RESEARCH PAPER

New Learning Paradigms, Development of 21st Century Skills and Teacher Education

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ABSTRACT

The overall aim of NEP 2020 is to forge and propagate common vision for Teacher education that will prepare effective teachers to cater the futuristic pedagogical needs and challenges of the 21st century. The vision and mission of NEP 2020 in the light of new emerging learning paradigms and its articulation with the evolving 21st century skills will serve as catalyst for the transformation of current system of pedagogy into a potent, multidisciplinary and multidimensional set of knowledge based teacher education module. Emergence of New learning paradigms in the era of knowledge explosion and digitalization has awakened the policy makers to explore, adopt and apply these new learning paradigms like 'Navigationism' as a novel and innovative learning paradigm with its interconnectedness with several principles of" Connectivism". In fact these new paradigms can be effective tools in the development of 21st century skills in the teacher education by transforming the present day educators into coaches and mentors especially equipped and trained to deliver Information, Media and Technological literacy via online platform in the pupils of future as envisaged in NEP 2020.
Key words: *21st century skills, Connectivism, Navigationism, New Learning paradigms*

INTRODUCTION

The global scenario in terms of technological advancement is changing with a significant pace Especially Information and communication technology has undergone a phenomenal ascend and has registered its global viability and acceptance in almost every field from economic order to multifunctional modes of communication whether industrial or military. It has brought about revolutionary changes in the global order. Educational sector is also no longer secluded and now has set to become a core agency of proliferation of educational realms around the world by assimilating various niches of Information and communication technology viz, computer based learning ,computer assisted learning and online learning etc. The traditional and present system of content driven learning paradigms where teaching-learning process is teacher centric now has become obsolete with the advent of new information and communication technologies that has paved a way for development of competency based education in the wake of 21st century skills.

Understanding the need to cope up and withstand the future global challenges amid the rapid technological growth new education policy 2020 has been formulated to explore the ways and means to transform the present system of Teacher education into a technology adhered and innovative skill and knowledge based pedagogical platform. NEP 2020 lay forward the roadmap of strategic vision of a future friendly teacher education where a teacher will act as facilitator and mentor with competence at par with the 21st century skills. The overwhelming progress made in the field of information and communication technologies (ICT) and technology enhanced learning (TEL) is transforming our educational practice. The traditional model of teacher education will vanish in the new world where the communication of information reigns.

At present the Massive open online Courses (MOOCs), social networking technologies and numerous information driven applications are transforming access to information and education. It is believed that this ever-developing digital world where online mode of knowledge exchange and expansion will predominate, advent of new learning paradigms like Navigationism and Connectivism will emerge as the alternate learning theory. Though the existing constructivist model of teaching and learning will not lose its importance completely rather it may convert into social constructivism as an intermediate towards the new learning paradigms. These altogether can contribute as revolutionary mode of teaching-learning process.

This paper discusses about the emergence of new learning paradigms in the light of digital, online mode and their possible integration with components of 21st century skills as portrayed in the NEP 2020 framework to be incorporated in the Teacher education.This paper also discusses about the development of navigational skills, interconnectedness and inter dependence of both the paradigms i.e Navigationism and connectivism respectively and their viable contribution in teacher education.

Before going into the deep insight and discussion about the two new learning paradigms and their implications in the future model of teacher education, let's have a look in to the important components of 21st century skills as envisaged in NEP 2020.

THE PROMINENT COMPONENTS OF 21ST CENTURY SKILLS AS PORTRAYED IN THE NEP 2020

1. Learning Skills (4Cs): Critical Thinking, Creativity & Innovation, Collaboration, Communication
2. Literacy Skills: IMT: Information Literacy, Media Literacy And Technology Literacy
3. Life Skills: FLIPS: Flexibility and Adaptability, Leadership and Responsibility, Initiative and Self Direction, Social and Cross-Cultural Interaction.

NEW LEARNING PARADIGMS & DEVELOPMENT OF 21ST CENTURY SKILLS

NAVIGATIONISM:

Navigationism is another learning theory, propounded by Tom Brown (2006), to address issues presented by information and communications technology and the plethora of information. Its goal is to move beyond constructivist principles in online learning.

In a navigationist paradigm, learner should be able to find, identify, manipulate and evaluate information and knowledge, to integrate this knowledge in their world of work and life, to solve problems and to communicate this knowledge to others i.e from teacher to student.

Past learning pedagogy emphasized knowledge production and the construction of meaning. Active learning tasks incorporating experiential and inquiry-based strategies were how learners construct personal meaning. Educators functioned as facilitators, guiding learners in the construction of meaning.

The modern era is shaped by information and communications technology. People are constantly connected to online networks and younger people have been connected all their lives. New information is constantly being acquired and the ability to evaluate the worthiness of knowledge has become paramount.

➢ Learning is a process of connecting nodes
➢ Capacity to know is more important than what is known
➢ Nurturing and maintaining connections facilitates learning
➢ Key skills include recognizing connections
➢ Decision-making is a learning process.

Navigationism builds on these core principles by adding the following skills that future teacher need to up skill and upgrade (Brown, 2006): Know where to find useful information
➢ Master search strategies for information
➢ New symbols, codes and conventions are part of the navigation process.
➢ Expand current thinking models and practice inferring.
➢ Analyze information from multiple perspectives
➢ Isolate relevant and irrelevant information
➢ Combine disparate fragments of information to form new ideas
➢ Select combinations of information and apply it to problem-solving in diverse situations
➢ Create connections between ideas that seem disparate.
➢ Locate specific pieces of information from larger contexts and use it to create new meaning.
➢ How to reorganize, reshape, represent and communicate information

NAVIGATIONINSM AND TEACHER EDUCATION:

Navigationism facilitates the Educators become coaches and mentors. They provide guidance in how to navigate the web, locate and analyse information. Learning activities need to focus on

navigating, exploring, connecting, evaluating, manipulating and integrating information. Activities should focus on problem solving, not knowledge creation. Knowledge creation is a by-product of this process. Learners are successful when they are able to solve real life problems through social interaction, collaboration, networking and problem- solving.

CONNECTIVISM:

Navigationism incorporates several principles Connectivism (Siemens, 2005 in Brown, 2006. Let us ponder on recent work of a few researchers in the field with a view to identify further navigating.

In his paper called: "Connectivism: A learning theory for the digital age". George Siemens describes connectivism as: "the integration of principles explored by chaos, network, and complexity and self- organization theories." (Siemens, 2004:5)

This is a very important definition to describe the complex learning environment in the knowledge era. Analyzing the elements and principles of connectivism as described by Siemens, we are able to identify several important 21st century skills that learners require within a navigationist learning paradigm.

Constant connectedness is a given circumstantial reality underpinning learning environment in which connectivist learning strategies, learning skills and learning activities are required to learn effectively. Siemens (2004:6) correctly state that: "Connectivism provides insight into learning skills and tasks needed for learners to flourish in the digital era". Connectivist learning skills are required to learn successfully within a navigationist learing paradigm. Connectivism is part and parcel of navigationism, which is the broader concept comprising more than connectivism, as illustrated in Figure 1.
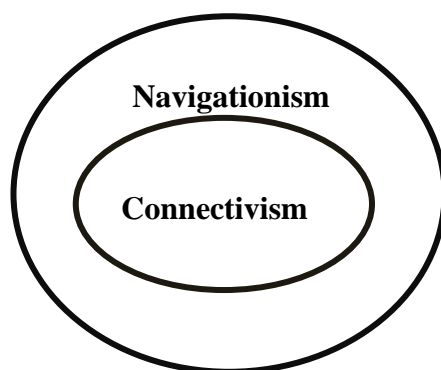
Fig. 1: The relationbetween Navigationism and Connectivism

The following list is a selection of Siemen's principles of connectivism (Siemens, 2004). It provides a summary of the connectivist learning skills and principles required within a navigationist learning paradigm:

➢ Learning is a process of connecting specialized nodes or information sources.
➢ Capacity to know more is more criticalthan what is currently known.
➢ Nurturing and maintaining connections is needed to facilitate continual learning.
➢ Ability to see connections between fields, ideas, and concepts is a core skill.
➢ Currency (accurate, up-to-date knowledge) is the intent of all connectivist, learning activities.
➢ Decision-making is itself a learning process, Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

The list of navigating skills and competencies required within a navigationist paradigm that is provided in the preceding paragraphs, is far from complete. What is provided here should be regarded merely as examples. Much researchis required to refine the definition and description of a navigationist learning paradigm. The list of diversified skills and competencies should be further developed and refined

PARADIGM SHIFTS AND ROLE CHANGES

Tables I and II created by Brown, provide a concise summary of the past and envisaged educational paradigm shifts, as well as the past and envisaged role changes of role players within teaching and learningenvironments. Tables I and II alsoprovide a key word summary of the most important issues in the preceding discussions.

Table I: Summary of paradigm shifts in education

Paradigm shifts in education	
Present	Future
Knowledge production	knowledge navigation
cognitivism constructivism	navigationism connectivism
learning facilitation	coaching and mentoring
information generation	information navigation
knowledge management	sense making

Table II: Summary of role changes in education

Role Change in education		
Role Player	Present	Future
Learner	Knowledge production	knowledge navigation
Teacher	Learning Facilitation	coaching and mentoring
Instructional Designer	Design of learning facilitation & learning activities Re-configuration of knowledge	Design of coaching activities Configuration of navigating tools
Information Specialist	information Configuration Knowledge management	information Facilitation sense making

Technogical development in New and alternative views about our interaction with information and people about the basic kills and competencies we require to survive in the knowledge era of the 21st century skills. The most basic skill required are problem solving, ICT skills, visual media literacy, e-competence to function within the technological and knowledge era, as well as psychological and emotional competence.

Further according to the requirements of 21st century skills as per NEP 2020, navigationism paradigm integrated with Connectivism assimilates more effective skills and competencies like:

The ability-know-know-where-to find relevant and up to date information, as well as the skills required to contribute meaningfully to the knowledge production process. This includes the mastery of networking skills and skills required to be part of and contribute meaningfully to communities of practice ie.- Teacher education and communities of learning. This implies that the basic communication, negotiation and social skills should be in place.

CONCLUSION

Recommendations of New Education Policy 2020 emphasizes on induction of multidisciplinary and multidimensional set of teaching-learning model in curricula. Navigationism blended with Connectivism might be an effective learning paradigm to meet with the recommendations of NEP 2020 in true spirit. Design of the curriculum for Teacher education can imbibe the best of this paradigm where a learner should be able to explore, identify, manipulate and evaluate information and knowledge, integrate their knowledge into their work place and life, solve problems and communicate this knowledge to others. The policy makers need to rethink their teaching and learning strategies to be able to provide meaningful learning opportunities in the future.

Policy makers should introspect the institutional standings not only to survive but to flourish in the competitive everchanging world of communication technology.

These new learning paradigms if applied with a sole aim of fortifying the teacher education with the 21st century skills where Teachers and educators should be transformed into coaches and mentors with required skills and knowledge to navigate in the ocean of knowledge era.

These new learning paradigms of the 21st century will facilitates the learning designers in designing the coaching and navigating activities instead of designing learning facilitation and learning activities. Teacher of future should learn how to configure navigation tools instead of reconfiguring the content. We can make justice with the recommendations and expectations of NEP 2020.

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