

E-Learning: Theories and Philosophies in Practice for Persons with Disabilities

P.Omkar

Faculty in Education, Department of Education, North-Eastern Hill University, Tura Campus, Chasingre, Tura, West Garo Hills, Meghalaya (India)

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Corresponding Author

Email: pathlothomkar[at]gmail.com

ABSTRACT

This paper focuses on two aspects of e-learning. First, it analyse the different types of learning theories; second, it explores the philosophies in practice for persons with disabilities. In the era of digital revolution, Information and Communication Technology (ICT) became an effective tool to connect and to convey the knowledge within and outside the classroom in order to achieve the academic standards and 21st century goals. In the developing countries like India, still experiences are lagging behind in the integration of ICT in Education in general and pedagogy in particular. Institutional ambiances, persons with disabilities and teachers face many challenges infusing technicalities in the pedagogical practices and in e-learning. Teachers play a vital role in transactions of the content and to provide rich experiences to the students, but many of the teachers and students are unaware the potential usage of ICT tools and e-learning, due to lack of computer literacy skills, pedagogical knowledge which is much needed for technological integration and also the traditional habituation of teachers for pedagogical practices and their diversified perceptions, attitudes and fear to utilize the ICT in relation to teaching and learning process. Along with these issues, teachers have many questions and growing concerns in their mind: why we have to adapt technology? What is the importance of technology? How technology facilitates their teaching and students engagement in learning? How to choose and use ICT, e-learning technologies to deliver the content? The answer for these questions relies on the theories and philosophies of learning. In this situation, it helps practitioners to look into the theories and philosophies once again to understand the importance of ICT and e-learning to put in practices with philosophical and ecological lenses. In this context, this paper describes and gives a meaningful platform to discuss about the theories and philosophies of learning to support effective use of ICT and e-learning in relation to pedagogical practices of persons with disabilities.

1. Introduction

In the field of education everyone always focus on to improve the quality of education which rely ultimately on how best a student learn, understand the things and what is the best way that this can be achieved, but how and by whom? It is possible through education provides instructions and gives direction by teacher who has different ways to teach content driven text book knowledge creatively. For this we need to find a variety of different ways to learn or teach our pupils effectively. The different ways of teaching referred as 'pedagogy'. Etymologically it connected with children (paidia), contemporary use of the term has lost its exclusive reference to childhood while retaining the original sense of 'leading or guiding to learn': learning in the context of teaching and teaching that has learning as its goal. In this sense, technology can play a vital role in achieving these ambitions. Moreover it has changed the way people interact and communicate with one another. The educational system cannot remain remote from this development. Gradually technology in the form of ICT and e-learning has entered into the classrooms (schools, colleges and universities) and started influencing teacher-learner interaction and affected our pedagogical practices. Unfortunately, both teachers and students are unaware the potential usage of ICT tools and e-learning technologies. The reason for this may be lagging computer literacy skills, traditional pedagogical practices, their diversified perceptions, attitudes and fear to utilize these technologies in relation to teaching and learning. In view of this there is need to re-think once again and how we understand and how we apply the

theories and philosophies of learning to put in practice, particularly in relation to e-learning for persons with disabilities.

1.1 Definition of E-Learning

E-Learning means primarily the use of electronic technologies for teaching and learning, however there is no common definition of the umbrella term "e-learning" at the early stage of its exploration; the letter "e" normally stands for "electronic". Often, e-learning is used synonymously with terms "online learning", "distance learning" "computer-based training" (CBT) and "web-based training" (WBT) (Pachler & Daly, 2011, p. 11). However, JISC (Joint Information System Committee) uses a definition whose meaning is considered to be most accurate: "E-learning can be defined as 'learning facilitated and supported through the use of information and communication technology' (ICT). It can cover a spectrum of activities from the use of technology to support learning as part of a 'blended' approach (a combination of traditional and e-learning approaches), to learning that is delivered entirely online. Whatever the technology, however, learning is the vital element". In two publications of JISC (2004 and 2009), defined e-learning as "enhanced learning", it sets out what might be meant by e-learning (see the Table 2 & Table 3)

Table 1: E-Learning Technologies

<p>E-learning may involve the use of some, or all, of the following technologies:</p> <ul style="list-style-type: none"> • Desktop and laptop computers • Software, including assistive software • Interactive whiteboards • Digital cameras,

- Mobile and wireless tools, including mobile phones
- Electronic communication tools, including email, discussion boards, chat facilities and video conferencing
- Virtual Learning Environments (VLEs)
- Learning activity management systems

(Source: Pachler & Daly, 2011, p. 15)

Table 2: E-Learning Connectivity

“E-learning” is still widely used to refer to the application of technology to learning. However, the term “technology-enhanced learning” is gaining favour since it emphasizes how technology adds value to learning by enabling:

- Connectivity to information and to others
- 24/7 access to learning resources
- Greater choice over the time, place and pace of study
- Alternative modes of study: distance, blended work-based, partially or wholly campus-based
- Knowledge-sharing and co-authoring across multiple locations
- Opportunities for reflection and planning in personal learning spaces
- Rapid feedback on formative assessments
- More active learning by means of interactive technologies and multimedia resources
- Participation in communities of knowledge, inquiry and learning
- Learning by discovery in virtual worlds
- Development of skills for living and working in a digital age

(Source: Pachler & Daly, 2011, p. 16)

1.2 The ‘E’ in E-Learning

What is the ‘e’ in e-learning and what does it mean in learning? The ‘e’ in e-learning gives many common hybrid meanings such as e-mails, e-commerce, and it signifies ‘e’ as an enterprise for software and hardware and also a networking infrastructures for internalizations of collecting, transferring and in dissemination of information, knowledge and collaborations with people from different place and in different times. For persons with disabilities the multimedia, laptops, palmtops, mobiles, media players and the different range of printing, accessing and reading softwares are need essential in their teaching and learning. The e-learning enterprise completely depends on hardware and software to code, decode, collect, store, forward and present the communication in textual, visual, audio, and video modes for course management, computer mediated communications and for collaborative virtual environment.

2. Methodology

This paper is descriptive and theoretical in nature. It primarily focuses on theoretical aspects and philosophical underpinnings in relation learning theories, e-learning and pedagogical practices. The paper uses the secondary data such as theoretical perspectives, theories of learning, existing theoretical positions, new literacies, new discourses in E-learning, technological participation of persons with disabilities, use of technology by teachers in teaching, sociotechnical perspectives, philosophical positions, E-learning ecologies, E-inclusions and exclusions, digital divide and cross-cultural issues etc,. It also uses research articles and empirical studies published in various journals and books. It articulates the psychological process of learning based on the internal

changes in relations to various learning theories and their philosophies. Learning theories provides an understanding of social and environmental aspects of learning in the way we get exposed to attend the experiences of the electronics and technologies.

3. Analysis

In analysing learning theories and their philosophies in practice in relations to persons with disabilities and teachers, there are three foundational notions associated with learning theories, which helps us in understanding the organic linkages and in the making sense of e-learning i.e., Transformation, Framing and Emergence.

- **Transformation:** it is considered as hallmark in many learning theories. It is heart of the learning that means it transform individual cognition from initial state to modified state. It is also observable in speech, writing, behavioural changes and in the form of productions.
- **Framing:** It means what we experience in the classroom adds to our understanding, our understanding from past experiences helps us in giving attention to further sense of or discover meaning in or surroundings. Our surrounding helps us in interpreting the frames for our actions.
- **Emergence:** It means the way we are learning and constructing the knowledge is all about the happening simultaneously around us in the interplay of environment in which we are operating out actions. Once the persons with disabilities and teacher attain the new sate of knowledge they become consolidates or emerged (see the Table 3)

Table 3: Stages in the Learning Process

<p>A. Initial ontological state of being, framed by personal, social and political experience</p>	<p>B. The learning act, also framed by personal, social and political experience but with the addition of a pedagogical framing</p>	<p>C. Subsequent ontological state of being, framed by personal, social and political experience</p>
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(Source: Haythornthwaite & Andrews, 2011, p. 36)

3.1 Importance of Learning Theories in the Digital Age

Our personal beliefs about professional, social and cultural lives have been affected and transformed by the networking revolution. The world in which we work and teach has been particularly impacted by networking technologies. This 21st century is referred to as the knowledge age, a time in which knowledge has key social and economic value and today learners’ described as ‘net generation learners’ raised in the culture of the internet and web browsing as integral to socializing and work. Yet educational practices do not signify and reflect or address this new reality (Linda Harasim, 2012).

4. Learning Theories

Theory is an explanation for why something occurs or how it occurs. Typically theory is generated by a question or by our curiosity and offers a response to that question. A theory of learning aims to help us to understand how people teach and learn (Linda Harasim, 2012). Our learning mostly influenced by three major schools of learning: behaviourist, cognitivist and

constructivist. Each school of thought introduces a new perspective on what learning is and how it can be affected by pedagogy and technology.

4.1 Behaviourist Theory

According to behaviourists, learning is viewed as a change in observable behaviour caused by external stimuli in the environment (Skinner, 1974). The behaviourist sees the mind as a black box and largely irrelevant; it means that a learner sees as a passive rather than an active participant in the learning process. The behaviourist school of thought, influenced by Thorndike (1913), Pavlov (1927), and Skinner (1974).

4.1.1 Behaviourist Pedagogy

Behaviourist pedagogy aims to promote and modify observable behaviour in people. Learning is considered as behaviour that demonstrates the acquisition of knowledge or skills. Behaviourist theory evolved two major types of conditioning, i.e., Classical Conditioning which sees learning as associated with stimulus and response and Operant Conditioning which sees learning as elicited by response. To understand behaviourist pedagogy, we look at the following three techniques and models (Linda Harasim, 2012).

- Reward and Punishment: emphasis on reinforcement (positive and negative)
- Behavioral Instructional Design: emphasis on systematic planning and sequences
- Taxonomies of Learning: emphasis on the ability to analyse and deconstruct elements by breaking them down into smaller chunks.

4.1.2 Behaviourist Technology

In the early 20th century, behaviourist views were largely affected by our classroom teaching and learning practices. With the advancement in scientific knowledge and technology, a new instructional technology has developed that is teaching machines and programmed instruction and Computer Assisted Instruction (CAI). All these technologies emphasize on drill and practice. In the present context, with the advancement of technology, e-learning plays a prominent role and provides drill and practice along with conditioning in learning and the learner receives feedback from the teachers, other subject experts and peer groups when they use e-learning technologies.

4.2 Cognitivist Theory

Cognitivist theory emerged as an extension of and a reaction to behaviourist theory. This theory concerned with what comes between stimulus and response, seeking to understand the process of the mind (thinking, imagining, conceptualising and other). The computer had a powerful impact on cognitive theory. Metaphors such as 'mind as computer' and human information processing. The school of thought is associated with

- Cognitive Information Processing (CIP)
- Schema Theory
- Gagne's Theory of Instruction

4.2.1 Cognitivist Pedagogy

Winn and Snyder (1996) stated that cognitivist pedagogy provides a thoughtful and important reminder about theory and practice in general and in particular with respect to cognitivism.

Here, the computer plays a prominent role in the teaching-learning process, because learning is viewed as an internal process which is closely related to, as if, processing the information in the computer.

4.2.2 Cognitivist Technology

The field of educational technology emerged during the behaviourist period and gained increased importance and influenced the cognitivists and instructional designers. According to them, computers are key learning technologies which include intelligent tutoring systems and artificial intelligence. Here, intelligent tutoring systems emphasize on content-specific, instructional technology, i.e., (i) knowledge of the domain (domain expert) (ii) knowledge of the learner (student model) (iii) knowledge of the teaching strategies (tutor) whereas artificial intelligence emphasizes on the invention of computers and computer programmes to be capable of human-like intelligence. When a learner uses e-learning technologies, it improves their attention, confidence, motivation, active participation and their metacognitive abilities which help in the learning process.

4.3 Constructivist Theory

Constructivists focused on understanding how people learn and the epistemology of learning, i.e., what is the nature of knowledge (Linda Harasim, 2012). According to constructivists, people construct their own understanding and knowledge of the world through experiencing and knowledge of the world and reflecting on those experiences, involve asking questions, exploring, engaging in dialogue with others and reassessing what we know. Learning is an active process of constructing rather than acquiring knowledge. The major perspectives associated with constructivists are: (i) cognitive constructivism (Piaget): how the individual learner understands the world in terms of biological developmental stages, (ii) Social constructivism (Vygotsky): emphasizes on how meanings and understandings grow out of social encounters.

4.3.1 Constructivist Pedagogy

It focuses on the learner or group of learners and their role in making meaning and constructing understanding. The way we perceive knowledge and the process of knowing shapes our educational practices. Constructivist principles help to generate a number of teaching and learning approaches, based on the following key principles.

- Active learning
- Learning by doing
- Scaffold learning
- Collaborative learning

4.3.2 Constructive Technology

The technologies specifically associated with constructivist learning were often referred to as learning environments or micro worlds and this is primarily associated with computer-based software that is open-ended to enable and require user inputs, action and agency. E-learning technologies include learning networks, mobile learning and computer-supported collaborative learning environments that provide scaffolding to the learners from networked society in constructing knowledge and their own meaning.

4.4 Connectivist Theory

Connectivist theorists emphasized mostly on integration of principles of connectivism explored by chaos, network, complexity and self-organization theories. Due to the information explosion in the current age, learning is not under the control of the learner. Connectivist theory is for the digital age, where individuals learn and work in networked environments. The rapid increase of information available from a variety of sources. It is important to learner to identify genuine information, because of globalization; information is not location-specific. The internet is expanding education into a global classroom as a result, learners must network with other students and experts to make sure that they continually learning and updating their knowledge (Siemens, 2004, Anderson, T., 2008).

4.4.1 Connectivist Pedagogy and Technology

Because of innovation and our increasing use of technology, learning is becoming more multidisciplinary. Learners must be exposed to different fields so that they can see the connections between the information in the fields. Siemens (2004) suggest that because of the networked society globalization and constant changes to information and new information, educators, need to look at new ways to design learning materials. The purpose of this theory to prepare the learners to function in the digital and networked age; however, further work needs to be done on how this theory can be used by educators to design and develop learning materials.

5. Philosophies of Learning

To understand the importance of philosophies in learning, first we need to know the philosophy of teaching and technology. It is essential for understanding to meet the challenges of 21st century learners. A philosophy of teaching and technology defined as a conceptual framework with certain values in which we see all the aspects of education (Zinn, 1990). Philosophy inspires our activities and gives direction to our practices. Specifically when we are aware of the philosophies of teaching and technologies we can articulate our own personal philosophy (Anderson, T., 2008). Philosophy provides us with the ability to understand the technological choices (Draper, 1993; Darkenwald & Merriam, 1885; Zinn, 1990). In this regard practitioners who choose and use of e-learning technologies must be knowledgeable about the philosophies of teaching as well as the multidimensionality of technological determination.

5.1 Philosophy of Technology

Dahlberg, (2004) pointed out there is a tendency to orientate ourselves to one of the following three orientations in regard to e-learning technology, they are:

- **Uses determinism:** this view pertains to the instrumental uses of technological artefacts and, correspondingly, the uses effects on technological artefacts and society.
- **Technological determinism:** this view focuses on forms and effects that technological artefacts have on uses and society.
- **Social determinism:** this view asserts that social contexts and cultures affect forms and uses of technological artefacts.

5.2 Philosophies of Teaching

The philosophy of technology largely affected our philosophies of teaching, mostly on liberal progressive, behaviourist, and humanist, radical and analytical. If we look at the overview of these philosophies in relation to learning emphasized on the aims of education, instructional methods, roles of teacher and student. Each philosophy or teaching orientation is closely related with particular technological determinism, as follows:

- **Liberal or Perennial** – closely associated with technological determinism. According to these learning activities demands for rational, intellectual training and evolving wisdom.
- **Progressive** – closely associated with uses determinism. In this philosophy the learning activities demands always toward movement of democratic cooperation, personal growth and personal enlightenment, orientation to maintain the standards competition, knowledge, wisdom and skill to the promotion of better society.
- **Behaviourist** – closely associated with technological determinism. According to this learning viewed as change in observable behaviour which is desirable that can be reinforced and learner role is active rather than passive; the responsibility lies primarily with the learner.
- **Humanist** – closely associated with uses determinism. According to this learning viewed as a highly personal endeavour and intrinsic motivation, self-concept, self-perception, self-evaluation and emphasizes on freedom, autonomy, trust, active cooperation, participation and self-directed learning.

All these philosophies are also emphasized on the role of teacher as an organizer, facilitator, guide, helper and partner in the learning process.

6. Concluding Remarks

In the era of digital revolution how technology transforms and shapes our teaching learning process. Our learning mostly influenced by major schools of thoughts particularly behaviorism, cognitivism, constructivism and connectivism. Each school of thought introduces a new perspective on learning and how it affects pedagogy and technology, specifically e-learning technologies within and outside the classroom in order to achieving the academic standards and 21st century goals. Each theory and philosophy of learning viewed differently with respect to aim of education, pedagogy, and changing roles of teachers' and learners along with the advancement of educational technology. Most of the educational institutions fail to provide infrastructure facilities like internet for effective use Information and communication Technology (ICT) and E-learning technologies; they viewed as expensive, time consuming and difficult to create high quality e-learning material than traditional form of materials. When e-learning technologies are used effectively, a learner are actively engage and improves their attention, motivation, interaction, metacognitive abilities to become more autonomous in their learning process. E-learning technologies are serving for the comprehensive learning process by providing verity of learning activities with ease of flexibility,

convenience, accessibility, and to meet the individual needs of persons with disabilities.

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