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Improvising the Quality & Productivity in Higher Education Universities: A Role of Information Technology

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Abstract: ***It is a reality that advancement of Information Technology has revolutionized the business practices and strategies of entire industries. The field of higher education is not an exception to this phenomenon. Colleges and universities around the world are investing significant amount of money to create Information Technology resources that meet their student's and faculty's instructional needs. While universities encourage their faculties to adopt the new technologies for their preparation and delivery of classes, various other factors influence the integration or resistance of acceptance of these technologies. Age, highest education earned, teaching experience, computer competency, prior computer experience, availability of technology, Institutional support etc. are examples of these factors.***
Keyword: Information Technology, Higher Education, E-learning, Quality, ICT

I. WHAT IS IT?

Today the IT's advancement around the world cannot be imagined. It integrated the world economy through removal of barriers. As defined by INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA (ITAA) "IT" is the "study, design, development, implementation, support or management of computer based information system particularly software's applications & computer hardware. The term is formed by two words i.e. Information and Technology. *Information* is data processed for some purpose but Information can only be considered to be 'real' info if it meets certain criteria i.e. it must be communicated to the recipient, it must be in a language that is understood, it must be in a suitable form, it must be relevant for achieving some purpose and *Technology* is the collection of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation and a computer is a general purpose, programmable device that is used for the production and processing of information..

Today, it is common to use the term Information and communications technology (ICT) because it is unimaginable to work on a computer which is not connected to the network so the IT is a process and application that create new methods to solve the problems, perform task and manage communication. IT industry is in GROWTH phase since last 5 years. There is estimated growth regarding spending on world-wide technology products & related services sector.It can be seen through contribution of IT in GDP, number of employees in this sector &revenue generated from this sector.

II. EVOLUTION OF INFORMATION TECHNOLOGY IN HIGHER EDUCATION

Technology is ever changing and in today's highly competitive world, a College Degree is must. Over the past 20 years, the evolution of technology has had massive impact on higher education .The Evolution of technology has brought on effects all in the same[1].

A. Access: What used to be based written grade books have become online spread sheet and websites that allow students to view up coursework.
B. Communication— Modern Mobile devices have come along with Email feature that shortens response time.
C. Online Courses—There are colleges which provide online courses that provide easier option for working college. Lecture notes and videos are ported online.
D. Pubmeds and Google are one of the most used tools for information, journals and articles can be seen online
E. Telecommunication and Telemedicine—For medical student it is now easier to discuss particular core with all around globe.

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Traditionally, Teachers have used much of their class time with students to disseminate information through lectures and follow discussion. In Era of advanced technology web based resources can disseminate basic information more efficiently. A study conducted in Saudi Arabia with title "Effectiveness of using information technology in higher education" Shows 61.5% student used the electronic device in their course activities. Another study conducted in Daata Meghe Institute of Medical Sciences WARDHA (maharastra) emphasis on incorporation of need for basic I.T. training as a part of medical curriculum to make learning enjoyable. Thus it is seen that Higher Education has undergone profound transformation due to recent technological advancement studies over recent past reflect a striking change in pattern of technology usage.

III. PRESENT SCENERIO OF IT IN HIGHER EDUCATION

India needs to make the system of education innovative and futuristic in order to respond to the changing demands of the modern society. India has already entered into the era of knowledge explosion. It has proved its tremendous potential by its performance in nuclear and space domains. In the coming few decades will be heralded by space craft, satellites, internets and others offshoots of scientific enquires. The recent development in communication technologies have helped to cross the barriers of time and distance. Boarders have become porous and the sky open. The student of today learning a specific content of information will find to his amazement that he is not prepared to face the life which he has to live for the next five decades because the knowledge furnished with, has become outdated long back. Higher education has undergone profound transformation due to recent technological advancements. Resultantly professional students have a strong base to utilize information technology for their professional development. Studies over recent past reflect a striking change in pattern of technology usage amongst students expanding prospects exponentially by e-books, science apps, readymade power-point presentations, evidence based medicine, Wikipedia, etc. Profound transformations in higher education have occurred as a result of recent technological advancements Earlier which was used for mails, chats, movies, videos, video games, dictionaries, entertainment has expanded prospects exponentially by e-books, science apps, readymade power-point presentations, evidence based medicine, Wikipedia etc[2].

Learners; now advocate the incorporation of training in computer skills as part of their curriculum which they report, will enhance their ability to acquire, appraise, and use information in order to solve clinical and other problems quickly and efficiently in the course of their studies, and more importantly when they graduate .

Nearly about 45% students in India felt that learning with the help of internet and computers will be a preferred method in future due to availability of vast information, interactive and personalized media, environment and user friendliness which is more appealing for the current techno-savvy generation This brings forth an important aspect that there should be more emphasis on computers as standard tools for learning with more use ICT in classrooms. There should be emphasis on expansion of computer-assisted learning which requires careful strategic planning, resource sharing, staff incentives, active promotion of multidisciplinary working, and effective quality control. Our student population has increased over the years and is likely to overwhelm the facilities if it were not for the use of IT enabling lectures, demonstrations and illustrations to be delivered to multitudes of students simultaneously. International collaborative research has been strengthened by the dense networking between and among institutions, driven by the availability of free and open knowledge. There is still a strong hierarchy among higher education institutions: some institutions or research departments attract more funding and have better working conditions and higher prestige. Institutions do still tend to partner and network primarily with institutions of similar prestige. At the same time, technology-driven networking allows those institutions not focused on research (including institutions in developing countries) to benefit from advances in knowledge. At its best, meaningful, purposeful technology enables us to create personalized learning experiences that are tailored to individual students' needs, helping them learn in the most effective way possible.

IV. FUTURE OF HIGHER EDUCATION

Education improves the quality of life, values at social and individual levels, spiritual and material progress. In India, the government education expenditure as a percentage of GDP has never ever risen above 4.3% of GDP despite the target of 6% having been set as far back as 1968 by the Kothari commission. The main challenges are improving access and quality at all level of education, increasing funding in higher education, Improving Infrastructure, improving management, improving literacy rates. Application of technology for higher education must be seen in light of broader societal transformations in the past two decades. Information and telecommunication technology has already become well entrenched in everyday life, so much so that we often overlook the range of functions served. Technology is also reshaping the world of higher education.

These issues are reflected in the three central pillars for the Government of India's 12 Five Year plan for education which is Excellence, Equity and Expansion. Improving the quality of education, for better learning outcomes and employability. Providing

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educational opportunities to all the citizens, regardless of social position, economic ability and geography and creating the capacity to meet the rising demands. Focus on Digital Future of Education, it save the time and energy. Digitalization bring the cost spend on the education down, so that it could be reach of everyone. Skills which will help to sustain in the workplace are cognitive flexibility, negotiation, service orientation, judgment and decision making, emotional intelligent, coordinating with others, people management, creativity, critical thinking and complex problem solving. The role of technology is in the education making education more collaborative and deep learning in terms of knowledge both visually and verbally. Learning science's interdisciplinary insights are uncovering new approaches to education. The power of technology is to influence and enhance academia. By applying learning science insights to IT education, we can create a dynamic, digital and hands- on learning experience that is tailored, flexible, and relevant, developing the talent needed to power the digital economy.

The progress we have begun to see in technology – enabled learning gives him reason to hope. Online learning has the potential to revolutionize education in both quality and scale, enabling anyone with an Internet connection and a will to learn access to an education. Experiments with massive open online courses have demonstrated that the quality education can be offered to millions of students worldwide at near zero marginal cost. Barriers to university credits for MMOCs have begun to come down, giving tremendous hope that soon people will be able to get education and meaningful qualification to showcase their work.

V. EDUCATIONAL TECHNOLOGY

Educational technology, sometimes shortened to Edu-Tech or Ed-Tech, is a wide field. "A complex, integrated process involving people, procedures, ideas, devices, and organization, for analysing problems, and devising, implementing, evaluating and managing solutions to those problems, involved in all aspects of human learning" In a more simplified form they correspond to today's "e-contents" that often form the core of "e-learning" set-ups, sometimes also referred to as Web based training (WBT) or e- instruction. Various pedagogical perspectives or learning theories may be considered in designing and interacting with educational technology. E-learning theory examines these approaches. These theoretical perspectives are grouped into three main theoretical schools or philosophical frameworks: behaviorism, cognitivism and constructivism.

A. Behaviorism

This theoretical framework was developed in the early 20th century based on animal learning experiments by Ivan Pavlov, Edward Thorndike, Edward C. Tolman, Clark L. Hull, and B.F. Skinner. Many psychologists used these results to develop theories of human learning, but modern educators generally see behaviorism as one aspect of a holistic synthesis. Teaching in behaviorism has been linked to training, emphasizing the animal learning experiments. Since behaviorism consists of the view of teaching people how to do something with rewards and punishments, it is related to training people.

B. Cognitivism

Cognitive science underwent significant change in the 1960s and 1970s. While retaining the empirical framework of behaviorism, cognitive psychology theories look beyond behavior to explain brain-based learning by considering how human memory works to promote learning. The Atkinson-Shiffrin memory model and Baddeley's working memory model were established as theoretical frameworks. Computer Science and Information Technology have had a major influence on Cognitive Science theory. The Cognitive concepts of working memory (formerly known as short term memory) and long term memory have been facilitated by research and technology from the field of Computer Science. Another major influence on the field of Cognitive Science is Noam Chomsky.

C. Constructivism

Constructivism has a primary focus on how learners construct their own meaning from new information, as they interact with reality and with other learners who bring different perspectives. Constructivist learning environments require students to use their prior knowledge and experiences to formulate new, related, and/or adaptive concepts in learning. Under this framework the role of the teacher becomes that of a facilitator, providing guidance so that learners can construct their own knowledge. Constructivist educators must make sure that the prior learning experiences are appropriate and related to the concepts being taught.

The extent to which e-learning assists or replaces other learning and teaching approaches is variable, ranging on a continuum from none to fully online distance learning. A variety of descriptive terms have been employed (somewhat inconsistently) to categorize the extent to which technology is used. For example, 'hybrid learning' or 'blended learning' may refer to classroom aids and laptops, or may refer to approaches in which traditional classroom time is reduced but not eliminated, and is replaced with some online

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learning. 'Distributed learning' may describe either the e-learning component of a hybrid approach, or fully online distance learning environments.

D. Synchronous And Asynchronous

E-learning may either be synchronous or asynchronous. Synchronous learning occurs in real-time, with all participants interacting at the same time, while asynchronous learning is self-paced and allows participants to engage in the exchange of ideas or information without the dependency of other participants′ involvement at the same time.

E. Linear learning

Computer-based training (CBT) refers to self-paced learning activities delivered on a computer or handheld device such as a tablet or smartphone. Computer-based training is conceptually similar to web-based training (WBT) which are delivered via Internet using a web browser. CBTs provide learning stimulus beyond traditional learning methodology from textbook, manual, or classroom-based instruction. CBTs can be a good alternative to printed learning materials since rich media, including videos or animations, can be embedded to enhance the learning.

F. Collaborative learning

Computer-supported collaborative learning (CSCL) uses instructional methods designed to encourage or require students to work together on learning tasks, allowing social learning. CSCL is similar in concept to the terminology, "e-learning and "networked collaborative learning" (NCL). With Web 2.0 advances, sharing information between multiple people in a network has become much easier and use has increased. One of the main reasons for its usage states that it is "a breeding ground for creative and engaging educational endeavors."

G. Flipped Classroom

This is an instructional strategy in which computer-assisted teaching is integrated with classroom instruction. Students are given basic essential instruction, such as lectures, before class instead of during class. This frees up classroom time for teachers to more actively engage with learners. Numerous types of physical technology are currently used- digital cameras, video cameras, interactive whiteboard tools, document cameras, electronic media, and LCD projectors. Combinations of these techniques include blogs, collaborative software, e-Portfolios, and virtual classrooms. The current design of this type of applications includes the evaluation through tools of cognitive analysis that allow to identify which elements optimize the use of these platforms.

VI. FACTORS AFFECTING INSTRUCTORS' ADOPTION OF E-LEARNING SYSTEM

Instructor/teacher is a remote person in the concept of eLearning. There are four areas of expertise required to be an effective online instructor: Pedagogical, Social, Managerial, and Technical[3].Here are some challenges/factors which affects the adoption of eLearning by the instructors:

1) *Technological Confidence:* There are four distinct learning styles: imaginative, common sense, analytic and dynamic. The dilemma to instructors is how to identify and understand the learning styles of online students when they cannot be visualized, especially when they have limited time and many students enrolled.
2) *New Learning Style Confidence:* Learning different pedagogical online strategies by teachers is not sufficient in an online learning environment, it should include academics correctly interpreting staudents' online written text, understanding the context, and understating group dynamics with individual needs.
3) *Motivation and Commitment:* When teaching online a lecturer could feel they are "left in the dark" where they are unable to observe students. This is highly demotivating and frustrating for an instructor.
4) *Qualification and Competence:* Academics who are not equipped technically to handle developments of materials and delivering online modules require extensive skills development. e-learning is exceptional for courses that require cognitive learning. However for teachers dealing with cultural barriers, differences in student attitude do not work well in the e -learning environment. Academic staffs that are better trained will bear the fruits of higher student learning. However if the teaching staff are not trained in using the e-learning technology and do not have a strong grasp of the operation of the technology then student learning is likely to suffer.
5) *Diversity of Students:* Instructors usually fail to take into account cultural differences when designing and delivering courses. Because pedagogy and technology do not reflect the culture of the student, it reduces his or her learning outcome and the

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cultural differences affect their ability to work with e-learning technologies. The outcome is reduced because students of different languages respond differently to how things are organised in e-learning technologies and also students of different cultures have different abilities to work with e -learning technology.

6) *Time:* Time and availability of instructor is major issue in eLearning for live lectures via video-conferencing/radio channels.
7) *Management:* Management issues involving agenda setting, pacing, objective setting, rule making and decision making is so closely related to pedagogical and the social roles that the academics did not separate online teaching and management duties. Some of it was due to the online course structure where management process is already set. However, some course management decisions were applied from academics' past experience without reflection. It would be interesting to learn where e-learning systems management process stop and academics' management decisions start. Since a lot of the management process is inbuilt into the course structure, once the course is mounted and initialized it is hard to change the structure or modify the course material.

VII. AGE OF INSTRUCTORS VERSUS IT RELATED BEHAVIORS OF HIGHER EDUCATION

Findings revealed that age is not a factor when considering the attitudes, competence and use pattern of teacher educators. In addition, age was not found to affect the time used on ICT by higher education. The study conducted by higher education teachers in Nigeria including 5 colleges of education and 5 universities, effects of age start to become noticeable from the mid-forties onward, so that aging people are not just another minority group but an important segment of the population[4]. If situation will improve a starting point is first answering the question what is the influence of age of teacher educators on their ICT behavior? The reason for starting from this point is because an intervention strategy (if there will be need for any) would require beyond mere speculations and informal observation. The influence of age on ICT-related behaviors' of teacher educators study guide, there is no significant difference between the age of higher education teachers and their attitude toward ICT and there is no significant relationship between the age of higher education teachers and their ICT use pattern. Study also suggested that there is no significant difference between the age of higher education teachers and the time spent on computer and their ICT competence. The study also obtained that the type of use to which educators put ICT is not related to age. It would seem that most of the users bordered on Word processing, Data processing, (i.e. result computation) and communication Jegede (2006) observed that 8% of almost 500 teacher educators who participated in a related study use ICT to teach. Thus in designing intervention strategy that would enable educators use ICT in the classroom no age group should be left behind.

Age has been shown in some studies to have a curvilinear relationship; the older employees being more satisfied than the younger ones (Punnett et al., 2007). In a study conducted in Australia by Dua (1994), younger staff reported more job stress than older staff. That was attributed to the idea that as people get older they become more experienced and more worldly- wise. The study conducted in Malaysia by Manshor and co- workers (2003) also indicated that age was significantly correlated with sources of stress, in particular with workloads. Workloads become intolerable to a certain range of age significantly correlated with sources of stress, in particular with workloads. Workloads become intolerable to a certain range of ages.

VIII. FACTORS AFFECTING STUDENTS' ADOPTION OF E-LEARNING SYSTEM

Students today are considered "digital natives" that is, users who have grown up using technologies such as computers, cell phones and the Internet. Student is the key factor in the world of eLearning. A student who takes a course via eLearning may face a lot of challenges mostly because all communication is online and meeting an instructor physically is almost impossible.Following are some factors which influence the adoption of eLearning of students[5]:

A. *Motivation:* Teaching online automatically makes the instructor less visible than in a traditional teaching role. This can make students feel less connected with the instructor, which will consequently result in lack of motivation on student's as well as instructor's behalf.
B. *Conflicting priorities (time):*Students miss deadlines for a wide range of reasons. Student excuses for not making their deadlines can be surprisingly creative. They range from a genuine problem, to a simple lack of self-discipline. This almost always makes more work for them.
C. *Academic Confidence:* E-Learning requires a different approach to pedagogy especially in areas such as individual and group interaction and online assessment.
D. *Technological Confidence:* Individual learners have a variety of learning approaches and use these approaches in varying degrees in different learning situations, e.g. visual, auditory or kinaesthetic. A good learning environment must also allow for the construction of knowledge, the constructivist approach and, more specifically, social constructivism. Any learning materials

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that are produced for the eLearning environment must reflect these differences and this under pinning theoretical perspective. Consequently good learning materials must be in several formats and foster and encourage collaboration and co-operation. Learners must be able to choose their own personal approach and have the opportunity to engage in discourse with others and collaborate and cooperate in the learning environment just as they would in the normal classroom.

E. *Learning Style:* Everyone has their own learning style along with their cultural influences. However, most of the courses are designed in universal way which can be problematic for students of certain ethnicities.

F. *Demographics:* Age and gender of students can vary which may cause problems like understanding of concepts, familiarity of technologies and acceptance of new learning styles.

In Adoption of E-learning for students, these factors can apparently be either disabling or enabling i.e. lack of access to technology or ample supply of technology respectively. All factors are variables where some level (not always easily specified) is required for success, too low levels may inhibit e-learning[6]. The e-learning models are usually based on proactive learning where students are expected to search, manipulate, and analyze study material individually and in groups. A traditional learning style may be detrimental to success of e-learning style. Therefore, a successful implementation of an e-learning system and adoption by learners requires a firm understanding of user acceptance processes and ways of persuading students to engage with these technologies.

IX. FACTORS AFFECTING OTHERS ADOPTION OF E-LEARNING SYSTEM

The most important service provided by internet is e-learning. E-learning is emerging as the new paradigm of modern education. It is still viewed as a new, innovative approach for learning that presents an organization with a new alternative as well as new means of solving problems. With the rapid change in all types of working environment, there is a need to implement electronic learning (e-learning) systems to train people in new technologies, products, and services. E-learning can include training, the delivery of just-in-time information and guidance from experts[7]. The idea of applying e-learning system to many institutions and organizations has been adopted with the help of internet. Many factors can lead to adoption of e-learning namely computer self-efficacy, content quality, and subjective norms. According to Bill Gates 'The future of advertising is the Internet.' The internet can connect people to their peers in other parts of the world. It can bridge the quality gaps. The internet just like a steam engine is a technological breakthrough that changed the world. Demystifying the concept of e-learning is important as everybody may not understand this new concept and for some it might only mean watching an online video, reading a bunch of PPT's and PDF's or playing online games. It is must for the employee to understand that e-learning can also be a mode of teaching, training and building skills in order to be successful at work. It is the fastest mode of learning or even advertising and selling or marketing. Along with cutting down the cost for the organization e-learning can also help in faster marketing of products and services than the traditional mode. Many old employees may resist while adopting e-learning as they are not well versed with technology. Blue collar employees, a less tech-savvy, may not even welcome the idea of adopting e-learning. There must be regular or periodic sessions in form of orientation program within the organization for the employees to familiarize them with the use of PC and recent technology. Various studies have demonstrated how institutional forces influence attitude and intention of using e-learning. E-learning is also uniquely suited to some other challenges those nations face, such as deficient highway systems which make transporting kids from remote rural areas difficult. Besides basic education, developing nations can leverage e-learning for skills acquisition, something extremely important for countries that seek to increase competitiveness and employment, making them more attractive to foreign investments but also fostering a business and entrepreneurial culture adapted and catering to local needs[8].

X. INTEGRATING IT SKILLS INTO BUSINESS SCHOOL'S PROGRAMMES

Presently, employers are looking for a wider range of skills in graduates than they have in the past. These employability skills include: using IT, working in a team, being innovative, communication and an ability to manage their own learning. These qualities are enshrined in the Personal Development Planning (PDP) element of present day undergraduate programmes of study. The need for multi-disciplinary integration in business school education has been well-established. Higher education institutions are being encouraged to play their part in preparing students for work, by teaching skills associated with employability, such as information and communication technology (ICT) and team working. Working in a team, creativity, planning and communication are important graduate skills. The employers' need for graduates with employability skills, including ICT and team working, has driven much of the curriculum development in the past 20 years, but defining appropriate skills and how they can be learned, or acquired, is problematical. These employability skills must be situated within a specific context, and cannot be taught as such, but are acquired through opportunities for experiences, provided by the curriculum. Any skills should be closely related to the context with its associated body of knowledge, so that knowledge of a subject is combined with skills to apply it appropriately. Of course

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employability skills applied in the workplace may be different to the experiences that can be logistically provided for students in the higher education environment, in particular skills associated with effective communication and team working. Structured training in team skills provides a "safe" learning environment, and as students develop a responsibility for their own learning, through team working and project working, they are better prepared for lifelong learning. Collaborative and co-operative learning is becoming more important in higher education, both within and outside of team activities,. The reflective nature of personal development planning (PDP) is of increasing importance in higher education, and is recognized by employers as an indicator of an individual who is capable of learning from experiences. So an ability to reflect on the experience of the learning activity is just as important as achievement of the actual product of the learning. Designing learning activities that provide suitable experiences for developing the recognisedem-ployability skills of: IT, communication (including web enabled), collaboration in groups and reflection, requires a degree of lateral thinking, if educators are to provide experiences that may go some way to simulating these aspects of the workplace environment.

XI. TECHNOLOGY INTEGRATION IN HIGHER STUDIES

Colleges and universities around the world are investing considerable amount of money to create Information Technology resources that meet their student's and faculty's instructional needs. While universities encourage their faculties to adopt the new technologies for their preparation and delivery of classes, various other factors influence the integration of these technologies. Technology has revolutionized the way we think, work, and play.

Technology, when integrated into the curriculum, revolutionizes the learning process. More and more studies show that technology integration in the curriculum improves students' learning processes and outcomes.

Teachers who recognize computers as problem-solving tools change the way they teach. They move from a behavioral approach to a more constructivist approach. Technology and interactive multimedia are more conducive to project-based learning. Students are engaged in their learning using these powerful tools, and can become creators and critics instead of just consumers. Age, teaching experience, computer competency, prior computer experience, availability of technology, Institutional support are some of the factors which influence the integration[9].

Governments in most developing countries especially in Asian region initiated many national programs to introduce computers into educational institutes. Supplying free tablets to school students is a recent example. With the help of government, educational institutions made substantial financial investments in the field of IT so that the recent educational technologies can be accessible for the next generation. In return, faculties are expected to be prepared and motivated in teaching in technology rich environments. The ultimate aim is to use the Information and Communication Technologies to improve the quality of education and teaching and learning process. Role Of Educational Institute in integrating technology in higher education is an important aspect in improvising quality & productivity.

A. In an educational institution, management should give priority to psychological, cultural and social elements associated with technology.

B. When faculty members and students have hands on experience in recent educational technologies through workshops and training sessions, and are living in an environment with positive situational support, they are likely to have higher levels of self-efficacy.

C. Universities should employ adequate staff members who are specialized in IT which will enhance the faculty feelings of competence in the use of educational technologies.

D. Steps should be taken to improve the computer self-efficacy of the faculty members.

E. Compatibility and experience are the key determinants of whether or to what extent teachers used computer technologies for instructional needs.

F. Adequate professional trainings on various computer applications will increase the computer self-efficacy of the faculty members and students.

G. Universities should provide adequate workshops as it helps them to experience the usefulness of information technologies in the teaching process.

H. Educational technologies and tools are improving day by day and hence the faculties and the students are need to update their IT skills over time.

I. The management should recognize the importance of providing long term professional development programs.

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XII. THE IMPLEMENTATION OF INFORMATION TECHNOLOGIES IN HIGHER EDUCATION

Higher education has undergone profound transformation due to recent technological advancements. Be it any field, students have a strong base to utilize information technology for their professional development. Availability of a lot of journals, articles, case studies, etc. on the World Wide Web, emergence of various educational/informational websites like-PubMED, WebMD, Google Scholar, etc. is a self speaking evidence of usage of information technology by students, professionals and educational institutions.
Notable initiatives of use of IT in higher education in India are:

1) Brihaspati- a software developed by IIT Kanpur, U.P. is an open platform of learning and a free of cost software.
2) Jadavpur University is using a Mobile Learning Centre
3) IIT Mumbai has started CDEEP (Centre for Distance Engineering Education Program) as emulated classroom interaction through the use of interactive classroom technology.
4) SGPGIMS, Lucknow is running an Induction Program every year for new joiners' in which teaching of how to use various educative websites like – PubMed, etc is provided.
5) SGPGIMS, Lucknow has also incorporated HIS (Hospital Information System) to maintain transparency in system, easy and more authentic collection of data, better security and confidentiality of information ,etc.
6) The Department of Higher Education, MHRD, Gov. of India, and all other official bodies operate through Online Portals
7) Rashtriya Madhyamik Shiksha Abhiyan(RMSA), MHRD, Gov. of India promotes ICT enabled education at schools

According to a Study done at Department of Physiology, Datta Meghe Institute of Medical Sciences(deemed University).User friendliness of technology as a source of useful information was agreed upon by 88.88% of students. Preference of web over text book was agreed by 39.68% students whereas 57.13% preferred text books over web.41.26% of students agreed that technology can replace textbooks in coming years. Some of the reasons put forward were technology as user friendly, Techno savvy generation, Vast information available, Technology being interactive and personalized and Environment friendly.
28.04% students did not deem it necessary as they felt that most of the things can be learnt by themselves as technology is quite user friendly[10].Last few decades of this millennium have observed a worldwide shift in education pattern from sole textbook reading/study pattern to involvement of Information Technologies in various percentages round the globe, ease it has provided to the users can't be denied but for study purpose the authenticity of information provided at some sites remains questionable. Govt. of India through its various programs and various other organizations are also promoting E- Learning at various levels, its significance is high in areas which are not accessible to higher education centers but dependence on electricity and unavailability /inaccessibility of technology is a limiting factor, although government is making continuous efforts in this direction example distribution of laptops etc. but still there is a long way to go.

XIII. TECHNOLOGY ACCEPTANCE MODEL

A. Integration Of It And Teaching-Learning Process

Technology Acceptance Model (TAM)is a theoretical foundation to explain and predict the acceptance of information technology.TAM is based on the Theory of Reasoned Action (TRA), which states that social behavior is motivated by the attitude and intention to perform.
TAM has been applied to different technologies (e.g. word processors, e-mail, WWW, GSS, Hospital Information Systems) under different situations (e.g., time and culture) with different control factors (e.g., gender, organizational type and size) and different subjects (e.g. undergraduate students, MBAs, and knowledge workers), leading its proponents to believe in its robustness. Currently, researchers in the IS field consider TAM one of the information systems fields' own theories, and still put much effort into the study of research using the theory. The integration of IT in the fine form of TAM is due to the tremendous growth of the technology. The technology acceptance model (TAM), introduction continues to be the most widely accepted & applied theoretical model in the Information systems (IS) field. One hundred and one articles have been published by leading journals and conferences in the past eighteen years. An open ended survey of thirty-two leading IS researchers assisted in critically examining TAM and specifying future directions[11]. In today's time, young students are better suited to learning by using distinctive modes learning including various ways indulging them into thinking, relating and creating. The notion that students have particular learning styles has different implications with every individual in each age group as well for teaching strategies. This is because the preferred modes of input and output vary for every distinct student, thus it becomes critical that teachers use a range of teaching strategies to effectively meet the needs of individual learners. A student-centred approach which actively engages the young in the learning process is critical if skills are involved. TAM has not just revolutionized the teaching process in various universities all over the world but its adoption at an individual level is mature and has provided rich theories and explanations of its determinants and user decisions.

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XIV. NEW TRENDS IN DISTANCE LEARNING

Distance education (DE) as a multidisciplinary field has reacted to these changes; it has and is still evolving and orienting itself to fulfil this demand. Thus, as the demands of educators and learners evolve, it is crucial to understand and get a deeper insight of trends and issues in DE so as to keep abreast of these constant changes[12].Distance education emerged in response to the need of providing access to those who would otherwise not be able to participate in face-to-face courses. It encompasses those programs that allow the learner and instructor to be physically apart during the learning process and maintain communication in a variety of ways (Keegan, 1986). It has evolved from correspondence schools to delivery mechanisms such as independent study, computer-based instruction, computer-assisted instruction, video courses, videoconferencing, Web-based instruction, and online learning. Technology has played a key role in changing the dynamics of each delivery option over the years, as well as the pedagogy behind distance education. Technology is responsible for distorting the concept of distance between learner and instructor, and enabling learners to access education at any time and from any place. Current trends in the field of distance education indicate a shift in pedagogical perspectives and theoretical frameworks, with student interaction at the heart of learner-centered constructivist environments. There are various benefits of using emerging technology tools such as wikis, blogs, and podcasts to foster student interaction in online learning also including the social software applications. Emerging technologies offer a vast range of opportunities for promoting collaboration in both synchronous and asynchronous learning environments, distance education programs around the globe.

XV. NEW TRENDS IN E-LEARNING

Over the years distance learning or distance education are the terms that the world came across but after the introduction of e-learning, distance education has taken a whole new perspective of its own. With e-learning, the possibilities for getting knowledge and information out to the learner at her/his own pace opened a whole new world for knowledge transfer.In the United States the Personal Digital Assistant (PDA) have already been used in schools and for workers on the move and this thing had significant results in terms of improved learning effectiveness. In Europe, mobile learning is beginning to develop, and telecommunications companies such as Nokia and Vodafone have already integrated these technologies into their training and development systems.E-learning is the simplest and fastest mode of providing training and development through various electronic media resources such as internet, audio, video. It can be also be termed as “Internet based Training (IBT)”. The following are the latest trends in e- learning:

A. Mobile application learning
B. Micro learning
C. Video Learning
D. Personalization & e-learning
E. Virtual & Augmented learning
F. Gamification
G. Social & collaborative learning
H. Blended Learning

In a society where the student generation have to be realized and embedded with the importance of technology, we are bound by obligations to be well aware on teaching the future leaders. Annual demand for education is ever increasing globally and India has never been an exception to it. The fact that the number of applicants in Indian Institutions are three to five times as compared to the number of seats in any institution of higher education has enhanced the need for such a system, which will help to reach to the maximum number of learners and e-learning is the solution for it.

XVI. CONCLUSION

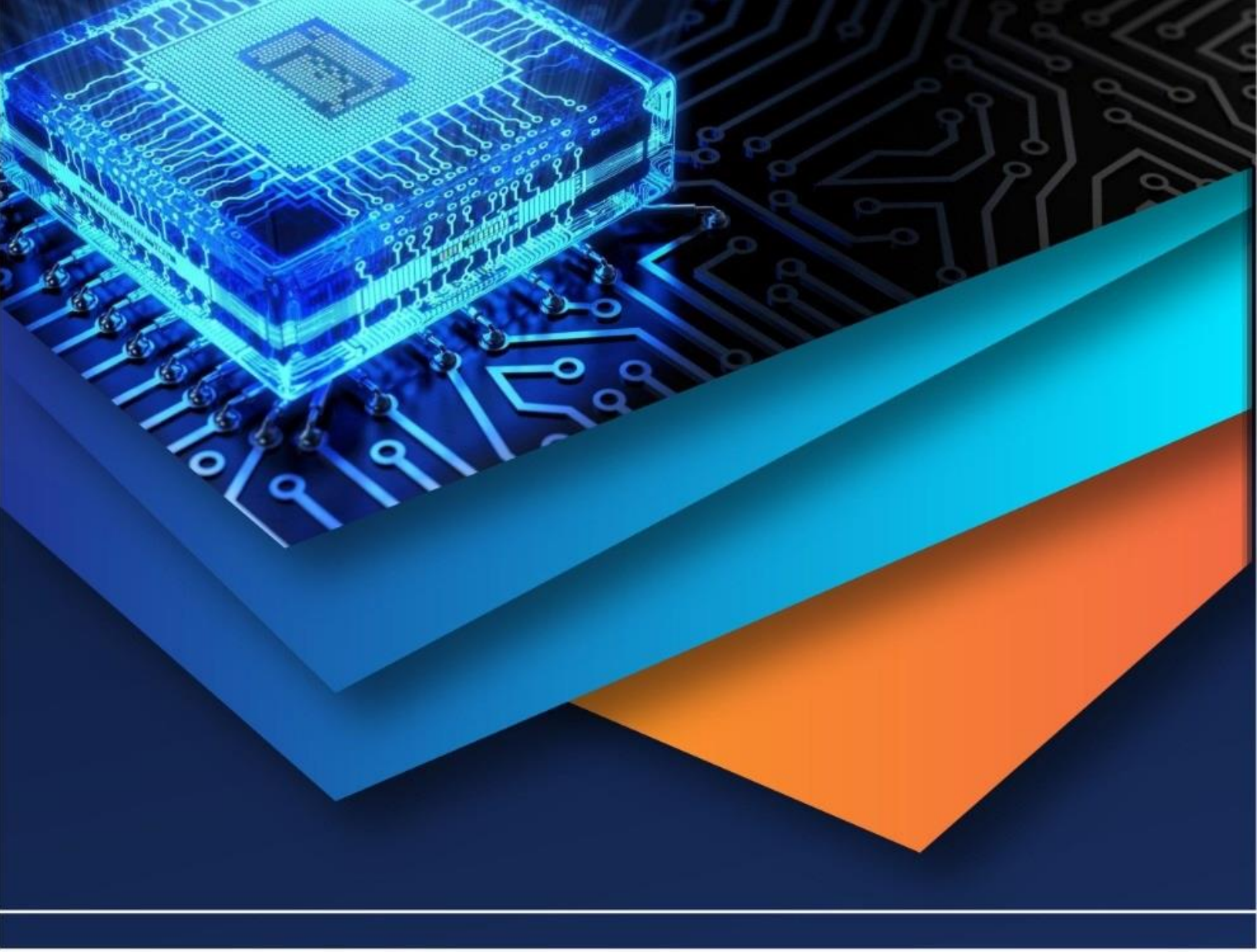
Technology in education is neither a novelty nor is it a fad. It is a part of the modern world, and is becoming more and more ubiquitous in our lives every year. It is also a proven method for improving learning. There is strong evidence pointing towards technology leading to better results on standardized tests; however the real emphasis should not be on how it improves test scores, but on how it benefits student learning; how it enables those who are not able to perform at their peak in traditional classrooms to do better; how it motivates students to learn and gives them a more positive attitude towards education; how it can individualize learning by giving feedback; how it can act as a catalyst for change towards more student centered learning; and how it better prepares the youth of today with technical, communicative, interpersonal and creative skills. The question we should be asking is not whether or not technology should be in education, but what can we do to remove barriers so as to further the integration of technology into our schools.

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