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Reshaping Teachers' e-Training through MOOCs in Pakistan

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ABSTRACT

Open education has come forward as a contemporary vogue across all areas of education including teacher training over the globe. Massive Open Online Courses (MOOCs) are trending concept that aim to fulfill the prospects of digital openness for providing e-Training to university teachers by utilizing novel open learning environments. MOOCs make it possible for large number of teachers to get involved in worldwide collaborative learning experiences through open e-Training courses. As technology adaptation in education is relatively slower in Pakistan, MOOCs are still uncommon in teacher training practices. This paper contemplates the significance of MOOCs in teachers' e-Training. This study also explores the awareness and utilization level of university teachers for MOOCs, and compares the perceptions of teachers of public and private universities about benefits and obstacles for utilizing MOOCs in e-Trainings and their willingness to participate in e-Training through MOOCs. 50 Teachers from five public universities and five private universities were taken as sample on the basis of familiarity and participation in online training programs. Existing literature and research studies were reviewed to find out the significance of MOOCs in teacher training programs. A survey questionnaire was administered to explore the awareness and utilization level of university teachers for MOOCs. Findings revealed that MOOCs have gained substantial importance in university teacher trainings of most of the countries of world, whereas university teachers of Pakistan are not well aware of potential and use of MOOCs in education. Also teachers of private universities tend to show more interest and inclination towards using MOOCs for their professional e-Training courses. It was recommended to use MOOCs in professional e-Training of university teachers of Pakistan to align them with the global trends of open education and also provide them opportunities to learn in collaborative environments for professional elevation in global age.

KEYWORDS: MOOCs, Teacher training, e-Training, Significance, Awareness

1. INTRODUCTION

Education is essential for societies to evolve and move forward. This is how the wealth of human knowledge is utilized to equip the generations of leaders, innovators and productive members of society. Expanding educational opportunities is more possible now with the advent of digital technologies and the web tools, which have supported more affordable, flexible and effective teaching and learning in the digital age. Through

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web-based and digital technologies, learners can find information instantly on virtually any topic, teachers can share their knowledge with students on another continent almost as easily as in their own classroom, and educational materials can be disseminated to a worldwide audience at virtually no marginal cost (Bykov, 2010).

Open Education:

Promoting open access and collaboration is very crucial in higher education. The open access movement looks for closing the gap of openness in education and believes that all and sundry globally should have complimentary online access to the high-quality educational opportunities (Zdioruk, Ishchenko, & Karpenko, 2011). Open education is actually a thought view of how the people should fabricate, share, and erect the knowledge. Advocates of open education deem every person of this world must have an approach to the high-quality educational opportunities, resources, and experiences, and the effort to abolish the impediments to this target (Kankonskyi, 2008). Such obstacles might comprise high financial costs, old-fashioned or outdated materials, and legal procedures that thwart the collaboration among learners and educators. Open Education includes the means, tools, resources and practices that are boundless of legal, technical, and monetary obstacles and be capable of full utilization, sharing, and adaption in digital learning spaces.

Open education involves the creation of common information and education environment of open access, teaching resources of educational institutions (educational plans, programs, methodical recommendations (for laboratory, practical, independent, course, qualifying works), lectures, examinations, the subject of reports, a list of recommended books and etc belong to its repository (Bakum & Tkachuk, 2015). Open education has been used to teach, develop and support the educators for many years long in many countries of the world with evenhanded notions of success. CEDEFOP (2009) reports open education as learning which provides the learner's flexibility in choosing the topics, pace, place, and method. According to UNESCO (2013), use of digital technologies eliminates the access obstacles to education; approves the approach to the knowledge anywhere and anytime; amplifies the prospects of collaboration; enhances the chances for personalization; and facilitates the scope of self-directed. So diverse types of

digital resources and tools are now recognized as legitimate media (Viana, 2012; Cobo & Moravec, 2011; Reilly et al., 2009).

MOOCs (Massive Open Online Courses):

Massive Open Online Courses (MOOC), analyzed as the most recent outlook of open and online learning, has been up fronting the momentum by expanding neutrality in education and training. According to European Commission (2013), term "opening-up education" undertakes the training and education being transferred on MOOCs by recognizing the MOOCs as a most recent trend as a result of the digital revolution. According to JISC CETIS (2013) report, a MOOCs is a precise online course openly available to the unlimited participants, at no cost. It is a mode of online learning where MOOCs utilize educational technology for their functioning.

Siemens (2013) states his point of view that MOOCs possibly relate to progress in the innovation propensity, in the utilization of technology which initiated with online distance learning endeavoring more massive and open learning opportunities. The rapid development of MOOCs is currently generating considerable excitement in the world of higher education. With a potential shift, MOOCs offer the chances to millions of people around the world to follow and attend the free, open, online courses launched by different universities, organizations, scholars etc, and in chorus associated with the communities of like-minded learners/scholars. (Lane & McAndrew, 2010; Rodriguez, 2012; McAuley, Stewart, Siemens, & Cormier, 2010; Fini, 2009; Liyanagunawardena, 2012; Weller, 2007). MOOCs are online courses designed with the concept of openness for an indefinite number of students. As well the course materials (e-Content, reading material, filmed lectures, and assessments and quizzes), MOOCs offer collaborative and interactive environments to support social interaction between students, educators, and teaching assistants (Greene, Oswald, & Pomerantz, 2015; McAuley, Sreewart, Siemens, & Corneir, 2010).

The original aspire of MOOCs was to provide open education and offer free admittance to the university education for the students as many as possible. The table below shows the unique features of MOOCs.

Table 1: Features of MOOCs

<i>Massive</i>	MOOCs are intended to be run at scale, with hundreds or even thousands of participants and without any limit to student numbers being imposed.
<i>Open</i>	MOOCs are intended to be open—with the word “open” used to imply that access to MOOC is both free of charge and also that access to MOOCs is unrestricted. MOOCs have no entry requirements and are open to learners of all educational background, age, and location.
<i>Online</i>	MOOCs are delivered completely online and involve no face-to-face contact. They are delivered through Internet technologies and so make it easy for students to communicate with each other while learning and for students to access resources that are available elsewhere on the web.
<i>Course</i>	One of the key attributes that differentiates MOOCs from an open educational resource is that they have the characteristics of a traditional course—they are run during a specific time period, based upon prescribed content, and instruction is provided to the student during that period of time. As with traditional courses, there is also usually an element of assessment included in MOOC

The figure below also shows the features of a MOOC.

Figure-1: Features of MOOCs

In comparison to traditional university online courses, MOOCs have two distinctive key features (Wikipedia, 2012):

1. Open access – "anyone can participate in an online course for free"
2. Scalability – "courses are designed to support an indefinite number of participants"

MOOCs in Higher Education

As MOOCs provide tremendous benefits to Higher Education since their inception, the proponents have pronounced bottomless potential to tend higher education easy to get through the use of smart devices, computers, or other digital and web-based tools and technologies (Duderstadt, 2012; Cooper & Sahami, 2013). Educators from top-tier HEIs and universities such as Stanford and Harvard often launch their courses through MOOCs so as to provide the student's opportunities to be taught by most distinguished professors and educators of the world (LeCounte & Johnson, 2015). Additionally, the MOOCs can be designed and created by the institutions and also by individuals and can be offered with the partnership of available platforms as well such as Coursera, Udacity, and edX. According to Wikipedia (2015), one of the biggest MOOCs "Coursera" owns ten million users from 114 institutions in the world with 839 courses.

Today, MOOCs are used widely all over the universities of the world. According to Shah (2014), the number of universities, during 2015, offering MOOCs multiplied to over 400 universities, resultantly doubling the number of collective courses to 2400.

Some higher education institutions have turned into flourishing universities in the development and expansion of MOOCs such as Princeton University, Massachusetts Institute of Technology (MIT), University of Sheffield, Stanford University, Harvard University, & University of California Berkeley (Sa'don et al., 2014). Majority of these universities have contributed towards the learning style with MOOCs.

Table 2: MOOCs offered by International Universities

University	Program/Department	MOOCs Offered
Northwestern University, Evanston, Chicago	Office of the Provost	Northwestern was one of the first universities to offer MOOCs and continues to engage global audiences in its MOOCs. Northwestern instructors are encouraged to experiment with MOOCs as a way of testing new modes of teaching and learning. A variety of free online courses are offered by Northwestern. Additional courses will be featured as faculty members develop new online strategies for delivering their course content to a global audience. Northwestern MOOCs can now be offered through the Coursera or Canvas Network platforms.
University of Southampton, UK	Institute of Learning and Innovation Development	The University, in partnership with FutureLearn are creating outstanding Massive Open Online Courses (MOOCs). Working closely with faculty staff, ILIaD learning designers and media producers produce high quality resources to support engaging and innovative learning activities for the thousands of learners on each course.
Boston University, Massachusetts, United States	Digital Learning and Innovation	DL&I offers consulting, training, and funding to aid Boston University leadership, faculty, and graduate students with modern pedagogy and technology. BU cultivates innovative new experiments and aid in developing new residential, online, and hybrid programs.
University of Alberta, Canada	Faculty of Sciences	UA looks towards increasing accessibility to our current students by building fully online courses around our MOOCs - these online courses are university, for credit courses and as such must follow the same processes and have the same level of expectations in terms of learning and assessment as any of our courses.
University of Maryland, USA	Teaching and Learning Transformation Center	developed over 40 courses with specializations in cyber security, entrepreneurship, survey data analytics, mobile programming, and resume writing and job interviewing in English for non-native speakers. These MOOCs have provided unprecedented exposure to UMD expertise, with more than 2 million registered students. If you would like to see all of the courses offered,

MOOCs for e-Training of University Teachers

Although the use of MOOCs has been generally confined to educational courses or programs for higher education learning up until now, MOOCs are not just for the college students or promising university programs anymore. Voss (2013) states that

emergence of MOOCs has changed the concept of teachers' online professional training by integrating emerging learning styles and collaboration features for professional learning. Overton & Dixon, (2014) express that It is exciting to spot mounting use of MOOCs in contexts of teacher training, particularly for the training of higher education institutions or university faculty. As Open and online educational trends have stepped towards the transformation of modes of teachers training along with all other sectors of education. The traditional and formal teacher training has already been replaced by e-Training substantially utilizing the digital tools and technologies and online resources (Khan & Intakhab, 2014). As MOOCs are recognized as one of the recent trends in online education and training with greater significance in higher education, it is vital for university faculty to get exposure of e-Training through MOOCs which might be regarded as 'open training'. So e-Training with MOOCs responds to a learning context embedded with openness in the structured learning process is more planned, collaborative and supportive training environment. representative experiences about teacher training through MOOCs are described by Viswa-nathan (2012) and Robledo et al. (2010).

Enrolling into the MOOC allows the universities to have flexible e-Training of their employees on specific skills set to improve their performance (Martain, 2012). Sung (2013) also narrates that e-Training has confronted the significant technological advances while utilizing MOOCs and provides tremendous benefits to the universities for faculty's e-Training without associated expenses and time limits. While the universities commit to using MOOCs in their educational programs, it is crucial to producing the faculty for certain reasons, such as:

1. Provide sufficient digital skills and literacy to execute the MOOCs' based online courses and design online instruction compatible with MOOCs
2. Improving the quality of online courses offered by universities through MOOCs
3. To bestow the online training experience to the faculty so that to make them familiar with vibrant features and significance of MOOCs in the digital era.

The e-Trainings of university faculty through MOOCs offer gigantic benefits by providing opportunities to seek innovative digital skills and expand their digital knowledge. Here are few of the most notable advantages of MOOCs for e-Training:

- University Teachers can have 24/7 access to training.
- Investing a lot of resources into the training programs, MOOCs provide equal opportunities to all teachers to choose programs of their interest without any cost from the list of offered MOOCs.
- MOOCs boost the on-job efficiency and digital competence of university faculty.
- MOOCs ensure to the teachers that they are professionally up-to-date with digital skills and knowledge.
- As MOOCs are customizable, the content can be added or altered according to the needs and on-job challenges of university teachers referring to the individualized learning.
- The teachers can be tracked or identified by the universities who are highly motivated and comfortable with the use of online technologies so that to assign them technology-relevant activities and tasks to promote online learning and MOOCs in the university.

These benefits of MOOCs enlighten the need and scope of MOOCs for e-Training of university teachers to pave the higher education on the innovative avenues to maximize its progress in the digital era.

MOOCs in Pakistan

Like other countries of the world, Pakistan has also taken the initiatives to launch MOOCs in higher education. The table below illustrates the MOOCs initiative and projects being started in different universities of Pakistan in a research study conducted by Iqbal, Naeem, & Nayyer (2016).

Table 3: MOOCs offered in Pakistan

University	MOOCs Programs
"LEJ Knowledge Hub", Latif Ebrahim Jamal National Science Information Center (LEJNSIC), University of Karachi	The program included accessing online courses, mentoring and assessing system. About 16,000 full courses have been gathered from different sources: Coursera, edX, ICCBS Courses, Khan Academy, Udacity, Virtual University. Some technical and vocational courses will also be dubbed in Urdu for the masses for providing them with means of earning.
Allama Iqbal Open University (AIOU)	The AIOU is first in the country, adopting the MOOCs system which has emerged as a popular mode of learning worldwide. Launched in May 1974, AIOU is an open university with a stress on imparting distance education in engineering, natural and social sciences. It was the first Open University in Asia (as well as Africa) and second in the world. It has the most applicants per year. The university has always opted for modern technology by offering on-line courses for domestic and foreign students.
Virtual University of Pakistan (VU)	VU is Pakistan's first University based completely on up-to-date Information and Communication Technologies (ICT). By finding the top university lecturers of the country, irrespective of their institutional affiliations, and requesting them to develop and deliver courses, the VU provides the most excellent courses to its students as well as to learners of all other institutions in Pakistan.

The legendary scientist of Pakistan Professor Dr. Atta-ur-Rahman who is leading "LEJ Knowledge Hub" program said that. "This is probably the most exciting project that I have undertaken in my lifetime, as it can change the landscape of education in Pakistan." While emphasizing the significance of MOOCs, the former information minister of Pakistan, Javed Jabbar believed that they [MOOCs] correspond to a gigantic jump in intensifying the access to knowledge, information, and education and reducing the immense inconsistencies in the quality of professional teacher training programs that are presently continued in Pakistan.

Where is the Gap?

Literature enormously highlights the significance of using MOOCs in higher education and their benefits for e-Training programs of university faculty as MOOCs are being used in higher education and teacher training programs in many high-tier universities of the world. But many countries, for example, Pakistan, lacks the utilization of MOOCs in higher education. According to UN Report (2016), Pakistan is almost fifty years (half a century) behind in attaining its widespread educational goals. Although the governments have raised and supported several colleges, technological institutions, and universities, however, the availability of sufficient numbers of digitally qualified faculty has been the topmost problem. So MOOCs are one of the best ways to enhance the digital skill-set of university faculty (Rafia, 2014). As e-Learning is in infancy stage in Pakistan

and technological advancements and online educational opportunities are smaller, the potential of MOOCs yet remains to be unfolded. There are only a few researchers which emphasize the utilization of MOOCs for e-e-Training of teachers is in early stages that's why the scope of open e-Training through MOOCs is not significant. That's why the purpose of this study is to explore the viewpoints and perceptions of university faculty about the awareness, potential, utilization, and organizational support regarding MOOCs in public and private universities of Pakistan.

2. RESEARCH METHODOLOGY

Keeping in front the objectives of this study, total 50 university teachers were selected from different departments of 5 public and 5 private universities. The sample of the study was chosen on the basis of familiarity with online technology and participation in e-Training programs. A questionnaire was administered with the sample to collect the required data. Collected data were analyzed using SPSS to get the solutions to the research problem.

Operationalization: Constructs & Variables

The study comprised of three major constructs. Each construct was intended to measure specific variables. The diagram shows the scheme operationalized constructs and variable.

Figure-2: Operationalization of concepts

Data Analysis

Tables below show in detail the analyzed data for this research study.

Table 4: Total Respondents from Public and private universities	
	Respondents
Public Universities	23
Private Universities	27
Total	50

The table above depicts that 23 teachers from public universities and 27 teachers from private universities were chosen to respond to the questionnaire.

Table 5: Awareness level of Faculty of Public and Private universities						
AWARENESS	FACULTY					
	Public Universities			Private Universities		
	N	Mean	S.D.	N	Mean	S.D.
Significance	23	2.87	.626	27	3.04	.587
Usefulness	23	3.05	.487	27	3.09	.501
Barriers	23	4.43	.507	27	4.48	.509

The table above infers that i) teachers of private universities are slightly more aware of the significance of MOOCs in higher education and e-Training. ii) statistical figures show that both public and private university teachers are uncertain about the usefulness of MOOCs in higher education and e-Training. iii) Mean values infer that teachers of public and private universities are well aware of barriers/challenges for not using MOOCs in higher education and e-Training programs.

Table 6: Utilization level of Faculty of Public and Private universities					
UTILIZATION	Faculty of	N	Mean	Std. Deviation	Mean Difference
Professional Use of MOOCs	Public Universities	23	1.00	.000 ^a	0.04
	Private Universities	27	1.04	.320	
Participation in MOOCs	Public Universities	23	1.09	.288	0.1
	Private Universities	27	1.19	.396	

e-Training through MOOCS	Public Universities	23	1.00	.000 ^a	0.07
	Private Universities	27	1.07	.267	

The table above illustrates the utilization of MOOCs by university teachers. It is evident that i) teachers of public universities do not use MOOCs at all for any professional tasks or activities while teachers of private universities, with a very slight mean difference, incline towards no professional use of MOOCs. ii) mean values 1.09 and 1.19 infer that faculty of public and private universities doesn't participate in MOOCs courses or activities. iii) teachers of public universities never attended any e-Training course through MOOCs while meaning value 1.07 infers that teacher of private universities have minor experience of e-Training through MOOCs but generally with a slight mean difference

Table 7: Attitude of Faculty of Public and Private universities							
ATTITUDE	FACULTY						Mean Difference
	Public Universities			Private Universities			
	N	Mean	S.D.	N	Mean	S.D.	
Interest	23	3.61	1.118	27	4.26	.712	0.65
Digital Competence	23	3.52	1.275	27	4.07	.917	0.55
Willingness	23	3.93	.717	27	4.12	.847	0.19

The table above illustrates that i) teachers of private universities exhibit more interest in getting the experience of MOOCs than teachers of public universities. ii) Teachers of private universities show more inclination towards the need of improving digital competencies for utilizing MOOCs. iii) Teachers of public and private universities are almost equally willing to participate in e-Training programs through MOOCs.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	S.E. Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Interest	Equal variances assumed	4.807	.033	-2.491	48	.016	-.651	.261	-1.176	-.125
	Equal variances not assumed			-2.406	36.187	.021	-.651	.270	-1.199	-.102
willingness	Equal variances assumed	.617	.436	-1.767	48	.084	-.396	.224	-.847	.055
	Equal variances not assumed			-1.791	47.999	.080	-.396	.221	-.841	.049

- i. Table above shows since $p < \alpha = 0.05$ so it is concluded that there is statistically significant difference between the interest of teachers of public and private universities for getting experience of MOOCs while equal variances not assumed as for interest, mean of teachers of private universities (i.e. 4.26) is greater than the mean of teachers of public universities (i.e. 3.61). So it can be interpreted that faculty of private universities shows greater interest in having experience of MOOCs than the faculty of public universities.
- ii. The table above depicts since $p > \alpha = 0.05$ so it is concluded that statistically there is no significant difference between the willingness of teachers of public and private universities to participate in e-Training through MOOCs while equal variances assumed. So it can be interpreted that faculty of public and private universities is almost equally willing to participate in e-Training through MOOCs.

3. DISCUSSION AND RECOMMENDATIONS

As the study focuses on the significance of using MOOCs in e-Training programs of university teachers, the findings of the study are not very satisfactory in the Pakistani context. Globally, MOOCs have transpired as a tool for digital education and training. It

is crucial for public and private universities in Pakistan to take measures to support utilization of MOOCs in educational activities and e-Training of university teachers. Literature illustrates that MOOCs have arbitrated the traditional system of higher education and teachers training but findings of this research clearly deduce the wretched condition of MOOCs as university teachers are not well aware of the significance, potential, and usefulness of MOOCs in higher education and e-Training. MOOCs can be promoted in Pakistani universities by removing the barriers which hinder the institutions to recognize the MOOCs as university teachers are well aware of the challenges and barriers. Findings show that professional use of MOOCs, taking MOOCs courses and participating MOOCs e-Training, all domains are conceded by university teachers. As for attitude, university teachers are positively inclined towards e-Training through MOOCs by showing their interest and high willingness to take e-Training courses through MOOCs. It is crucial to recognize the significance of MOOCs amongst university teachers by improving their digital competencies and offering e-Training programs through MOOCs so that to remodel the e-Training patterns of university teachers in accordance with the global digital trends.

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