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Re-accredited 'A' Grade by NAAC (CGPA : 3.26 Second Cycle)

CPE Status by UGC-Thrice

Lead College identified by SGBAU, Amravati,

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3.3.3 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during AY 2018-19

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the pro
80	Dr. D. S. Wankhade	Nil	Safety and First Aid in sports Injury	Interdisciplinary National Conference on Role of Physical Education and Other Disciplines in Enhancing the Performand of Player and finess for young and New India	National conference on Role of physical education and other disciplines in enhancing the performance of players and fitness for young and new India	National	2018-19	2349-638x
81	Dr. R. V. Joat	A Text of Physics B.Sc.-I_ Second Semester	0	0	0	National	2018-19	978-93-87278-28-8
82	Dr F C Raghuwanshi, Dr N G Belsare, Dr T S Wasnik, Dr R V Waghmare, Dr R V Joat, Dr G T Lamdhade, Dr K B Raulkar, Dr A S Wadatkar	Research Journey, Special Issue I 2019	0	0	0	International	2018-19	2348-7143
83	R. J. Lote & Dr. A. D. Chauhan	Social Problems in India: 2	0	0	0	National	2018-19	978-81-939045-3-4
84	R. J. Lote & Dr. A. D. Chauhan	Bhartatil Samajik Sammasya	0	0	0	National	2018-19	978-81-937934-1-1

85	Dr.S.K.Rodde	Nil	Use of ICT in Commerce Teaching, Learning and Evaluation	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National	2018-19	ISBN :978-93-84021-93-1
86	Dr.S.K.Rodde	Nil	Foreign Direct Investment & Indian Economy	Recent Trends in Commerce and Management	Recent Trends in Commerce and Management	International	2018-19	
87	Dr. R. M. Patil	Nil	Use of ICT for effective Teaching, Learning and Evaluation	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National	2018-19	ISBN:978-93-84021-93-1
88	Prof. V.P.Shekokar	Nil	Information Communication Technology and English Language Teaching and Learning	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National	2018-19	ISBN:978-93-84021-93-1
89	Dr. V. R.Shekhawat	Library Automation Using Soul Software	Library Automation: An overview	Library Automation Using Soul Software	National Conference	National	2018-19	ISSN: 2394-7632,

90	Dr. V. R. Shekhawat	RESEARCH JOURNEY International E-Research fournal PEER REFREED February-2019 & INDEXED JOURNAL Special Issue - 110 (A)		0		International	2018-19	ISSN - 2348-7143
91	P. P. Khade	Nil	Use of ICT in Teaching Learning and Evaluation of Mathematics	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview	National	2018-19	978-93-84021-93-1
92	R. J. Lote & Dr. A. D. Chauhan	Samajik Manavshastra: Bhag- 1	0	0	0	National	2018-19	978-81-942250-3-4
93	R. J. Lote & Dr. A. D. Chauhan	Samajik Manavshastra: Bhag- 2	0	0	0	National	2018-19	978-81-942388-5-0
94	Dr. A. D. Chauhan & Dr. K. B. Borse	Research Methods in Sociology	0	0	0	National	2018-19	978-93-877760-042
95	Dr. A. D. Chauhan & Dr. K. B. Borse	Samajshastra: Mulbhut Samajik Sanstha	0	0	0	National	2018-19	
96	Dr. A. D. Chauhan & Dr. K. B. Borse	Samajshastra: Samajshastracha Parichay	0	0	0	National	2018-19	
97	Dr. M. M. Rathore	Surface Chemistry	0	0	0	National	2018-19	978-81-8152-467-6

98	Dr. G. T. Lamdhade	A Text of Physics B.Sc. III Sixth Semester	NA	NA	NA	National	2018-19	978-93-87278-30-1
99	Dr. K. B. Raulkar	A Text of Physics B.Sc. III Sixth Semester	NA	NA	NA	National	2018-19	978-93-87278-30-1
100	Dr. P. G. Bansod, Dr. M. U. Ghurde; Dr. P. V. Pulate; Ms. Lubna Khalid	Research Journey, Special Issue Special Issue – 110 (E)	0	0	0	International	2018-19	2348-7143
101	Dr. P. R. Rajput, Dr. V. V. Parhate, Dr. M. M. Rathore, Dr. V. H. Masand, Dr. P. S. Bodkhe	Research Journey, Special Issue Special Issue – 110 (b)	0	0	0	International	2018-19	2348-7143

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on
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Safety And First Aid In Sports Injury

Dr. Dnyaneshwari S. Wankhade
Director of Physical Education Dept.
V.B.M.V., Amravati

Abstract

Sports are natural, physical process which includes running, jumping, throwing, climbing, dozing, skipping etc. While performing these activities there is a possibility of injuries anytime and anywhere, any skill of sports if done by wrong method, injuries can happen. The reason behind all injuries depends upon circumstances and wrong uses of sports equipment are directly or indirectly responsible for it. In any condition we must win, such type of feelings may one of the reasons of injuries of sports. Sports help us to develop physical, mental, and intellectual health. We must know how to balance these three factors. Then only we can achieve success in sports & education. If we cannot keep proper balance in the above factors, then we have to face injuries. We cannot avoid sports injuries totally but we can minimize sports injuries by considering and playing sports as fun and recreation. Generally while living normal life injuries can take place but in sports area the possibility of injuries are more.

Introduction

Everyday, millions of people in the world participate in games and sports activities, from soccer fields to softball diamonds and kabbadi courts. It's called playing, but sports activities are more than play. Participation in sports improves physical fitness, coordination, and self-discipline, and gives children/individuals valuable opportunities to learn teamwork. Games and sports can also result in injuries-some minor, some serious, and still others resulting in lifelong medical problems.

Young athletes/sports persons taking part in games/sports/physical activities are in majority and they are not merely small adults. Their bones, muscles, tendons and ligaments are still growing which makes them more susceptible to injury. Growth plates- the areas of developing cartilage where bone growth occurs in youngsters- are weaker than the nearby ligaments and tendons. What is often a bruise or sprain in an adult can be a potentially serious growth plate injury in a young athlete/ sports person.

First aid is the provision of initial care for an illness or injury. It is usually performed by non-expert, but trained personnel to a sick or injured until definitive medical treatment can be accessed. Certain self-limiting illnesses or minor injuries may not require further medical care past the first aid intervention. It generally consists of a series of simple and in some cases, potentially life saving techniques that an individual can be trained to perform with minimal equipment you may vitally need, sometimes the results of self-injury can be safely treated at home.

Meaning of First Aid:-

The terms 'First Aid' was adopted officially in England for the first time in 1879 by the St. John Ambulance Association. First aid is a combination of simple but quite effective and active measures to prevent possible complications. First Aid means the treatment given to the casualty till proper medical aid comes. In other words, the first aid is the process of carrying out the essential emergency treatment of an injury/illness in order to benefit the casualty till the proper medical services are rendered. First aid is the immediate and temporary care given to the victim of an accident or sudden illness. Purpose of First Aid till the medical aid is given by the competent and qualified medical personnel.

Common Sports Injuries

Some of the common sports injuries are sprain, strain, dislocation, abrasion, and contusion.

First Aid For Common Sports Injuries

Approach to Doctor: Listen to your body. Several signs will indicate to you when you should see your doctor. You must approach your doctor in case of the following:

- A) If pain severe or persists
 - B) Inability to move the injured part of your body
 - C) The injury does not appear to be healing
- Immediate Care of Injuries** The immediate care of common sports injuries (sprain, strain, dislocation, abrasion, and contusion, etc) consists of a four-step program that should followed as soon as an injury occurs, whether or not you go to a physician. The four part program is called RICE and stand for REST, ICE, COMPRESSION, AND ELEVATION.

A) Rest

As soon as an injury occurs. It is important to stop the activity immediately. Prolonged delay in stopping the activity could cause further damage to the injured part. When a body part has become injured, the body reacts with an inflammatory process, which causes swelling, redness, local increase of heat in the area, pain and malfunction. The degree of each of these depends upon the severity of the injury.

B) Ice

Put ice in the injured part as soon as possible after the injury. Ice or cold, specifically, controls swelling by constricting the blood and lymph vessels, decreases muscle spasm and decreases some of the discomfort and pain caused by the inflammation. By reducing the swelling that collects around the injured area, the rehabilitation time will be lessened and you will be able to return to your sport more quickly. The ice should be applied for 20-30 minutes. It could be in the form of an ice bag, chemical packs, frozen vegetables, can of soda, snow, etc. It should be applied every hour for the next several hours.

C) Compression

Compression also helps to limit swelling in the injured area. The compression should be applied concurrently with the cold treatment. After the ice treatment, a dry elastic wrap or tape should be applied comfortably firm not too tight to cut off circulation, or too loose to allow further swelling. If lack of sensation or numbness is felt, the wrap is probably too tight. The use of sponge pads around bony prominences will insure even pressure around the injured part. The wrap should be loosened while going to bed, but worn continuously until the swelling has subsided (about 48-72 hours).

D) Elevation

The fourth part of the treatment is to elevate the injured part while being compressed. In elevating support should be placed under the entire limb. The height should be above the level of the HEART to help drain the excess fluid from the injured area. While sleeping, the compression wrap should be loosened and the foot of the bed or mattress raised by some suitable object or the head of the bed or mattress raised for the upper extremity injuries. RICE should be continued for at least 48-72 hours. Under no circumstances during this time • should any form of heat be applied, including excessive time in hot showers or baths. That would just increase the swelling and inflammation. When you are sure that the swelling has stopped. Give yourself an extra day of RICE. During the acute stage of the injury, no other activity should be performed. Your body has been injured and will need all the help it can to heal the injury. This means optimal healing conditions- proper nutrition, your normal amount of sleep, and a positive attitude. The same amount of effort you placed in your sports/athletic endeavors should be placed in your rehabilitation program.

Conclusion

As we discussed above, we cannot avoid sports injuries totally but we can minimize sports injuries by considering the four part program -RICE. And some immediate cares.

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Published by the **DnyanPath Publication (INDIA)**

A TEXT BOOK OF PHYSICS (B.Sc. Part I, Second Semester)
The edition publish in 2019 by
ISBN 13 : 978-93-87278-28-8



Mahatma Fule Sankul, Infront of Abhityanta Bhavan,
Shegaon Naka, V.M.V. Road, Amravati - 444603 (Maharashtra)

Visit us : www.dnyanpathpublication.com

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Phone : 08600353712, 09503237806

Printed at Shri Gurudeo Printers, Amravati.

Mahatma Fule Sankul, Infront of Abhityanta Bhavan,
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This Journal is indexed in :

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Impact Factor – 6.261

ISSN – 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

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February -2019 Special Issue – 110 (I)

Physics

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ISBN: 978-81-937994-1-1

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प्रजय धोपटे, सुशेदार लेन, टिळक पुस्तका, महाला, नागपूर.

मुद्रक :



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National Seminar on Revised Accreditation Framework and Institutional Preparation: An Overview

Date: 9th March, 2019

CERTIFICATE

This is to certify that **Dr. S. K. Rodde, Department of Commerce, Vidya Bharati Mahavidyalaya, Amravati** has actively participated and presented a paper in National Seminar on "**Revised Accreditation Framework and Institutional Preparation: An Overview**" organized by Internal Quality Assurance Cell, Vidya Bharati Mahavidyalaya, Amravati on 9th March, 2019.

Title of the Paper - **Use of ICT in Commerce Teaching, Learning and Evaluation.**

Dr. R. M. Patil

Coordinator IQAC & Organizing Secretary



Dr. F. C. Raghuwanshi

Principal and Convener

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Use of ICT in Commerce Teaching, Learning and Evaluation

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Introduction

Information and Communication Technologies (ICTs) are referred to as the varied collection of technological gear and resources which are made use of to communicate. They are also made use of to generate, distribute, collect and administer information. ICT is a force that has changed many aspects of the way we live.

Information and Communication Technologies consist of the hardware, software, networks, and media for collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services. ICTs can be divided into two components, Information and Communication Infrastructure (ICI) which refers to physical telecommunications systems and networks (cellular, broadcast, cable, satellite, postal) and the services that utilize those (Internet, voice, mail, radio, and television), and Information Technology (IT) that refers to the hardware and software of information collection, storage, processing, and presentation.

ICT is a boon to transform the teaching-learning system by adopting many advanced computer systems and devices like projectors, web conferencing, online lectures, seminars, workshops, document workflow, online office administration, online student interaction, etc. It includes use of mobile phone technologies too. Various social and other networking technologies also come under its roof.

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.

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) hardly 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 for the betterment of teachers as well as students.

Commerce Education

Commerce education is that area of education, which develops the required skills, attitude and knowledge for the successful handling of trade and industry. During the last few years, it has grown

remarkably both in corpus and scope. Today, it is a growing discipline with a set of many multi-dimensional key areas like accounting, finance, marketing, taxation, statistics, and human resource management, entrepreneurship development, marketing management and information system. The growth and expansion of commerce has always been felt as being professional oriented and thus, generally accepted as more socially relevant than others. The commerce education has to play a phenomenal role in respect of restructuring the industry, trade and economy as a whole in the present turbulent era of rapid changes and complex environment. An effective and innovative course of planning and skill development would entail the enrichment of students, industry and nation as a whole.

As a branch of knowledge, commerce imparts experience of business world at large in all its manifestations. It prepares its learners for personally fruitful and socially desirable careers in the field of business. Commerce is an organized system for the exchange of goods between the members of the industrial world.

Commerce is that part of business which is concerned with the exchange of goods and services and includes all those activities which directly or indirectly facilitate that exchange."

Fredrik G. Nichols defined Commerce Education As: "Commerce education is a type of training which, while playing its part in the achievement of the general aims of education of any given level, has for its primary objective the preparation of people to enter upon a business career, or having entered upon such a career, to render more efficient service therein and to advance from their present levels of employment to higher levels."

ICT in Teaching, Learning and Evaluation of Commerce

Teaching-learning and evaluation is the base and centre of our education system. The monitoring agency like National Assessment and Accreditation, more popularly known as NAAC often emphasizes and signifies the process of teaching-learning and evaluation considering one of the major criterions of 350 points/ marks among seven indicators of assessment. The present honourable Prime Minister of India often talks about digitization of education system and emphasizes the need of skilled manpower production from the educational institutions promoting the world level digital teaching and learning. Many steps have been and being forwarded in this connection by University Grants Commission (UGC) and NAAC.

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, Google classroom, web resources and many other software and hardware devices.

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. 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.

So, the present paper focuses on the Use of ICT in commerce teaching, learning and evaluation 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, learning and evaluation of commerce more effective, more useful, more practical and ultimately more successful.

Suggestions

To motivate students to adopt ICT in learning, teachers will have to adopt it first in teaching, learning and evaluation process. This suggests that the use of ICT among teachers of commerce will be

able to promote in teaching of commerce. Teachers will have to show keen interest in using of ICT in teaching of commerce through seminars, conferences, workshops so that they will feel confident in using of ICT in teaching of commerce. Teachers will be given adequate training of ICT so that they will use it in teaching of commerce. Teachers will 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 will teach and motivate students to learn and utilize these upcoming new trends of commerce in right directions. Teachers will be provided digital infrastructure by installing computer systems in class rooms, computer labs and staff rooms etc. so that they will start using them frequently. Teachers will be provided 24*7 free and fast-paced Wi-Fi internet facilities so that they may access it any time without any inconvenience. Teachers will 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 will take full advantage of it in teaching of commerce without any hesitation and fear.

Conclusions

Use of ICT is a serious concern in Commerce education. The present curriculum needs to be revamped from pragmatic point of view. Current business, employment and professional needs should be the base to do so. Education-Industry linkage is thus very important. Students are demanding the quality education and it is the prime duty of any educational institution to impart the same much effectively.

A number of measures like modernization of curriculum, introduction of need-based and relevant job-oriented courses, replacement of teaching by chalk and duster with new pedagogy like audio-visual training, business games, computer-aided teaching, case study, group discussion, project works etc. can be adopted to bridge the gap of expectation by the students and reality. 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. It has revolutionized teaching by modifying instruction strategies of all subjects including commerce. Thus, it recommends teaching of commerce with ICT to make the teaching, learning and evaluation of commerce more effective, more useful, more practical and ultimately more successful.

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FOREIGN DIRECT INVESTMENT AND INDIAN ECONOMY

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Abstract

Foreign Direct Investment (FDI) plays a very important role in the development of the nation. It is very much vital in the case of underdeveloped and developing countries. A typical characteristic of these developing and underdeveloped economies is the fact that these economies do not have the needed level of savings and income in order to meet the required level of investment needed to sustain the growth of the economy. In such cases, foreign direct investment plays an important role of bridging the gap between the available resources or funds and the required resources or funds. It plays an important role in the long-term development of a country not only as a source of capital but also for enhancing competitiveness of the domestic economy through transfer of technology, strengthening infrastructure, raising productivity and generating new employment opportunities. In India, FDI is considered as a developmental tool, which helps in achieving self-reliance in various sectors and in overall development of the economy. India after liberalizing and globalizing the economy to the outside world in 1991, there was a massive increase in the flow of foreign direct investment. FDI plays a multidimensional role in the overall development of any economy. The present paper is an attempt to study the FDI and its impact on Indian economy. It provides a new source for capital, can lead to technological up gradation, skill enhancement and resultant efficiency effects.

Keywords: Foreign Direct Investment (FDI), Gross Domestic Product (GDP) and Indian Economy.

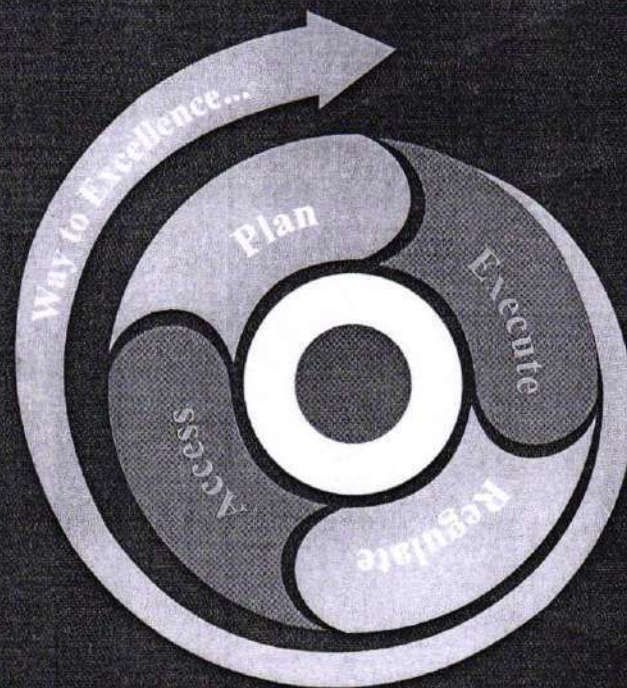
Introduction

Foreign direct investment (FDI) has played an important role in the process of globalization during the past two decades. The rapid expansion in FDI by multinational enterprises since the mid-eighties may be attributed to significant changes in technologies, greater liberalization of trade and investment regimes, and deregulation and privatization of markets in many countries including developing countries like India. At the micro-level, FDI is expected to boost output, technology, skill levels, employment and linkages with other sectors and regions of the host economy. In India FDI inflow made its entry during the year 1991-92 with the aim to bring together the intended investment and the actual savings of the country. To pursue a growth of around 7 percent in the Gross Domestic Product of India, the net capital flows should increase by at least 28 to 30 percent on the whole. India prefers as well as possesses the maximum amount of Foreign Direct Investments. Hence FDI is considered as a developmental tool for growth and development of the country. Therefore,

ISBN: 978-93-84021-93-1

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Use of ICT for effective Teaching, Learning and Evaluation**Dr. R. M. Patil**

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In the wake of Information Communication Technology everything has been rapidly changing. The explosion of technology has altered every walk of life. The higher education has been immensely using the technological gadgets in the day today functioning. The traditional methods of teaching and learning have become outdated. These ICT tools have been proving very effective as far as its impact on the learners is concerned.

Teaching Shakespeare and Shaw in a literature classroom has really become a pleasurable activity with use of LCD projector/ screen. A teacher can use as many resources as he/she has available at hand. A good kind of power point presentation can also serve the purpose effectively. Different types of online resources can be tapped while teaching the play like Shakespeare's *Hamlet* or Shaw's *Pygmalion*—one may use pictures/ images from Flickr or Google search, you tube videos, delivered lectures by scholars/academicians or can have an online workshop or webinar on the same topic. We can also show the Hollywood/ Bollywood movies based on the play; e.g. BBC produced movie *Hamlet* can be screened. This creates an interest among the students and causes to change their habits of learning. The imagined pictures get concreted and ideas become cleared to even for an average student. 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 hand-outs for the homework or they can be said to prepare a seminar or short presentation on the topic.

Keywords: Teaching, Learning, Evaluation, Information Communication Technology gadgets, NAAC, UGC.

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. Due to scientific inventions the world has become very smaller and very closer. Globalization has brought about an immense change in every walk of life right from the habits of eating to habits of working. How education sector can be isolated from this change? It has gone through a great change in the country like India. We have moved from our ancient heritage education system of *Gurukul* (*Ashramkalin*) to the modern day techno-savvy university education system. Today, education has become all inclusive process covering almost all aspects of life—social, cultural, political, economic, national, etc. Present is the era of information communication technology (ICT) which made transmission and spread of information most reliable and easiest. The Indian education system is striving to impart the overall development of individual and society and enabling the teaching-learning community to compete the global market with sustainable growth and development. Teaching-learning and evaluation is the foundation and centre of our education system. The monitoring agency like

National Assessment and Accreditation Council, popularly known as NAAC often emphasizes and signifies the process of teaching-learning and evaluation considering one of the major criteria with weightage of 350 points/ marks among seven criteria of assessment in making of the Self Study Report of an academic institution.

The present paper is an effort to analyse and emphasize the area of teaching-learning and evaluation and sheds ample light on the use of ICT in the classroom and its significant role in the process of teaching and learning with an example. ICT is an inevitable marker and a part of strategy of any educational institution which wants to cater the teachers-students diversity and aims at smooth/ fair administration to come out with potential results from the institution. Teaching should not remain one way process but to become more student centric and two way communication. Every segment of information shared by the teacher should reach home properly.

In a document of UNESCO shared online, the ICT has been defined with broader perspective advocating its scope, importance and nature of use, especially highlighting in the field of education:

“Information and Communications Technologies (ICTs) are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. Communication and the information are at the very heart of the educational process, consequently ICT-use in education has a long history. ICT has played an educational role in formal and non-formal settings, in programs provided by governmental agencies, public and private educational institutions, for profit-corporations and non-profit groups, and secular and religious communities.” (unesco.org).

According to the definition, the role of ICT tools is very wider and has multidimensional and multifunctional task as it can be used to “communicate”, “to create”, “disseminate”, “store” and “manage” information on diverse levels—teachers-students, teachers-management, students-management, teachers-students-administration, teachersstudents-public, etc. The tools and resources of ICT include all modern gadgets in the field of internet, software and hardware tools which are used to communicate through satellites, computers, cell phones, tablets and similar devices and also the old day tools like telephone, television and radio. It has enhanced the quality of teaching-learning process and thus progresses 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 HEIs diversely spread over vast rural geography, as it is in the most of the developed nations. It’s a challenge for the country like India due to non-availability of the modified resources and infrastructure but yet it can be achieved. The Government of India often underlines the digitization of education system and emphasizes the need of skilled manpower production from the educational institutions promoting the world level digital teaching and learning. Many steps have been and being forwarded in this direction by University Grants Commission (UGC) and NAAC. Now, the NAAC has made it mandatory to use smart/e-classrooms, online resources/Google classroom, etc. in our regular teaching practices.

Now teaching learning process has become more learner-centric and its aim is to produce skilled workforce. The olden approaches and mechanics of teachinglearning have witnessed a reformative transformation and its place is occupied by all technological gadgets such as online interactive smartboards, projectors, laptops, android phones, PCs, online lectures, tablets, 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; e.g. India has launched her first education satellite called EDUSAT in 2004 to impart knowledge to the distant learners and has developed virtual digital classrooms. The use of ICT tools and resources is highly increased in the present decade even the main focus is to promote such learning by reaching at all ends of the country. This type of teaching shall produce extremely efficient and skilled brain who can contribute their mite in the building of the nation. Highly qualified and well finished and trained man power shall emerge to serve the best. Hence teacher education has become an issue of the first attention.

“The quality of basic education provided to our children is largely influenced by the quality of our teachers in the schools. As no nation can afford to provide poor quality education, it is necessary that we build a strong system of quality teacher education—on which depends the quality of the teacher and ultimately the Nation’s education.” (Menon and Rama).

As per the demand at national level teacher training programmes need to be altered and should be made more technology based. The syllabi need to be redesigned and should be made at par throughout the country. Hence teacher training programs have an immense importance in the transaction of teaching-learning and it needs to be imparted by using ICT resources with a wide range. The access to ICT tools for teachers and students provide an interesting and mutual communication while teaching and learning. It benefits both teachers and students on a greater scale. Here is an example of how to use ICTs in literature classroom is furnished which can also be exploited in other streams of study. British Council and many other agencies have developed a lot of tools and online courses to educate teachers all over the world and they offer their specially designed programs on demand to the desired teachers at home only.

A classroom can be converted into a theatre by using audio-visual tools in ICT enabled classrooms while dealing with students of English literature. Various activities thereafter can be conducted via Google classroom. MCQs on the taught and screen plays can be framed and placed online for the responses of the learners. It can be a sort of online test on the taught topic. Teacher can assess online and the results can be communicated to the students on a single click. The outcome of such activities is very fruitful and these techniques are being used on a larger scale in Indian classrooms. There may be other many ICT tools and resources which can be exploited while teaching language and literature. The only thing is how effectively we use ICTs to improve teaching and learning quality and be able to produce the solid outcomes.

Technology has proven to be a boon to the mankind if used positively. 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 abundance of resources and at the same time an expert teacher community to implement and to reach to the remote part where most of the illiterate population resides. And this target can only be accomplished through the impressive and active use of ICTs in education.

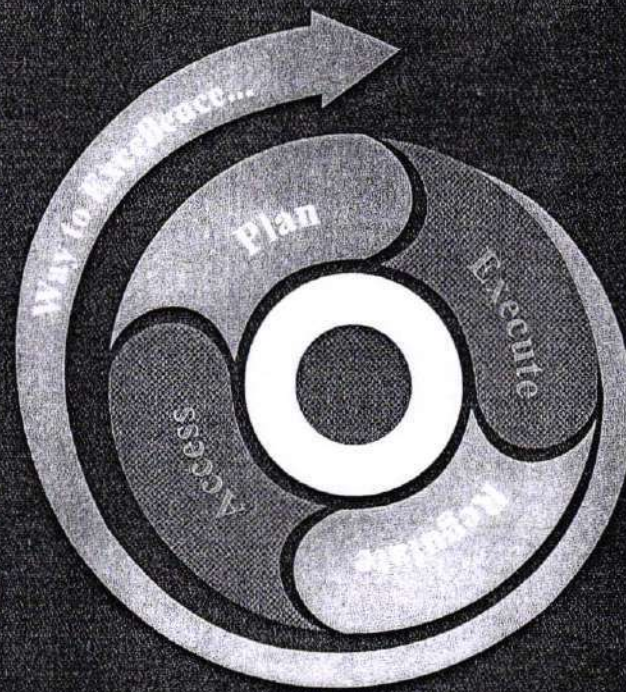
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ISBN: 978-93-84021-93-1

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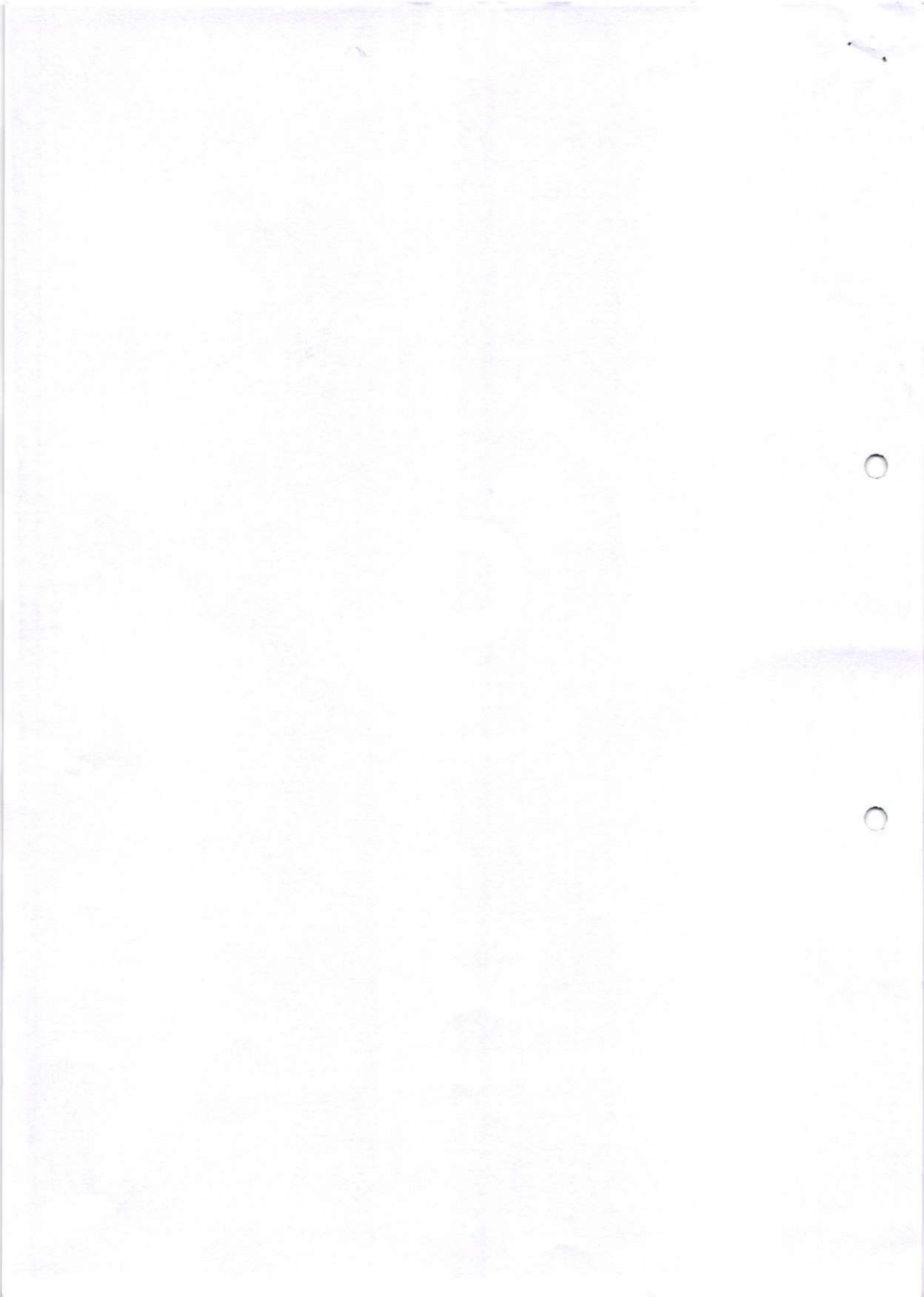


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Information Communication Technology and English Language Teaching and Learning

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Information Communication Technology (ICT) has brought new opportunities to reform the language learning/teaching environment. Currently, ICT has opened new possibilities and brought new challenges to language learners as well as teachers. The responsibility of learning tasks has shifted towards the learners and this has significantly changed the part of teachers. However, it is also true that present language teachers agree on the quality of learning process, and not ICT. This paper tries to highlight the potentialities of ICT as a dominant tool for foreign language teaching and the effects of this technology on second language learning.

Foreign Language teaching has been widely dominated by the inventions made in the field of Computer Science and technology. The recent approaches to ELT are based on technologies. It is basically includes the learning interactively with an online support and use of ICT tools between the teachers and the learners. Now a day, e-devices have impact in all aspects of life; so in the modern world of computer, the internet and other e-forms become integral part in ELT (Gide, 2014, p.29). The quick improvement of Information and Communication Technology (ICT), particularly the Internet, is one of the most intriguing factors characterizing the Information Age. ICT enable the access to information, enables new forms of communication, and serves many on-line services in the spheres of commerce, industry, science, entertainment and education etc. Information and Communication Technologies consist of the hardware, software, networks, and media, storage, processing, transmission and presentation of information (voice, data, text, and images), interactive boards, projector and other related devices. ICTs can be divided into two components, Information and Communication Infrastructure (ICI) which refers to physical telecommunications systems and networks and the services that utilize those (Internet, voice, mail, radio, and television), and Information Technology (IT) that refers to the hardware and software of information collection, storage, processing, and presentation.

English Language Teaching (ELT) is an area that has changed over the years, moving from very teacher-centered approaches to learner-centered ones (Richards, 1985). ELT projects have been introduced throughout different parts of the world (Markee, 1997; Rea-Dickins and Germaine, 1998) and innovations have brought changes in materials (supplementary, self-study, authentic, etc) and technology devices (language laboratories, tape recorders, video recorders, computers, etc). Recently, the exercise of technology as a tool to develop the different language skills has received great attention hence English language learner and teachers are often exposed to new practices.

Now ICT is being used in every field of life. The field of education is not untouched by the ICT. Now we cannot imagine education without the use of Information and communication Technology. It is now easy to exchange of thoughts, ideas, experiences and feelings with the help of this technology. With the help of ICT a lot of persons can get education and training simultaneously at low cost. Now ICT is being used in all the aspects of education. Use of computers, Internet, television, radio, projectors and mobile phones, e-mail facility, online audio and video conferencing as well as new applications has made the Teaching Learning Process and striking and convenient. This is helpful in saving time, energy and money. So, we can say that ICT is playing the most important and pivotal role in Teaching Learning

Process. Hence it is also playing an important role in the learning of language, especially English Language Learning.

Information Communication Technology and English Language Teaching and Learning as a Second Language:-

Personal Computers: PC is the most central device of information and communication technology. All the modern communication process is possible with the use of computers. It is helpful in storing, preparing, collecting and distribution of data for communication. It is helpful for the improvement of listening and speaking skills. There are number of applications available to be used on the personal computer which helps us to teach English as a second language.

Mobile Applications: Smart Phone has made English language teaching easier and smart. Digital devices like laptops, iPods, tablets, smart phones have added new methodology in English language learning teaching and learning. There are number of applications available in the App store and Play store (Android) markets. These apps furnish teachers with quizzes, games, dictionaries, Audio and Video files, movies, Podcasts and tests as teaching material at every level of the learners. . Mobile applications can perform as a personal 24/7 English language supports for teachers throughout the world. Some mobile applications which are amending English language learning and teaching are BBC Learning English, Dictionary.com,

Projector: It is an important tool of displaying information and processes to a large number of teachers and students all together. It can be used in teaching and training of personnel. Prepared forms of information are easy to display with the help of projector.

English Language Lab: This tool is very important in language training of the students. A number of students can practice speaking and hearing drills with the help of English Language Lab. It is especially useful in the training of English language listening and speaking skills.

Radio: The Radio plays very important role in education and training of the students of rural areas. Distance and Open educational programmes are being conducted with the help of radio. **Television:** This is found that television plays a very vital role in developing listening skills, useful in learning situational language while learning a language as a second language. It is also observed that television is a motivational tool for the language learners. This is very helpful in understanding the language of mass media. A large number of students may be benefitted with the programmes of television simultaneously. Many distance and open universities are running their educational programmes on television, such as Indira Gandhi National Open University, New Delhi. Swayam channel is being proving as the most effective and affordable for large number of learners in India. This is the chief tool of audio video conferencing. Live telecast of training and discussions are done through this.

Internet: Internet has made possible for us to communicate throughout the world within no time. All the recent communication takes place through internet. It has made the communication facility very fast, convenient, economic, and attractive. Numbers of web sites are available on internet which provides authentic material for English language learner and teacher in the world such as BBC Learning English, British Council and many more. Google is also providing many services which help the teacher and learners of the English language. Google Classroom, Google Drive, Google Scholar etc are some services which play a very vital role to teach and learn English as a second language.

Social Websites: Social Media is very famous in the students' community. It has become an inescapable mode of communication. This provides a platform for sharing feelings, views, thoughts and ideas. Many Blogs are available on the internet which support English language learning and teaching. Teaching and students can also have their own to share their view and thoughts on larger scale. Students can add themselves with the English language learning groups and take advantage of enjoying information from every corner of the world. There are number of social media websites available on it like, Face book, Twitter, Instagram etc. All these are very supportive in learning situational English language.

The Professional Development of the Teacher: The role of a teacher has now changed tremendously. There is no better educational environment without a better teacher. In earlier times the teacher was the central point of education, but now the role of teachers has changed a lot. He is considered as a guide and friend of students who helps in learning, does not provides knowledge. To teach better a teacher need to update him with the new information and communication technology. A teacher can acquire various language skills with the help of information and communication technologies. He can do various certification programmes in English language teaching run by the educational institutions. Recently UGC has started Refresher Courses online on Swayam Portal. We can register/ apply online for such courses. Students also apply for number of courses on Swayam. These programmes help in enhancing his/her capacity to teach English language and to make his subject content easy, economic and more understandable. This technology has made available teaching and learning material in the form of e-journals, e-magazines and e-library. He can also participate in discussions and conferences with the experts of his English language teaching to improve his knowledge and skills through audio and video conferencing. It also helps a teacher to learn innovative methods of teaching and learning. He can work with the students on various project and assignments by using Google Classroom application. It also helps him in providing teaching contents, home works etc. Information Communication Technology made easy and possible to a teacher to direct his students about the English language learning materials available on internet, e-books, e-journals, e-magazines and social sites. It also helps him framing curriculum of English language learning.

Limitations of ICT tools: Though ICT tools are very supportive in the teaching and learning of English language, still these tools have some restrictions. Many times learners and teachers not succeed to learn the targeted objectives of the English language teaching. Teachers and students become lazy about their task and make them busy in futile works.

It is now obvious that ICT tools have changed the pattern of English language teaching learning process. Hence it is crucial for a teacher to be well versed with ICT tools.

Conclusion

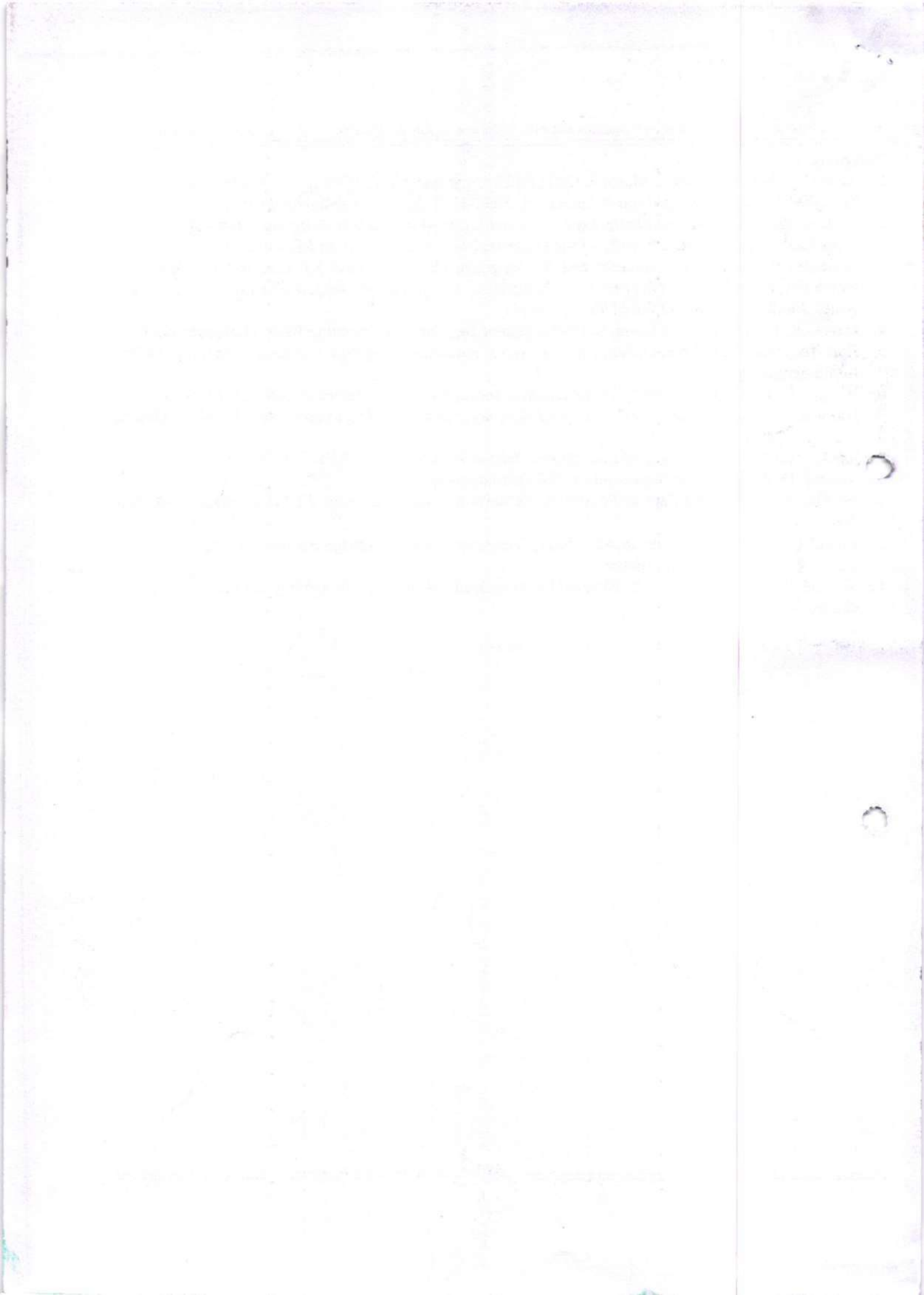
There are many difficulties for integrating Information Communications Tools in teaching and learning such as resources, access, cost efficiency, skills and expertise to use. In spite of the challenges ICTs construct opportunities to both English teachers and learners. Digital literacy has become the need of the day. Hence we have pay attention on ICT based integrated instruction in English Language Teaching.

The educational success of ICTs depends on how they are used and for what purpose. And like any other educational tool or mode of educational delivery, ICTs do not work for one and all, universally in the same way.



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An International Multidisciplinary Multilingual
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ISSN 2394 - 7632

EISSN 2394 - 7640

Special Issue

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Journal No- 41129

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LIBRARY AUTOMATION: AN OVERVIEW

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ABSTRACT:

Academic Libraries have accepted this challenge and started automation process, in spite of all necessity of their end. This paper describes the various useful services given by library automation. User can access catalogue on internet thorough the OPAC. This paper discusses the automation process and advantage of automation in library. At the same time it also focuses on disadvantages of using library management software.

Keywords: ICT, Academic Library, Computerization

Introduction:

Computer is a device used by many people all over the world for different purposes. Its use is increasing in our daily life. It is used in laboratories, hospitals, schools, colleges, houses, offices, industries. Computer use is multifunctional. Computer helps us to get things done at a faster rate with accurate result. Accuracy depends on the quality of software because computer receives the data processes and provides information as required by the users.

Computer has more increase its importance in every work of human action, better use of its, haste, reliable, Storage, accomplished, automation and dedication. The main aim of Library is to provide access to proper information explosion, due to growing demands of the user and reduce of financial resources, library cannot able to maintain all the reading materials on demand of users, the only way to overcome from these problem is sharing resources through consortia, and Internet. Library automation reduces the responsibility of repeated manual efforts in library routine by use of library automation like collection, storage, keeping, processing, protection and communication.

Library Automation:

Couple of year libraries used catalogue card, accession register, periodical register typewriters, and manually assigned due dates. Library automation is modern method for library protector to effective use of library resources, now more logical because of computers and software. In Library automation process cover the house keeping functions like circulation, cataloguing Acquisition, serial controls OPAC etc. For the automation of library electronic machines are used the application of machines to perform the different routines work, it means information and communication technologies (ICT) is used to replace manual systems in the library.

General Characteristics of an automated system:

- The operations and process are carried out automatically
- Reduce the human action and save the labour
- information Explosion
- Information in Machine readable form
- Routine Jobs
- Increase in users

- To improve the control over collection
- To avoid Duplication
- Speed and reliable
- To share the resource through consortia nationally and international

History of Library Automation:

Library automation began in the year 1930's when punched card equipment was implemented in library for circulation and acquisition. Harley E Tillet began experiments for storage and searching of a co-coordinating index. Using an IBM 70, Soon after this machine arrived in September 1953. In 1954 presented his report in IBM Computational Seminar at Endicott, New York. This paper is the first report on library-related computerization (Tillitt, Harley E). The beginning of Library Automation: 1930 – 1960

Library automation is officially underway: 1966 – 1980

Library automation present in: 1980

The term "library automation package" is generally used to refer software packages designed to automate library housekeeping functions such as Acquisition, Serial control, Circulation control, OPAC and Web OPAC (On Line Open Access Cataloging) etc.

Acceptance of Library Automation software packages:

- End user Friendly
- marketability of package
- easy to handle for library professional with Minimum training
- Multi-user and ultimate user access
- Support to web OPAC

Library will have to perform minimum number of basic operations. These operations are conventionally referred to as "Library Automation".

- Acquisition
- Circulation
- Cataloging
- Serial Control
- OPAC

Advantages of Library Automation:

Library automation has the following advantages:

- Speed: Information processing is done much quick which ensures better work flow through the library.
- Reliable: The degree of rightness and accuracy in processing information is high. However, it is dependent on the reliable information led into the system.
- Cost Effectiveness: Operating costs can be reduced if the system is well designed and well managed.
- Curtail in library work: Library workloads can be curtail as the computer can do vast amount of work and processing.
- Improved services to users: Gross rate and better quality in performance is possible through the use of computers. Library avoids duplication of work and easy to access external and internal database providing online access and users have easy to search information as well as excellent control over circulation.

Disadvantages of Library Automation:

- Cost
- Security depends on third party

- Maintenance of Automation software is totally depend on Computer administrator
- Continuous staff training are required for it
- It is totally depend on Electricity
- Untrained users

Requirement of Facility:

- More number of computers should require in the library.
- Good quality of internet to use web base services like Web-OPAC or use other search engines.
- Standby power supply facility should be there.
- Skilled staff should require explaining automation procedure.
- Library should also digitize their material for online access to information.
- Library orientation required at a specific interval to know the usage of the facility

Software for Library Automation:

AUTOLIB	CALIBAN	LIBASOFT
LIBRARIAN	LIBSYS	NIRMA
SOUL	TLMS	SLIBMAN
KOHA	NEW GENLIB	EVERGREEN
GREENSTONE	D SPACE	E PRINTS
E GARANTHALAY		

Conclusion:

Library automation is the activity which needs right planning, timely execute and frequent evaluation. The librarian should to set the priorities after analyzing the current status and future requirements. Correct Selection of the suitable library management software according to the needs of the users. Acquisition, Circulation, Cataloguing, Serial Control OPAC, etc. should be conducted with care. Staff training and user education are keys to the success of the process. For the successful implementation of required library management system all key factors must be in place support from administration, staff, skill, consideration of user requirements, presence of infrastructure, (Hardware, software, networks) available data, excellent ICT skill.

REF:

- IOSR Journal of Humanities and Social Science (IOSR-JHSS) Volume 17, Issue 5 (Nov. - Dec. 2013), PP 20-26 e-ISSN: 2279-0837, p-ISSN: 2279-0845.
- Library Automation, Anmol Publication New Delhi, ISBN81-261-2634-5 316p.

Impact Factor – 6.261

ISSN – 2348-7143

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Special Issue 110 (A): **Library Science**
UGC Approved Journal

ISSN :
2348-7143
February-2019

Impact Factor – 6.261

ISSN – 2348-7143

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Use of ICT in Teaching Learning and Evaluation of Mathematics

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Abstract:

In the present research, our aim is to encourage for higher level of active student engagement, where knowledge is obtained by sharing, problem solving and creating mathematics through integration of ICT in teaching and learning. ICT would motivate students and make learning easier, more interesting and even fun. Mathematics is regarded as the queen of all sciences. For long, the role of mathematics was limited to purely academic domain. Now the Mathematics has entered the domain of technology and Industry. The tendency of most students is to consider the subject as one that is boring, thus, creating interest in the topics being discussed. To overcome some of these barriers, this paper proposes an e-portal for teaching mathematics. The e-portal consists of two modules: a resource repository and a lesson planner. The resource repository is a collection of mathematical tools, a question bank and other resources in digital form that can be used for teaching and learning mathematics. The lesson planner is a user friendly tool that can integrate resources from the repository for lesson planning.

Keywords: Integration of ICT, Teaching & Learning mathematics, ICT tools.

1. Introduction:

Education, together with science and technology, are the main drivers of the progress and transformations of a country. Einstein famously said that his pencil is more intelligent than he was – meaning, that he could achieve far more using his pencil as an aid to thinking than he could unaided. There is a need to recognize that mathematical digital technologies are the pencils of today' and that we will only fully exploit the benefits of digital technologies in teaching, learning and doing mathematics when it becomes unthinkable for a student to solve complex mathematical problem without ready access to digital technological tools.

Digital learning solutions have change the face of most Indian classrooms. Learning solutions that are student centric and also aid teachers in better engagement in classrooms are the learning tools of the future. As technology has become an integral part of everyone's life, the Indian education has quickly shift to digital learning. This transformation will take the teaching learning process at universities and colleges at the next level. Keeping the above objective in mind the UGC is collecting information to know the effective use of digital technology in Universities and Colleges, through an online survey. It is important to note that the goal of the digital skills for all program is to contribute to the development of digital skills and the use of ICT not only among students but also between managers and teachers.

At present, students and teachers face new challenges that demand different attitudes towards mathematical knowledge and different ideas about what it means to teach and learn. ICT improves the way mathematics should be taught and enhances student understanding of basic concepts. Many researchers have carried out studies to evaluate the benefits of using ICT in mathematics. Different studies described the benefits of integrating ICT in education. These benefits are categorized as benefits for students and benefits for teachers. Mathematics permeates all fields of human endeavour and its importance cannot be underestimated. Mathematics is useful in today's technological advancement,

educational research, economic integration and business. The development of strong mathematical concepts at all levels of higher education demands solid foundation in Mathematics education for students to effectively apply mathematical concepts. In most India, Mathematics is a compulsory subject at the basic, junior and high school levels. This means that every student has to pass with at least a credit before admitted into to any tertiary institution. Thus, without at least credit in mathematics, the educational progress of a student is more likely to be truncated. Since Mathematics is very important in student learning, students' interest in learning mathematics and teachers' involvement in teaching the subject could be very paramount. Since without interest: students' achievement would not be a reality. The problem of students' failure in Mathematics and factors that constitute this failure are of great concern to educators and parents.

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.

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. Geo boards are useful for introducing geometric concepts. Clinometers are useful for teaching and learning of Trigonometry. 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 Slidrocket, 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.

The main objective of this study was to help mathematics teachers in the integration of ICT into their teaching. The study aimed at identifying the most common ICT applications used by these teachers and how ICT was used in the class. It also aimed at understanding how the Internet was used by teachers, analysed their training needs and further assessed the level of ICT usage in instructional programmes. The barriers faced by teachers during the integration of ICT into mathematics lessons and their perception of the usefulness of an e-portal were also investigated.

2. Methodology:

Word "method" comes from Greek and means "way to something". With the term educational method we understand system of ways of didactical cooperation between a teacher and students, when students get new knowledge and skills and at the same time develop their cognition skills (Albrecht, 1998). Educational method is an important part of a lesson, way of cooperation between a teacher and students in order to reach specific educational aims. The most important thing to understand is that educational process does not stay only in the classroom, it is uninterrupted and there the use of ICT can help a lot if the student understands the goals and expected results and the teacher is able to lead and motivate successfully. Technologies make learning environment alive and active. Educational method is an essence of educational contents where we can see personalities of a teacher and students as well as cooperation between them. Information and communication technologies (ICT) is a sum of technology tools and resources for creating, spreading, changing and managing the information. Coming of ICT in education has brought many novelties and essentially changed its values, methods and results. That

would be an important benefit for education system if the novelties and changes brought by ICT are accepted, used and developed by students, teachers, school administration, decision makers in local and state institutions and parents.

The proposed e-portal for teaching mathematics consists of two modules, i.e., a resource repository and a lesson planner. Teachers need to plan their lessons daily and in order to do the planning, they need resources; hence, this portal will not only relieve them from their daily routine tasks, it provides them with some useful resources during teaching. Flash presentations and Java applets are the two least used programmes deployed by mathematics teachers. However, this does not mean that they are useless as both are useful applications in mathematics education. There are many flash presentations and java applets found in the Internet which can be readily and effectively used in mathematics lessons. They are of high educational value and enhance exploratory and constructivist teaching approaches. The repository of the e-portal consists of the syllabus, curriculum specifications, mathematical tools (Java applets and Flash presentations), the question bank, research articles and sample lesson plans. Apart from lesson planning, it also functions as a test and exercise generator. The e-portal also provides a forum for teachers to collaborate and discuss professional issues with colleagues.

This research deployed to investigate the use of ICT and the barriers of integrating ICT into the teaching of mathematics. There are various types of technologies currently used in traditional classrooms. Among these are: Radio, television, audio tape, video tape, slide projector, overhead projector are of passive learning when interaction of the learner is less.

2.1. 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.

2.2 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.

2.3 Wireless classroom microphones:

With the help of microphones, students are able to hear their teachers more clearly. Students learn better when they hear the teacher clearly. Downloaded lecture can hear number of times. So he understand easily.

2.4 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. Submit their assignment through mobile app.

2.4 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.

2.5 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.

2.6 Online media:

Streamed video websites can be utilized to enhance a classroom lesson.

2.7 Online study tools:

Tools that motivate studying by making studying more fun or individualized for the student.

2.8 Software used for teaching learning Mathematics:

There are actually a lot of different types of educational software, including: educational software for teaching academic skills such as mathematics; programs that will teach student basic keyboarding skills; software that teaches student how to think logically and to solve problems and artistic software that students can use to create and colour 3D pictures. Learning activities should be designed considering the use of educational software; learning materials and activities should include guiding material to facilitate learning; and promote learning through play. We propose a few design principles for educational software to support learning better and more effectively.

- Graphic Calculators
- Dynamic graphing tools (Geo gebra)
- Dynamic geometry tools
- Microsoft Excel / spreadsheet
- Microsoft Mathematics
- Geo Gebra
- Auto shape
- Mat lab
- Mathematica
- Math Type 5

The use of educational software offers many advantages but may also become a frustrating experience for teachers and students that lack experience of its use.

2.10 Learning resource centre:

Thousands websites provide e-resource for both offline and online teaching –learning. <http://www.ignou.ac.in> The Indira Gandhi National Open University (IGNOU), <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.

<http://www.ixl.com/math/algebra-1/absolute-value-and-opposites> <http://mathforum.org/library/> Lesson Plan

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<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. <http://www.montgomeryschoolsmd.org/departments/hiat/websites/math.shtm> helps teacher for lesson plan.

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 www.mathforum.com MATH FORUM
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Here the teacher as well as student will find answers to the many questions that teachers and others have posed.

3. Impact of Technology on Teaching and Learning Mathematics:

Use of computers allows for "dynamic, linked notations" with several helpful advantages.

3.1 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 learners 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 personally and directly. The new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centred pedagogy to one that is learner centred.

3.2 Technology helps teacher in lesson Planning:

The ease and speed of obtaining information on the Internet definitely helps the teacher users to empower themselves. 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 students' self-esteem. It adds further information about the topic he/she is teaching. He/she can make the content more colourful 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.

3.3 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. 5.4 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..

4. Barriers of use of technology:

- Not enough or limited access to computer hardware & computer software
- Lack of time in College/University 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 College/University priority
- Students and Teachers do not have access to the necessary technology at home
- Difficulty in integrating and using different ICT tools in a single lesson
- Unavailability of resources at home for the students to access the necessary educational materials.
- The age of the teachers, where older teachers are reluctant to use new digital technologies.

5. Conclusion:

The use of ICT in teaching mathematics can make the teaching process more effective as well as enhance the students' capabilities in understanding basic concepts. Nevertheless, implementing its use in teaching is not without problems as numerous barriers may arise. The types of barriers have been identified in the study. A proposed e-portal to overcome some of these barriers was introduced as part of the on-going research project.

5.1 Technology provides New Ways of Learning:

Technology can reduce the effort devoted to tedious computations and increase students' focus on more important mathematics. Equally importantly, technology can represent mathematics in ways that help students understand concepts. In combination, these features can enable teachers to integrate project based learning. Calculators and other technological tools, such as computer algebra systems, interactive geometry software, applets, spreadsheets, and interactive presentation devices, are vital components of a high-quality mathematics education. With guidance from effective mathematics teachers, students at different levels can use these tools to construct knowledge and develop 21st century skills such as critical thinking, problem solving and decision making.

5.2 New Roles of the Teacher:

In the present time the teacher's role in teaching mathematics is facilitator. The teacher has to facilitate the learning by providing students with access to instructional technology, including appropriate calculators, computers with mathematical software, Internet connectivity, handheld data-collection devices, and sensing probes. The teachers can find the means to more easily to engage students in learning and to cater to the various needs of different students. Technology provides opportunity for his/her students to collaborate with others. This case indicates that the Internet cannot replace the role of the teacher as facilitator, as she must set up the task, pose questions, provide appropriate websites, and give feedback.

5.3 Teaching Mathematics Better and Teaching Better Mathematics:

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 college 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 and Universities. What needed in colleges are student-led mathematical modelling, problem solving and computer programming which makes use of the powerful Mathematical digital technologies that are widely used in society and the workplace.

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ISBN : 978-81-942250-3-4

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ISBN : 978-81-942388-5-0

प्रकाशन क्रमांक : ५८४

पहिली आवृत्ती : डिसेंबर, २०१९

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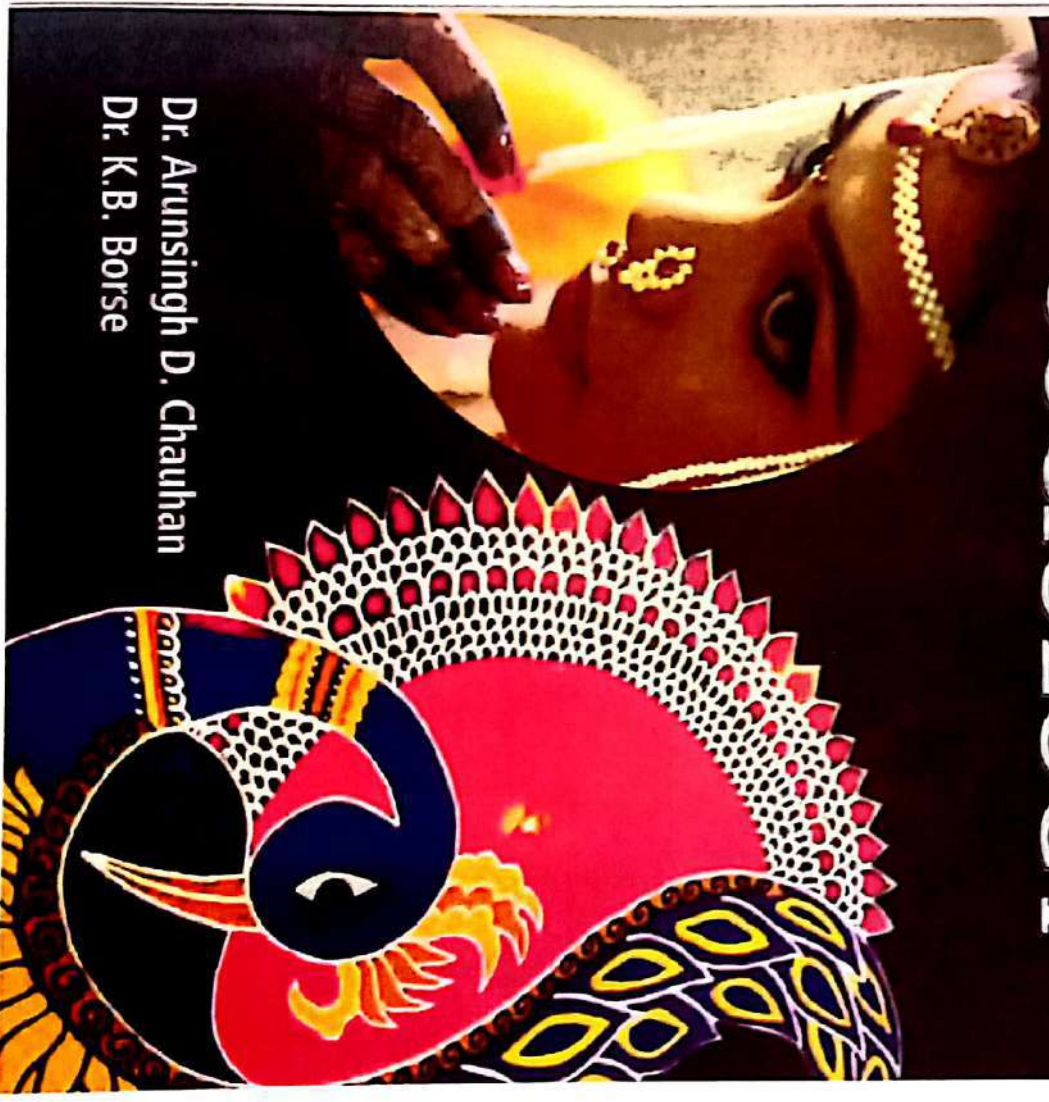
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First Published : 2019

ISBN : 978-81-8152-467-6

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Price : Rs. 1850

Published by

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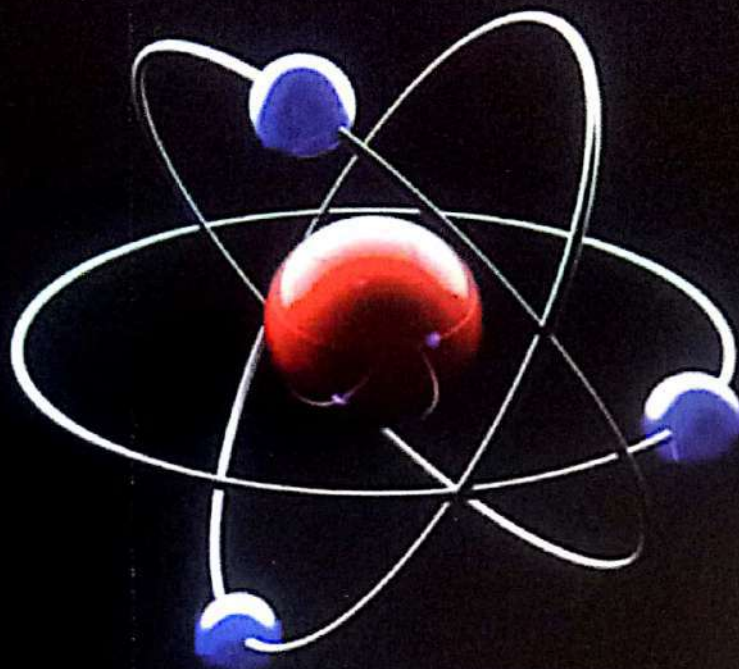
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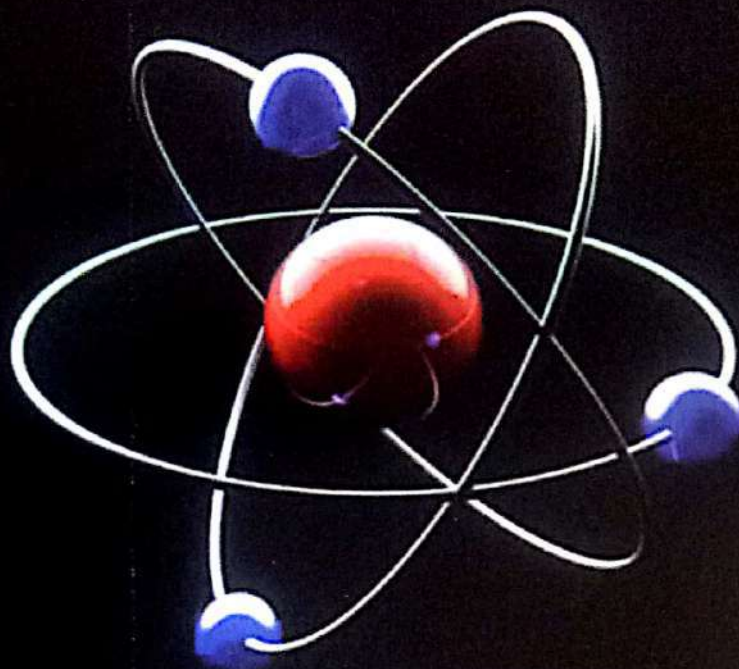
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SWATIDHAN PUBLICATIONS



'RESEARCH JOURNEY' *International E- Research Journal*
Impact Factor - (SJIF) - **6.261**, (CIF) - **3.452(2015)**, (GIF) - **0.676 (2013)**
Special Issue 110 (B) : **Chemistry**
UGC Approved Journal

ISSN :
2348-7143
February -2019

Impact Factor - 6.261

ISSN - 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

RESEARCH JOURNEY

International E-Research Journal

PEER REFREED & INDEXED JOURNAL

February-2019 Special Issue - 110 (B)

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