COGNITIVE SKILLS:
A Modest Way of Learning through Technology

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ABSTRACT

Learning is an ever-present phenomenon. It takes place irrespective of time and place. It engages learners in their interested topic/content. Learning absorbs many skills, such as; reading skills, writing skills, technological skills, emotional skills, behavioral skills, cognitive skills, and language skills. Out of all these, cognitive skills play significant role for apprehending a concept and comprehending a discussion. In the context of distance education (DE), learning never restrains to print medium only, it has extended to the various technological media with abundant possibilities for multiple variations of online and web instructions. This article discusses how cognitive skills assist learners in their learning through technology instructions. Further, it elucidates the technological impacts in the distance learning scenario. Consequently, it argues that the intervention of suitable and advanced technology helps learners to develop their cognitive skills and assists in their learning activities.

Keywords: **Cognitive skills, Information and Communication Technologies (ICTs), Information Society, World Wide Web (www), e-learning.**

INTRODUCTION

Information and Communication Technologies (ICTs) make the globe smaller and human beings are now closer to each other than ever before. The intervention of advanced technology in teaching-learning domain in general and distance education in particular has influenced learners to learn and access study contents through ICTs.

The technologies used in distance education settings are; telephone, radio, audio, video, TV, computer, mobile device, etc. Though these are not limited to its varieties yet much of these are used across the globe in distance education. Opting for and adopting these technologies, learners utilize their time in purposive way and effective manner. They are able to receive update information, browse and access relevant study contents on web pages, communicate with the concerned persons in real time, watch video lectures, listen audio recordings, etc..

Hong, Lai, & Holton (2003) and Poon, Low, & Yong (2004) found in their study that students generally agreed that e-learning (learning through computer enabled with internet) helped them in their studies.

According to Yiong, Sam, & Wah (2008) the students felt that they focused more on the quality of learning when they were engaged in online mode especially in discussion forums or chat rooms where they could ask questions and received answers from peers and instructors.

It would be challenging affairs when teaching-learning tasks have to be carried out solely through technological (online & off-line) instructions. This is so because in the Open and Distance Learning (ODL) system, learning materials are designed based on the pre-determined expectations of target learners and by evaluating in what extent they can achieve these expectations. To address this challenge, learners' need 'cognitive skills'. According to Askar & Altun (2009) cognitive skills will be able to provide a personalized path for each learner, based on his/her progress and/or responses.

Further, by highlighting the usage and implications of cognitive skills in the technology enabled teaching-learning situations, they submitted that;

- **learners can access the navigations for their learning path based on their cognitive skills, which aim at scaffolding learning in a constructivist perspective.**
- **cognitive skills assist learners in achieving learning objectives.**
- **these skills enable learners to diagnose their shortcomings related to subject contents and use of technological tools, and further, encourage them to work upon their shortcomings for the eradication or ramification.**

Thus, it asserts that cognitive skills are considered as essential elements in an e-learning environment. Learners on the use of technological instructions in their learning situations receive the following benefits (a few may be added).

- **They can schedule to carry out their learning tasks around personal and professional work**
- **They can save travel cost and the time spent for travel to and from the institution.**
- **They can exercise their options to select study materials that meet their level of knowledge and interest.**
- **They can engage in their study activities wherever they have access to a computer and Internet.**
- **It encourages them to adopt self-paced learning module, and further allows learners to work at their own pace.**
- **They can join in the bulletin board threaded discussion forums at any hour, or visit with classmates and instructors remotely in chat rooms**
- **Adaptation of online or computer-based courses give self-confidence to them, and further, encourage to take responsibility for their independent and lifelong learning.(http://www.about-elearning.com/e-learning-advantages-and-disadvantages.html)**

To avail these facilities they should adopt, adapt, and adhere to the use of different technology in their learning activities as a pedagogical approach to learning. Using technology in appropriate contexts and right directions, they need some specialized skills called 'cognitive skills'.

The expression 'cognitive skills' has different interpretations in different contexts, but in our purpose it is defined as any mental skills that are used in the process to acquire knowledge (Askar & Altun, 2009).

It is an ability that we use to think, study, and learn. It has wider applications and subsumes multiple activities, such as; creativity, judgment, comparison, contradiction, description, interpretation, argument analysis, evaluation, questioning, observation, logical presentation of contents, and problem solving approach. Cognitive skills encompass the following components (http://ezinearticles.com/?Cognitive-Skills-Determine-Learning-Ability&id=1318573):

- **Perception**
- **Memory**
- **logical thinking**
- **Concentration**
- **Rational attitude**
- **Reading and writing techniques**
- **Communication skills.**

These components play vital role in the teaching-learning domain. Without these any sort of study activities will be a negligible or mere impossible phenomenon. The following passages highlight the nature and significance of these components in learners' learning activities.

Perception

The term 'perception' is understood here as, judge or/and identify a thing or an object as it is. Further, it adds a notion, i.e. we must interpret a fact or an event in a correct way without any ill-intention or malfunction to that. To explain, it is a noticed phenomenon that different people perceive an issue differently for various reasons (e.g., cultural biases, religious backgrounds, knowledge on the subject content, ideological prejudices, etc.) although it conveys a particular meaning which is to be considered as the correct perception of that fact/issue. Since people perceive a fact differently they have different opinions on that, and therefore, they treat that fact differently. For example, "She is sharp". It is understood differently by her teachers, parents, colleagues, and friends though it conveys one and only one meaning, i.e. about her talent. Thus, one should understand her talent is the correct way of perceiving the fact that 'she is sharp'. In this sense, it is suggested that learners should set their goals by identifying their skills and move in a correct direction to achieve their goals would be considered as a right perception to engage themselves in their routine tasks. Further, the right perception guides them to achieve their goals/ambitions in their academic endeavour.

Memory

Memory is one among the other components of cognitive skills helps learners in remembering, and recapitulating events, or issues, or particular objects in an exact form. It is of five sorts (http://www.audiblox2000.com/cognitiveskills.htm):

- **Short term memory: It lasts from a few seconds to a minute**
- **Long term memory: An ability to recapitulate the long past events.**

- **Receptive memory: Remembering the physical postures of an object of recent past.**
- **Sequential memory: Remembering things in an order.**
- **Rote memory: It is an habit to learn and remember certain information**

These memories are not only assisting learners to recast their studied contents on time but also relate to their experiences for better understanding.

Logical thinking

Thinking logically means thinking step by step or in a chronological order. And to do so learners need the support of mental process. Thus, it can't be inherited from our ancestors nor it would be considered as a matter of genetic endowment. To think logically on an issue is to acquire a systematic study and understanding. It guides to apply our reasons constantly and consistently to achieve a particular pre-determined goal. It even assists to get multiple solutions of a problem. It improvises the performance in reading, writing and even searching/browsing and organizing study materials.

Concentration

Concentration is an act of will and it won't happen automatically. It is perceived in three varieties; (i) an ability to concentrate on a particular task (ii) an ability to focus on several important tasks at once (iii) an ability to filter irrelevant information and remain focused on a particular task. Concentrating on a particular task guides learners towards their prior setting goal and helps them in achieving success. It even assists in grasping the study content systematically.

Rational Attitude

The expression 'rational attitude' has different interpretations in different contexts, but in our case where the focus is on teaching-learning activities through cognitive skills, the possible interpretation is; the positive behaviour towards an issue or an object. This implies not to lose hope on any issues and positively work on one's shortcomings to overcome the barriers and to reach to the target. It supervises to fix achievable goals on par with one's abilities and capabilities. It guides learners to move in the correct path. It helps them to take correct decision on certain issues. To develop this attitude one needs to be focused on a particular attainable goal.

Study skills

Whenever we discuss about study skills immediately SQ3R techniques (S: Survey, Q: Questioning, R_1: Reading, R_2: Reviewing, R_3: Recalling /recapitulating) (Francis, 1970) appear in our mind though these do not constitute the whole activities of study skills. It suggests some other techniques, such as;

- **Developing time management approach**
- **Familiarizing with the course**
- **Be self-motivated**
- **Coping with Stress**
- **Setting possible goals**
- **Peer-group interaction**
- **Developing online search skills**
- **Evaluating one's own progress on regular intervals**

By practicing these techniques, learners can organize, plan and execute their study effectively and purposefully, and hence, learning becomes an easier and lifelong phenomenon for them.

Communication Skills

Communication skills help learners to communicate their thoughts intentionally and purposefully. It suggests that one can share his/her feelings, emotions and even inner desires to others if he/she uses the proper or correct vocabulary in the sentences before their deliverances (either written or utterances). It helps to construct not only a bond between 'learners and tutors', and among their peer groups but also to access the subject contents in an easy, comfortable and progressive manner.

All these components together suggest that cognitive skills help learners in their learning activities. It assists learners on identifying images, analyzing sounds, recapitulating information, searching facts in memory, learning scientifically, and arguing logically. By supporting in these ways it encourages and inspires learners to do multiple activities in various fields.

Neisser (1967) proposed that cognitive skills are on the processes by which sensory input is transformed, reduced, encoded, stored, recovered, and used. The specific subject matter that is operational for investigative purposes encompasses mental states and processes (Butterfield & Dickerson, 1976). Several processes associated with cognitive behaviour are perception, information, representation in memory, use of knowledge (Norman & Rumehlart, 1975), sensation, imagery retention, recall, problem solving, and thinking (Neisser, 1967). The manner in which a learner employs these various processes in relation to personal cognitive capabilities for the efficient use of information, in activities such as comprehension, listening, and reading, is the major determinant of individual differences in the acquisition of skill (Simon, 1975).

Now a question arises does cognitive skills help learners to become a successful ICTs based learner. How learners can optimize their learning by using ICTs in teaching- learning environment?

Many research findings edifice that technological intervention in the educational sector plays a pivotal role for optimizing learners' learning. Sivin-Kachala and Bialo (2000) found that students succeed more when they were engaged in technological-rich environment platforms. They gain significantly in achieving all subject areas from preschool through high school. It is reflected in both regular and special-needs students' cases. By using technology they improve their attitudes toward learning and increased self-esteem for themselves. Boster, Meyer, Roberto, & Inge (2002) also had the similar findings on students' achievements while examining the effectiveness of integration of standards-based video clips into their lessons. Further, Roschelle, Pea, Hoadley, Gordin, & Means (2000) noted that computer technology can support learning and is especially useful in developing the students' higher-order skills of critical thinking, analysis, and scientific inquiry by engaging them in authentic, complex tasks within collaborative learning contexts. Due to the learners' demand and inquisitiveness in technological pedagogy most of the DE institutions across the globe have inserted technology to their teaching learning systems.

In this context, to resolve a most debatable issue whether media can differentiate from technology, Bates (1995) says "any attempt to differentiate media from technology would be less meaningful as they become integrated into single machines or transmission systems with the advent of multimedia computers". p.59

Technology enabled learning is often seen as requiring additional skills of learners in taking greater responsibility for their own learning and this is possible of possessing and exercising cognitive skills. These skills motivate learners into an independent and adult learner, hence, support more self-directed learning. In this regard, Beatty, Dall' Alba and Matron (1990) elicited the following ways to understand learning.

- **increase one's knowledge**
- **memorize and reproduce the contents**
- **apply, interpret, and synthesize the teaching-learning concepts**
- **understanding the concepts, ideas, and events**
- **Perceiving things in different ways**
- **changing as a person**

The first three are viewed as knowledge of something is given; something that exists "out there", waiting to pick up, taken in and stored. The last three points emphasize the importance of understanding or gaining meaning from knowledge, which is conceptually linked to a more active approach to learning in which the learner attempts to construe and create personal meaning from knowledge and ideas (Ramsden, 1992). Thus, cognitive skills enhance and develop new learning techniques which may cause learning to become easier and quicker.

TECHNOLOGY AND LEARNING: Using Computers as Cognitive Tools

In the technology enabled teaching-learning situations, learning activities are mostly carried out through e-learning tools. In this context, technology doesn't stand alone as media, rather it is observed as integrated phenomena. Learners learn in technological environment through multiple media.

The use of web-based learning or online learning (e-learning) falls in this category. By the help of technology activities pertaining to individuated learning can be made easily and produced on time without any further delay. Learners can study the subject contents online irrespective of time and place. They can contact their teachers/instructors both in synchronous and asynchronous modes if they have any query, and receive feedback within expected time. They can even receive their evaluation reports of assignment-responses in the comments form for their future use. They can receive the update information relating to their course(s) from time to time. They can also continue their study while they are at work.

Learning through technology pre-requisites self-regulation, internal motivation, and religiously enacting with time management schedule. All these practices help learners to become a successful learner in DE settings.

Participation in technological environment becomes crucial for learning to happen because it facilitates collaborative, cooperative, and lifelong learning. Thus, learning through technology is an inquisitive approach to effective learning.

Information and communication tools and their applications for the growth of educational research and better learning outcome have been contributing remarkably to the knowledge society, and thus, influence learners' learning processes and outcomes. The paramount research findings have been collected from The Centre for Applied Research in Educational Technology (CARET) at http://caret.iste.org on the higher education students' achievement and their academic performance on the use of technologies in their learning activities (Cradler, McNabb, Freeman, & Burchett, 2002).

This research is emphasized a fact that technology accelerates the learning performance when the technological applications directly support the curriculum standards those are being assessed and the learning objectives those are presented in an explicit manner for learners' benefit.

The research findings reveal that;

- **students acquire their best in content areas of learning while using technology**
- **they develop higher order thinking and problem solving skills approach**
- **they can easily deal with the workforce preparation.**

Thus, learning through technology not only inspires learners to engage in their learning activities but also supports them to achieve the study content areas, enable to think rationally and develop problem solving approaches, and deal with the regular workforce tasks.

CONTENT AREA ACHIEVEMENT

Application of technology to the learning situations improves learning performance when its application directly supports the curriculum. Technological integration often require teachers/instructors and curriculum planners to revisit curricular standards as they select technology application (Cradler, & et. al., 2002, p.47). Technology can have the greatest impact when integrated into the curriculum to achieve clear, measurable educational objectives. (CEO Forum, 2001). Learning through technology empowers learners to acquire the following skills.

- **Research skill (ability to explore new ideas, thoughts, events) (Cradler, & et.al., 1999)**
- **Application skills (ability to apply learning in different situations)**
- **Organizational skills (ability to arrange things systematically)**
- **Lifelong learning skills (retaining interest in the up-date content)**

With these skills learners can achieve the content areas thoroughly and develop analytical skills which help them immensely in their learning process.

HIGHER-ORDER SKILLS DEVELOPMENT

Using technology in learning activities, learners benefited with bless by higher order thinking and problem solving skills. These two skills comprise the following activities though these are not limited to these skills.

- **Browse and accumulate relevant study contents/resources**
- **Identify the relevant materials for their use**
- **Self-evaluation of assignments -responses in reference to questions**
- **Analyse new ideas and/or thoughts**
- **Interpret a fact or an event in different perspectives**
- **Re-organise thoughts as situation demands**
- **Evaluate the performances**

By doing all such activities learners enable to apply their content knowledge in variety ways which may lead to innovation and deeper understanding of contents. Though technologies are used in rampant for educational purposes yet learners by using this skill can find out which technologies will be best fitted for their purposes.

WORKFORCE PREPARATION

Technology plays a key role in assisting learners to achieve their educational goals. Research shows that when learners learn to use the applications of technology in their world of work, such as; use of word processors, spreadsheets, computer aided drawing, website development programmes, and the internet browsing, they need some of the prerequisite skills for workforce preparedness (Cradler & et.al. 2002, p.49). These skills are precisely referring to the cognitive skills. When content and problem solving strategies meet and accepted education standards, technology increases mastery of vocational and workforce skills and helps to prepare learners for work (Cradler, 1994). Cognitive skills prepare learners how to perform in actual workforce environments. Technology is useful in linking work experiences with academic subjects. Research and evaluation shows that technology tools for constructing artifacts and electronic information and communication resources support the development of higher order thinking skills (Cradler, & et.al., 2002, p.48).

It depicts that technology can enable the development of critical thinking skills when learners use technological tools to present, publish and share results of projects (Cradler, J. & et.al., p.49). Collaborative activities and formative feedback are key components of instructional strategies that accompany effective technology implementation.

Nothing stimulates DE except web based learning in the present world. The web is now causing educators, instructors, and even learners ranging from preschool to higher education to identify the very nature of teaching and learning processes. Researches have been depicted that web can offer free teaching and learning where learners can access education without their presence in the physical classrooms and abide time bound class schedule.

With the help of web instructions the earlier practice of classroom lectures may be webcasted through multimedia which inspires learners' to receive unique learning experience. Learning through multimedia assists learners to understand complicated issues in an easy ways.

Thus, web technology supports learner centric education rather than teacher centric instructional curriculum. A question pops up here, i.e. does technology make learning more accessible?

TECHNOLOGY AND ACCESSIBILITY

Accessibility and technology are interlocked with each other and their nexus relies on many other factors; feasibility, cost, update software, comfort in usability, and instructional design. Hence, access to technology is to access learning. It implies that education is more attainable and accessible by different categories of people if it is designed properly by keeping in mind the target group. Further, it suggests that technological learning provides opportunities for those people who are members of many communities, e.g. work in office, home responsibilities, social responsibilities etc. and extends to those who are deprived from education due to cultural, religious, economic and social barriers. More importantly, it accommodates disabled learners and encourages them to adopt lifelong learning. Insertion of technology in DE arena motivates educators to devise new ways to capitalize web-based technology. "An inviting graphical screen layout, interactive multimedia learning materials, simplified access tools and searching of data bases, exponential growth of new resources around the world, and open technical standards that allow any modern computer to access the web are some of the advantages institutions see in the web to make learning more accessible" (Owston, 2009, p.27). Indira Gandhi National Open University (IGNOU) as a mega Open University in India offers many courses in online mode. The programmes are ranging from social science to applied sciences and from humanities to vocational programmes. It has the facilities of E-gyankosh, Flexi learn, IGNOU- WIKI, and YouTube technology enabled courses. Due to all these facilities learners' enrollments in those courses are rising in a progressive way (Gaba & Sethy, 2010).

According to Dabbagh & Bannan-Ritland (2005) those are comfortable with internet and web based technologies such as; search engines, instant messaging, massive multiplayer online role-playing games, podcasting, vodcasting, social bookmarking, and folksonomies are well prepared to engage themselves in online learning activities. Further, distributed online learning delivery models, such, as knowledge networks, learning communities, asynchronous learning network, and knowledge portals are designed to effectively meet the characteristics of this emerging learner population. To use all these facilities, learners enroll in DE and prefer to adapt technological instruction in their learning

HANDLING ACCESS BARRIERS

Although the online facilities break down the long existing physical and temporal barriers of access to education, it creates new sort of impediments for learners. A few may include; computer hard ware that malfunctions, difficulty in settings up software to access an educational institutions or internet service provider, and encountering constant busy signals when dialing up from home, heavy online traffic can overload popular websites (Owston, 1997). Supporting to these findings Perris, Zhang, & Poon, (2004) submitted that students have barriers to online learning in the Hong Kong Open University due to some technical limitations those include computer crashing, dysfunctions of online learning platform. Muilenburg & Berge (2005) mentioned that one of the barriers for students' online learning is technical snags those pop up in an unexpected time and stand as hurdles for doing learning tasks. These new obstacles can be removed easily if learners use their cognitive skills to find out the solutions and/or resolutions of the problems.

These skills are not only equipped learners to adapt the problem based learning techniques but also encourage for creative learning. Problem based learning is nothing but an inquiry learning where learners learn while doing activities.

So the experience gain by the learners stands as strength for handling the same sorts of situations in future. It guides them to adhere and develop the time management approach to learning.

TECHNOLOGICAL LEARNING AS IMPROVED LEARNING

As Clark (1983) says that just inserting technology into the curriculum does not enhance learning, so what we require is to understand our learners and insert technology as it is handled by them in their best while using the study materials. If the content can be designed with proper instruction base then the output curve will be touching to the expectation. Further, he evokes that "any improvement in learning that may accrue will come from the instructional design, not the medium that delivers the instruction" (Clark, 1983). We do not have to realize that the medium itself is likely to improve learning in a significant way when it is used to deliver instruction, nor is it realistic to expect the web when used as a tool to develop learners' unique skills. The key to promote improved learning with the web lies in how effectively the medium is used in the teaching and learning situation. Unlike a face-to-face situation where conversation won't be stored, the web allows every thought to be captured for future examination, elaboration and extension. The crucial and positive aspect of the web is that it is very compatible with the way learners now prefer to learn. Papert (1993) calls the computer the "children's machine" because learners in public schools and in a good many colleges and universities do not know a word without the computer. It may be an integral part of their world.

Technology enabled education enhances learners' autonomy and to create a self-directed independent learning. Learners' thus prefer virtual classroom rather than physical classroom. Learning through technology certainly has potential benefits provided learners must show their inclination on technological use and acquaint with its multiple applications. Technological intervention in distance education has aimed at some specific objectives and goals. In this regard, Cuban (1993) pointed out that the following advantages can be derived by using computer in teaching learning domain.

- **to keep the education system at the forefront of technological development and learners' skills up to date with those expected in the workforce;**
- **to increase efficiency and productivity in teaching and learning; and**
- **to enable more self-directed learning**

Distance education in its early period states about "industrial society" where there was much talk about how knowledge was restricted to a particular group of people. Then the transition takes place from "industrial society" to "information society". In this period, information is being considered as power. It is the information which strengthens learners for their learning outcome. Much after the information society, people began to talk about "knowledge society" where the general believe was information is not enough to cope up with all varieties of studies.

So, we need information as well as content understanding. This will result to acquire understanding of study content and facts of the world. The knowledge sprouts from these sources will last longer because of the involvement of understanding in it. In this situation, knowledge is stored in the memory in the form of information or messages. Retaining information in the memory and applying these in proper context implies the presence of cognitive skills.

COGNITIVE SKILLS AND INQUIRY LEARNING

Cognitive skills are intended to promote inquiry learning which a part of educational methods is. To define inquiry learning, it is interpreted as an educational activity in which learners both individually or collectively investigate a set of phenomena- virtual or real, and draw conclusions on it. According to Dejong and Van Joolingen (1998) learners direct their own investigatory activity, but they may be prompted to formulate questions, plan their activity, and draw and justify conclusions about what they have learnt. Learners come to understand that they are able to acquire knowledge they desire, in virtually any content domain, in ways that they can initiate, manage, and execute on their own, and that such knowledge is empowering. Since DE inherently accommodates different learning styles, the pedagogical characteristics of technology emphasize interaction and collaboration. The technological environments are multimodal supported by audio, video, texts, and provides individual as well as groups to interact in synchronous and asynchronous modes. Technological platforms support learners to represent linear and nonlinear content, and hence providing a variety of learning tools to cater different learning styles adopted by learners. In this context, Brown (2000) expresses that the web affords the match we need between a medium and how a particular learner learns (p.12).

According to Novak, meaningful learning involves the assimilation of new concepts and propositions into existing hierarchies (Lanzing, 2004). Salomon, Perkins and Globersen (1991) suggest that cognitive tools or mind tools refer to technologies, tangible or intangible, that enhance the cognitive powers of human beings during thinking, problem solving and learning. In Jonassen's (1996) views learners are active constructors of knowledge. He assumes that cognitive tools are developed to function as intellectual patterns to enable and facilitate critical thinking and higher order learning. Cognitive skills empower learners to design their own representation of knowledge and are used to support deep reflective thinking. Thus, cognitive tools enable mindful challenging learning.

Cognitive processes are facilitated by the learners' activation and implementation of the appropriate strategies (Kausler, 1974). Rigney (1978) has stated that a strategy may be interpreted as signifying operations and procedures that a learner may use to acquire, to retain, and to retrieve different kinds of knowledge. On technological stand, the nature of cognitive strategy is such that it enables a learner to form an organizational structure in which information can be stored and retrieved more effectively (Tulving, 1962). Bruner (1961) says that a strategy developed by a learner in accordance with cognitive abilities and situational demands would be must effective in relating new information to previously obtained experiences. Dansereau (1978) expresses that cognitive skills help the learners to identify the relevant and pertinent materials for their courses. It also assists them to retrieve information under appropriate circumstances.

The basic challenge lies when DE institutions go for online delivery mode and everything is on the web, how are learners equipped with timely learning and perform their routine activities? A fact is needed to highlight here, i.e. no matter how convenient or flexible online education may be designed, opting and handling a course online consumes time. Learner may be saved communicating time in an online course but they might spend more time dealing with technology concerns. However, by adopting easy computational methods and new sophisticated technology a few learners in different parts of the world convey that "technologies have the potential to fundamentally transform how and what people learn throughout their lives just as advances in biotechnologies made possible the green revolution in agriculture, new digital technologies make possible a 'learning revolution' in education" (Resnick, 2010).

Technology in the 21st century of the globalized world does most of the human works in professional way. Thus, learners tend to believe that learning through technological instructions will help them in easy and timely learning. This is so because it does not restrict to a particular boundary, it is widen in its scope and broadened in its locus. The digital technologies have accentuated the need for creative thinking in all aspects of learners' learning. It supplies tools for learners to improve and reinvent themselves in their learning activities. Throughout the world computing and communication technologies are providing ample information and resources to learners in all subjects domain. Thus ICTs use and their applications are found in much rigorous way in educational domain. This enunciates that learning becomes easier and quicker if learners give proper attention to the use of technology in actual contexts and upgrade themselves with the periodic ICTs growth and progresses.

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