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MOOCS A LEARNING PARADIGM SHIFT IN INDIAN ELEMENTARY TEACHER EDUCATION SYSTEM

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ABSTRACT

Massive Open Online Courses (MOOCs) bring an impetus to educational and learning reforms as online endeavours. During the times when information and communication technology are a dominant force to reckon with, arguably MOOCs provides the most viable digital platform. Teachers and learners in lakhs, can get involved, participate and transform the elementary teacher education context in both rural and urban India.

Teacher education is increasingly becoming technology driven in the context of complexity of subject matter and skewed presence of the expertise leading to lesser population directly getting the benefit of being in the system of knowledge production and transfer. It is in this context, attempts like MOOCs through programmes like SWAYAM platform are mooted.

In this paper, we will discuss the relevance of MOOCs in present teacher education and its role in addressing the concerns raised in the shift in learning paradigm. Other important aspects relating to implementation of the provisions of Right to Education Act, National Indian Open Schools (NIOS) also provide several issues and challenges in utilising SWAYAM platform.

KEYWORDS: MOOCs, SSA, NIOS Initiatives, Learning paradigm shift, Connectivism, Swayam, Technological pedagogical content knowledge.

INTRODUCTION

Investment in developing the quality of teachers is critical for any system to excel. Internationally systems of education systems are on rapid metamorphosis. Both primary as well as secondary level analyses of educational system are essential now. The revised focus needs to be: teaching-learning processes, androgogical and pedagogical practices, the role of media and technology in the context of globalization which require adequate academic attention and research.

Present society has access to various resources including multiple media along with the traditional textbooks and reference books. The information revolution floods us with information from hundreds of e-mails, websites, text messages, Face book posts, Skype talks, Twitter tweets, Blog postings and WhatsApp messages. Douglas Kellner emphasises the point that the transition in to information technology revolution is much more impactful when compared to the transition to print revolution from oral traditions. As pointed out by Alvin Toffler the Third Wave is creating tsunamis.

When we recall, just a generation back, the awareness on global issues was minimal and knowledge on local issues was intense. Today we have an exactly opposite situation. Our knowledge on the neighbourhood is minimal while we are up-to-date on international relations. Internet connects with the world outside but flooding information disconnects us from focusing on the neighbourhood.There is an

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imminent need to make our students who are our future citizens aware of the importance and challenges involved in handling climate change, pollution, environmental degradation as well as international terrorism globally. But there is also a need to address local corruption, community ill health and poverty in the neighbourhood. We have new challenges now, hence we need increasingly new and better responses now.

Teacher educators need to utilize the opportunities created by the technological revolution and excessive and intensive media exposure. We need to have a relook at the curriculum and the transaction methodology as well as the assessment practices. Universal Elementary Education (UEE) provides equal opportunities to all. It strengthens social fabric of democracy at all levels, especially in the villages, towns and cities.

In fact, for universalizing elementary education the Sarva Shiksha Abhiyan (SSA) is being implemented. It provides for universal access and retention, irrespective of gender and social background. New schools were opened, additional teachers were recruited, regular in-service teacher training was conducted under SSA. It provided assistance for additional academic monitoring support, resource support such as free textbooks, uniforms also were provided for supporting the students and for improving the conditions which support better attainment of learning outcomes.

SSA is the main instrument for implementation of RTE act, 2009. SSA emphasizes for providing education in an equitable manner i.e. Equal opportunity for all children to complete elementary education irrespective of their gender, religion, caste, socio-economic, cultural or linguistic back ground and geographic location.

ROLE OF SSA IN STRENGTHENING ELEMENTARY EDUCATION

The Elementary Education(EE-II)Bureau Report (2016) of the Department of School Education of the Ministry of Human Resource Development Report gives it that total enrolment in elementary schools has risento 19.76 Crore children in 2014-15 from 18.79 Crore children in 2009-10. While UDISE 2014-15 puts Gross Enrolment Ratio (GER) is 98.85% for boys and 99.43% for girls. This is an indicator of enrolment at primary level being almost universal. It is also to be noted that the GER at upper primary level is 95.29% for girls and 87.71% for boys from 32 in 2009-10 the Pupil Teacher Ratio (PTR) has improved to 25 in 2014-15.On analysis it is found that 62.65% of the government schools in India have PTR as per the RTE norm(30:1 primary and 35:1 upper primary on an average).Out of school children number which was 134.6 lakhs in 2005, has been brought down to 81 lakh in 2009 and 61 lakh in 2013 respectively. Significant results are also seen as per UDISE in Average Annual Dropout rate at primary level, as it has come down from 6.76% in 2009-10 to 4.34 % (2013-14). At upper primary level and further it has come down to 3.77% (2013-14).The transition rate from primary to upper primary has gone up from 85.17% in 2009-10 to 89.74% in 2013-14 as per UDISE.

On close analysis teacher education looks at elementary level as increasingly becoming technology driven in the context of complexity of subject matter and competition for attention from both the social as well as the mass media. Educators need to be present to the fact of technological revolution and media-saturation in society. This has driven a new paradigm into our education. The 21 century knowledge society students are digital natives and can no longer be easily engaged with traditional pedagogy. With the advent of advanced technologies, knowledge accumulation gets measured in months rather than through generation. Thus the educators have to become facilitators for promoting acquisition of knowledge than continue with the traditional role of providers of knowledge.

At this juncture though we had access to free courses on the internet for very long, in 2008, an educational experiment was conducted based on shifting the dynamics of learning process from teacher-to-student to student-to-information. This proposed learning theory connectivism freed learning theories from traditional practices. This approach was explored through an online endeavour described as a massive open online course (MOOC). In this era of information and communication technology without a second thought,

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MOOCs environment is one of the most viable digital platform where thousands of students participate and transforming the elementary teacher education scenario in India, especially in semi-urban and rural areas.

A revolution, creative spirit and technological innovation within it are worthy of concern. Seen from the perspective of distance online teaching, MOOCs are open courses offered by way of online learning. Quality education at affordable prices and the importance being given toe-learning and digital literacy by educational institutions and governments across the world, the Massive Open Online Courses (MOOCs) are becoming an integral part of the education system globally.

The quality of teachers depends on the quality of teacher training they undergo. Teaching is a profession. Untrained teachers are deprived of teaching skills, attitudes and awareness on child rights which impacts their proper handling. Sarva Siksha Abhiyan provides 60 days of training for untrained teachers. But this training is not sufficient on par with NCTE guidelines.

It is in this context attempts like MOOCs through programme like SWAYAM are mooted. These attempts aim at creating a comprehensive and integrated system for enhancing the efficiency and effective transaction of education at all levels. They introduce transformational change in the mode, pedagogy and style of learning for students. Continuous research is needed on this core, automated, scalable and integrated applications, deployed centrally and having a Web Portal interface for all stakeholders through Internet and/or National Knowledge Network (NKN). The research inputs from this source could prove to be very effective in upgrading the skill of the teachers from time to time. Utility and extent of them being used as ready reckoners by any teacher at any point of time on any aspect of the curriculum with integration of the personal guidance possibility needs to be researched.

Since the inception of Indian Republic, the constitutional provision for Universal Elementary Education (UEE) has played a critical role in strengthening the social fabric of democracy. It provides for equal opportunities to all. Through National Policy on Education, Indian government has introduced wide range of programme initiatives aiming at achieving the goal of UEE. These include several schemes and programme interventions like Right To Education and National Curricular Framework 2005.

The Right to Free and Compulsory Education Act 2009and NCF 2005

Compulsory elementary education is a constitutional provision. It as a legal right under to Right to Free & Compulsory Education Act 2009, provides a justiciable legal framework entitling all children between 6-14 years, free and compulsory admission, attendance and completion of elementary education. Under the Act, children have a right to education of equitable quality, based on principles of equity and non-discrimination. This Act provides for children's right to an education that is free from 'fear, stress and anxiety'.

The entire training strategies for in-service untrained teachers need to be based on the basic principles such as, promotion of child friendly and barrier free education for all children, promotion of child cantered pedagogical processes leading to more of activities for experiential learning, exploration, inquiry and discovery.

NCF 2005centres around five key guiding principles to guide all our plans for facilitating teaching learning processes in different subject areas: 1.Connecting knowledge to life outside the school, 2.Ensuring that learning shifts from rote methods,3.Enriching the curriculum so that it goes beyond textbooks, 4.Making examinations more flexible and integrating them with classroom life,5.Nurturing an overriding identity informed by caring concerns within the democratic polity of the country. Promoting a non-threatening assessment system with in-built process for continuous assessment system is essential. Teacher preparation needs to look at CCE as an important area of learning for the teachers.

Right of Children to Free and Compulsory Education Act 2009 has become effective from 1st April 2010.It has notified the essential requirement of all training teachers at the elementary level within 5 years from the date of notification. RTE Act 2009 bans private tuitions by teachers along with banning of the

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corporal punishment. In view of the skewed presence of trained teachers at elementary school system throughout India, NIOS has taken a massive initiative of providing online D.El.Ed training program in 2017.

The National Institute of Open Schooling (NIOS)

Being an autonomous organisation, the National Institute of Open Schooling (NIOS),functions under the Ministry of Human Resource Development (MHRD) in Government of India. Presently it is the largest open schooling system in the world having more than 2.02 million learners on roll at the secondary and senior secondary levels. With 5000 study centres for academic and vocational programmes across India and abroad it is administered by more than 15 Regional Centres and 2 Sub-Centres. NIOS offers MOOCs in many languages. Providing access to learner-centric quality education, skill up-gradation and training through open and distance learning mode are its specialities. It delivers programmes through printed material along with personal contact based face to face tutoring. Its programmes are supported by Information and Communication Technology- Audio/Video CDs, Radio Broadcasts and Television programmes. Training untrained elementary teachers is also one of the important responsibilities of NIOS. It has developed a training package for D.El.Ed. Programme collaborating with relevant institutions. In order to meet the requirements of meeting the Right to Education, the in-service and untrained teachers from different states, NIOS also offers a special innovative and challenging Two-year Diploma in Elementary Education Programme.

The first MOOCs started in 2008 by Siemens and Dowenes with 2300 students. The components of MOOC system include: teachers who facilitate the learning process, students who are interested in learning, teaching or innovation and realising own true potential. It is also an effort to democratize higher education, while providing the best learning experience available in some of the best institutions in the world to anyone in the world, using the web.

Here the learning topic is explored through the connectivist quarter of role from each of the elements in learning: student, teacher, content and context. Content contains PDF, text, e-Books, illustrations, video demonstrations, documents, interactive simulations and context online delivery.

CONNECTIVISM MOOCS LEARNING APPROACH :

"Learning" Learning is defined simply as the acquisition of new behaviour which integrates knowledge, attitudes and skills. It is in interaction that learning occurs. All theories of learning, whether they are behavioural or cognitive or constructivist, have relied heavily on interaction as a foundation of learning. But these models and theories are linear with limited coverage of the information networks possible.

Connectivism as new theory originated out of the work of Canadian G. Siemens. He believes that learning process connects people and information resources in a social setting and does not happen in isolation of either information resources or connecting people. Learner is always connected to various sources parallel and simultaneously. Learning connects human resources and non-human resources. It connects teacher, learner, information and context. Context is critical in the learning environment of MOOCs. Exponential growth of knowledge is the characteristic of the present information society as in "many fields the life of knowledge is now measured in months and years". George Siemens' defined learning as "a process that occurs within nebulous environments of shifting core elements – not entirely under the control of the individual". He also noted that learning -- or "actionable knowledge" can and does exist outside the individual. That is how Connectivism is distinct from Behaviorism as well as Constructivism.

In many ways the connectivism paradigm contrasts the learning paradigm of behaviourism. The behaviourist paradigm is based on the basic idea of theory of stimulus-response by J. B. Watson, E. L. Thorndike and B. F. Skinner. Learning focus is on teacher – centered instructional process here. The learner responds on input from the teacher rather learner's activity. Which means learning depends on external inputs and environment that exists around.

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This behaviourist approach was disputed by psychologists and pragmatists who replaced it with activity theory and social learning theory. The social constructivist approach to learning acknowledges social approach to learning and participatory to learning which occurs through scaffolding. Constructivism focuses on competencies and management of complex situations. Its roots extend back to Piaget, Vygotsky and others. Here learning is self-directed and self-organised. Learner is the home of knowledge. Learner is always in the process of exploring knowledge which is intrinsic to him. This gets altered and expanded from time to time. Using these pedagogical models for large scale programme like MOOCs is challenging. Hence Siemens suggested that "the starting point of connectivism is the individual" thereby connectedness of the learning process is emphasised.

SWAYAM Platform
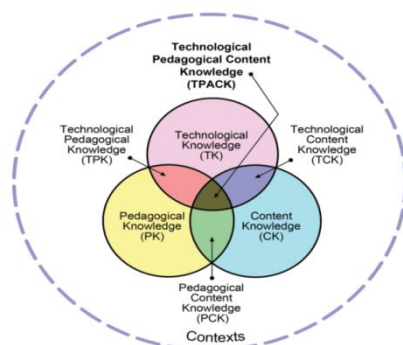
SWAYAM

Government of India has initiated SWAYAM programme to achieve Access, Equality, Quality the three cardinal principles of education policy a programme. It makes available the best teaching learning resources to all, including the most disadvantaged. It bridges the digital divide for hitherto untouched students. It provides technological knowledge(TK),content knowledge(CK) and pedagogical Knowledge (PK). It integrates online courses, utilises information and communication technology (ICT).

SWAYAM is an indigenous platform hosting courses and it can be accessed by anyone, anywhere at any time. SWAYAM provides opportunities to Indian students to learn without fear of failure. In order to facilitate and regulate online learning a special set of instructions called UGC (Credit Framework for online learning courses through SWAYAM) Regulations 2016 have been formulated under Section 26 of the UGC Act.

There is an imminent need for streamlining the open learning of teacher educators and teachers using ICT platforms. In order to ensure production of best quality content and its delivery relevant for promoting school education, a National Coordinator was appointed. Best teachers across the country have prepared the interactive course material and it is available at free of cost to the residents in India. The course developed by the National Coordinator NIOS has 4 quadrants: 1.Video lectures, 2. Specially prepared learning reading material that can be downloaded/printed,(3). Online discussion forum for clarification of doubts and (4). Self-assessment through tests and quizzes.

CHALLENGES

The possible challenges for MOOCs in teacher education include:

There is a need to promote usage of SWAYAM platform for promoting their online distance mode courses by the content developers as well as educational institutions. Many content developers may not be active teachers of educational institutions, but they may have excellent skills in content development and content presentation. A continuous enlisting of the content developers and presenters as required by the topic and subject is essential.

Student teachers usage of video lessons hosted on SWAYAM platform depends on availability and access to them. Options and opportunities for this are to be organised at different levels both in villages and

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towns, in schools and outside schools in designated locations. All media access is limited presently by availability of infrastructure in public and private domains.

The extent of knowledge, attitude and skills that get transferred for improving effectiveness in teacher education through MOOCs method can be interesting. The transfer of learning into practice in teacher education profession has several constraints. Each subject matter and topic in teacher education has its own best suited media and presentation. The involvement of the presenter and availability of alternate method as well as presentation material is also varied.

The effect of distance learning on professional education standards is to be studied. It could be that when the teacher education is handled through the distance mode, the professional standards may be diluted. Practice which is fundamental to any profession may not get monitored support when the transaction of education is through distance mode.

Building Micro Teaching competence in teachers of primary education through self instructional e-learning modules is a difficult activity. It needs monitored support and involved participation. The willingness of the guide teacher in close monitoring and mentoring for building teaching competence may be difficult in the context of e-learning. While transfer of instructional material may be efficient, the effectiveness the teacher depends on the monitored mentoring of the micro teaching

Collaboration of Curriculum Development Cells at various levels for identified faculties on par with Global Standards is essential. When education is global the competence levels also need to raise to the level of global standards as there is a competition also from various agencies and the user is always in search of the best possible material for the given subject matter for acquiring a given skill.

Employability of candidates who undergo under graduate and post graduate curriculum in teacher education will depend upon the effective transfer of knowledge, skills and attitude in the student teachers. This depends upon the practice of the skills and monitoring of the practice by senior professional teacher educators. Dispersed availability of such teacher educators is critical.

Expanding role of ICT in research and development and innovative teaching skills provides many opportunities while posing challenges. Longitudinal and cross sectional studies are comparatively less difficult when the ICT tools are adopted. Networks of teacher educators can be formed for sharing new knowledge and testing such innovative practices which help in efficient transfer of knowledge.

Utility of e-resources in teacher education raises several issues, provides huge opportunities and poses many challenges. The intensive professional interaction required among faculty members and knowledge producers is different from the knowledge practitioners. Both these are to be explored and studied.

Effectiveness of e-content in enhancing micro –teaching skills of students pursuing diploma in early childhood education requires both infrastructure and orientation. It provides lot of opportunity for exploration and innovation. But when ineffectively utilised it could confuse the students instead providing clarification

Ensuring sustainability in the MOOCs learning for trainee teachers is possible only when there is a linkage with practice of the learning. These courses may lose relevance once it is found that there is huge number of people who have taken MOOCs and the requirement in the market is far less. The best people may not get placement, while all those who access may compete and join the teaching services even without much professional commitment.

There is a very less completion rate of courses in MOOCs in higher education. Similarly, in teacher education what is the completion rate is to be studied and analysed. The excitement present while joining the course may evaporate after a while there is no close monitoring or peer encouragement and peer pressure is not present due to lack of personal interaction. This area needs to be further investigated and addressed Students taking MOOCs courses in teacher education and their purpose are to be studied. Whether it is an additional qualification or a hobby or genuine interests in pursuing the courses have to be

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studied and shared with the teacher educators. Such studies could help in constructing right courses that can be more purposeful and objective oriented.

There are several advantages of offering the courses freely including dispersed and ready availability of people with relevant knowledge and skills. MOOCs courses in teacher education have an important contribution to make in reinforcement in of learning acquired through formal regular courses. We need to see if there is an impact of pricing of the certificate on the students' completion of the teacher education course in MOOCs. There could be several advantages in linking all post course learning in teacher education to MOOCs as advanced learning.

CONCLUSION

In order to address the skewed presence of the teacher training institutional presence and expertise at elementary level, an attempt of NIOS has been to introduce MOOCs. It aims to create a comprehensive and integrated system for enhancing the efficiency and effectiveness in transaction of knowledge, including knowledge production and knowledge transfer. Connectivism is a new learning theory which presents an interesting pedagogical viewpoint. It presents the learning paradigm shift from teacher to learner, from being teacher centered to learner centered, and from class room to computer centres to smart phones and net books. Connectivism creates its own challenges which the present generation would encounter and would need to address.

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