and athletics that are used to express and illustrate physical education lessons.

Physical education benefits from integration of ICT in making lessons more natural and real. Computer programmed spoils gives instructions and pictorial sequence of skills used in playing sports and simulations of skills and tactical formations in a variety of sports.

Through appropriate use of ICT students are able to promote and develop ownership of their work and direction they choose to take.

Computer

- Computer is an electronic devise that has the capacity to store, retrieve and process both qualitative and quantitative information fast and accurately.
- Computers-we used to produce documents, lesson plans, to convert scores (Excel, word spss etc) management.
- It also involves video units PC heart rate monitor, remedy heart rate monitor and educational software.
- Computer also aid learning experiences when they are used for motion analysis.
- This involves using computer to examine the way learner moves and then determine ways in which this movement can be improved in a practical physical education class.
- This devise stresses how human motor abilities can be perfected and controlled.
- Special application software analyzes the images. It measures the exact angle at which the players holding his or her arms and lags. The speed and efficiency of each movement is measured.

Internet

Internet is a global system of interconnected computer networks that promotes free flow of information. The internet provides various information resources and services which can be used by physical educators for teaching and learning. Physical education teachers share experiences with other professionals via the internet which are integrated into teaching lessons.

Cameras

Video cameras can provide footage of experienced performers in action and can be used

to inspire, to demonstrate correct techniques and to develop pupils' understanding and knowledge of the subject.

Mobile Camera Phones

The use of mobile phones in schools is a contentious issue. Some schools may allow pupils to use their mobile phones within physical education lessons.

For example, during an orienteering unit of work pupils can take photographs with their phones of the items they were trying to find and use the picture as evidence of completion of the course. Pupils can also set up their own orienteering courses, using their pictures.

Motion analysis software

The use of motion analysis software within physical education is becoming a more mainstream means of evaluating pupil performance and enhancing learning.

Film editing in PE

Video footage taken in one lesson can be edited and used at the beginning of the following lesson to highlight the achievements of pupils but also to identify common faults.

This enables teachers and pupils to study individual and team performance across a range of activities.

Portable multimedia players

Portable multimedia players (PMP), sometimes referred to as a portable video player (PVP) or an Internet Media Tablet (IMT), are capable of storing and playing digital media.

Digital Audio Players (DAP) that can also display images and play videos are portable multimedia players. Like DAPs, the data is typically stored on a hard drive. Micro drive or flash memory.

Interactive whiteboards

Teachers can use interactive whiteboards for showing a whole class a particular technique from video demonstrations taken immediately afterwards or in a previous lesson

Voice projection systems

The use of voice projection systems are an innovative way of communicating with pupils specifically within physical education

Games consoles

Games consoles are being used in schools to encourage disaffected pupils in physical education lessons in order to increase fitness levels.

Nintendo Wii Fit

The Wii Fit is a video game that has been designed by Nintendo for the Wii console. The game focuses on exercise which involves an individual using a Wii balance board. The board is a wireless accessory and contains multiple pressure sensors used to measure an individual's centre of balance. This can be applied to activity games such as skiing,

Dance mat systems

There a number of multi-player wireless dance mat systems where pupils can activate panels on a dance platform in sequence with four arrows on a screen and the beat of music. Dance Machine offer a twenty mat system for schools.

Conclusion

Physical education essentially requires the performing physical activity. This is associated with the development of motor skill. Physical education within the school system requires time, facility space and interactive lesson plans. ICT provides access to information, compresses information, motivate learners, and connect learners to teachers and teacher to theft colleagues. There are nowadays many available technological innovations that could be inserted into the physical education lesson. The visual physical education lesson is essentially based on the connected learning environment which uses ICT that are networked in structure. Physical education should avail themselves of these ICT opportunities to make their lesson more real and dynamic.

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IMPACT OF ICT IN TEACHING AND LEARNING ENGLISH LANGUAGE

ABSTRACT

Globalization and technological changes have created a new global economy "powered by technology", fueled by information and driven by knowledge." The emergence of this new global economy has serious implications for the nature and purpose of educational institutions. As the half-life of information continues to shrink and access to information continues to grow exponentially, schools cannot remain mere venues for the transmission of a prescribed set of information from teacher to student. Rather, schools must promote "learning to learn. The illiterate of the 21st century will not be those who cannot read and write, but those cannot learn, unlearn, and relearn.

Contemporary countrywide beliefs place innovatory tools in English language teaching high on the schedule with an accent on incorporation and embed ICT. Consequently it is apparent that innovatory tools will entail to be considered in all phases of policy development. We have endeavored to review the key issue allied with ICT, which influence English language learning and educational prerequisite and coupled premeditated opinion inside English language teaching. We initiate with providing a wider contextualization of these concerns in provisions of countrywide drivers and in particular delineate the ever-increasing value that is being placed on the improvement of precise higher-level premeditated principle with respect to innovatory tools and its accomplishment.

Innovatory tools play a key role in ELT system that will bequeath the learners much desired information, skills they require in contemporary day with great endeavors. As technology pooled with ELT pedagogies, this makes the education practice further motivating and pleasant. As enlightening institutions are currently initiating to integrate the market wishes in their course curriculum, this signals to the responsibility of ICT as integrated with other educational assets too. As a comprehensive practice anywhere and everywhere this trend becomes an immense prospects for the institution to establish that ELT pedagogy shifts to the new techniques of education. We converse the challenge and concern to be faced in dealing with ICT in contemporary education as a mechanism for transformation. As Indian academic institutions are in the progression of ICT toincorporate in their ELT pedagogy, this education practice will give the student more access to information and digital technology assets. Since education is a continuous process, therefore innovatory tools can make a difference on how the ELT pedagogy in the future will be and how the ELT will accomplish in the company of pioneering innovatory tools.

Innovatory tools protract the English language trainer on the one hand and facilitate the learners on the other hand. At the same time, trainers and learners get rid of their scheduled vocation, and have to play their innovative roles in new-fangled circumstances correspondingly. English language teachers fritter a large amount of their moment in sustaining the learners rather lecturing; and learners access the information pertaining to ELT.

ICTs comprise useful tools to sustain the system to encourage learner learning by providing resources to keep an eye on arrangement and correspond these initiatives to the public (CEO Forum 2001:13). There may be some suggestions

which are projected to help ELT institutions in working towards advanced assimilation and exploitation of innovatory tools to continue ELT, learning and research.

Innovatory tools, consequently, cannot by themselves determine educational problems In the developing world; as such problems are ingrained in well entrenched issues of poverty, social inequality, and uneven development. What ICTs as educational tools can do, if they are used prudently, is enable developing countries to expand access to and raise the quality of education. Cautiousness requires vigilant consideration of the interacting issues that underpin ICT use in the school-policy and politics, infrastructure development, human capability, language and content, customs, impartiality, expenditure, and not least, core curriculum and pedagogy.

Hence, employed with propensity, preciseness, psychoanalysis and security, ICTs present prevailing resources of improving the attribute of ELT beside significantly enhanced information for diagnosis and crucial evaluation. This approach will be realized if educators in all sectors take up the challenge and hard work of variation and renovation wanted if we are to amplify both innovatory tools in English language teaching in general and education in particular in cyber age.

Technological tools subsequently should not drive education; rather, educational goals and needs, and careful economics, must drive technology use. Only in this way can educational institutions in developing countries effectively, efficiently, successfully and equitably address the key needs of the population, to help the population as a whole respond to new challenges and opportunities shaped by an increasingly worldwide market.

ICT can enhance pupil interaction, verbalization and involvement in collaborative learning. ICT extends children's experiences and literary skills. It encourages the learner to express their ideas, thoughts and feelings effectively and add to students' understanding and pleasure. Communication technologies like video-conferencing, digital video and interactive white boards will motivate language learners, especially foreign language learners to express freely. Face to face interaction with native speakers improves learners' confidence in listening and speaking in the target language. It raises their cultural awareness too. Most of the language teachers adopt 'Lecture Method' for teaching. Though this continues to be most familiar method, there are many inherent problems with this method of teaching. Most often lectures reduce to monologues and students remain as passive learners. No matter, how interesting the topic may be, the attention span of students always comes to an after about fifteen to twenty minutes. Introduction of ICT to English Language Teaching can offer an alternative way to teach language without rote learning it.

Language teaching has its own technology to support irrespective of the teaching-learning methodology adopted. The grammar translation method relies on the blackboard-a chalk and talk method, which is still considered to be the best one-way transformation of information. It is then followed by the OHP (Overhead Projector), used as an alternative for the blackboard in the teacher dominated classroom. The audio lab, which is added to these has proved its usefulness for the audio lingual method in language learning. the computer software programmers known as drill and practice method are replacing this. Learners have already started reporting that this is also monotonous. In this context, communicative language teaching has become very popular with emphasis on learners engaging in authentic and meaningful interaction. This has paved the way for the use of Internet as a mean of learning and teaching languages. It is always known that, to impart quality education, teachers must keep themselves abreast of the last developments in their fields and this is made easy through technology. The Internet has numerous websites to help them enhance their regular's lessons through animation and simulations. For instance, if the teacher wants to explain about the calamities of the earthquakes or tsunami, he/she can make the learners witness these through animations, explaining the relevant details associated with it. A tape recorder can enable the learners to learn a foreign language with proper accent, when they listen to the voice of the native speaker. Live video conferencing, an amalgam of telephony and computer-compressed technologies, will lead to

the creation of a centralized pool of tutors for different subjects.

Recent studies in language teaching and learning using advanced technologies emphasis one important feature that the teachers are the gatekeepers for students' access to educational opportunities afforded by technology because the learners will not use their technical intelligence beneficially, if teachers do not provide them with proper guidance.

Don Morrison in his book E-learning Strategies has said that the educational structure has to switch over from push model to pull model technology. Previously, the teacher remained the store-house of knowledge and courses were pushed out to the learners, irrespective of their capability. Now the students can pull out their centralized classroom teaching could now deliver the fast changing skills and knowledge to everyone according to their needs and demands.

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USE OF ICT IN EDUCATION IN RURAL INDIA

ABSTRACT

Standard of education provided to the learners decide the future progress of any country. Considering this, the present scenario of educational standard in rural area is deplorable. Hence, strengthening education in rural area must be the major concern of Indian government. Taking into consideration the rapid use of technology in various fields, the government must provide ICT enabled education along with the traditional pedagogy to the students otherwise the future generations will be sidelined from the main stream of progress which will be very harmful to the developing country like India.The present research paper aims at studying the need of ICT enabled education in rural area in India. India is the country of villages and almost 70% population of India resides in rural area. India has been developing in various sectors but unfortunately there is want of improvement in educational standard in rural areas. Presently in the era of globalization, rural area seems to be lagging behind in many areas including education. Use of traditional pedagogy in the field of education is on the verge of being out of place in the onslaught of ICT enabled teaching and learning process. In urban areas ICT is being amply used but rural area is far away from it. Almost all subjects can be taught and learnt by using ICT. Use of ICT in providing education in rustic area is imperative considering the dropout rate and low standard of students.

Key words: *ICT, Pedagogy, Globalization*

Introduction:

It is imperative to incorporate ICT in education in Indian rural classrooms. ICT i.e. Information and Communication Technology in education is broadly defined as a "diverse set of technological tools and resources used to communicate and to create, disseminate, store, and manage information."(Blurton1999) A holistic development, and a drastic change are required in education system in India and ICT can be a milestone in this regard.

ICT enabled teaching and learning has overall a very positive impact on education system all over the world. ICT can make the teaching and learning process lively and interesting to the teachers and students. It can be used to motivate the learners to enrich and deepen their skills and knowledge, and can be used by teachers to avail the detailed information regarding the topic to the students and even students can get the sources to expand their views and sharpen their knowledge. By using various devices of ICT teacher can update his own knowledge and impart it to the students. The teacher has to be a facilitator in guiding the students to take the positive use of ICT in education. It can help the students to lessen the weight of school bags. It can also help the students to get new job avenues in different fields.

Students in rural area have become listless in the traditional teaching -learning process. It is a monotonous and one way process and students have little scope to take part in the process. Use of YouTube, Google, Wikipedia, Wickihow, e-learning contents and educational websites by the teachers and students can keep themselves abreast with the present world. By using ICT in teaching and learning process teachers can reach to the masses. E-notes, e-contents can be sent to the

students and even absent students can get taught material and notes through email.

The Indian central and state governments have taken a lot of efforts in making Indian education system digitalized. Presently more than 100 big companies of the world are producing low-cost mobile handset in India. Call rates in India is cheapest in the world. 4G facility and 4GB data at lowest rate is also available in India which will definitely boost the use of ICT in rural schools. But apart from these facilities, Indian schools and classrooms in rural area are falling short in using ICT in teaching-learning and evaluation process. There are various reasons which halted the progress of ICT based teaching, learning and evaluation process in rural areas-

1. Lack of qualitative e-content, e-books and reference books.
2. Non availability of low cost tablets affordable to students from rural area.
3. Akash tablet was provided at a very low rate but its quality was disappointing and hence failed the Akash project.
4. Network problem in rural areas is still not solved.
5. Lack of sufficient infrastructure. Small sized classrooms and well-equipped classrooms with ICT tools is a problem.
6. Lack of financial help and grants to schools.
7. Listlessness of private sectors in investing in education in rural area.
8. Load shedding and power cut is another problem in rural areas.
9. Lack of regular and ICT trained teachers in schools. Meagerly paid and non-grant teachers is another problem in educational sector in India.
10. Lack of interest in modifying traditional teaching method, and embracing ICT enabled education.
11. Problem of English language for the teachers in rural area, and lack of sufficient e-contents in regional languages.

There might be many other reasons apart from these, but even then use of ICT in education process has a overall positive impact. It helped in reducing drop-out rate of students in rural area. Only government and stakeholders need to be positive in the use of ICT in schools in rural area.

Conclusion:

The overall picture of education in rural area in India is frustrating and it will kill the future of many generations in India. The report of ASER (2016) clearly mentions that the students from 1 to 8 standards can't read the text suitable for 2nd standard students. They even can't solve the simple mathematics. Their general awareness and general knowledge is also very poor. Considering this horrible picture of education in rural Indian classrooms, ICT based education can prove a ray of hope. The government is paying more attention to infrastructural development of India like constructing roads, highways, toilets etc. but unfortunately neglecting the basic educational facilities in schools in rural India. Delhi government's step regarding the upgradation of government run schools is praiseworthy. The central and state governments must implement strong ICT policies to strengthen education in rural areas. Teachers and stakeholders must be encouraged to use ICT in education to make the teaching- learning process interesting and burdenless. ICT training must be provided to all teachers. Classrooms must be well-equipped with ICT tools. Computer labs with robust internet facility and uninterrupted power supply must be provided to schools in rural area. These steps will definitely help to improve the deplorable state of education in rural area in India.

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USE OF ICT IN TEACHING ENGLISH LANGUAGE

ABSTRACT

Language is a medium of communication. It had been since its origin. Nowadays, it shapes as per the new changing era of technology.Nowadays there are many ways to access various tools of languages in the age of information & communication technology. It's not a branch of only technology but it covers overall the field of life. So, the important field is language learning & teaching particularly English. There are various target groups such as teachers, trainers, policy makers and learners also.

Keywords *Language, Communication, ICT*

Introduction

English language is an international language. Nowadays, in the age of Technology it is the call of time to communicate our ideas and thoughts on the platform of the world. It is because that the language has its own value and importance as far as the message is concerned.

English is also called a link language as well as Langue-Franca. In Indian context it is call as ESL (English as a second Language) nowadays it is to be righty said that language has better learning and earning. English should be taught to develop communicative skills among the students.

Use of ICT for better learning & Teaching

It is necessary to teach English language by using ICT at various levels in learning and teaching. There are various institutions which use their own approaches and methodologies to use in our country. And it is necessary to use ICT (Information and Communication Technology) to develop better comprehension of LSRW (Listening, Speaking, Reading and Writing) among the students at school, college and professional courses level.

Approaches, Facilities and Tools

ICT has various things to offer to both teachers and students for an enhancement of their vocabulary and improvement of English language skills.

Some of these approaches are being used widely as per their convenience omnipresence, effectiveness and financial way. these are as follow-

CAI (Computer Assisted Learning)
CALA (Computer Assisted language Assessment)
CALI (Computer Assisted language instruction)
CALL (Computer Assisted language learning)
MALL (Mobile Assisted language learning)
TELL (Technology enhanced language learning)

Blogs, wiki, email facility, digital libraries, multimedia, mobile learning, free hand open source software & social media, Moocs, virtual classrooms, documentaries, digital storytelling and learning, mobile applications and learning, I-Pads, Digital notebooks, Tablets, Smart phones, Recorded audio/video materials, Online spoken English Assignments, Digital online pronunciation dictionaries, Over Head projector, Lingua Phone, Radio, Television, Internet, Features film, Short Film, E-journals, E-Magazines, Periodicals, Weeklies, Daily E-Newspapers, Android Phones, Digital Watch, language laboratory teaching learning with help of cartoon programs, E-books, web based teaching learning courses etc.

Conclusions

It is strongly believed that the implementation of educational technology & communication provides flexible & diverse set of technological tools. It gives chance to learners to use higher order skills to develop critical thinking.

It also develops & encourages being update in the upcoming technologies. It came in 2002 to help the computer based teacher and learner for awakening about technology. ICT provides an opportunity for students in the era of global competition need to obtain adequate supplies.

To be a master is a necessity for every human being in age of information & communication technology.

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COMMUNICATION BEHAVIOUR OF AGRICULTURE ASSISTANTS IN TRANSFER OF AGRICULTURAL TECHNOLOGY

ABSTRACT

The study on communication behaviour of Agriculture Assistants in transfer of agricultural technology was conducted in Nagpur district of Maharashtra state. The exploratory design of social research was used. The data were collected from 90 Agricultural Assistants with the help of a well-structured and pretested interview schedule. The findings were revealed that nearly half the respondents (48.89%) belonged to the medium category of communication behaviour, followed by 30.00 per cent were belonged to low category of communication behaviour and 21.11 per cent respondents were found in high category of communication behaviour respectively. In communication behaviour of Agriculture Assistants in transfer of agricultural technology majority of respondent (51.11%) had medium information seeking behavior, Similarly majority of respondent (56.66%) had information processing behaviour and 55.55 per cent had medium information transfer behavior. The problems faced by agriculture assistants in communication of agriculture technology like lack of interest of farmers in participation of extension programme, political interference in extension activities, non-availability of vehicle (46.66%), lack of communication media (40.00%) and lack of administrative training programme. It is need to be provided all the physical facilities for increasing communication behavior. By providing training to them time to time for enhancing their communication behavior, by organization of some motivational programme to farmers. So that communication gap will be filled.

Key Words: *Communication behavior, Agricultural assistant*

Communication is also considered as most vital tool that makes cultural transcends from one generation to another, its objectives is to bring about desirable changes in the behaviour of rural people. It improves their quality of living through transfer of appropriate technology and brings about changes in their knowledge, attitudes and skill. Good communication dose not consists of imparting knowledge, but it also includes helping people to gain a clear view of the meaning knowledge for transfer of technology. Thus, communication is very important in technology transfer for the nation development.

Agriculture Assistants are the grass root level workers engaged in transfer of technology process in State Department of Agriculture. In Maharashtra, Department of Agriculture has well organizational set up with Divisional Joint Director, District Superintendent Agriculture Officer, Sub-divisional Agriculture Officer, (SDAO), Taluka Agriculture officer (TAO), Agriculture Officer (AO), Mandal Agriculture Officer (MAO), Agriculture Supervisor (AS), Agriculture Assistant (AA), and Krishi Sevak are working as extension functionaries performing the role of change agent among the farming community. Hence effective and efficient transfer of technology depends of role

played by Agriculture Assistant. Thus, this study focused on Communication behaviour of agriculture assistants in transfer of agricultural technology.

METHODOLOGY

The present study was carried out in Nagpur district of Maharashtra state with exploratory design of social research was used. The sample of 90 Agriculture Assistants was purposively selected from five talukas viz. Nagpur, Kamptee, Hingna, Kalmeshwar, and Saoner of Nagpur district from state department of agriculture. For the present study Agriculture Assistant having more than two year service experience was selected. Agriculture Assistants were selected by random proportion sampling method and from four talukas 90 Agriculture Assistants were selected as a respondents in the present study. The data were collected by personally interviewing the respondents with the help of a pre tested and structured interview schedule. Collected data were analyzed tabulated and the statistical tools i.e. mean, standard deviation, percentage, co-efficient of correlation.

RESULTS AND DISCUSSION

Communication behaviour of Agriculture Assistants in transfer of agricultural technology

1.Information seeking behavior

Table 1. Distribution of the respondents according to their information seeking behaviour.

Sr. No.	Category	Frequency (n=90)	Percentage (%)
1	Low	01	01.11
2	Medium	46	51.11
3	High	43	47.78
	Total	**90**	**100.00**

From the above Table 1, it was observed that majority of the respondents (51.11%) belonged to the medium category of information seeking behaviour, followed by 47.78 per cent were belonged to high category of information seeking behaviour and 01.11 per cent respondents were found in low category of information seeking behaviour. This finding was supported by Uddhav (2002).

2. Information processing behaviour

Table 2. Distribution of the respondents according to their Information processing behaviour

Sr. No.	Category	Frequency (n=90)	Percentage (%)
1	Low	30	33.34
2	Medium	51	56.66
3	High	09	10.00
	Total	**90**	**100.00**

It was observed that majority of the respondents (56.66%) belonged to the medium category of Information processing behaviour , followed by 33.34 per cent were belonged to low category of Information processing behaviour and 10.00 per cent respondents were found in high category of Information processing behaviour. The similar findings were also found by Ujwal Bhaltilk (2000).

3. Information transfer behaviour

Table 3. Distribution of the respondents according to their Information transfer behaviour

Sr. No.	Category	Frequency (n=90)	Percentage (%)
1	Low	50	55.55
2	Medium	36	40.00
3	High	04	04.45
	Total	**90**	**100.00**

It was revealed that from table no.3 majority of the respondents (55.55%) belonged to the low category of Information transfer behaviour , followed by 40.00 per cent were belonged to medium category of Information transfer behaviour and 04.45 per cent respondents were found in high category of Information transfer behaviour. By and large majority of respondents information transferred behaviour was low, it indicate that majority of Agriculture Assistant were transferring Agriculture Technology information to their client farmer at low level.

4. Overall communication behaviour of Agriculture Assistants in transfer of agricultural technology

Table 4. Distribution of the respondents according to their overall communication behaviour of Agriculture Assistants in transfer of agricultural technology

Sr.	Category	Frequency	Percentage

No.		(n=90)	(%)
1	Low	27	30.00
2	Medium	44	48.89
3	High	19	21.11
	Total	**90**	**100.00**

From the above Table 4, it was observed that nearly half of the respondents (48.89%) belonged to the medium category of communication behaviour, followed by 30.00 per cent were belonged to low category of communication behaviour and 21.11 per cent respondents were found in high category of communication behaviour. By large respondent the Agriculture Assistant working in state department of Agriculture, Nagpur had medium to low level communication behaviour it needs to increase at high level.

5 Relationship between profiles of agriculture assistants with their communication behaviour.

In order to find out the relationship of the selected characteristics of the respondents with communication behaviour, correlation coefficient was worked out. The results obtained from the relational analysis have been presented in (Table 5).

Table 5. Relationship between profiles of Agriculture Assistants with their communication behaviour.

Sr. No.	Independent variable	Correlation (r)
1	Age	-0.1178^{NS}
2	Educational qualification	0.2767**
3	Service experience	0.0470^{NS}
4	Training received	0.2419**
5	Facilities available	0.3254**
6	Achievement motivation	0.2776**
7	Job satisfaction	0.3059**

***Significant at 0.01 per cent level probability. N.S – Non significant.*

5.1 Age and communication behaviour of respondents.

Data presented in Table 5, reveals that among selected variable age has non-significant relationship with communication behaviour of respondent Agriculture Assistant to transfer of agriculture technology level to their client (farmers). These findings are in contradictory with the findings of Bala Subramanian and Perumal (1989) line with the findings of who reported that, there was non significant relationship between age and job performance of extension personnel behaviour to transfer of agriculture technology.

5.2 Educational qualification and communication behaviour of respondents.

The data presented in Table 5 clearly indicate that, educational qualification of the respondent had positive and significant at 0.01 per cent level of probability relationship with communication behaviour of respondents to transfer of agriculture technology. Higher was the education qualification from of respondent more effectively they communicated and better their communication behaviour.

5.3 Service experience and communication behaviour of respondents agriculture technology

The data presented in Table 5 revealed that, service experience of the respondent and communication behaviour respondents had non-significant relationship. It indicates that service experience of respondents had no any effect on their communication behaviour. Younger and less experienced Agril. Assistants communication more effectively.

5.4 Training received and communication behaviour to transfer of agriculture technology

The data presented in the above Table 5 clearly indicates that training received by the respondents had positive and highly significant relationship at 0.01 per cent level of probability and with communication behaviour of respondent more number of training received to Agriculture Assistant more better is their communication behaviour of respondents.

5.5 Facilities available and communication behaviour.

The data from Table 5revealed that facilities available at the disposal of the respondent had positive and highly significant relationship with communication behaviour of respondent (r=32.54). It more communication facilities available to

Agriculture Assistant they can transferred more effectively Agricultural Technology to farmers.

5.6 Achievement motivation and communication behaviour of respondent.

The data from the above Table 5 showed that achievement motivation of the respondents had positively and significant relationship with their communication behaviour at 0.01 per cent level. It shows that, higher the achievement motivation higher will be the communication behaviour of Agriculture Assistant.

5.7 Job satisfaction and communication behaviour of respondent.

The data revealed from the above Table 5 that job satisfaction of the Agriculture Assistant had shown positive and highly significant relationship with each other (r=0.3059). It indicates that if Agriculture Assistants are satisfied with their job in agriculture department they will better way to transfer the agriculture technology to farmers.

CONCLUSION

It was concluded that nearly majority of the respondents (48.89%) belonged to the medium category of communication behaviour, followed by 30.00 per cent were belonged to low category of communication behaviour and 21.11 per cent respondents were found in high category of communication behaviour respectively. In case of information seeking behaviour of respondents, majority of respondent (51.11%) belong to medium information seeking behaviour followed by 47.78 per cent high level. Information processing behaviour of respondents shows that, majority of respondents (56.66%) belong to medium category whereas, 33.34 per cent in low category. It was also observed that, majority of respondents (55.55%) belonged to low level information transfer behaviour, followed by 40.00 per cent belonged to medium level.

The agriculture assistants who are engaged in transfer of technology in agriculture should be technological update by providing training to them time to time for enhancing their communication behaviour. There is need to establish a sound relationship with the farmers and the extension agencies and motive the farmers by organization of some motivational programme to farmers. So that communication gap will be filled.It was observed that as farmers are not interested in agricultural extension programmes so it is necessary start the motivational programme related to agriculture so they can motivate to participate in different agricutlrue programmes. The Agriculture Assistant also faced some technical problems to understand technology, so make the technical measure in simple language, visual, special pictorial form so that they can understand it very easily and transfer it more effectively. These is also need to provide vehicles to Agriculture Assistant as they are performing their job in rural area and also provide latest communication tools and special training on recent agriculture technology.

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TEACHING OF LANGUAGE WITH INNOVATIVE TECHNIQUES

ABSTRACT

An English Language classroom should provide room for learners to take risks and use English. Confidence is the essential ingredient required for any person to try something new. Constant motivation and appreciation are some of the tools to impart confidence among learners. If the teacher wants to create any positive impact on the students he/she should be lied first. As soon as the students like the teacher, they will start trusting the teacher and will make efforts to follow the guidelines. The methodology followed by the teacher directly or indirectly influences the students in making opinion about the subject.

Key Words: *Language, Technique, Teaching.*

Introduction:

In order to take risks, you need a learning environment in which you do not feel threatened or intimidated. In order to speak, you need to feel you will be heard and that what you're saying is worth hearing. In order to continue your language learning, you need to feel motivated. In order to succeed, you need an atmosphere in which anxiety levels are low and comfort levels are high. Issues of motivation and language anxiety are key to this topic of effect in the second language classroom.

A class will become boring and monotonous if the teacher goes on professing loads of information, instead it could be made interesting by making the students involve in the course of the class. Every learner should be given an opportunity to raise out his/her opinion about a particular topic and it should be carefully listened to by the teacher. The topic should be comprehensible and relevant to the learners.

The topics from the media are familiar to the learners they will participate with more enthusiasm. They can be asked to share it with their partners and then, with the class and finally they can be made to write. Similarly, they can be asked to share their personal experiences from their life. For example, the students can be made to share a funny incident from their life. Fist, the teacher should share a funny incident from his/her life. This would shorten the distance between the teacher and student ad will motivate the learners to come out of their shell. When teachers share their personal experiences and their own perspective on the varied topics, they send forth a message that theage, my belong to the group of learners. This paves way for a relaxed atmosphere in class.

Correction of funny letters; Students may get hurt if corrections are given based on their mistakes. Instead indirect corrections can be given by citing the errors made by a third person. Here are a few samples of letters written by unknown people with mistakes.

An Employee applied for leave as follows: "Since I have to go to my village to sell my land along with my wife, please sanction me one week leave."

Students can be asked to narrate well known stories on different perspectives. For example the story of the "crow and the fox" can be asked to narrate in the version of the fox. Short stories can be given to the students and they can be made to convert them into dialogues.

Different optical illusions can be shown to the students and they can be asked to make interpretation. As each student will interpret in one angle, a moral message can be driven home that what they see is not the only truth. As this involves all the four skills of reading, writing, speaking and listening, this can be given as seminar. Even the

students from regional medium enjoy and excel in it. Interesting facts in regional language can be given to the students and they can be made to translate first in writing and then spell out in class.

Problems, which require lateral thinking solutions, can be declare to the students especially in the last 5 minutes of the class and they can be encouraged to come out with a solution, the next day. This will make the students to think and it will trigger their curiosity for English classes. Take this sentence, " the quick brown fox jumps over a lazy dog". The specialty of this sentence is, it includes the entire English alphabet. The learners can be challenged to frame another sentence with all alphabets within one minute. It is very simple they have to just shift the noun and say, "The quick brown dog jumps over a lazy fox".

The learners can be motivated to collect cartoons, which appear in the editorials of the different newspaper every day, and compare and interpret them in class. This will promote their awareness on current affairs and foster their creativity and soft skills as they will learn how to tell serous things in a jest manner.

The learners can be encouraged to imagine a product which might be invented in future and write advertisements for it and promote them in class. The class room will be booming with creative innovations and the learners will get a feel of a scientist.

Conclusion:

Students can asked to pick the adjectives given in the matrimonial columns and make comparisons, frame sentences and match the bride and bridegroom. Thus, there are numerous ways in making an English language teaching class active. An English language teacher should be ready to shift the role from teacher to a learner, from a speaker to listener, from an organizer to participant. A teacher can reach the learner by giving choice to their voice. It is in the hands of the teacher to make the classroom the most desired one. Thus, the fruits of teacher's innovation is the learner's ovation.

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THE ROLE OF I.C.T IN LEARNING AND TEACHING

ABSTRACT

Information Communication Technologies are the power that has changed many aspects of the lives. The impact of the ICT on each sector of the life across the past two-three decades has been enormous. The way these fields act today is different as compare to their pasts. Across the past twenty years the use of ICT has basically changed all forms of endeavour within business governance and off-course education !As world is moving rapidly towards digital information the role of ICTs is education becoming more and more important and this importance will continue to grow and develop in 21 century. This paper highlights various impacts of ICT on contemporary higher education and also discusses potential future developments. The paper argues the role of ICT in transforming teacher-centered learning to competency based learning. It also explores some challenges in higher education like cognitive tutors, need for developing a model, collaborative authoring etc.

Introduction

To accurately understand the importance of ICT in Education there is need to actually understand the meaning of ICT.ICTs stand for *information and communication technologies* and are defined, for the purposes of this primer, as a ―diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.‖ ICT permeates the business environment, it underpins the success of modern corporations, and it provides governments with an efficient infrastructure. At the same time, ICT adds value to the processes of learning, and in the organization and management of learning institutions. The Internet is a driving force for much development and innovation in both developed and developing countries. Countries must be able to benefit from technological developments. To be able to do so, a cadre of professionals has to be educated with sound ICT backgrounds, independent of specific computer platforms or software environments. Technological developments lead to changes in work and changes in the organization of work, and required competencies are therefore changing. Gaining in importance are the following competencies:

critical thinking,
generalist (broad) competencies,
ICT competencies enabling expert work,

What is ICT?

ICT is an acronym that stands for "Information Communication Technologies". Information and communication technologies are an umbrella term that includes all technologies for the manipulation and communication of information. ICT considers all the uses of digital technology that already exists to help individuals, business and organization. It is difficult to define ICT because it is difficult to keep up the changes they happen so fast.

ICT is concern with the storage, retrieval, manipulation, transmission or receipt of digital data. The definition taken from the guidance in the QCA schemes of work for ICT is

"ICTs are the computing and communication facilities and features that variously support teaching, learning and a range of activities in education."

The followings are the aim and objectives of ICT implementation in education:

1) To implement the principle of life-long learning / education.
2) To increase a variety of educational services and medium / method.
3) To promote equal opportunities to obtain education and information.
4) To develop a system of collecting and disseminating educational information.
5) To promote technology literacy of all citizens, especially for students.
6) To develop distance education with national contents.
7) To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.)
8) To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education, etc.)\

Role of ICT in Higher Education:

1. To increase variety of educational services & medium
2. To promote equal opportunities to obtain education & information.
3. To develop a system of collecting & disseminating educational information.

Change In The Way of Learning:

We discussed ICTs are cause to make a move from a teacher centered learning to competency based learning. Universities are also responsible to make supporting changes in the way students are learning.

Traditional way of learning is based on Tran missive modes. Use of ICT in education also affects the way students learning. The following points are particular forms of learning.

a. Students Centered Learning:

With the help of technologies it is possible to promote transformation of education from teacher centered inst. To students centered inst. e.g. 1) Increased use of web as a source. 2) Internet users can select the experts from whom they will learn. 3) Process will become problem – based learning. 4) The proliferation of capability, competency and outcomes oriented curricula.

ICTs in education acts as a change agent. It supports independent learning. Students become immersed in the learning process by using ICT.

b. Supporting Knowledge Construction:

The emergence of ICTs as a learning technology unknowingly insists to think on alternative theories for learning.

The conventional teaching process has focused on teachers planning and leading students through a series of instructural sequences to achieve desired outcome. This way of teaching follows the planned transmission of knowledge though some interaction with the content as a means to consolidate the knowledge acquision. It depends on the process of personal understanding. In this domain learning is viewed as the construction of meaning rather than memorization of facts. Use of ICTs provide many opportunities through their provision and support for resource based, student centered learning. It acts to support various aspects of knowledge construction and as more and more stud. Employ ICTs in their learning process, the more pronounced impact of this will become.

*** The Impact of ICT on place 'When' & 'Where' to learn:**

In the past, there was no or little choice for students in terms of method & manner in which programs have been delivered. Students typically being forced to accept what has been delivered. ICT applications provide many options & choices in the same case.

a. Any place learning:

The use of ICT has extended the scope of offering programs at a distance. The off-campus delivery was an option for students who were unable to attend the campuses. Today, many students are able to make this choice through technology – facilitated learning settings. e.g.

1. In many instances traditional classroom learning has given way to learning in work-based settings with students able to access courses and programs from their workplace. The advantages of education and training at the point of need relate not only to convenience but include cost savings associated with travel and time away from work, and also situation and application of the learning activities within relevant and meaningful contexts

2. The communications capabilities of modern technologies provide opportunities for many learners to enroll in courses offered by external institutions rather than those situated locally. These opportunities provide such advantages as extended course offerings and eclectic class cohorts

comprised of students of differing backgrounds, cultures and perspectives.

3. The freedoms of choice provided by programs that can be accessed at any place are also supporting the delivery of programs with units and courses from a variety of institutions, There are now countless ways for students completing undergraduate degrees for example, to study units for a single degree, through a number of different institutions, an activity that provides considerable diversity and choice for students in the programs they complete.

b. any time learning:

In case of geographical flexibility, technology, facilitated educational programs also remove the temporal constraints. It is the good opportunity for stud. To undertake education anywhere, anytime & any place.

1. Through online technologies learning has become an activity that is no longer set within programmed schedules and slots. Learners are free to participate in learning activities when time permits and these freedoms have greatly increased the opportunities for many students to participate in formal programs.

2.The wide variety of technologies that support learning are able to provide asynchronous supports for learning so that the need for real-time participation can be avoided while the advantages of communication and collaboration with other learners is retained.

3. As well as learning at anytime, teachers are also finding the capabilities of teaching at any time to be opportunistic and able to be used to advantage. Mobile technologies and seamless communications technologies support 24x7 teaching and learning. Choosing how much time will be used within the 24x7 envelope and what periods of time are challenges that will face the educators of the future

CONCLUSION:

The role of ICTs in the education is recurring and unavoidable. Rapid changes in the technologies are indicating that the role of ICT in future will grow tremendously in the education.

1. By observing current activities and practices in the education, we can say the development of ICTs within education has strongly affected on

a.
What is learned?

b.
How it is learned?

c.
When & where learning takes place

d.
Who is learning and who is teaching.

2. ICT also focuses modification of the role of teachers. In addition to classroom teaching, they will have other skills and responsibilities. Teachers will act as virtual guides for students who use electronic media.

3. Ultimately, the use of ICT will enhance the learning experiences of students. Also it helps them to think independently and communicate creatively. It also helps students for building successful careers and lives, in an increasingly technological world.

Therefore this paper is an attempt to present the important issues that must be addressed by both pre-service teacher‘s education and in-service teacher professional development programs if schools and other educational institutions are to fully exploit the potential of computers and the Internet as educational tools. In terms of using internet and other ICT as a resource for lesson preparation, most of the teachers interviewed, admitted to never or rarely using it, while very few used the internet to gather information sporadically or regularly. The teachers particularly felt that they had both access and training inadequacy and hence were unable to utilize internet and other facilities. More teachers were comfortable however, with using computers as an individual than as a teacher. A positive find is that all those teachers who are not well versed with the computer and other technology, expressed keen interest in undergoing training for the same. They felt that if trained, they would be in a position to make use of resources available in the school.

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ROLE OF ICT IN THE PROCESS OF TEACHING AND LEARNING IN INSTITUTION

ABSTRACT

ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teachers 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. A teacher can use as many resources as he/she has available at hand. A good kind of power point presentation can serve the purpose. Different types of online resources can be supplied while teaching the play like Othello—one may use pictures/ images from Flickr or Google search, you tube videos, delivered lectures by scholars or can have an online workshop or webinar on the same topic.

Keywords:*Teaching, Learning, Evaluation, Information Communication Technology*

Introduction: ICT is an „electronic means of capturing, processing, storing, communicating information.Technologyis developed to solve problems associated with human need in more productive ways. If there is no problem to solve, the technology may not be developed and/or not adopted. Applying this principle to educational technology would mean that educational institution should create and adopt technologies that address educational problems.

The new ICT enables self-paced learning through various tools such as assignments, computer etc. as a result of this the teaching learning enterprise has become more productive and meaningful. 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, chat sessionthe new environment of interactive learner-centered approach of ICT has completely meta-morphosisedthe process of education i.e. delivery and dissemination. The technological creativity learner will help generate sharing of knowledge to perform tasks in a better way and to develop their capacity and skills to keep pace with the rapid changes but the pace of change is so fast that what was avant-garde few years ago is just a thing of past. We must not allow the ICT related opportunities to slip out of our hands. The tools and resources of ICT include all modern day inventions in the field of internet, software and hardware tools which are used to communicate through satellites, computers, mobile phones, tablets and similar devices and also the old day tools like telephone, television and radio. It has enhanced the progress in education sector rapidly. Most of the institutions use it at its best to reach a wide diversity of social communities or public. ICT must become a priority in the Indian colleges diversely spread over vast rural geography.The process of teaching-learning has become more student centric and its set aim is to produce skilled work-force. The traditional approaches and methods of teaching-learning have witnessed a reformative transformation and its place is occupied by ICT tools such as online smart-boards, projectors, laptops, android systems, PCs, online lectures, tablets, cellular phones, e-readers, web resources and many other software and hardware devices. Education satellites also have made its stake in the process of teaching-learning and evaluation. The present era is the age of Information Communication Technology .Due to the advent of ICT &IT, life has become easier.

During the last few decades, there has been a tremendous growth in the use of ICT in all fields such as industries, businesses, societies, lives of people and education.Some authors maintain that technology has the power to change the ways students learn and professors teach Still other authors posit that technology can "revolutionize" the learning process [13]. In other words, ICT extend professors and students capabilities, and their well determined use can transform roles and rules in the classroom. Many people recognize ICTs as catalysts for change; change in working conditions, handling and exchanging information, teaching methods, learning approaches, scientific research, and in accessing information.The use of ICT in the classroom teaching-learning is very important for it provides opportunities for teachers and students to operate, store, manipulate, and retrieve information, encourage independent and active learning, and self-responsibility for learning such as distance learning, motivate teachers and students

General Objectives:

1. Use of ICT as a tool for designing new learning environment for their own subject-specific purposes to help their future students to use ICT.
2. Provide the Student-Teacher with the knowledge, skill and attitude to better use technology in their lessons, research, and communication, problem solving and continuing professional development.
3. It is a fact that teachers are at the center of curriculum change and they control the teaching and learning process

Specific Objectives:

1. Critically apply the pedagogical principles of ICT integration in education
2. Develop and facilitate ICT based learning activities in the context of teaching every subject
3. Analyse and evaluate appropriate content and context for the use of ICT in teaching.
4. The use of ICT as aspect of discipline or profession; refers to the development of ICT skills for professional or vocational purposes

RESULTS AND DISCUSSION

•The institutions provide Computer, Multimedia Projector, Whiteboard facilities to support teaching learning process. This therefore made it easy for them to integrate the use ICT for teaching learning process.

•Majority of the teaching staff used computers for teaching learning mostly to prepare lesson plan and they are familiar with the software so they were able to teach the students easily. Some of the software they used include: Tally, Microsoft Office, and other programming languages.

•The teaching staff have ICT knowledge and are able to integrate it in teaching learning, they also encouraged their students to use ICT for learning for that they become proficient in it and able to wide their knowledge.

•Most of the institutions have internet facility to support teaching learning process this thus made it easy for the teaching staff and administrators to integrate ICT in education thus improving students and their knowledge.

•The teaching staff and administrators need training on ICT in order to integrate ICT effectively in teaching learning, thus many institutions today provide training to teachers and administrators so that they can improve their skills in use of ICT for teaching learning and their administrative work.

•ICT is very much needed for the development of higher institutions. This is because it makes easy administrative work for administrators and teaching learning process for teachers thus making the running of the institutions smoothly.

•ICT is very much helpful for improving the techniques of teaching learning process in higher institutions. Because it is easy for them to integrate ICT in teaching learning process.

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ROLE OF MOBILE AGRO ADVISORY SERVICES IN ENHANCING FARMERS RETURN

ABSTRACT

The development of agricultural sector is largely depends upon the development of need based technology and dissemination of information, knowledge of the same, towards the farming community at proper time. In the era of globalization, due to availability of ICT tools the process of technology transfer is possible at the lightning speed. Farmers are able to choose the need based information from the pool of knowledge. The present study was undertaken to access utilization pattern of information received thorough mobile agro advisory service. The study sample comprise of 120 farmers, selected by proportionate random from the 20 villages from Kalmeshwar and Hingna tehsil of Nagpur district. The findings of the study indicated that majority of the respondents (55.04%) were belonged to middle age group, completed secondary schooling (34.10%), resided with 5 to 7 members in family (48.33%), possessed semi-medium land holding (55.10%), with annual income above Rs.3,00,000/- (43.33%), having intermediate social participation (57.50%) and extension contact (66.66%) and risk performance (54.17%). The findings with regard to agro advisory messages about crop production, it was found that 58.33 per cent and 51.67 per cent of the respondents had availed information about precaution while spraying and weather forecasting respectively on regular basis. The findings with regard to utilization of market information disseminated through mobile agro advisory services revealed that 45.83 per cent of the respondents utilized information about market price on regular basis whereas 35.00 per cent and 29.17 per cent of the respondents utilized informative messages on price forecasting and availability of market on regular basis respectively. The findings with regard to utilization of information about government schemes it was found that around three forth of the respondents had accessed the information on regular basis about newly launched policies, eligibility criteria for different schemes and about important dates related to particular schemes. The study illustrates the need for more emphasis dissemination of information towards farming community by use of mobile agro advisory services.

Introduction

Uneven dissemination of information is one of the major constraints in the growth and development of agricultural sector. Agricultural information is the key component improving the agricultural production as well as productivity of crops, it also ensures the fair price to the marketed produce if farmers had information at right time. Farmers need different types of information during each stage of the development process, ranging from weather forecasts, pest attacks, input, cultivation practices, pest and diseases management and prices (Nitin, 2012).

The progressive growth and development of agriculture and other enterprises depends upon the accessibility to scientific information. In recent

years, agriculture is facing severe challenge and coupled with limited man power of extension personnel due to which information needs of farmers are not met. As in India extension worker: farmer ratio is 1:1000 (Kaur *et al.* 2014). It is very difficult to provide a large number of paid officials to do this job. Use of information and communication technology (ICT) in extension enables the extension workers to be more effective in meeting the information need of the farmers and to speed up the extension process.

In the era of globalization, advances in Information and Communication Technologies have changed the way knowledge is produced, processed, stored, retrieved and transferred to different stakeholders in agriculture. Telecommunication, especially the mobile phones, have the potential to disseminate of the much needed information by the farming community at the shortest span of time. Mobile technology goes beyond geographic, socioeconomic, and cultural barriers. Mobile telephony is the predominant mode of communication in the developing world. Mobile phone penetration has been growing rapidly. With the help of mobile one can reach the unreached. The speed of adoption of mobile phone technology has raised the general expectations about its potential contributions to spread of innovative farming technology, as well as farmer's knowledge and awareness of other relevant knowledge and information. This rapid spread of mobile phones open new possibilities for poor rural and agricultural households in developing countries as they allow users to overcome important barriers of physical distance and improve access to information and services. India is the second-largest mobile phone user with over 1188.5 million showing a monthly growth rate of 01.17 per cent user in the world (Anonymous, 2018a). There are about 94.57 million mobile phones users in Maharashtra (Anonymous, 2018b). Mobile phones significantly reduce communication and information cost for the rural poor. This provides new opportunities for rural farmers to obtain information on agricultural technologies.

Mobile based agro-advisory ensure availability of right kind of information at proper time which enable the farmers to initiated the right decisions with regard to the agricultural operations, which significantly results in enhancement of agricultural production of the farming community. Mobile agro- advisory has the potential to fulfill the diverse information of demand of farmers. The messages received over the mobile make aware the farmers about different crop varieties, their planting methods, pests as well diseases, their control measures, proper time of harvesting and marketing of harvested produce in right market so as to receive remunerative price. The mobile agro-advisory also provide the weather related information like, thunderstorm, cold storm, heavy rainfall etc., this prepare the farmers for the drastic weather conditions.

Department of Agriculture had engaged in dissemination of agricultural information through web portal mKisan since December, 2012. The mKisan has been delivering information for the farming community of the state by harnessing the information and communication technology based mobile network. The aim is to provide timely quality need based information on various topics and context of agriculture and allied sector in the right quantity and right form thus empowering the farmers with information and improving their decision making ability. The delivered information is location specific and crop or enterprise specific. Information is delivered to the registered farmers of the state through mobile SMS.

As availability of mobile sets is increasing at enormous rate in the urban as well as in the rural area. This provides an opportunity extension system to deliver the required information by the farming community. The utilization and feedback over the agro advisory message by the farmers will proved advantageous for the policy makers for dissemination of need based information. Hence the present study was undertaken with the specific objectives a. to study the the personal, socio-economic, communicational and psychological characteristics of farmers b. to study the utilization of information of mobile based agro advisory services.

Material and Methods

The study was carried out in Kalmeshwar and Hingna talukas of Nagpur district of Maharashtra state. An ex-post facto design of social research was used for the present study. The ten villages in which highest number of farmers received mobile based agro advisory messages

were selected from each taluka. Thus from two taluka under the study, 20 villages were selected on basis of higher beneficiary farmers of agro advisory messages, further by proportionate random sampling method 120 farmers were selected for the present study. The data were collected personally with the help of pre-tested structure interview schedule. The data were then tabulated, analyzed and the results were interpreted.

Results and Discussion

The study was conducted to find out the personal, socio-economic, communicational as well as psychological characteristic of the famers, the findings of the study was presented in the table no 1.

A. Personal, socioeconomic, communication and psychological characteristics of the respondents

The data in Table 1 indicated that majority of the respondents (55.04%) belonged to middle age group i.e. (36 to 50 years), more than one third of the respondents (34.17%) had competed secondary school level education, nearly half of the respondents (48.33%) resided with the 4 to 7 members family size, slightly more than half of the respondents (55.00%) possessed semi-medium land holding (2.01 to 4.00 ha.), great majority of the respondents (87.50%) tend to followed kharif cropping pattern, followed by (46.67%) had grown rabi crops, higher proportion of the respondents (43.33%) were reported their annual income (above Rs. 3,00,000/-), while social participation and extension contacts of the respondents were observed in intermediate range i.e. (57.50%) and (66.66%) respectively and more than half of the respondents (54.17%) had medium risk preference.

Table 1: Distribution of the respondents on the basis of their socio economic profile.

(N= 120)

Characteristics	Categories	Frequency	Percentage
i) Age	Young (Up to 35 years)	20	16.66
	Middle(36 to 50 years)	66	55.04
	Old (Above 50 years)	34	28.30
ii) Education	Illiterate	01	00.83
	Primary school	09	07.50
	Middle school	18	15.00
	Secondary school	41	34.17
	Higher secondary school/Junior college	32	26.67
	Diploma or technical education	06	05.00
	Under graduate degree	10	08.33
	Post graduate degree	03	02.50
iii) Family size	Small (up to 4)	33	27.51
	Medium (5 to 7)	58	48.33
	Big (above 7)	29	24.16
iv) Land holding	Marginal	07	05.83
	Small	24	20.00
	Semi-medium	66	55.00
	Medium	23	19.17
v) Cropping pattern	Kharif	105	87.50
	Rabi	56	46.67
	Summer	07	05.83
	Annual	47	39.17
	Perennial	59	49.16
vi) Annual Income	Up to Rs. 75,0000	03	02.50
	Rs. 75,001 to 1,50,000	07	05.83
	Rs. 1,50,001 to 2,25,000	12	10.00
	Rs. 2,25,001 to 3,00,000	46	38.34
	Above Rs. 3,00,000	52	43.33
vii) Social participation	Low (up to 1)	21	17.50
	Medium (2 to 4)	69	57.50
	High (Above 4)	30	25.00
viii) Extension contact	Low	22	18.33
	Medium	80	66.66
	High	18	15.01
ix) Risk performance	Low	26	21.67
	Medium	65	54.17
	High	29	24.16

B. Utilization of mobile agro advisory service by the respondents

i) Crop Production

The data in Table 2 represented the utilization frequency of mobile agro advisory service message by the beneficiaries for the crop production purpose. It was observed that information related to the precautions to be taken while spraying of insecticides (58.33%), weather forecasting (51.33%), sowing time (44.17%) and seed treatment (41.66%) disseminated through messages were utilized and followed regularly by the respondents. While respondents reported that they had sometime utilized the agro advisory information related to land preparation (62.50%), method of sowing (62.50%), application of irrigation (60.00%), availability of seeds (58.34%), disease symptoms (54.17%), nutrient deficiency symptoms (54.17%), pest attack (50.83%),crop

maturity (50.00%), seed treatment (48.34%), new crop varieties (46.68%), use of chemical fertilizers (45.83%), use of recommended doses of insecticide/pesticides (43.33%), soil testing (40.83%), management of weed (40.00%) and sowing time (36.66%), respectively.

From the findings it was revealed that large number of the respondents were utilized information of mobile agro advisory services on sometimes to regular frequency basis.

Table 2.Distribution of the respondents on the basis of utilization of mobile agro advisory message for crop production.

Sr. no.	Information related to crop production	Utilization Interval (n=120)		
		Regular	Sometime	Never
1	Soil testing	40 (33.33)	49 (40.83)	31 (25.84)
2	Land preparation	17 (14.16)	75 (62.51)	28 (23.33)
3	Availability of seed	18 (15.00)	70 (58.34)	32 (26.66)
4	Variety	50 (41.66)	56 (46.68)	14 (11.66)
5	Seed treatment	50 (41.66)	58 (48.34)	12 (10.00)
6	Sowing time	53 (44.17)	44 (36.66)	23 (19.17)
7	Method of sowing	20 (16.67)	75 (62.50)	25 (20.83)
8	Irrigation	27 (22.50)	72 (60.00)	21 (17.50)
9	Weed management	38 (31.67)	48 (40.00)	34 (28.33)
10	Chemical fertilizers	39 (32.50)	55 (45.83)	26 (21.67)
11	Pest attack	42 (35.00)	61 (50.83)	17 (14.16)
12	Disease symptom	38 (31.66)	65 (54.17)	17 (14.17)
13	Precaution while spraying	70 (58.33)	28 (23.33)	22 (18.33)
14	Recommended doses of pesticide/insecticide	31 (25.83)	52 (43.33)	37 (30.83)
15	Deficiency symptoms	39 (32.50)	65 (54.17)	16 (13.33)
16	Crop maturity	19 (15.83)	60 (50.00)	41 (34.17)
17	Weather forecasting	62 (51.67)	36 (30.00)	22 (18.33)

ii) Market information

Marketing of the harvested produce is an important aspect which will enhance the profitability of the farmers if the produce sell at proper time. The data with regard to utilization of information about marketing, availability of market, price forecasting was accessed and presented in Table 3. It was observed that most of the respondents were regularly utilized information about market price for different commodities (45.83%) followed by information on price forecasting (35.00%) and availability of market (29.17%) respectively. While 45.83 per cent and 40.07 per of the respondents utilized information on availability of market and price forecasting messages on sometimes interval.

Table 3. Distribution of the respondents on the basis of utilization of mobile agro advisory message for marketing of the produce.

Sr. No	Information about market	Utilization Interval (n=120)		
		Regular	Sometime	Never
1	Availability of market	35 (29.17)	55 (45.83)	33 (27.50)
2	Market price	55 (45.83)	45 (37.50)	20 (16.67)
3	Price forecasting	42 (35.00)	48 (40.07)	28 (23.33)

iii) Information on government schemes

Government implementing different schemes, programmes, policies for the welfare of the farming community. The information about government initiatives at the right time proved helpful to avail the benefits of the programmes. The data in Table 4 revealed the distribution of the respondents on basis of the utilization of information on government schemes. It was apparent that, majority of the respondents were regularly utilized the information about newly launched schemes (74.17%), followed by information on documents required (69.17%), eligibility criteria (70.83%) and information on important dates related to particular schemes (66.68%).

Table 4. Distribution of the respondents on the basis of utilization of mobile agro advisory message for government schemes.

Sr. No	Information about Government schemes	Utilization (n=120)		
		Regular	Sometime	Never
1	Newly launched policies	89 (74.17)	25 (20.83)	06 (05.00)
2	Required documents for scheme	83 (69.17)	30 (25.00)	07 (05.83)
3	Eligibility criteria for particular scheme	85 (70.83)	26 (21.67)	09 (07.50)
4	Important dates related to particular scheme	80 (66.68)	32 (26.66)	08 (06.66)

C. Overall utilization of information received through mobile agro advisory service.

It was revealed from the Table 5 that majority of the respondents (53.34%) had sometime utilization of the information provided through agro advisory service, followed by 27.50 per cent respondents were regularly utilized and 19.16 per cent respondents were never utilized the information provided through agro advisory service. It can be concluded that majority of the respondents were observed the utilization of mobile agro advisory messages in sometime to regular pattern.

Table 5. Distribution of the respondents according to their overall utilization

Sr. No.	Utilization	Respondents (n=120)	
		Frequency	Percentage
1	Never (Up to 22.07)	23	19.16
2	Sometime (22.08 to 47.13)	64	53.34
3	Regular (above 47.13)	33	27.50
	Total	**120**	**100.00**
Mean= 34.60		SD= 12.53	

CONCLUSION

Information is pre-requisite condition for the utilization of crop production practices, marketing of produce and participation of the individuals in the government programmes. It was found that majority of the respondent were regularly utilized mobile based agro advisory service messages about crop production, marketing of the harvested produce and the information related to the different developmental programmes, schemes as well policies implemented by the government for the betterment of the farming community from time to time.

The messages need to be need based, should be disseminated at proper time of application so that large number of the farmers can be benefitted.

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ICT TOOLS USED IN CLASS ROOMS

ABSTRACT

At the very outset we ought to bear one thing in mind that ICT plays a vital and the most significant role in teaching, learning and evolution in the classrooms. As a matter of fact ICT tools are not only beneficial for the teachers but also for the students. As a rule ICT stands for information and communication technologies which alludes to technologies that provides access to information by dint of telecommunications. Though it is Similar to information technology, it focuses primarily on communication technologies. This consists of the internet, wireless networks cell phones, and other communication of mediums.

At the very outset we ought to bear one thing in mind that ICT plays a vital and the most significant role in teaching, learning and evolution in the classrooms. As a matter of fact ICT tools are not only beneficial for the teachers but also for the students. As a rule ICT stands for information and communication technologies which alludes to technologies that provides access to information by dint of telecommunications. Though it is Similar to information technology, it focuses primarily on communication technologies. This consists of the internet, wireless networks cell phones, and other communication of mediums.

Information communication technology tools are personal computers digital television, email, robots, network hardware and software, satellite system, video, radio, laptop, projector etc. There can not be denying the fact at all that appropriate use of ICT tools in the classrooms makes teaching –learning efficient and effective. Teaching – learning by means of ICT in the classrooms of B.A, M.A, B.com, M.com, B.sc, M.sc, Medical and engineering is so important that it provides opportunities for both teachers and students to operate systems forcefully. It is to be remembered that ICT provides the perfect platform for teachers to adopt and improve their teaching practices with new methods such as blended learning . ICT can enhance the standard and quality of education in a number of ways. It increases motivation and engagement of the students by virtue of facilitating the acquisition of basic skills and by enhancing teacher training. ICT tools are applied in order to assist teaching and learning in the classrooms. Nowadays thousands of ICT tools are available in the educational fields which are useful and fruitful for students and the teachers as well. For example social networking sites.

Making education online could be one major application of ICT. Automation and technology enhanced presentation can be other issues. ICT can improve the standard and quality of human life because it can be used as a learning and education media. It provides wider knowledge and can help in gaining and accessing information. ICT is the connecting link between the teachers and the students which provides update and logical knowledge to the students. It is also easy for the teacher to handle the ICT tools to teach the students in the classrooms.

In this way ICT is very important in order to teach the students in the classrooms.

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STUDY OF ICT FACILITIES IN ENGINEERING COLLEGE LIBRARIES IN MAHARASHTRA IN TERMS OF AICTE NORMS

ABSTRACT

Due to the ICT present libraries are provide better service for achieve their goals and made convenient platform for the students to make use the information and can reach their users without the restrictions of geographical boundaries. Information and Communication Technologies (ICTs) have changed the concept of traditional libraries into digital library, virtual library or paperless library. This paper focuses on availability of ICT resources in the engineering college libraries in Maharashtra.

Introduction:-

In the higher level education field, Maharashtra has taken giant steps, therefore infrastructure facilities for higher education of high standard can be found in Maharashtra. Resources development of human has been quite good in Maharashtra particularly related to development in technical education. With regard to technical education, numbers of outstanding institutions have catered to the needs of students pursuing their dream to be engineers.

Engineering education in Maharashtra has seen much growth over the past decade, both in number of students and number of colleges. At present 350 engineering colleges are existing in Maharashtra. Out of this 04 Engineering colleges run by Government, 05 Engineering colleges run by Government aided Institution, 04 engineering colleges run under the Government aided Autonomous , 02 colleges having university manage, one college taking status of deemed university, 02 colleges are nation level institution, 09 engineering colleges run by Unaided Autonomous and 318 engineering colleges run by Unaided Private organization.

In the present era, the technological development is invasion on library work. Hence libraries have developed network based distributed library system. This system helps to expand library sources and services, increasing used, efficiency and effectiveness of library. It is also established new path for interaction between users and information.

ICT provides is High speed and efficiency to the users. Use of ICT is easier for the users, they can access required information and material through ICT sources such as computer, software or equipment is available. Huge reading materials can be searched, retrieved and disseminated simultaneously and instantly. Electronic resources are the electronic information sources, which are collections of digital or electronics format. Those are accessed on various electronics device like compute, smart phone, tab etc. in different forms. The range of electronic information resources is wide; it provides information in the form of full text databases, e-journals, e-discussions, image collections or any multimedia form through the internet.

It is very first step towards the use of ICT in library. It is developing well in automating the house keeping operations in library, also brings great revaluation in the five law of library science. Generally ICT resources are divided in two type's i.e. Online which may include E-journal, E-books, databases, Web sites and Offline may include CD, Diskettes, computer etc

Objectives:-

The present work is carried out with objective, to study the present status of ICT facilities of engineering college libraries in Maharashtra in terms of norms.

Methodology:-

For the purpose of collecting data questionnaires were circulated to each institution under study. Similarly for the objective researcher has analyzed the received data from questionnaires and Personal interviews methods. Based on this analysis, the findings of the study are submitted in the form of conclusion. For this study researcher has covered only engineering colleges in Maharashtra, which offer degree level courses in the field of engineering and technology. The researcher has considered only those colleges that are established before 2002-03, approved by AICTE and run under the control of Directorate of Technical Education (DTE) of Maharashtra.

Analysis of Data:

The collected data is analyzed and presented in tabular from in forth coming paragraphs.

Table 1 : Year-wise distribution of establishment of colleges

Sr. No.	College Status	Number of college established during the period				Total
		Before-1983	1983-1989	1990-1996	1997-2003	
1	Govt.	01	--	02	-	03
2	Govt. aided	01	--	--	01	02
3	Govt. Autonomous	04	--	-	--	04
4	Govt. Aided Autonomous	02	--	--	--	02
5	Un-aided	--	37	18	34	89
6	University Department	01	--	--	--	01
Total		**09**	**37**	**20**	**35**	**101**

Table-1 is confirmed the growth of technical education colleges in the Maharashtra state. In Maharashtra, 141 engineering colleges are offered engineering degree courses up-to 2003. Among these 101 institutes was responded to the questionnaires. The All India Council for Technical Education (AICTE) monitors and regulates the standard of technical education in Maharashtra. In view of the above, it is observed that, In Maharashtra before 1983 total nine engineering colleges were established including one Government, one Government Aided, four Government Autonomous, two Government Aided Autonomous and one University Department Colleges. In Maharashtra, private organizations have adopted the policy of privatization, in technical education from 1983; there is a quantitative expansion. According to table-1 it is observed that there are 101 colleges are run by Government, University and Private organizations in Maharashtra state up-to 2003. During the period of 1983 to 1989, 37 un-aided engineering colleges were started on permanent non grant basis. Subsequently, 20 engineering colleges were started during 1990 to 1996 out of which two colleges are run by Government and 18 colleges are run by Private organizations. During the period of 1997 to 2003; 35 engineering colleges were started by various organizations. Among these 34 colleges including one university managed unaided college Usha Mittal Institute of Technology SNDT Women's University, Mumbai are unaided and one college is Government aided college.

Table 2: Allocation of space for library building

Sr No	Space in Sq. Mt.	Number of colleges having status						Total	Percentage
		Govt.	Govt. aided	G.A	G.A.A.	Un-aided	U.D		
1	Less than 400	01	01	-	-	16	-	18	17.81%
2	400-600	-	01	-	-	32	-	33	32.67%
3	600-800	01	-	01	01	10	-	13	12.87%
4	More than 800	01	-	03	01	30	01	36	35.66%
5	Not responded	-	-	-	-	01	-	01	0.99%
Total		**03**	**02**	**04**	**02**	**89**	**01**	**101**	**100%**

***G.A. -Govt. Autonomous, U.D. - University Department, G.A.A. - Govt. Aided Autonomous**

Table-2 displayed the allocation of space for library building. Only one (2.98%) libraries were not responded to this question. During the study, it has been found that eighteen (17.82%) libraries are not fulfilling the norms of AICTE because they are running in the area less than 400 sq. mt. Subsequently, other eighty two (81.19%) libraries have the area more than norms and standard of AICTE. From table-2 it is found that out of eighty two college libraries thirty three (32.67%) libraries is setup in the area in between 400 to 600 sq. mt. Similarly thirteen (12.87%) college libraries have been running in the area in between 600 to 800 sq. mt. Whereas thirty six (35.66%) libraries having areas more than 800 Sq. Mt.

Table 3: Seating capacity in the reading room

Sr. No	Seating Capacity (No. of users)	Number of colleges having status						Total	Percentage
		Govt.	Govt. aided	G.A	G.A.A	Un-aided	U.D.		
1	Upto-50	01	-	-	-	01	-	02	1.98
2	50 - 100	02	01	03	-	34	01	41	40.59
3	101 -150	-	01	-	-	27	-	28	27.72
4	151 - 200	-	-	01	02	16	-	19	18.81
5	More Than 200	-	-	-	-	11	-	11	10.90
Total		**03**	**02**	**04**	**02**	**89**	**01**	**101**	**100**

***G.A. -Govt. Autonomous, U.D. - University Department, G.A.A. - Govt. Aided Autonomous**

According to AICTE norms-2006 table-3 reflected the information about the seating capacity in reading room of libraries under the study. From this table it reveals that only 2 libraries under study, having the reading room with the seating capacity upto 50 users. Forty one (40.59.%) libraries are having the reading room with the capacity ranges between 50 to 100 users and twenty eight (27.72 %) libraries have provided reading room having the capacity 101 to 150 users. Similarly nineteen (18.81 %) libraries have provided the reading room having capacity ranges between 151 to 200 users. Moreover eleven (10.90 %) libraries are having the reading room capacity is more than 200 users. In this respect it would be interested to study the deficiencies in the libraries from Maharashtra state and it is reflected in table 9.23.

Table 4: Deficiencies of seating capacity in college library

Sr. No	Deficiencies	Number of libraries with deficiencies in seating capacity	Percentage
1	1 – 20 %	10	9.90%
2	20 – 40 %	04	3.96%
3	40 – 60 %	03	2.97%
4	60 – 80 %	03	2.97%
5	Not Deficiency	81	80.20%

From table 4, it reveals that total 101college libraries are responded in Maharashtra out of which eighty one libraries have fulfilled the prescribed norms of AICTE in respect of reading room capacity. Moreover ten libraries have defecated if compared with AICTE norms. This deficiency is ranging between1 to 20 % and four college libraries deficated in between 20 to 40%. Similarly three college libraries have defecated AICTE norms in between 40 to 60% and 60 to 80%.

Because modern consortia are concerned with the purchase of electronic journals, we tend to measure their strength in terms of the financial benefits that they are able to achieve for their members. Financial benefits are important; hence the Librarian should take care of it while acquiring the reading materials for the users. According AICTE norms, e-journals are required in the library but it is not mandatory. However from table 5 it is found that sixty four (63.36%) libraries are subscribing IEEE online journals for its users. It is one of the leading online journal consortia in India as well Maharashtra. During the study it is also found that SCIENCE DIRECTS, SPRINGER LINK, J-GATE (JET), ASME, ASCE and AICTE-DELNET are also the popular online databases, which are subscribed by various engineering college libraries. ACM, ASTM, JCCC and ABI online databases are also subscribed by engineering college libraries. On other hand it is also observed that thirty engineering college libraries are not the member of any consortia or online library databases. Two libraries including one Un-aided and one Govt. aided autonomous library has not responded to the questionnaire.

Table 5: Availability of consortia in the library

Sr. No	Name of Consortia	Number of colleges having status						Total	Percentage
		Govt	Govt. aided	G.A	G.A.A.	Un-aided	U.D		
1	IEEE	01	01	04	01	57	-	64	63.36%
2	cience Directs	-	-	01	-	04	-	05	4.95%
3	SPRINGER	-	-	01	01	03	-	05	4.95%
4	ASME	-	01	01	-	07	-	09	8.91%
5	ASCE	-	01	01	-	02	-	04	3.96%
6	J-GATE (JET)	-	-	-	-	02	-	02	1.99%
7	AICTE-DELNET	-	-	-	01	02	-	03	2.97%
8	ACM	-	--	01	-	-	-	01	0.99%
9	ASTM	-	-	01	-	-	-	01	0.99%
10	JCCC	-	-	01	-	-	-	01	0.99%
11	ABI	-	-	-	-	01	-	01	0.99%
12	Not Subscribed	02	01	-	-	26	01	30	29.70%

13	Not responded				01	01		02	1.99%

***G.A. -Govt. Autonomous, U.D. - University Department, G.A.A. - Govt. Aided Autonomous**

Library automation has helped libraries in improving the quality, speed and effectiveness of services, obtain increased operational efficiencies, provide new services not hitherto possible. Therefore, Librarians take initiative towards the library automation with management support.

Table 6 highlighted that there is no uniformity for using the library software in the libraries. Total 28 library automation software have used in eighty nine libraries. From the table it is observed that SLIM-21 software is using by 15 libraries for its automation. It is most popular library software in Maharashtra. Similarly SOUL software is taking second position in using library software. It is using by nine libraries for its automation. However 12 college libraries are using the In-House library software. Moreover, it is found that Library Management, LiBMan, SOFTLIB, LIBSUIT and E-Granthlaya are also popular library software amongst the libraries.

Table-6: Use of library software in library

Sr. No.	Name of library software	Number of colleges using software						Total
		Govt.	Govt. aided	G.A.	G.A.A.	Un-aided	U.D	
1	LIBSYS	-	-	01	-	03	-	01
2	SOUL	-	-	-	01	08	-	09
3	CDS/ISIS	01	-	-	-	01	-	02
4	SLIM-21	-	01	02	-	12	-	15
5	LIBSUIT	-	-	-	-	03	-	03
6	E-Granthlaya	-	-	-	-	03	-	03
7	Library Management	-	-	01	-	06	-	07
8	SOFTLIB	-	-	-	-	07	-	07
9	EXCEL	-	-	-	-	01	-	01
10	Deeksha System	-	-	-	-	03	-	03
11	MICM.NET	-	-	-	-	01	-	01
12	In-house	01	-	-	-	11	-	12
13	Bookworm	-	-	-	-	01	-	01
14	Vision India	-	-	-	-	01	-	01
15	LIBMAN	01	01		01	02	-	05
16	E-ASY LIB	-	-	-	-	01	-	01
17	Library Manager	-	-	-	-	01	-	01
18	Synthesis lib.	-	-	-	-	01		01
19	Auto-Lib	-	-	-	-	02	-	02
20	Digital	-	-	-	-	01	-	01
	Software							
21	Del-Plus	-	-	-	-	01	-	01
22	Ohonix	-	-	-	-	01	-	01
23	Master	-	-	-	-	01	-	01
24	Synch-Ronix	-	-	-	-	02	-	02
25	Polan Green	-	-	-	-	01	-	01
26	Management Tech.	-	-	-	-	01	-	01
27	Soft-Tech	-	-	-	-	01	-	01
28	No Software	-	-	-	-	07	-	07
29	Not Responded	-	-	-	-	05	-	05
Total		**03**	**02**	**04**	**02**	**89**	**01**	**101**

***G.A. -Govt. Autonomous, U.D. - University Department, G.A.A. - Govt. Aided Autonomous**

As per the AICTE norms and standard minimum two computers are available in the library for digital library section. According to this norm from table 7 it is reflected that out of 101 libraries 97 libraries were fulfilled the norms of AICTE. Eleven libraries are extending its services to its users on 1 to 5 computers and twenty eight colleges including 26 un-aided libraries, one Govt. and one Govt. aided college are made available 6 to 10 computers. Eight libraries have provided computer facilities to its users through 11 to 15 computers. Sixteen libraries including 13 un-aided libraries, one Govt., one Govt. aided and one Govt. aided autonomous college have used 16 to 20 computers for its computerization. Thirty four libraries including 29 un-aided, four Govt. Autonomous and one Govt. aided Autonomous college are providing computers facilities to its users on more than 20 computers. Only two un-aided college and one University Department libraries have not provided this facility to its users and one college has not responding to this question.

Table 7 Availability of Computer in library

Sr. No.	Number of computers	Number of colleges having status						Total
		Govt.	Govt. aided	G.A.	G.A.A.	Un-aided	U.D.	
1	1-5	01	-	-	-	10	-	11
2	6-10	01	01	-	-	26	-	28
3	11-15	-	-	-	-	08	-	08
4	16-20	01	01		01	13	-	16
6	More than-20	-	-	04	01	29	-	34
7	Not Available	-	-	-	-	02	01	03
8	Not Responded	-	-	-	-	01	-	01
Total		**03**	**02**	**04**	**02**	**89**	**01**	**101**

***G.A. -Govt. Autonomous, U.D. - University Department, G.A.A. - Govt. Aided Autonomous**

Conclusions

AICTE has setup norms and standards for the development of library in terms of library space, reading room capacity, e-journals, digital library section, number of computers etc. It has framed first norms, standards and guidelines for technical institutions including libraries in 1990 which is subsequently amended till date.

AICTE has made compulsory to subscribe e-journals in the library since the year 2012-13. The list of e-journal packages to be subscribed is given by the AICTE. However, in 2010-11 and 2011-12 it was simply mentioned that the library should subscribed e-journal for its users. And from 2016-17, 2017-18 AICTE has mentioned that" Suggested subscription of e-journal packages for all engineering Institutions conducting UG/PG courses:"

Regarding the position of availability of computers in library, 97 libraries are providing computer facilities to its users as per AICTE norms and standards. Out of 97 libraries, 55 libraries are having more than 100 % computer facility as per AICTE norms. Apart from this study it is also highlighted that eighty nine college Librarians have taken initiative towards the library automation. But there is no uniformity for using the library software in the libraries in Maharashtra. Only 12 college libraries are still not turn towards automation. The position of availability of computers in libraries is tolerable and Librarians are taking good initiative towards making library computerized.

Besides the formation of norms and standards, AICTE also helps in the development of engineering college libraries through set up network with DELNET, INFLIBNET, IEL digital library as well as National Programme on Technology Enhanced Learning (NPTEL)

Suggestions

- It should make mandatory for the subscription of e-journals packages to the colleges. But the freedom for selection of these should be given to libraries so that, every college library will subscribe e-journals packages as per their needs.
- There should be Memorandum of Understanding (MoU) with publishers for updating of e-journal packages and inclusion of useful e-journals in packages.
- Developing E-Resource Access Center in the library for users should be made mandatory in order to improve qualitative library services.
- Required infrastructure for library automation should be given in the norms taking into consideration the requirements of library to run it in the ICT era. It will work as guideline for librarian.
- Beside these, two computers shall install in each teaching department for students and faculty members for accessing e-resources subscribed by the library. These computers should attach to the server installed in the library by Intranet.

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ई -स्त्रोतांचा ग्रंथालयातील उपयोग

ABSTRACT

विविध क्षेत्रात त्याचप्रमाणे विविध शास्त्रात ज्ञानाच्या कक्षा अमर्याद वेगाने वाढत आहे. अशा या वेगवान माहितीयुगात ज्ञानार्जनासाठी तसेच ज्ञानदानासाठी, माहिती संप्रेषणासाठी माहिती तंत्रज्ञानाचा मोलाचा वाटा आहे. माहिती तंत्रज्ञानाचा कौशल्यपूर्वक वापर के. जी. पासून पी. जी. पर्यंत विद्यार्थ्यांना ज्ञानदान करण्यासाठी तसेच ज्ञानार्जनासाठी तसेच उच्च पातळीतील संशोधनासाठी होत आहे. माहिती तंत्रज्ञानाचा उपयोग अध्ययन, अध्यापन प्रकीयेमध्ये मोठया प्रमाणावर होत असतांना तसेच माहिती तंत्रज्ञानाचा वापर माहिती संप्रेषणासाठी, ग्रंथालयासाठी विशेषत: महाविद्यालयीन ग्रंथालयासाठी सुध्दा उपयूक्त ठरत आहे.

प्रस्तावना :

माहिती तंत्रज्ञानाने पुरविलेल्या माहितीच्या ई - स्त्रोतांचा उपयोग महाविद्यालयीन ग्रंथालयात कसा उपयूक्त ठरेल याबाबतचा शोध या लेखातून घेण्याचा प्रयत्न केला. माहितीचे ई-स्त्रोत म्हणजे माहितीचे विविध इलेक्ट्रानीक माध्यमांचे स्त्रोत. उदा. इ-बुक, इ-जर्नल, संदर्भ डेटाबेस सुचीबध्द, संदर्भ डेटाबेस पूर्ण स्वरुपात, सांख्यिकीय माहितीचे डेटाबेस इत्यादी.

माहितीचे ई-स्त्रोत म्हणजे असे साहित्य की जे विविध प्रकारच्या संगणकाव्द्रारे उपलब्ध होते. बव्हंशी ई-स्त्रोतांचा वापर करण्यासाठी इंटरनेटचा वापर करावा लागतो. माहितीच्या झपाट्याने होणा-या प्रसारामूळे नवीन माहिती जलद गतीने वाचकांपर्यंत पोहचण्यासाठी ग्रंथालयाचे आधुनिकीकरण करणे आवश्यक झाले आहे. डिजीटल तंत्रज्ञानाच्या या युगात ग्रंथालयाचे आधुनिकीकरण करण्यासाठी ग्रंथालयात ई-स्त्रोतांचा वापर करणे कमप्राप्त ठरते.

ई- स्त्रोत साहित्य :

जवळजवळ सर्व शास्त्रे आणि तंत्रज्ञान या विषयांचे ई-स्वरुपातील साहित्य प्रकाशीत होत आहे. ई- स्त्रोतांच्या वाचनातील सोयी व फायद्यामुळे त्यांना आज जास्त मागणी होत आहे असे दिसून येते.ई- स्त्रोतात काही प्रकार आढळून येतात त्यांची यादी पुढीलप्रमाणे सांगता येईल.

१. निर्देश आणि सार नियतकालीके (Indexing and Abstracting Journal) :

निर्देश नियतकालीकांचा दर्जा हा सार नियतकालीकापेक्षा उच्च व शास्त्रीय असतो. निर्देश नियतकालीके ही विशेषत: वैद्यकीय शास्त्रात वापरली जातात.सार नियतकालीकाव्द्रारा एखाद्या विषयाचा सार सांगीतला जातो. हयाप्रकारची सार नियतकालीके ही आर्थिक मोबदल्याशिवाय मिळत नाही. वरिल दोन्ही प्रकारच्या नियतकालीकाव्द्रारा उच्च बौध्दिक पातळीची व नविन संशोधनाला उपयूक्त अशी माहिती मिळते.

२. इ- बुक (E-Book) - जी पुस्तके संगणकावर किंवा हातातील इलेक्ट्रानीक उपकरणावर वाचली जातात त्या पुस्तकांना इ-पुस्तके असे म्हणतात.इ-पुस्तके हि सर्वसाधारण डिजीटल फाईल किंवा पी. डी. एफ. व्द्रारे उपलब्ध होतात. इ- पुस्तके ही संगणक, लॅपटॉप, टॅबलेट, स्मार्टफोन,यासारख्या उपकरणावर डाऊनलोड केली जातात. त्यामध्ये छापलेल्या पुस्तकासारखे कमांकीत पाने, सारण्या, अनुकमणिका, चीत्रे आलेख दिसून येतात.इ-पुस्तके इंटरनेटव्द्रारे संगणकावर डाऊनलोड करता येतात. छापील पुस्तकाप्रमाणे इ-पुस्तकांची किंमत भरुन ती आपल्या संगणकावर त्या पुस्तकाच्या वेबसाइटवरुन डाऊनलोड करता येतात किंवा प्रकाशकाकडून डाऊनलोड करण्याची लींक उपलब्ध होते. पूर्ण पुस्तक डाऊनलोड झाल्यानंतर ती पुस्तके इंटरनेटशिवाय केव्हाही वाचल्या जाऊ शकतात. डाऊनलोड केलेली इ- पुस्तके ही छापील पुस्तकापेक्षा दीर्घकाळ टीकणारी असल्यामूळे ग्रंथालयाला इ- पुस्तके जतन करण्याची गरज राहत नाही. इ- बुक छापील स्वरुपात हवे असल्यास संगणकावरील प्रींट बटन दाबुन आपल्याला छापील स्वरुपात पुस्तक उपलब्ध होते. सध्या बाजारात इ- बुक्स खरीदतांना विविध प्रकारच्या आर्थिक फायद्याच्या योजना प्रकाशकाकडून मिळत आहे त्यामूळे ग्रंथालयांना इ-पुस्तके आर्थिक दुष्ट्या फायद्याची आहे. इ- पुस्तके दळणवळणास अति सोयीची असून एका व्यक्तीला शेकडो इ-पुस्तके एका ठीकाणाहून दुस-या ठीकाणी सहजतेने हलवीता येतात तसेच इ- पुस्तकाचा उपयोग सहजतेने करता येतो.

इ- पुस्तकाव्द्रारा एखाद्या विषयाबाबत अधिक माहितीसाठी संदर्भग्रंथाची लींक तुम्हाला मीळते त्यामूळे

काही क्षणात पुस्तकात दिलेल्या लींकव्द्वारे आपल्याला संदर्भग्रंथातील माहिती पाहता येते. सर्वसाधारणपणे इ-पुस्तके इंटरनेटव्द्वारे उपलब्ध होत असल्यामूळे छापील पुस्तकाप्रमाणे पुसतके बोलावण्याचा टपालखर्च, पॅकेर्जीगचा खर्च वाचतो. इ-पुस्तकातील मजकुराचा हवा तसा फॉंड हवा तसा करता येतो. याचा फायदा कमी दृष्टी असणा-या वाचकांना होतो. काही इ- पुस्तके ध्वनी स्वरुपात उपलब्ध असल्यामूळे ती न वाचता श्रवण करता येते याचा फायदा अंध वाचकांना होतो. इ- पुस्तके हि जगात कोणत्याही ठीकाणी कोणत्याही वेळेला उपलब्ध होतात.

३. संदर्भ डेटाबेस :
संदर्भ डेटाबेस म्हणजे असा माहिती संग्रह ज्यामध्ये निनयतकालीकेतील महत्वाचे लेख, टिपणे संगणकाच्या माध्यमातून इंटरनेटव्द्वारा शोधणे होय. संदर्भ डेटाबेसमध्ये हजारो लेख एकाचवेळी हजारो नियतकालिकामधून शोधता येतात परंतू प्रत्यक्ष छापील नियतकालीकामधून शोधून काढणे अवघड व वेळखाऊ काम आहे. परिणामत: ग्रंथालयातील वाचकाला कमी वेळात संदर्भ डेटाबेस व्द्वारे माहिती शोधता येते, संकलित करता येते इतकेच नव्हे तर हवी तेवढी टिपणे, लेख संगणकाला Print Order दिल्यावर छापील मजकुराव्द्वारे मिळवीता येते.

४. सांख्यिकीय माहितीचे डेटाबेस :
सांख्यिकीय ही गणिताची अशी उपशाखा आहे ज्यामध्ये मोठया प्रमाणावर संग्रहीत माहितीचे अर्थात कचच्या सामग्रीचे विश्लेशण पृथ्थकरण आणि प्रतीरुप चित्ररुपाने, आलेखरुपाने किंवा सारणीव्द्वारे सर्वांना सुलभतेने समजेल असे केले जाते. सांख्यिकीय माहितीच्या डेटाबेसव्द्वारे वैज्ञानिक संशोधने, औद्योगिक किंवा सामाजिक समस्येचे प्रतिरुपणे सांख्यिकीय प्रतिकृतीव्द्वारे दर्शवील्या जाते. या प्रकारच्या सॉफटवेअर मध्ये सांख्यिकीय विश्लेषण प्रणाली, सामाजिक शास्त्राच्या अध्ययनाकरिता उपयूक्त सांख्यिकीय सॉफटवेअर इत्यादींचा समावेश होतो.

अशाप्रकारे सांख्यिकीय माहितीच्या डेटाबेसव्द्वारे वाचकाला वैज्ञानिक संशोधनासाठी किंवा सामाजिक समस्येचे पृथ्थकरण करण्यासाठी अत्यल्प वेळात मदत होते. या डेटाबेसमूळे वाचकाच्या अमुल्य वेळाची बचत होऊन माहितीचे अचूक विश्लेषण केल्या जाते.

५. माहितीचे इतर ई- स्त्रोत :
माहितीच्या इतर ई- स्त्रोतामध्ये आपल्याला पूर्ण मजकुर असलेले नियतकालिके, इ- वर्तमानपत्रे, औद्योगिक कंपन्यांच्या माहितीचे इ- पुस्तके,इ- मार्गदर्शिका, विविध भाषांचे इ- शब्दकोश, इनसायक्लोपिडीया,डिजीटल प्रतिमा, चरित्रात्मक लेख, इ-मार्केटिंग, व्यवसाय मार्गदर्शन इत्यादीचा समावेश माहितीच्या इतर ई- स्त्रोतांमध्ये करता येईल.

माहितीच्या ई-स्त्रोतांचे ग्रंथालयातील फायदे:

१. इंटरनेटव्द्वारे तसेच ई- स्त्रोतांव्द्वारे उपलब्ध होणारी माहिती छापील मजकुरापेक्षा कमी वेळात उपलब्ध होते त्याचप्रमाणे एकाचवेळी हजारो वाचक ती माहिती पाहू तसेच वाचू शकतात.

२. ई-स्त्रोतांव्द्वारे उपलब्ध होणारी माहिती काही क्षणात उपलब्ध होते त्याचप्रमाणे माहितीच्या सागरातून हवी असलेली माहिती शेकडो नियतकालीके, शेकडो पूस्तकातून काही क्षणात उपलब्ध करता येते.

३. ई- स्त्रोतांव्द्वारे संगणकावरील माऊसच्या एका क्लिकवर आपल्याला पुस्तक व नियतकालीकाच्या थेट प्रकाशनामध्ये जावून तिथल्या माहितीचे विश्लेषण काही क्षणात करता येते आणि आपल्याला हवी असलेली माहिती सदर प्रकाशनाकडे आहे किंवा नाही हे ठरवता येते. अशाप्रकारे वाचकाला हवी असलेली माहिती कुठे उपलब्ध होईल हे ठरवून ती मिळवीता येते.

४. ई- स्त्रोतांव्द्वारे मिळालेल्या माहितीबाबत माहितीला पूरक चित्रे, आलेख, विश्लेषणात्मक सारण्या तसेच संबंधित व्हीडीओ उपलब्ध होतात जे छापील मजकूराव्द्वारे मिळू शकत नाही.

५. ई- स्त्रोतांची ने आण करणे अर्थात ई- स्त्रोतांचे दळणवळण छापील मजकूरापेक्षा सोपे आहे.

६. ई- स्त्रोतांमध्ये हजारो पुस्तके, नियतकालीके ही एका लहानश्या सिलीकॉन चीपवर साठविली जातात परिणामत: एवढया छापील मजकुराच्या पुस्तकांना, नियतकालीकांना जतन करण्यासाठी ग्रंथालयाची फार मोठी जागा वापरावी लागते.

७. ई- स्त्रोतांव्द्वारे वाचकांचा तसेच ग्रंथालयांचा केवळ वेळच वाचत नाही तर ब-याच प्रमाणात पैसाही वाचवीता येतो. परिणामत: ग्रंथालयाचे आर्थिक अंदाजपत्रकामध्ये समतोल साधला जावू शकतो.

सारांश :

उपरोक्त लेखात ई- स्त्रोतांचा ग्रंथालयातील उपयोग याबाबत पूढीलप्रमाणे आढावा घेण्यात आला.

माहितींच्या ई- स्त्रोतांचे प्रकार अर्थात इ-नियतकालीकांचे दोन प्रकार निर्देश नियतकालीके व सार नियतकालीके यांचा महाविद्यालयीन ग्रंथालयात वाचकांसाठी तसेच ग्रंथपालासाठी वापर कसा उपयूक्त आहे याबाबतचा आढावा घेतला. त्याचप्रमाणे ई- स्त्रोतांचा दुसरा मुख्य प्रकार अर्थात इ- पुस्तके. हजारो इ-पुस्तके आपल्या ग्रंथालयातील भौतीक जागा न व्यापता कशाप्रकारे जतन केली जातात याबाबतचा आढावा घेतला.इ- पुस्तकाव्द्वारे उपलब्ध होणारी माहिती वाचकांचा केवळ वेळच वाचवीत नाही तर वाचकांचा पैसाही वाचवीतात तसेच वाचकांना मिळणारी माहिती चित्ररुपात, चलचित्ररुपात मिळते जी छापील पुस्तकाव्द्वारे मिळणे अशक्य आहे. थोडक्यात वाचकाचा वेळ वाचवा हया ग्रंथालय पंचसुत्राची पूर्तता होते.

ई- स्त्रोतांच्या संदर्भ डेटाबेसव्द्वारे वाचकाला हवी असणारी माहिती किंवा टिपणे शेकडो नियतकालिकामधून

शोधून अचूकपणे व अत्यल्प वेळात शोधता येतात इतकेच नव्हे तर आवश्यक मजकूर संगणक व प्रिंटरच्या साहाय्याने छपाई करुन घेता येतो यामूळे वाचकाचा वेळ वाचतो तसेच वाचकाला हवी असणारी माहिती उपलब्ध करुन देण्याचे समाधान लाभते त्यामूळे प्रत्येक वाचकास त्याच्या आवडीचा ग्रंथ मिळाला पाहिजे हया ग्रंथालय पंचसुत्राची पूर्तता होते. सांख्यिकीय माहितीच्या डेटाबेसव्दारे वाचकाला मोठया समुदायातील माहितीचे अचूकपणे विश्लेषण करता येते तद्वतच त्या माहितीचे प्रभावी सादरीकरण कसे करता येईल हे समजते. यासाठी वाचकाला माहितीच्या विश्लेषणासाठी वेगळा वेळ खर्च करावा लागत नाही.

ई-स्त्रोतांचा ग्रंथालयात उपयोग केला असता ग्रंथपालाला त्याच्या ग्रंथालयातील जागेचा वापर न करता हजारो नियतकालीके, इ-पुस्तके, त्याच्या संगणकात साठवून ठेवता येतात.परिणामत: एवढ्या मोठया प्रमाणात माहितीचे दिर्घकाळासाठी जतन करता येते.माहितीच्या ई- स्त्रोतांचा ग्रंथालयातील वापरामूळे ग्रंथपालाचा वेळ, पैसा वाचला जातो तसेच वाचकांना हवी असलेली माहिती आपण देवू शकलो याचे समाधान मिळते.

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वर्गखोल्यांमध्ये माहिती संप्रेषण तंत्रज्ञान साधनांचा उपयोग

ABSTRACT

आजचे युग हे विज्ञान आणि तंत्रज्ञानाचे युग आहे. शिक्षण प्रणालीमध्ये बदलाचा विचार करता प्राचीन काळापासून आजपर्यंत मोठया प्रमाणात अध्यापन, अध्ययन आणि अध्यापनातील साधनांमध्ये बदल झाला आहे. माहिती संप्रेषण तंत्रज्ञानामुळे शिक्षणाच्या क्षेत्रात प्रचंड बदल होत असुन अतिशय सकारात्मक व प्रचंड आशादायी सुधारणा घडून येत आहे. २१ वे शतकच मुळी माहिती संप्रेषण तंत्रज्ञानाचे झाले आहे. हया अध्यापन आणि अध्ययनातील माहिती संप्रेषण तंत्रज्ञानामुळे रटाळ अध्यापन आणि अध्ययन मागे पडत असुन आज हया माहिती तंत्रज्ञानाच्या युगात प्रात्यक्षिक स्वअध्ययन याला महत्व येत आहे. ज्ञान देण्याचा आणि ग्रहण करण्याचा वेग तीव्र गतीने वाढते आहे.

प्रस्तावना :-

माहिती संप्रेषण तंत्रज्ञान जे आज या शिक्षण प्रणालीमध्ये अतिशय मोलाचे ठरत आहे. त्याची समर्पकता व महत्व विशद करणारी व्याख्या पाहायची झाली तर " माहिती प्रसारीत करणे, साठवणे, तयार करणे, माहितीचे आदान प्रदान करणे यासाठी वापरण्यात येणारे तंत्रज्ञान म्हणजे माहिती संप्रेषण तंत्रज्ञान होय.'' रेडीओ, दुरदर्शन, व्हीडीओ, डिव्हीडी, दुरध्वनी, मोबाईल फोन, उपग्रहावर आधारित सेवा व सुविधा, संगणक व त्यासंबंधीत हार्डवेअर आणि सॉप्टवेअर अशा गोष्टींचा समावेश माहिती संप्रेषन तंत्रज्ञानामध्ये होतो त्याशिवाय व्हीडीओ कॉन्फरंसिंग, इ-मेल, ब्लॉग अशा तंत्राचाही समावेश माहिती संप्रेषण तंत्रज्ञानामध्ये होतो आणि बऱ्याच साधनांकरिता इंटरनेट सेवा ही फार महत्वाची आहे. वर्ग खोल्यांमध्ये माहिती संप्रेषण तंत्रज्ञानाच्या वरिल साधनांचा उपयोग हा अत्यंत महत्वाचा ठरत आहे. आणि शिक्षण प्रक्रीयेमध्ये ही साधने अतिशय मोलाची ठरत आहे.

विषय विवेचन :-

सध्याच्या माहिती तंत्रज्ञानाच्या युगात माहिती व संप्रेषण तंत्रज्ञानाच्या साधनांचा वापर शिक्षणात केल्याने शिक्षणाच्या दर्जात उल्लेखनिय व सकारात्मक सुधारणा होईल असे सर्वच शिक्षणतंज्ञाचे व संशोधनाचे म्हणणे आहे. आज मोठया प्रमाणात नाविण्यपुर्ण तंत्राचा वापर अध्यापन आणि अध्ययनासाठी वर्ग खोल्यामध्ये केला जात आहे. सुचनात्मक साधने, ऑडीओ, व्हीडीओ, दुरदर्शन, रेडीओ, डिजीटल उपकरणे सॉप्टवेअर व कन्टेन्टवेअर संपर्काची साधने, प्रोजेक्टर डिजीटल बोर्ड, माध्यम (मिडीया) शैक्षणिक वेबसाईट्स ही नविन तंत्रे शिक्षण प्रणालीमध्ये फारच उपयुक्त ठरणारी आहे. पूर्वीच्या वर्ग खोल्या आणि आजची वर्गखोली हयामध्ये विलक्षण बदल झाला आहे. पुर्वीच्या गुरुकुल पध्दतीच्या आश्रमातील वेगळया खोल्या, नंतरच्या काळातील विटामाती, सिमेंटच्या खोल्या आणि विज्ञान तंत्रज्ञान युगातील डिजीटल वर्ग खोल्या असा बदल झालेला दिसत असतांना आज मोठया प्रमाणात वर्गखोल्यांमध्ये माहिती संप्रेषण तंत्रज्ञान साधनांचा वापर होतांना दिसत आहे.

रेडिओ व दुरदर्शन हया साधनांचा वापर २० व्या शतकापासून शिक्षणामध्ये केला जात आहे. मुख्यत्वे रेडिओ व दुरदर्शनचा उपयोग शिक्षणामध्ये वा वर्ग खोल्यांमध्ये तीन प्रकारे केला जातो. १) शालेय विषयाशी संबंधीत ध्वनी चित्रफीती व रेडीओ वरुन प्रसारीत केले जाणारे कार्यक्रम यांच्या सहाय्याने वर्गात शिकविणे. २) शाळांमध्ये शिक्षणाला पुरक असे कार्यक्रम प्रक्षेपित करणे. ३) सामान्य ज्ञान व माहितीपर शैक्षणिक कार्यक्रम दाखविणे किंवा प्रसारित करणे.

रेडिओवरुन प्रसारित केले जाणारे कार्यक्रम दैनिक स्वरुपाचे असतात. हे रेडिओ यंत्रे, एका विशिष्ट विषयाशी संबंधीत असतात व त्यांचा प्रेक्षकवर्ग लक्षात घेऊन त्यांची काठिण्यपातळी ठरविली जाते. या कार्यक्रमामुळे शिक्षकांना तो विषय अधिक चांगल्या रितीने शिकविण्यास मदत होते. तसेच मुलांना ही तो विषय समजुन घेणे सोपे जाते. या पध्दतीमुळे दुर्गम भागातील शाळेतील विद्यार्थी व ज्या ठिकाणी शिक्षकांची कमतरता आहे अशा ठिकाणच्या विद्यार्थ्यांना ही शिक्षण घेणे सोपे जाते. रेडिओ द्वारे दिले जाणारे शिक्षण हे औपचारिक व अनौपचारिक अशा दोन्ही स्वरुपाचे असल्याने रेडिओद्वारे दिल्या जाणाऱ्या शिक्षणाचा दर्जा फार उत्तम व सकारात्मक राहिलेला आहे. त्याचप्रमाणे दृकश्राव्य असलेले अतिशय प्रभावी माध्यम म्हणजे दुरचित्रवाणी (दुरदर्शन) अनेक प्रकारचे ज्ञान देणाऱ्या गोष्टी विविध वाहिन्यांच्या माध्यमातून विद्यार्थ्यांना देणे सोपे झाले आहे. हे दुरदर्शनचे माध्यम सर्वांचे आवडते असल्याने वर्ग खोल्यामध्ये दुरदर्शन हे माध्यम अतिशय उपयुक्त ठरत आहे. विविध प्रकारचे ज्ञान, खेळ, माहिती, पर्यावरण, निसर्ग, संस्कार हया सारख्या अनेक गोष्टी दुरदर्शनाच्या माध्यमातून शिकायला मिळत आहेत. रेडिओ, दुरदर्शनचे ज्ञानोपयोगी कार्यक्रम विद्यार्थ्यांना खिळवून ठेवत आहेत अनेक ठिकाणी शैक्षणिक प्रसारण मोठया प्रमाणात केले जाते. उदा भारतात इंदिरा गांधी राष्ट्रीय मुक्त विद्यापीठातील अनेक अभ्यासक्रम दुरदर्शन व व्हीडीओ कॉन्फरसिंग च्या मदतीने शिकविले जातात. खरोखरच सर्व सामान्य शैक्षणिक कार्यक्रम प्रसारित करण्यासाठी ही दुरदर्शन व रेडिओचा वापर केला जात आहे. जगाचा विचार करता १९२० हया दशकात रेडिओ आणि १९५० च्या दशकापासून दुरदर्शन चा शैक्षणिक साधन म्हणुन वापर करण्यात येऊ लागला आहे. रेडिओ व दुरदर्शनाच्या वर्ग खोल्यांतील वापरामुळे विद्यार्थ्यांमध्ये रुची वाढत जाण्यामुळे विद्यार्थी गुणवत्ता वाढत असतानांच विद्यार्थी गळतीचे प्रमाण कमी झाले आहे.

माहिती संप्रेषण तंत्रज्ञान सांधनामुळे ज्ञानाची नवी कवाडे खुली झाली आहेत. त्यातील अतिशय महत्वाचे साधन म्हणजे संगणक हे वर्गखोलीतील प्रभावी माध्यम ठरले आहे. जगातील कुठलीही ज्ञानात्मक माहिती विद्यार्थ्यांना संगणकामुळे सहज उपलब्ध होऊ शकते. संगणक व इंटरनेटमुळे शिक्षक व विद्यार्थी पुस्तकी ज्ञानाच्या पलीकडे जाऊन त्यांच्या विषयाशी संबंधीत नवनवी माहिती मिळवू शकतात व आपल्या ज्ञानात भर घालु शकतात. शिक्षक हवी ती माहिती इंटरनेटवरुन शोधून हवी ती माहिती इंटरनेटद्वारे मिळवू शकतात व ती वर्गात वाटू शकतात. म्हणजेच शिक्षण पध्दती हळूहळू विद्यार्थी केंद्रीत होत चालली आहे. विद्यार्थ्यांच्या परीक्षा संगणकामुळे ऑनलाईन घेतल्या जात असून त्यांचे गुण सुध्दा इंटरनेटचा वापर करुन संगणकाद्वारे विद्यार्थ्यांपर्यंत पालकापर्यंत पोहचविले जात आहे. संगणक ज्ञानामध्ये झालेल्या प्रचंड वाढीमुळे संगणक शिक्षण क्षेत्रात अतिशय उपयुक्त साधन म्हणुन महत्वाचे ठरले आहे. संगणकाच्या सहाय्याने अध्यापन प्रक्रिया व अध्ययन प्रक्रिया सुलभ होते. क्रमान्वित पाठ अध्ययन पध्दतीचा वापर संगणकाच्या सहाय्याने करणे सुलभ जाते. मानव विकासाच्या अवस्थेसंबंधी चित्रे, संबंधित शास्त्रज्ञांची चित्रे, पाठ घटकावरिल आवश्यक चित्रे व नकाशे यंत्राच्या सहाय्याने स्कॅनिंग करुन संगणकावर साठवून त्याचा गरजेनुसार वर्गात अध्यापनात वापर करता येतो. दृकश्राव्य माध्यमांमध्ये ग्राफीक्स आणि ऍनिमेशनच्या सहाय्याने प्रभावी व आकर्षक कार्टुन्स रेखाचित्रे, थ्रीडी चित्रे, पुर्णपणे संगणकाद्वारेच निर्माण केली जातात. या आधारे भाषा विषयासंबंधी व विज्ञान, गणित, सामाजिकशास्त्रे या विषयातील शैक्षणिक कार्यक्रमांची निर्मिती करता येते. स्वगतीने विद्यार्थ्यांस कुठल्याही घटकाचे अध्ययन करणे सुलभ जाते. संदर्भज्ञानासाठी आणि मुल्यमापनासाठी देखील माहिती संप्रेषण तंत्रज्ञानाचा (संगणकाचा) प्रभावी उपयोग करता येतो. संगीत, खेळ, कार्यानुभव चित्रकला या विषयांमध्ये संगणक वापराला अधिक वाव आहे. विविध शैक्षणिक व व्यवहारिक संदर्भ आंतरजालाच्या मदतीने मिळविता येतात. संगणकाच्या या युगात वर्ग खोल्यांमध्ये सुध्दा संगणकाचे महत्व अनन्य साधारण असेच आहे. माहिती संप्रेषण तंत्रज्ञानातील शैक्षणिक साधन म्हणून व्हिडीओ, डिव्हीडी ही साधने सुध्दा फारच प्रभावी ठरली आहेत. विषयांच्या अनुषंगाने विविध घटकांचे व्हिडीओ अध्यापनात दाखविता येतात. त्याचप्रमाणे अभ्यासाच्या अनुषंगाने व्हिडीओ कॉन्फरन्सिंग द्वारे विविध विषयावर देवाण घेवाण होते. अनेक प्रकारची ज्ञानात्मक माहिती दाखविता येते अनेक विषय व्याख्याने प्रबोधनात्मक माहिती

चित्रपट त्या व्हिडीओ द्वारे अध्यापनात देता येते. डिव्हीडीचा वापर करुन अभ्यासास पुरक अशी दृश्यचित्रे व माहिती आपणाला बघता येते व ज्ञान घेता येते हयाचा वर्गखोलीमध्ये चांगल्या प्रमाणात वापर केला जातो आहे. ज्या संकल्पना विद्यार्थ्यांच्या स्पष्ट नसतात. किंवा ज्या बाबींचे विद्यार्थ्यांना बरेचदा आकलन होत नसते त्यावेळी वेगवेगळया प्रकारची व्हिडीओ दृष्याचित्रे दाखविण्यामुळे विद्यार्थ्यांना खुप फायदा होतो. जगातील कुठल्याही भागातील कुठल्याही विषया संबंधित व्हिडीओ विद्यार्थ्यांना दाखविता येतात. त्यामुळे विद्यार्थ्यांना अतिशय चांगला फायदा मिळतो.

मोबाईल (भ्रमणध्वनी) हे माहिती संप्रेषणाचे शिक्षणामध्ये महत्वाची भूमिका बजावणारे एक साधन आहे. मोबाईल हे संवादाचे प्रभावी माध्यम असल्याने हवीशी माहिती किंवा ज्ञान आपल्याला पटकन मिळविता येते. त्याचप्रकारे अनेक प्रकाची हवी असलेली माहिती चित्रे, व्हिडीओ ऑडीओ अध्यापनामध्ये वापरता येतात तसेच विद्यार्थ्यांना अध्यायनामध्ये मोबाईल फार उपयुक्त ठरणारा आहे. जगातील कोणतीही माहिती वा पुस्तके त्यावर उपलब्ध असल्याने आज विद्यार्थी मोठया प्रमाणात मोबाईलचा वापर करत आहे. मोबाईल ॲपच्या वापरामुळे शिशुवर्गातील मुले साक्षरता कौशल्ये लवकर शिकतात व शाळेत जाण्यासाठीची त्यांची पूर्वतयारी शिशुवर्गात ॲप वापरल्याने चांगली होते असे एका अभ्यासातून दिसुन आले आहे. संशोधकाच्या मते ॲप्सच्या मदतीने मुलांचे उच्चार व ध्वनी ज्ञान वाढले व संभाषणाचा अर्थ समजण्याची व छापील शब्द 'लर्न विथ होमर' या ॲपने समजावून घेण्याची क्षमता वाढली पण हे मोबाईल शैक्षणिक ॲप भारतीय विद्यार्थ्यांना जसेच्या तसे उपयोगी पडणार नाही त्यामुळे ॲप विकासकांनी आणखी वेगळया कल्पना लढवून भारतीय मुलांसाठी नवे ॲप तयार करावे. त्याला भारतीय लोककला, संगीत, कविता यांचा बाज द्यावा लागेल. मोबाईल हे साधन म्हणजे अतिशय आकर्षण असणारे शैक्षणिक साधन असुन मोठया आनंदाने विद्यार्थी त्याचा आज उपयोग करुन घेत आहे. त्याचप्रमाणे दुरध्वनी आपण योग्यवेळी वापरुन आपल्या शैक्षणिक माहिती व ज्ञानासाठी तिचा उपयोग करु शकतो.

माहिती संप्रेषण तंत्रज्ञानामधील प्रोजेक्टर हे एक प्रभावी असे माध्यम आहे, जे माध्यम शिक्षणप्रणाली मध्ये वर्ग खोल्यामध्ये फार महत्वाचे आहे. बदलत्या काळानुसार आज प्रोजेक्टर द्वारा शिक्षण देणे जरुरीचे झाले आहे. प्रोजेक्टरमुळे विद्यार्थ्यांना सहज शिक्षण दिले जाऊ शकते. ज्या विद्यार्थ्यांना शिक्षणामध्ये रुची नाही ते विद्यार्थीसुध्दा प्रोजक्टरमुळे अध्ययनात रुची दाखवितात व विद्यार्थ्यांना शिकण्यामध्ये उत्साह वाटतो. प्रोजेक्टरच्या माध्यमातून शिकविण्यामुळे कमितकमी वेळात चांगले ज्ञान विद्यार्थ्यांपर्यंत पोहचते. हवी ती माहिती, ज्ञान, विषय, घटक विद्यार्थ्यांपर्यंत हया प्रोजेक्टरच्या माध्यमातून सहज पोहचविता येते. आज मोठया प्रमाणात वर्ग खोल्यांमध्ये प्रोजेक्टरचा वापर होतांना दिसत आहे, आणि ही काळाची गरज आहे.

विज्ञान आणि तंत्रज्ञानाच्या हया युगात 'डिजीटल बोर्ड' ही संकल्पना नव्याने रुजु झाली आहे. पुर्वी 'ऑपरेशन ब्लॅकबोर्ड होते आता 'ऑपरेशन डिजीटल बोर्ड' झालेली आहे. बदलत्या काळानुसार शाळामध्ये खडु फळयाऐवजी आता डिजीटल बोर्ड येऊ लागले आहेत. संपूर्ण देश पातळीवर आता 'ऑपरेशन डिजीटल बोर्ड' राबविण्याचा केंद्र शासनाचा मानस आहे. कमीत कमी खर्चात डिजिटल स्कुल ही संकल्पना सर्वप्रथम महाराष्ट्रात सुरु झाली. ही अध्यापनासाठी वर्ग खोल्यामध्ये डिजिटल बोर्ड फारच उपयुक्त व प्रभावी आहे. डिजीटल बोर्डामुळे विद्यार्थ्यांची रुची व आकलन क्षमता वाढीस लागली आहे. अनेक प्रकारच्या गोष्टी ज्यामध्ये आहे व ते विद्यार्थ्यांना ज्ञान देण्यासाठी नव्याने आलेले प्रभावी साधन ठरले आहे. माहिती संप्रेषण तंत्रज्ञानाचे जी साधने आहेत त्यांचा वर्गखोल्यामध्ये प्रभावी वापर होत असतांना शिक्षक – विद्यार्थी हयांच्या मधला संवाद कमी होत चालला आहे. त्या साधनांची ही मर्यादा सुध्दा जाणवत आहे.

निष्कर्ष :-

माहिती संप्रेषण तंत्रज्ञानाचा आज मोठया प्रमाणात सर्वत्र वापर होत असतांना शिक्षण प्रणालीमधील प्रक्रियेमध्ये हया माहिती संप्रेषण तंत्रज्ञानास विशेष महत्व दिले आहे. आज लक्षणीय अशा स्वरुपात माहिती संप्रेषण तंत्रज्ञानाच्या साधनांचा वर्गखोल्यांमध्ये उपयोग चालु आहे. ही या विज्ञान आणि आधुनिक जगासाठी महत्वाची बाब आहे. विद्यार्थ्यांची आवड आणि गुणवत्ता हया दोन्ही बाबींसाठी ही माहिती संप्रेषण साधने मोलाची ठरत आहेत. आज माहिती संप्रेषण तंत्रज्ञानाच्या साधनांचा प्रचंड मोठया प्रमाणात उपयोग होत

असतांना सर्वच स्तर, समाज, ठिकाण हयांचा विचार करता त्याचा फायदा सारख्या प्रमाणात होईल असे नाही. माहिती व संप्रेषण साधनांमुळे शिक्षण पध्दतीवर निश्चितच लक्षणीय असा चांगला व सकारात्मक परिणाम होत आहे. शिक्षणाचा दर्जा हया साधनांमुळे उंचावला आहे. विद्यार्थ्यांच्या अनुपस्थितीचे प्रमाण कमी होत आहे. अनेक प्रकाराची माहिती संप्रेषण साधने वर्ग खोल्यामध्ये वापरल्याने विद्यार्थ्यांसाठी प्रभावी शिक्षणाची व्यवस्था निर्माण होत असल्याचे दिसत आहे. शिक्षकांना आपल्या अनेक संकल्पना, विषय, कल्पना मांडण्यासाठी सोयीस्कर झाल्याने त्यांच्या प्रभावी अध्यापनातून विद्यार्थ्यांना आवडेल असे शिक्षण दिले आत आहे. हया साधनांमुळे कमित कमी वेळात विविधांगी व प्रभावी अशा अध्यापनाचे व अध्यायनाचे मार्ग खुले झाले आहेत. आजच्या हया विज्ञान तंत्रज्ञानाच्या युगात माहिती संप्रेषण तंत्रज्ञान साधनांचा शिक्षण प्रक्रियेत अर्थात वर्ग खोल्यांमध्ये मोठया प्रमाणात वापर होत आहे ही अतिशय सुखकारक व आशादायी गोष्ट असुन ती आजच्या काळाची गरज सुध्दा आहे. माहिती संप्रेषन तंत्रज्ञान हे शिक्षण व्यवस्थेला नक्कीच योग्य दिशेने नेऊन त्या व्यवस्थेला विशिष्ट उंची प्रदान करेल हेच खरे !

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आय.सी.टी. चा अध्यापनात होणारा वापर एक अभ्यास

ABSTRACT

युनेस्कोच्या Learning to ce (१९७२-७३) अहवालात समाज व शिक्षण यांच्यात घडणाऱ्या अपरीहार्य बदलाबाबत केलेल्या विवेचनाचा मतीतार्थ पूढील प्रमाणे आहे ः लोकसंख्येचा प्रस्फोट लोकशाही विचार धारांचा प्रसार आर्थिक विकासाची अत्यंतीक गरज शास्त्रीय व तांत्रीक ज्ञानातील उत्क्रांती सर्व समाजातील सर्व स्तरातील जनतेत झालेली जागृती व त्यामुळे ते प्राप्त करण्यासाठी विविध संपर्क साधनाचा अत्यावश्यक वापर या सर्वांचा जगातील विविध राष्ट्रातील समाजावर व शिक्षण पद्धतीवर परिणाम झाला थोडक्यात २० व्या शतकाच्या उत्तरार्धाला प्रस्फोटाचे युग म्हणता येईल आज प्रत्येक ज्ञानाचे क्षेत्र व्यवसायाचे उदयोगाचे वा शिक्षणाचे क्षेत्र असो ते ज्ञानधिष्ठीत झाले आहे आज प्रत्येकाला आपल्या अस्तित्व टिकविण्यासाठी आपण करित असलेल्या व्यवसाय उद्योग व शिक्षण क्षेत्र बँकिंग क्षेत्र किंवा प्रशासकीय क्षेत्र या सर्वात प्रत्येकाला नवनविन ज्ञानात्मक माहिती आत्मसात करण्याची गरज निर्माण झाली आहे व या गरजे पोटी माहिती संपर्क तंत्रज्ञान विकसीत झाले आहे

प्रस्तावना :

सध्याचे यूग हे संगनकाचे युग म्हणून ओळखले जाते. कॉम्प्युटर नावाच्या या यंत्राने आजच्या समाज जिवनावर सर्वांगीण परिणाम केलेला आहे. संगणक हे एक ईलेक्ट्रॉनिक उपकरण आहे. या चिन्हावर प्रक्रिया करणारी पद्धती किंवा व्यवस्था असून त्याची रचना व व्यवस्थापण असे असते की, ज्यामूळे माहिती संस्कारीत कर्ते ती माहिती साठविणे यासारख्या प्रक्रिया केल्या जातात. संगणकाचा रेल्वे, विमान, आरोग्य, बँक, उद्योग धंदे, शिक्षण संशोधन, विमा क्षेत्र, विद्यूत विभाग इत्यादी क्षेत्रामध्ये कार्यासाठी उपयोग केला जातो. ते संगणकाच्या काही वैशिष्ट्यपूर्ण क्षमतामुळे याला शिक्षणातील अध्ययन अध्यापन क्षेत्र तरी कसे अपवाद ठरणार असे दिसून येते.

माहिती तंत्रज्ञानाची वैशिष्टये :-

- वेग व कामाचा वेग अतिप्रचंड आहे.
- स्मरणशक्ती - मर्यादित असली तरी दुय्यम स्मरण शक्ति साधने वापरून खूप मोठया प्रमाणावर माहिती साठविता येते.
- अचूकता ः संगणक दिलेले काम दिलेल्या सुचनेप्रमाणे अतिशय अचूकतेने करता येते.
- अष्टपैलू उपयोगीता ः ज्या कामाबाबत तर्कसंगत व क्रमवार सूचना देतात असे कोणतेही काम सामान्यपणे संगणक करू शकतो. या त्याच्या गणधर्मामुळे संगणक विविध प्रकारची कामे पार पाडू शकतो. उदा: वाहतूकीचे नियंत्रण, गुणपत्रिका छपाई इत्यादी.
- संगणक हे एक तंत्र असल्याने त्यांच्या मध्ये न कटाळता व न थकता काम अचूकपणे करण्याची क्षमता आहे.
- संगणकाची विविध उपयोगीता पाहील्यास त्याच्यावर होणारा खर्च हा फारच कमी आहे.
- भावनीक दृष्टीने कोणत्याही प्रसंगाचा संगणकाच्या कार्यक्षमतेवर कुठलाच विपरीत परिणाम होत नाही.

माहीती तंत्रज्ञानाच्या सहाय्याने होणारे अनुदेशन

संगणक केवळ शिक्षकाला मदत करून थांबत नाही, तर शिक्षकाचे काम स्वत: करण्याची संगणकाची तयारी असते. प्रत्यक्ष अनुदेशन प्रस्तूती करणाचे काम देखील संगणक करते. या तंत्रालाच संगणक सहाय्यीता अनुदेशन म्हणतात. या तंत्राची वैशिष्ट्ये पूढील प्रमाणे सांगता येतील.

- अनुदेशन तंत्र हे संगणक व अध्ययन करता यांच्या अंतरक्रियेवर अवलंबून असते आणि मानवी अध्ययन हे त्यांचे उद्दीष्ट आहे.
- संगणक प्रत्यक्ष विद्यार्थ्याला माहिती देत असतो व विद्यार्थ्याला विवक्षीत पातळीपर्यंत नेण्यासाठी संगणकामध्ये आवश्यक ती माहिती भरून ठेवलेली असते.

- विद्यार्थ्याला स्वत: व्यक्तीगतरित्या, स्वत:च्या वेगाने अध्ययन करता यावे, अशी व्यवस्था संगणकामध्ये केलेली असते.

माहिती तंत्रज्ञानाची शैक्षणीक उपयोगीता :-

संगणकाचा वापर दैनंदिन जीवनात पदोपदी होत असलेला दिसून येतो. संगणकाच्या ज्ञानामध्ये झालेल्या प्रचंड बदलामुळे शिक्षण क्षेत्रात देखील वेगवेगळया कार्यासाठी एकसाधन म्हणून उपयूक्त साधन आहे. गरज आहे ती आज संगणकाचा वापर कल्पकतेने आणि योग्य सावधगिरी बाळगून शैक्षणिक प्रक्रियेत वापरण्याची काही उपयुक्त ॲप्लिकेशन सॉफ्टवेअरमुळे संगणकाचा शिक्षण क्षेत्रात ट्यूटर, साधन म्हणून वापर करता येतो.

- शाळेमध्ये संगणक शिक्षकांना अध्यापन करण्यास मदत करते.
- निरनिराळया कार्यालयामध्ये त्याची कामे सोपी व लवकर करण्यास मदत करतो.
- शालेय आरोग्य तपासणी संबंधी माहिती साठवून त्याचा पाठपूरावा करण्यासाठी माहिती संप्रेषण तंत्रज्ञान मदत करते.
- दृक श्राव्य माध्यमामध्ये ग्राफिक्स आणि ॲनिमेशनच्या सहाय्याने प्रभावी व आकर्षक कारटून्स, रेखाचित्रे, थ्री-डी चित्रे पूर्णपणे संगणाद्वारे निर्माण केली जातात. या आधारे भाषा विषयासंबंधी व विज्ञान, गणित, सामाजिक शास्त्र या विषयातील शैक्षणिक कार्यक्रमाची निर्मिती करता येते.
- शिक्षणात संगणाकाचा वापर केल्याने गेल्या दशकात मोठया प्रमाणात बदल घडून आला. आज माहिती तंत्रज्ञानाचा वापर होत नाही. असे जवळपास एकही क्षेत्र नाही.
- संगणकाच्या सहाय्याने व स्वयम अध्ययन प्रक्रिया सूलभ होते.
- क्रमन्वीत पार्ट अध्ययन पद्धतीचा वापर संगणकाच्या सहाय्याने करणे सूलभ जाते.
- संदर्भ ज्ञानासाठी आणि मुल्य मापनासाठी देखील माहिती तंत्रज्ञानाचा प्रभावी उपयोग करता येतो.
- विविध शैक्षणिक व व्यवहारीक संदर्भ आंतरजाळाच्या मदतीने मिळविता येतात.

संदर्भ ग्रंथसूची

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दृक-श्राव्य साधनांचा प्रभावी वापर वाढविते वाचन व लेखन कौशल्य

ABSTRACT

वाचन आणि लेखन या क्रीया व त्यातील कौशल्ये एकमेकांशी खूप निगडीत असतात. एकाशिवाय दूसऱ्याचा अभ्यास शक्य होत नाही. वाचल्याशिवाय (स्वतंत्र) लेखन शक्य नाही. व लिहीलेले असल्याशिवाय वाचन शक्य नाही. वाचनाचे स्वरुप,महत्व व प्रकार ठरवितांना लिहीलेल्या मजकुराचे अवलोकन करावे लागते. तसेच वाचणाऱ्या चा हेतू, कुवत लक्षात घ्यावी लागते. तरीही सामान्य वाचनाची काही सोपी तंत्रे आहेत. ती आत्मसात केल्यास आणि सोबतच दृक-श्राव्य,ऑडीओ, व्हिडीओ साधनांचा वापर केल्यास वाचन आणि लेखनच्या कौशल्यात वाढ होवून विषय प्रभावीपने सादर केल्या जाऊ शकतो आणि प्रभावीपणे समजून दिर्घकाळ स्मरणात ही राहू शकतो.

प्रस्तावणा -

वाचत असतांना लिहीलेले डोळयांनी पाहून ओळखने एवढेच अभिप्रेत नसते. तर मजकुराचा अर्थ कळणे महत्वाचे असते. लेखी शब्द हे दर वेळेला बोलणे शक्य नसल्यामुळे अशावेळी तो मजुकर समजण्यासाठी वाचतांना चित्र,फोटो,गाणे दाखवून अक्षर ज्ञान होते. आवाज आणि इक्षर यातील परस्पर संबंध वाचणाऱ्याचा हेतू ईत्यादी गोष्टी साध्या होतात. म्हणून दृक - श्राव्य साधन वापरणे कौशल्यपूर्ण ठरते.

विवेचन -

वाचनातून आपल्याला अर्थाचे आकलन होणे अपेक्षीत असते.

वाचनारा लिहीलेला मजकूर वाचीत असतो. पण लेखन हे मुळातच दरवेळी

बोलणे शकय नसल्यामूळे झालेले असते. बोलण्यात जे भाव, हावभाव, चढउतार,महत्व,संदर्भ व्यक्त होतात ते लेखनात जसेच्या तसे आणता येणे कठिण असते. अशावेळी दृक-श्राव्य माध्यमातील विविध साधनांचा प्रभावी वापर यशस्वी ठरतो. आणि वाचानाऱ्याने यातून हे सारे समजावून घ्यावे अशी अपेक्षा असते. बोलणारी व्यक्ती तिचा हेतू पद आवाज यांचा लिखित शब्दांशी संबंध जोडून वरील साधनांचा वापर करावयास पाहिजे. भाव भवना व्यक्त करतांना शब्दांची असमर्थता समजते. अशावेळी या साधनांच्या वापरामूळे अधिक सखोल वाचान केले जाऊन ते लक्षात राहते. बोलण्या मागील हेतू, भाविका व संदर्भ ही समजतो. ऐकणाऱ्यांची क्षमता वाढतो बोलणात्याचा उत्हास वाढतो. आपलेपणा वाटतो. लिहीणाऱ्याच्या हेतूनुसार ऐकणाऱ्याच्या लक्षात अर्थाचे आकलन प्रभावीपणे होते.

वाचनाचे आणि लेखनाचे महत्व अपार आहे. खूप आणि चिकित्सक वाचनाने आपल्या अनुभवात भर पडते आणि लिखाण हे दर्जेदार होते. विपूल माहिती संग्रही असल्यामूळे आपला दृष्टीकोण विशाल होतो. अध्ययन सखोल होते. स्वताला आनंद तर मिळतोच तसा तो दूसत्यांनाही देता येतो. पून्हा पून्हा केलेल्या वाचनाने स्मरण होते, आपली मते / विचार निश्चित होण्यास मदत होते. हे सारे शक्य होते ते वाचन प्रक्रियेतील घटकांकडे लक्ष दिल्याने.

वाचन प्रक्रियेतील घटक प्रभावीपणे समजण्यासाठी आकलन होण्साठी संबंधीत गोष्टीसाठी दृक -श्राव्य माध्यामाच्या साधनांचा प्रभावी वापर आपण करु शकतो.

शब्दबोध - नजर टाकताच शब्दाचा अर्थ लक्षात येतो (व्हिडीओ)

वाचन दिशा - डावीकडून उजवीकडे व वरुन खाली अशी असावी.

पूर्ण दृष्टीक्षेप - कारण नसतांना पून्हा पून्हा अलीकडील शब्दावर नजर वळवू नये.

दृष्टीचा अहवाल - एकाच दृष्टीक्षेपात एकदम २-३ शब्द वाचावेत.

आकलन - अनावश्यक गोष्टींकडे दूर्लक्ष करुन हव्या त्याच गोष्टी लक्षात ठेवणे.

आच्छादन - शब्दांच्या निरनिराळया छटा समजावून सांगत असतांना आपल्या तयारीप्रमाणे, उद्दीष्टाप्रमाणे अनुभवात रममान होणे शक्य होते.

शब्दसंग्रह - वाचणात्या जवळ असलेल्या शब्दांच्या साठयाप्रमाणे वाचकाचे बोधन आकलन होते व शिकविण्याचा वेग वाढतो.

वाचतांना शिकवितांना अधिक महत्व हे आकलनालाच आहे. शिवविण्याच्या व वाचणाच्या प्रक्रीयेतील सर्व घटकांकडे व्यवस्थतीत लक्ष दिल्यास अपले आणि विद्यार्थंचे आकलन चांगले होते. आकलन चांगले होते म्हणजेच मजकुरातील महत्वाचा तपशील समजतो. योग्य तो तर्क किंवा अंदाज बांधता येतो. योग्य अयोग्य उचित अनुचित आवश्यक अनावश्यक काय ते ? ते ठरविता येते. मुल्यमापन पातळीवर नेमके आवडीचे तेवढे लक्षात राहते. आकलनाच्या या चार पातळया आहेत त्या अधिक कौशल्यपूर्ण होतात त्या दृक-श्राव्य साधनांच्या माध्यमातून.बोधन,चाळणी,वेचकपणा,सारग्रहण करणे सहज सुलभ होते. ते PPT च्या माध्यमातून. PPT मूळे लेखकाला जे सांगायचे आहे ते ऊचित संवेदने सहित अर्थासहीत कळते. पुस्तकाचे मुखपृष्ठ,

शीर्षक,अनुक्रमणिका,मांडणी,भाषा, परिशिष्ट सूची,समारोप इ. पासून मजकूर आपल्या दृष्टीने पायुक्त आहे किंवा नाही ते ठरवावे.

PPT वरुन आकलन करतांना थोडया वेळात महत्वाचे , गाभ्याचे काय ते लक्षात येते. त्यालाचा सारग्रहण म्हणू शकतो. लेखकाच्या शैलीचा फुलोरा, स्पष्टीकरणासाठी दिलेली उदरहणे हे सर्व प्रभावीपणे लक्षात राहण्यास मदत होते.

निष्कर्ष -

वाचनाशी संभाषण,लेखन,टिपण,वकृत्व अशी अनेक कौश्यले संबंधीत असतात. या कौशल्याच्या विाकसात दृक-श्राव्य माधमातील साधनांचा सिंहाचा वाटा आहे. स्वतंत्रपणे संभाषणात आपल्या वाचणातील संदर्भ,दाखले देवून दाखवून आपण आपली स्वतंत्र छाप पाडू शकतो. वकृत्वात विविधांगी वाचनाचा स्पष्टीकरण विवरणासाठी जसा उपयोग होतो तसा भाषणाची परिणामकारकता वाढविण्यासाठी ही होतो. जिज्ञासापूर्ती होते. शब्दांचे विविध प्रकारचे उपयोग समजतात. श्रोत्यांच्या व आपल्याही कल्पनाशक्तीचा विकास होतो. संस्कृती आणि परंपराची सचित्र ओळख होते.

संदर्भ -

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शिक्षण विद्याशाखा मधील माहिती संपर्क व तंत्रज्ञानाची भूमिका

ABSTRACT

२० व्या शतकाच्या उत्तरार्धात झालेल्या ज्ञानाचा प्रस्फोट व वैज्ञानिक क्षेत्रातील लागलेल्या विविध शोध त्यामुळे सर्वजण अनेक दृष्टीने समृध्द व समर्थ बनले. त्याचप्रमाणे विविध क्षेत्रात सातत्याने होणारे शोध व त्यातुन विकसित झालेली आधुनिक तंत्रज्ञानाचा प्रभाव मानवी जीवनाशी निगडीत सर्वच क्षेत्रावर झालेला दिसतो.ज्ञानाचा प्रस्फोटामुळे प्रत्येक क्षेत्रात ज्ञानाच्या अनेक शाखा स्वतंत्रपणे अभ्यासण्याची गरज निर्माण झाली. परिणामी एवढे प्रचंड ज्ञानाचे भांडार लोकसंख्या वाढीने इतक्या लोकांना कशे शिकवायचे ? या गरजेतुन ज्ञानात्मक माहिती देण्यापेक्षा ती प्राप्त कशी करायची स्वत: कशी मिळवायची या प्रेरणेतुन संगणकाची देण झाली. आजच्या युगामध्ये संगणकाचा शिक्षणामध्ये वापर करण्यात आला. सहाजिकच प्रशिक्षण शिक्षण महाविद्यालयामध्ये आधुनिक तंत्रज्ञानाचा वापर करण्यात आला व संत गाडगेबाबा अमरावती विद्यापीठाने सन २०१५ च्या सुधारीत अभ्यासक्रमामध्ये शिक्षण विद्याशाखा मध्ये माहिती संपर्क व तंत्रज्ञान या विषयासह प्रात्यक्षिक भागाचा समावेश करण्यात आला.

प्रस्तावना :-

शिक्षण शाखेचा विचार करतांना शिक्षण ही अशी संकल्पना आहे ज्यामध्ये काळानुरुप बदल होणे अपेक्षित ठरते. भारतात स्वातंत्र्योत्तर काळात शिक्षणासंबंधी डॉ. राधाकृष्णण आयोग, मुदलियार आयोग, डॉ. कोठारी आयोग यांनी शिक्षक प्रशिक्षणामध्ये महत्वाचे बदल सुचविले त्यांच्या सुचनेनुसार शिक्षण प्रशिक्षण प्रज्ञालीत अनेक बदल घडून आलेत. अर्थातच हा बदल विशेष करुन माहिती संपर्क व तंत्रज्ञान यांच्या प्रगतीने झाला. तरी भारतासमोर दोन समस्या प्रामुख्याने उभ्या होत्या. एक म्हणजे असाक्षर जनतेस साक्षर करणे व पाश्चात्य लोकांप्रमाणे विज्ञान व तंत्रज्ञानामध्ये प्रगती करणे त्यासाठी माहिती व संपर्क तंत्रज्ञानाचा वापर करणे शिक्षण क्षेत्रात अनिवार्य ठरले. त्यासाठी याची सुरुवात शिक्षण प्रशिक्षणापासून करुन शिक्षकांना माहिती संपर्क व तंत्रज्ञानाची ओळख करुन वापरण्याचे कौशल्य प्रदान करणे महत्वाचे ठरते ज्यामुळे शिक्षकावर आता पालकांचा पाहण्याचा दृष्टीकोन बदलला शिक्षकाला आता कार्यक्षम, उत्पादकक्षम, परिणामकारकता याचा विचार करणे गरजेचे झाले. तसेच सर्व विद्यार्थ्यांना समान संधी देणे, शिक्षकांच्या कमतरता भरुण काढणे, उच्च शिक्षणाच्या संधीबाबत विषमता दुर करुन, कमीत कमी वेळेत कमीत कमी खर्चामध्ये जास्तीत जास्त लोकांपर्यंत शिक्षण प्रभावीपणे पोहचवणे यासाठी शिक्षणामध्ये व शिक्षण विद्याशाखेमध्ये माहिती संपर्क व तंत्रज्ञान काळाची गरज ठरते.

- **माहिती संपर्क व तंत्रज्ञानाचे स्वरुप :-**

वैज्ञानिक शोधाने माहिती संपर्क व तंत्रज्ञान विकसित केले व सर्व जग जवळ आणले. वैद्यकीय तंत्रज्ञान प्रगतीमुळे लोकांचे जीवनमान वाढले व अनेक पटीने लोकसंख्या वाढली या लोकसंख्या वाढीमुळे अनेक क्षेत्रात प्रगतीचे दारे उघडली. आज संपुर्ण जग एक गाव झाले व माहितीची देवान घेवाणीतील फरकामुळे सर्व जग जवळ आले. एका क्षणात जगाच्या दोन टोकांवरील माहिती एकमेकांना कळते ती साठवता येते. यासाठी टेलिफोन, फॅक्स, व्हिडीओ फोन, सेल्युलर फोन, मोबाईल, दुरदर्शन, नेटवर्क, संगणक व संगणकांचे सर्व हार्डवेअर व सॉफ्टवेअर या इलेक्ट्रॉनिक साधनांचा वापर करुन माहिती संपर्क व तंत्रज्ञान विकसित होत आहे.

- **माहिती संपर्क व तंत्रज्ञानाचे शिक्षण विद्याशाखामधील मानसशास्त्रीय अधिष्ठान :-**

१) एडगर डेल यांनी मांडलेल्या बहुज्ञानेंद्रिय अनुभवानुसार आपण जे वाचतो ते दोन आठवड्यानंतर १०% लक्षात राहते. आपण जे ऐकतो त्याच्या दोन आठवड्यानंतर २०% लक्षात राहते. आपण जे पाहतो त्याच्या दोन आठवड्यानंतर ३०% लक्षात राहते. आपण जे बोलतो त्याच्या दोन आठवड्यानंतर ७०% लक्षात राहते. आपण जे पाहतो व ऐकतो त्याच्या दोन आठवड्यानंतर ८०% लक्षात राहते. आपण जे करतो ते दोन आठवड्यानंतर ९०% लक्षात राहते.

२) एडगर डेल यांनी बहुज्ञानेंद्रियाची परिणाम कारकता स्पष्ट करतांना १९६१ मध्ये प्रत्यक्ष, अप्रत्यक्ष, वास्तव,

भावनात्मक अनुभुती, चित्रात्मक, दृकश्राव्य साधनामुळे अध्ययनाचा वैयक्तिक दर्जा सुधारतो व शिक्षकामध्ये वैज्ञानिक दृष्टीकोन, क्षमता, चेतना व्यक्त करण्याचे कौशल्य निर्माण होऊन अध्ययन अध्यापण प्रक्रिया, परिणामकारक होते.

३) एडगर डेल यांनी अध्ययन शंकु निर्माण करुन अध्यापन करतांना अध्यापन साहित्य माध्यमातुन कशाप्रकारे संवेदिक ज्ञान प्राप्त होते याची माहिती सांगितली.

४) यावरुन आपणांस माहिती संपर्क व तंत्रज्ञानाचा वापर अध्ययणात केल्यास विद्यार्थी अध्ययण नक्कीच सुधारात्मक बाबी घडून येतील असे म्हणावयास हरकत नाही.

- **शिक्षण विद्याशाखामध्ये माहिती संपर्क व तंत्रज्ञानाची गरज :-**

१) विस्तारित ज्ञानशाखेचा सर्वच स्तरावर अभ्यास करण्यासाठी

२) विद्यार्थ्यांना आधुनिक युगामध्ये महत्वाची बदल शिकवण्यासाठी

३) शिक्षक प्रशिक्षणार्थ्याला अभ्यासू, चिकित्सक, संशोधक वृत्ती विकसित करुन विद्यार्थ्यांना योग्य प्रकारे ज्ञान देण्यासाठी

४) कमीत कमी वेळेत, कमी श्रमात, अधिक स्पष्टपणे व योग्य अध्ययन अनुभव देऊन संकल्पना स्पष्ट करण्यासाठी

५) अनेक विद्यार्थ्यांना एकाच वेळी व मोजक्या शब्दात स्पष्ट उदाहरणाच्या माध्यमातून शिकवण्यासाठी

६) शिक्षकांना प्रत्यक्ष ज्ञान, दृक श्राव्य साधनाचा योग्य वापरण्यासाठी विविध पाठ साहित्य, चित्रे, उदाहरणे याचा वापर करण्याची सोय करण्यासाठी माहिती संपर्क व तंत्रज्ञान महत्वाची भूमिका पार पाडू शकतो.

- शिक्षण विद्याशाखेमध्ये माहिती संपर्क व तंत्रज्ञानाचे महत्व :-

१) शिक्षण विद्याशाखेमध्ये ICT च्या वापरामुळे शिक्षकांना अद्ययावत तंत्रज्ञज्ञन वारुन भविष्यात Digital Classroom व माहिती संपर्क व तंत्रज्ञानाचा प्रचार, प्रसार व कौशल्य विकसित करणे

२) ICT चा उपयोग करुन विद्यार्थ्यांमध्ये प्रत्यक्ष अनुभव, उदाहरणे, संकल्पना स्पष्ट करणे

३) अनेक विद्यार्थ्यांना एकाच छत्राखाली, कमी श्रमात, कमी वेळात योग्य स्पष्टीकरण, उदाहरणाचा वापर करुन शिकवणे.

४) विविध आकृत्या, चित्रे, रंगसंगती, यामुळे अध्यापणात रंजकता आणणे व विद्यार्थ्यांना परित करणे.

५) ICT मुळे विद्यार्थ्यांना प्रत्यक्ष अध्यापण करतांना चिकित्सकता, वैज्ञानिक दृष्टीकोन, माहिती साठवणूक या अनेक बाबी विकसित होण्यास मदत होतात.

- **समारोप :-**

वर्तमान काळ हा वैज्ञानिक आधुनिक माहिती व संपर्क तंत्रज्ञान वापरण्याचा काळ आहे. शिक्षण एक अत्यंत गुंतागुंतीची प्रक्रिया आहे. शिक्षण परिणामकारक होण्यासाठी अध्ययण-अध्यापण प्रक्रिया यशस्वी झाली पाहिजे. यासाठी वर्ग - अध्यापणात माहिती संपर्क व तंत्रज्ञानाचा वापर केला पाहिजे व योग्य उद्दिष्ट्ये साध्य होण्यास मदत होईल. तेव्हाच शिक्षक यशस्वी होईल.

- **संदर्भ सुची :-**

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**M.S.P. Arts. Science and K.P.T. Commerce College,
Manora Dist. Washim Maharashtra, India.**

मराठी भाषेमधील संगणकाचे उपयोजन व महत्व

ABSTRACT

आजच्या युगाला आपण माहिती तंत्रज्ञानाचे नेट युग म्हणून ओळखतो या युगात प्रत्येक गोष्ट झटपट आणि बिनचूक उपलब्ध होते ही बाब अत्यावश्यक बनलेली आहे यासाठी मानव वेगवेगळ्या साधनांचा वापर करतो, संगणक हे त्यापैकी एक साधन आहे. म्हणूनच पारंपारिक शिक्षणाच्या जोडीला संगणकाचे ज्ञान मिळविणे ही काळाची गरज बनली आहे. म्हणूनच संगणकाशी संबंधीत ज्ञानाची निकड प्रत्येक क्षेत्रामध्ये गरजेची आहे. संगणकामूळे माहिती साठविण्याबरोबरच आपल्या अनेक प्रकारच्या कामामध्ये त्याची मदत होत आहे. पर्यायाने मानवी श्रमाची बचत संगणकामूळे झालेली आहे. संगणकाच्या विविध उपयोजना बरोबर संवाद अथवा संदेशन व्यवहारासाठी होणारा वापर महत्त्वपूर्ण ठरलेला आहे.

प्रस्ताविक :

मराठी विषयामध्ये संगणकाची भूमिका :

इंटरनेटच्या माध्यमातून माहितीचे वहन मोठ्या प्रमाणात सुरू झालेले आहे. गुगल सर्च इंजीन आपल्याला अचूक माहितीपर्यंत पोहचविते. अनेक पर्याय असलेल्या साईटची लिंक देते, तर विकिपिडीयासारखे मुक्त ज्ञानकोश तुम्हाला माहितीच्या सागरात घेऊन जातात. "विकिपिडीया" (Wikipedia) या मुक्त ज्ञानकोशाला नुकतीच दहा वर्ष पूर्ण झाली. घरी घरी ग्रंथालयात ज्ञानकोशाचे खंड सांभाळणे, हाताळणे फारच जिकिरीचे असते. या अडचणीवर मात करणारा आणि वापरावयास अधिक सोपा असा इंटरनेटची क्षमता वापरून निमार्ण झालेला "विकिपिडीया" हा ज्ञानकोश आहे. हा ज्ञानकोश ज्ञान देण्याबरोबरच आपले ज्ञान जगापर्यंत घेवून जाण्यास मदत करतो. आपल्याला मनी असलेल्या विषयावर अभ्यासपूर्ण लेखन करण्याचे हे एक क्षेत्रच आहे. "विकिपिडया"तील अनेक नोंदी रोज अद्ययावत करता येतात. तशा त्या केल्या जातात म्हणून हा जिवंत ज्ञानकोश आहे. वाचकाला कोणत्याही विषयातील माहिती हवी असेल, तर ती देण्यासाठी "विकिपिडीया" समर्थ आहे.

मराठी भाषेतही आता अनेक संकेतस्थळे हे काम करीत आहेत. १९९६ साली "मायबोली" (www.maayboli.com) मराठीतील पहिले संकेतस्थळ सुरू झाले या वेबसाईटने जगाच्या कानाकोपऱ्यात अलेल्या मराठी माणसांना एकत्र आणले. आधुनिक जगाचे संवाद माध्यम असणाऱ्या इंटरनेट विश्वात मराठी भाषेने आत्मविश्वासाने प्रवेश केला आणि या माध्यमाची सारी समर्थ्य सामर्थ्य पेलली. त्यामुळेच आज तुकारामची गाथा, छत्रपती शिवाजी महाराज, ग.दि.माडगुळकरांचे गीत रामायण ते अलिकडच्या अनेक कविंच्या कवितांपर्यंत अनेकांचे साहित्य इंटरनेटवर सहज उपलब्ध आहे. मायबोल या मराठी भाषेतील वेबसाईटने पत्रव्यवहार सुविधा, वधुवर सूचक केंद्र, दिवाळी अंक विक्री सोयीही उपलब्ध करून दिल्या. लोकांना मराठी पुस्तके वाचनाचा आनंद देणारी ही संकेतस्थळांना सुसंवादाचे सक्षम साधन म्हणून महत्वाचे कार्य सुरू ठेवले आहे.

इंटरनेटचे विश्व हे अफाट आणि दिवसेंदिवस विस्तारत चाललेले आहे. केवळ मराठी भाषेपुरता या क्षेत्राचा विचार केला तर आज असंख्य मराठी संकेतस्थळे निमार्ण झालेली पाहता येतात. संत तुकारामांची संपूर्ण गाथा www.tukaram.com व उपलब्ध आहे. तुकारामांचे तब्बल साडेचार हजार अभंग या संकेतस्थळावर आहेत. ज्ञानेश्वरांच्या सर्वच्या सर्व १८ अध्यायांचे निरूपण या संकेतस्थळावर आहे. www.chatrapati.shivaji.com वर शिवाजी महाराजांविषयी सारे काही आहे. महाराष्ट्राचे आधुनिक वाल्मिकी म्हणून ज्यांना ओळखले जाते त्या गदिमांच्याही www.gadima.com अशी स्वतंत्र ओळख इंटरनेटवर आहे. कुसुमाग्रजांची www.kusumanjali.com पु.ल.देशपांडे यांच्या विषयीची www.puldeshpande.net हे संकेतस्थळ आहे. म्हणजे पु.ल.प्रेमीच्या गप्पांचा कट्टाच आहे. "मराठी मित्र" (www.marathimitra.com) हे एक संवादासाठीचे महत्वाचे मराठी संकेतस्थळ आहे. अमराठी भाषिकांना मराठी भाषा शिकविणारे हे संकेतस्थळ आहे. "शतपावली" ते अगदी "पिठल भात" या मराठी अस्मितेशी जोडल्या गेलेल्या अनेक विषयांची माहिती या मराठी मित्राकडे आहे. बदलत्या काळाची स्पंदने टिपून वाचन संस्कृतीचा वापर करण्यासाठी कार्यरत असणाऱ्या "ग्रंथालीने" ही www.mararhividyapeeth.org या संस्केतस्थळाव्दारे जगभरातील मराठी माणसांशी संवाद साधला आहे. ग्रंथालीने या संकेतस्थळात "मराठी विद्यापीठ" म्हटले आहे. गेली शंभराहून अधिक वर्षे मराठी मानसाने ज्या

कला प्रकारावर भरभरून प्रेम केले, या नाट्यविश्वातील घडामोडींचे माहिती देणारे www.natak.com हे संकेतस्थळ आहे. नाट्य संस्थामध्ये सुयोगचे www.suyougmumbai.com संकेतस्थळ आहे. तर नाट्य कलावंतामध्ये दिलीप प्रभावळकर, प्रशांत दामले यांची संकेतस्थळ भेट देण्योजोगे आहे. आरोग्य डॉट कॉम हे आरोग्यविषयक माहिती देणारे इंग्रजी भाषेबरोबरच मराठीमध्येही उपलब्ध असलेले असेच एक महत्वपूर्ण संकेतस्थळ आहे. www.pustak.com हे संकेतस्थळ तर इंटरनेटवरील मराठी पुस्तकांचे दुकानच आहे. या शिवाय महाराष्ट्रीयन कॉम, मराठमाती डॉट कॉम, रामराम पावण डॉट कॉम, मराठी वर्ल्ड डॉट कॉम अशी व इतर काही मराठी संकेत स्थळ आहेत. या संकेतस्थळावर मोठ्या प्रमाणावर विविध विषयावरील लेख वाचता येतात. महाराष्ट्र सरकारचे अधिकृत संकेतस्थळ www.maharashtra.gov.in संपूर्णपणे मराठीत असून येथे आपण मराठी भाषेत कोणतीही माहिती मिळवू शकतो. या शिवाय सतत अद्यावत राहणारे हे संकेतस्थळ आहे. या शिवाय जवळ जवळ सर्व जिल्ह्यांची आणि महापालीकांची संकेतस्थळे आहेत. महारष्ट्र खऱ्या अर्थाने ई-गव्हर्नन्समध्ये पुढारलेले आहे. माझी कविता कॉम या संकेतस्थळावर चंद्रशेखर गोखले, गिरीश ओक, निशिगंधा वाड आदिंच्या कविता उपलब्ध आहे.

मराठी माती या संकेतस्थळावर मराठी भाषा, संस्कृती, अभिमान, रसिकता, अभिव्यक्ती, काव्यात्मकता, शब्दांचे विविध आकार या सर्वांचे संमिश्र रूप दिसून येते कविता कशी लिहावी? विविध पत्रे कशी पाठवावित याचे नमुने या वेबसाईटवर मिळतात.

इंटरनेट या बाबींचा मोठा उपयोग करून घेण्यात आलेला आहे. इंटरनेटच्या माध्यमातून शिक्षण असल्याचा अर्थ आहे हे अतिशय लोकप्रिय वेब आहे. इंदिरा गांधी मुक्त विद्यापीठ असे प्रयोग करीत आहे. इंटरनेटच्या माध्यमातून चर्चा गटात सहभागी होण्यासाठी आणि संवाद साधण्यासाठी ई-मेलचा वापर करता येतो. आपला निरोप देणे, भावना व्यक्त करणे, वेगवेगळ्या चळवळी चालविणे, वेगवेगळे प्रकल्प करणे, समान आवडीनिवडीच्या लोकांचे जाळे विणणे अशांसाठी हे तंत्रज्ञान अतिशय महत्वाचे ठरते. या संदर्भातील एक कौतुकास्पद उदाहरण म्हणून अलिकडेच एका मराठी संस्थेने निरंतन संवादी असे ई-साहित्य संमेलन भरविले. एका मराठी संस्थेतने मराठी साहित्याच्या प्रसारासाठी-उत्सवासाठी या माध्यमाचा अतिशय प्रभावी वापर करून घेतला आहे. इंटरनेट क्रांतीमुळे ऑनलाईन मराठी वाचकांचा एक नवा वर्ग उदयाला आलेला आहे या वाचकांना भौगोलिक सिमा नाहीत. जगभर पसरलेली मराठी माणसे या माध्यमाचा उपयोग करून आपली वाचनाची भूक भागवितात अशा अनेक मराठी माणसांना साहित्य-संस्कृती-कला इत्यादीमध्ये रस असल्याचे त्यांच्या इंटरनेटवरील वापरावरून समजते. आर्कुट, फेसबुक, ट्विटर या माध्यमातून ही मराठी माणस सतत व्यक्त होत असतात. अशा या नव्या युगातील वाचकांसाठी युनिक फीचर्स यांनी पहिले ई-मराठी साहित्य संमेलन भरविले या पहिल्या ई-मराठी साहित्य संमेलनाचे अध्यक्ष जेष्ठ नाटककार रत्नाकर मतकरी हे होते. या संमेलनाला इंग्लंड, अमेरिका, ऑस्ट्रेलिया या सारख्या राष्ट्रामधून वाचकांच्या हिट्स मिळाल्या आहेत. शिवाय इजिप्त, नायजेरिया, घाना आदी मराठी भाषिकांची आमसंस्था असलेल्या अन्य पंधरा वीस देशातून चांगला प्रतिसाद मिळालेला आहे. अध्यक्षीय भाषणासह विविध परीसंवाद, मुलाखत, कवी कट्टा यांना भरपूर प्रतिसाद या संमेलनात मिळाला. आधुनिक युगाचा संवाद माध्यमांशी सांधा जोडत एका मराठी संस्थेने सुक्ष केलेला हा उपक्रम मराठी माणसांसाठी अभिमानास्पद असाच आहे या माध्यमांचा विस्तार होण्याचा सपाटा थक्क करून सोडणारा आहे.

इंटरनेटवरील दैनिके :

सर्वांसाठी सर्व काही उपलब्ध करून देणारे इंटरनेट वर्तमानपत्रांच्या क्षेत्रातही मागे नाही. जगभरातील सुमारे तीन हजाराहून अधिक वर्तमानपत्रे इंटरनेटवर उपलब्ध आहे. आज १५० हून अधिक वर्तमानपत्रे इंटरनेटवर उपलब्ध आहेत. यामध्ये मराठी वर्तमानपत्रेही मागे नाहीत. मराठी भाषेतील "केसरी" हे दैनिक सर्वात प्रथम इंटरनेटवर अवतरले. सकाळ, लोकसत्ता, महाराष्ट्र टाईम्स, पुढारी, लोकमत, सामना, तरूण भारत, अशी अनेक दैनिके इंटरनेटवर वाचनांच्या वाचकांची संख्या दिवसेंदिवस वाढते आहे. या दैनिकांना प्रदेशाच्या सीमा नसून संपूर्ण जगभरातील वाचक ही दैनिके स्वत:च्या घरी, कार्यालयात बसून वाचू शकतात. ई-सकाळ तर अलिकडे सर्वात लोकप्रिय इंटरनेट दैनिक बनले आहे. फॅमिली डॉक्टर ही अलिकडच्या एक-दोन वर्षात अतिशय उपयुक्त आणि लोकप्रिय बनलेली संपूर्ण पुस्तिका या साईटवर वाचकांसाठी उपलब्ध करून देण्यात आलेली आहे.

"मराठी माती डॉट कॉम, मराठी माया, मनोगत, अनामिका, मराठी वाचनालय, मायबोली, मराठी वर्ल्ड, मराठी शब्दगंध, मराठी मित्र, मराठी जगत, इथे मराठीचिये नगरी अशी अनेक संकेतस्थळे मराठी वाचकांच्या पसंतीला उतरली आहेत. आरोग्य, क्रिडा, शैक्षणिक, सामाजिक, राजकिय विषयांबरोबरच अनेक ललित लेखही या संकेतस्थळावर उपलब्ध आहे. अनेक संकेतस्थळावर गद्य साहित्य, कथा, कादंबरी अशा लिंक आहेत त्याच बरोबर केवळ कवितेसाठी काढलेली काही संकेतस्थळे आहेत, मनोगत वर "मराठी कविता-मराठी कवितांचे माहेर घर" असे स्वतंत्र पान तयार केलेले असून याच पानावर "ट्विटर"च्या मराठी कविता या पानावर जाण्याची सोय उपलब्ध करून दिलेली आहे. "नामवंत मराठी कवी" या लिंकवर ग्रेस मंगेश पाडगांवकर, ना.धो.महानोर, ग.दि.माडगूळकर यांच्या रचना वाचकांना पहायला मिळतात.

फेसबुक हे आज सर्वाधिक लोकप्रिय बनलेले संकेतस्थळ आहे. फेसबुकवर आज सुमारे पन्नास कोटीहून अधिक लोक परस्परांशी जोडलेले आहेत. मिडियावर चालणाऱ्या वैशिष्ट्येपूर्ण संपर्क संवाद प्रक्रियेमुळे फेसबुक दिवसागणिक अधिकाअधिक लोकप्रिय होत चाललेले आहे. कविता महाजन या मराठीतील आजच्या महत्वाच्या लेखिका

आहेत यांना फेसबुकवर अल्पावधीत पाच हजाराहून अधिक मित्र मिळाले. शेवटी कुठल्याही प्रकारचे लेखक, विचारवंत, कलावंत यांची "व्यक्त होण" ही गरज आहे आणि ऑडिओ, व्हिडीओ, व्हिज्युअल आणि लेखन अशा चारही मार्गानी फेसबुकवर पोहचन शक्य असते. सगळ्यात महत्वाच म्हणजे आपली मत इथं बिनधास्त मांडता येतात. भालचंद्र नेमाडे यांची "हिंदू" प्रकाशित झाल्यावर बऱ्याच चर्चा अगदी चांगल्या आणि वाईटही फेसबुकवर जोरदार झडल्या.

निष्कर्ष :-

एकूनच इंटरनेटवरील मराठी भाषेची वाटचाल कौतुकास्पद असून आज अनेक बाबतीत मराठीने इंटरनेट संगणकाच्या क्षेत्रात आघाडी घेतलेली आहे. काही तांत्रिक, आर्थिक अडचणींवर मात करीत ही संकेतस्थळे स्वत:चे स्थान निमार्ण करण्यात यशस्वी झालेली आहेत. आज सर्वच मराठी साहित्य इंटरनेटवर वाचता येत नाही फॉन्ट कॉपीराईटचे अधिकार अशा असंख्य अडचणी या संदर्भात असतात. तथापी कविता, कथा, लेख यांच्या प्रसिध्दीसाठी इंटरनेट हे महत्वाचे माध्यम ठरले आहे. एकूणच या माध्यमातून संवादाबाबतचा आग्रहीपणा वाटतो आहे. हे माध्यम बारा महिने चोवीस तास सातत्यपूर्ण वापरासाठी खुले असल्याने त्यातून न संपणारा संवाद आणि माहितीचा स्त्रोत सतत वाहत राहणारा आहे. या माध्यमांचा कौशल्यपूर्ण वापर करता येणे हे महत्वाचे आहे. या माध्यमांच्या कौशल्याने वापर करण्याचे तंत्र विकसित केले तर आत्मविकासासाठी त्याचा करण्याचे तंत्र विकसित केले तर आत्मविकासासाठी त्याचा मोठा लाभ होवू शकेल.

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