

A Comparative Study of Allama Iqbal Open University (AIOU) and University of Terbuka, Indonesia to Utilize MOOCs for the Professional Development of University Teachers

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Abstract

Advent of digital technologies and open learning spaces have superbly influenced higher education worldwide both in the formal and open universities. Open education is emerged as contemporary approach to learning and teaching. Teachers' professional development in open education is a recognized and stimulating research area. MOOCs are innovative way of professional development of university teachers to prepare them via open education. MOOCs are generally provided free to all participants who seek to share their experiences and knowledge for personalized or collaborative learning. This study was proposed to bring innovation in teacher education by transforming professional development of university teachers through MOOCs. Followed by the positivist paradigm, the study was descriptive in nature by using quantitative and qualitative research methods. The population of the study comprised all the regular faculty members of one university in Pakistan and one university in Indonesia. Survey questionnaire and interview were used to analyze the perceptions of faculty members and heads of departments/programs of both universities for analyzing awareness about MOOCs, digital competencies, utilization of MOOCs in professional trainings, challenges for using MOOCs, and readiness & attitude towards using MOOCs for training courses. Data were analyzed by using mean score, t-test and transcribing the data. MOOCs-based training is to be provided to the teachers for its effective use.

Keywords: MOOCs, professional development, university teachers, open education.

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Introduction

Online education has been constantly reshaping the concept of distance learning. Globally distance education is presently experiencing an immense transformation due to significant digital revolution. Education is highly influenced by emerging digital technologies which are regarded as central dynamism for education modernization. Thus, as narrated by Bozkurt (2019), open education has emerged as an elevated trend in teaching, learning and training sectors as a practice that emphasizes a philosophy of free and open sharing of ideas, tools, knowledge, content, platforms, methods, and approaches of learning and teaching.

The use of digital technologies in open education is widened to teaching and learning in formal universities as well as virtual and open universities. If universities are to fully embrace opening up education by utilizing digital technologies and virtual open spaces, they must ensure that their faculties are trained having professional competencies and skills to design open education systems of content, pedagogy, delivery and assessment (Paskevicius & Irvine, 2019). Many of universities prepare their faculties through professional development programs in virtual learning environments which typically involve the utilization of learning management systems (LMS), blackboard or WebCT etc. These training courses although prepare teachers to teach online but with the advent of open education, novel ways of professional development of university teachers have been introduced such as MOOCs.

Guttenplan (2010) claims that MOOCs (Massive Open Online Courses) are most emerging trend in open education since last decade. MOOCs are basically open online courses which have open accessibility on the internet for large number of participants who stand on the philosophy and beliefs of open education, and their major inclinations are to set aside novel ways of technological teaching and learning. MOOCs are generally free for all participants who aspire to exchange their experiences and knowledge for personalized or collaborative learning. A MOOC engages the participants provides information and content links on a particular topic, and engages participants all through the course to facilitate them for understanding of topic by providing information and open learning content on the relevant topics. The interactions of participants within a MOOC can be adapted and modified from constructivist approach to Connectivist approach.

Teachers are an imperative objective group for MOOCs. Also, just like MOOCs, teachers' professional development in open education is a recognized and stimulating research area. MOOC has demonstrated its potential in teacher professional development (Misra, 2018; Castaño-Muñoz, Kalz, Kreijns & Punie (2018); Ji & Cao, 2016; Jobe, Ostlund & Svensson, 2014). According to Daniel, Cano & Cervera (2015), the recent developments of MOOCs have further stressed the need for open, lifelong, personalized, flexible professional education. So, a rational and recommendable blend is to utilize MOOCs to fulfill the ostensible elevated demand for the professional development of university teachers. MOOCs offer traditional professional courses online for free.

Ramirez (2014) presents a research study rooted on the first MOOC in Latin America which was aimed to provide an alternative for teachers training through open accessibility to knowledge. MOOCs thereby enhance the quality of teachers' professional

development courses as a means of teachers training, and hence enhance the quality of education (Patru & Balaji, 2016). The teachers' training courses through MOOCs intend to develop the skills and competencies needed to create and manage powerful online learning environments, designing open educational resources, sharing knowledge, seeking e-Pedagogy and e-Assessment activities in open, distance and online education systems.

Generally, there is an apparent shortage of research studies providing evidence of MOOCs for professional teacher development which is one of the reasons for calling more research studies involving massive courses used specifically for teachers' professional development. The application of MOOC in teacher professional development is still in the empirical stage, and experimental data analysis is needed for further research.

In this context, a research study was proposed focusing the importance of MOOCs. Thus, this research study was conducted to analyze and compare the awareness and utilization of MOOCs for professional development of university teachers from one university of Pakistan (UniP) and one university from Indonesia (UniI).

Literature Review

MOOCs are a modern trend in online learning landscape that has roots in ever expanding gamut of distance education and open learning; undoubtedly, they approve a novel model of distance learning. McAuley, Stewart, Siemens & Cornier (2010) claim that MOOCs are a latest advancement in online learning being a method of distance education, and development in the field of open education. Whereas MOOCs have probably started newer generation of distance education (Davis, Dickens, Urrutia, Vera, & White, 2014). As cited by Iqbal, Naeem & Nayyer (2016), according to 'IEEE CS 2022 report', MOOCs are among those topmost ten technologies which could revolutionize the world by 2022. According to Dabbagh, Benson, Denham, Joseph, Zgheib & Guo (2016), the present era is referred as 'open' (open systems; open education; open standards; open resources; open archives) which describes openness as a concept that characterizes the knowledge and communication systems, societies and politics, epistemologies, institutions or organizations, and individuals by designing, producing, sharing and reusing the open resources of learning. The online platforms of MOOCs (Massive Open Online Courses) are one of the most recent innovations in open education. Further McAuley (2010) & Fini (2009) which highlight the key characteristics of this new learning model of MOOCs by defining *Massive* as having no limits of participants; *Open* as accessible to anyone with wifi/internet connection for free of charges; *Online* as learning/teaching delivered via online mode; and *Courses* as designed and structured content around objectives. According to Educause (2012), "a MOOC is a model for delivering learning content online to any person who wants to take a course with no limit of attendance." Two most widely used forms of MOOCs are attributed as, i) cMOOCs and ii) xMOOCs. cMOOCs (Connectivist MOOCs) focus collaborative and connected learning free from institutional constraints. cMOOCs are rooted from learning theory of Connectivism (Siemens, 2011), are all about knowledge construction by self-organized learning networks. In other words, information is distributed on networks. cMOOCs are based on the iterative process through which learners produce and reflect their content

and share their innovative knowledge (Ahn, Butler, Alam & Webster, 2013). In contrast to cMOOCs, the xMOOCs (eXtended MOOCs) are content-based MOOCs which are online courses with predetermined learning objectives, assignments, learning tasks and communication tools. xMOOCs are built on customary instruction-driven learning principle. Information is made available on online platforms for a large group of learners (Lackner, Kopp & Ebner, 2014).

MOOCs represent ingress of promising innovation in higher education as they provide new models for teaching and learning (Hoyos, Perez, Kloos, Rojas, Leony & Prada, 2014). Also Jansen & Schuwer (2015) asserts that numerous research studies suggest MOOCs becoming vital strategic facet in European universities. Allen & Seaman (2015) narrate same trends in USA whilst O'Connor (2014) claims MOOCs trends in Australia. According to Shirky (2012), proponents perceive MOOCs very innovative for transforming higher education by making fundamental changes in organization and delivery of higher education. MOOCs also motivate learners to learn, and develop professional or personal identity (Belanger & Thornton, 2013).

Universities may design and develop their own MOOCs or opt MOOCs from providers. Nisha & Senthil (2015) stated that Coursera, edX, FutureLearn, Udacity, Iversity & Canvas are some of the major MOOC platform providers in the world. According to Hollands & Tirthali (2014), in 2013, 70 US institutions launched 374 courses collectively on Coursera whereas 53 courses were organized on edX from 27 UK-based institutions where approximately 900,000 participants were registered. Likewise, University of Edinburgh launched 6 online courses through their own MOOC where 308,000 students were reported being registered. It has been reported that 30% of the Asian population has since registered for a MOOC (Valenzuela, 2016). Most Asian MOOC users see these courses as a way to help them gain specific job skills, prepare for future work, and as part of professional certification. About 6% of Singaporeans have utilized their SkillsFuture Credits on MOOCs. Indonesia also owns potential MOOCs users (Internet World Stats, 2016) and Indonesian government provides support to MOOCs through ministerial and presidential regulations (APJII, 2016). Malaysia has grown to be the first country of world for developing national policy for MOOCs. An Indian University Grants Commission (IUGC) has released plan and strategies for MOOC platforms to unite online and offline higher education.

In Pakistan, Agha Khan University was first to launch three-week long course through MOOCs in 2014 on 'Bioinformatics of Drug Design' (Abidi, Pasha, Moran & Ali, 2016). According to Iqbal (2017), AIOU (Allama Iqbal Open University) and VU (Virtual University) have taken initiatives to utilize MOOCs for deploying online courses as AIOU is successfully running its OCW (Open Courseware) too. In addition, the Vice Chancellor of ITU (Information Technology University) Dr. Umar Saif revealed in 2016 that ITU was working out with edX to launch online courses.

In Indonesia, Universitas Terbuka (UT) officially embarked MOOCs in 2014. The launch of MOOCs was an innovative step of UT to utilize technological advancements for providing education to public, serving students in all areas all over Indonesia. MOOCs of UT also called as online open course is offered to all Indonesian people to gain a comprehensive experience in online-based learning. MOOCs in UT is a form of community services for public or common people. All Moocs is managed by UT's Research and community unit (LPPM-U). According to (Lubis, Idrus, & Abd Rashid,

2020), on the MOOC of Universitas Terbuka, 293,000 students had been registered by June 2019.

MOOCs are especially very much relevant as those correspond to consummate promising potential for teachers' professional development, particularly if the formal professional courses are restructured and updated as cMOOCs. The connectivist principles of diversity, openness, autonomy, and interactivity facilitate the participants' engagement in the MOOCs. As described by Evans (2002), teachers' professional development is a recognized and mounting research field as MOOCs are. So a plausible combination is using the MOOCs concept to fulfill the obvious elevated demand for teachers' professional development of teachers (Jobe, Ostlund, & Svensson, 2014; Beaven, 2013). MOOCs endorse the professional development of teachers to take place in the online communities of practice (Clarà & Barberà, 2013; Ferdig, 2013). Hence teaching in higher education is very strong component and needs high level of digital skills and knowledge of university teachers to utilize MOOCs pedagogy and to develop content compatible with MOOCs. As teachers are required to seek the competencies and literacy to use MOOCs pedagogical models in higher education, they are provided training to understand and use MOOCs in their profession. MOOCs are considered an effective mechanism for teachers' training as many studies identify the scope of MOOCs for professional development of teachers for adoption of e-Learning trends and technologies as one of the crucial concerns (Dowker 2004; Knight, Tait, & Yorke 2006; Griffin 2004). Misra (2018) narrates that MOOCs may have become a cost-effective and resource-effective means to be a foil for the conventional ways of professional development of teachers.

Although MOOCs are latest trend in professional development of university teachers, it is required to overcome and ponder on certain challenges relating to MOOCs. One major challenge according to (Ho, Chung, Mitros & Pritchard, 2015; Matthew, 2015; Tim, 2015) is high dropout rates of participants due to the non-completion of courses. Moreover Mihaescu, Andone & Vasii (2016) in their study point out the quality of MOOC-content a considerable challenge for MOOCs success in higher education and in the success of professional development of university teachers (Misra, 2018). Lack of institutional policies regarding open education and MOOCs is also attributed as a major challenge. Also the recognition and accreditation of MOOCs is a big challenge as these courses are perceived low-valued in comparison to traditional professional certifications. Furthermore, inconsistent or low participation in learning tasks and assessments is an issue with MOOCs. Due to insufficient digital competencies and literacies of teachers, universities' administrations spend a lot to outsource the MOOCs-compatible content from external e-content experts which rises administrative cost of MOOCs (Houston, 2013).

To overcome the challenge of seeking digital literacy and competencies of teachers towards MOOCs and e-Content, it is vital to provide proper MOOCs training to the university teachers. Provision of effective professional development opportunities to university teachers in e-Learning is being challenging in Pakistan (Impedovo & Malik, 2019). Although Higher Education Commission (HEC) takes measures and arranges faculty development programs for university teachers, however endeavors like MOOCs need great attention to be established and utilized for training of teachers. Digital divide between university teachers and university students (Iqbal, 2017) and lack of

technological infrastructure hinder the implementation of MOOCs in Pakistan (Iqbal, Naeem & Nayyer, 2016). Likewise, Dabner, Davis, and Zaka (2012) indicate that teachers' professional development is scantily done and generally converges on workshops to extend technical skills of teachers with suitable technologies like LMS. The present study is conducted keeping in view the scarcity of research in the particular area of utilization of MOOCs for professional development of teachers in Higher education. It is vital for the teachers of open educational institutions/open universities to possess sufficient professional technological competencies to coop in open and distance learning systems.

Objectives of the Study

Main objectives of the research were as follows:

- i) To analyze the awareness of teachers of one university in Pakistan and one in Indonesia regarding MOOCs
- ii) To assess the digital competencies of teachers of one university in Pakistan and one in Indonesia for using MOOCs
- iii) To analyze the level of utilization of MOOCs for professional development of teachers of one university in Pakistan and one in Indonesia
- iv) To examine the challenges faced by teachers of one university in Pakistan and one in Indonesia for using MOOCs
- v) To investigate the attitude and readiness of teachers of one university in Pakistan and one in Indonesia to use MOOCs for professional trainings in future
- vi) To compare prevailing status regarding MOOCs of one university in Pakistan and one in Indonesia

Hypotheses

Null hypotheses for the study were as:

- H₀₁: There is no difference between awareness level of teachers of UniP and UtiI regarding MOOCs.
- H₀₂: There is no difference between digital competencies of teachers of UniP and UtiI regarding MOOCs.
- H₀₃: There is no difference between utilization level of teacher of UniP and UtiI regarding MOOCs.
- H₀₄: There is no difference between utilization level of MOOCs for professional development of teacher of UniP and UtiI.

Methodology

This study was descriptive in nature and survey done to compare the utilization of MOOCs regarding the professional development of faculty members of one university in Pakistan and one in Indonesia. Hence this section of the study contains the following aspects of the research process. The proposed methodological framework of the study is as:

Table 1

Methodological Framework

Details of Methodological Framework

Research paradigm	Positivist
Research Design	Descriptive Design
Research Method	Quantitative and Qualitative
Research Approach	Deductive/Inductive
Research Technique	Survey
Research Tools	Questionnaire and Interview

As the researchers carried out this research study as compulsory component during an international fellowship program, one university from Pakistan and one from Indonesia were brought under study. All 293 regular faculty members from a Pakistani university and 288 from one Indonesian university were taken as population of this study. Hence 150 from each university were target population keeping in mind the availability of faculty members. 300 questionnaires were distributed only among the target population comprised on 150 of each university. But only 200(100 from each university) were received back. Accordingly, sample was pertained on the response rate. Sample and sampling technique were as under:

Table 2

Sample and Sampling Techniques

University	Questionnaire		Interview	
	Faculty Members		Head of Departments/Programs	
	N	Sampling Technique	N	Sampling Technique
UniP	100	Convenient	10	Convenient
UniI	100	Convenient	10	Convenient
<i>Total</i>	200		20	

While focusing the objectives following two research tools were developed by the researcher herself.

- i) Questionnaire for Faculty members
- ii) Interview for Heads of Departments/ Programs

Questionnaire was developed on five-point Likert scale while interview was semi structured. Hence both were developed by focusing these constructs such as i) awareness about MOOCs, ii) digital competencies, iii) utilization of MOOCs in professional trainings, iv) challenges for using MOOCs, and v) readiness and attitude towards using MOOCs for training courses. Questionnaire comprises on 21 items and interview comprises 6 items. Hence items of questionnaire were operationalized as under:

Table 3: Operationalization of Questionnaire

Objectives	Construct/Variable	Items
1	Awareness	1-4
2	Digital Competencies	5-6
3	Utilization	7-9
4	Challenges	10-14

5	Attitude	15-18
	Readiness	19-21

Researcher collected data personally from UniP but in UniI with help of three other counterparts. Data collected through research questionnaire were tabulated and analyzed by using mean score, percentage and t-test while data of interview was transcribed and prioritized.

This study was aimed to explore the role and potential of utilization of MOOCs for professional development of university teachers. For this purpose, two universities UniP and UniI were taken a study. Researcher personally interviewed head of programs/departments of both universities.

Heads of departments/programs were asked to provide their views/opinions about role and effectiveness of MOOCs in open and online education, their experiences with MOOCs, initiatives taken by them to use MOOCs in their universities/departments particularly in teachers training courses. They were also posed to give their responses about MOOCs-challenges and their suggestions to promote MOOCs as means of professional development of teachers in universities.

Researcher conducted interviews and collected data through audio recordings. After completing interviews, the data was transcribed. Transcription of data involved writing down the whole interviews in detail by carefully listening the interviews many times. Some of data chunks collected from teachers of UniI required translation into English so those data were translated but other than translating conversation, no other changes were made in data. Next step comprised of data cleaning in which data consistency was checked by removing all those dialogues/conversations which were redundant, unimportant and irrelevant to objectives of the study. After making the data accurate and reliable by cleaning it, data was put for coding. Coding is a process of combining the data for themes, ideas, categories or groups, then making the text in passages with code labels so that they may easily be retrieved afterwards.

Data Analysis

Data were analyzed objective wise as each table is showing the findings of objectives successively.

Table 4

Teachers' Awareness, Digital competencies and Utilization of MOOCs

Objectives	Variables	AIOU		UTI	
		N	%age	N	%age
1 Awareness of MOOCs	Familiarity	100	60.4	100	64.0
	Enrollment	100	40.8	100	55.2
	Flexibility	100	64.8	100	72.2
	Exposure	100	70.2	100	73.2
2 Digital Competencies	e-Skills	100	50.2	100	62.8
	e-Content	100	47.6	100	62.0
3 Utilization of MOOCs	Teaching	100	1.44	100	2.61
	Content Design	100	1.26	100	2.98
	Learning Strategies	100	1.48	100	2.90

Table 4 illustrates the percentage values of UniP and UniI of *teachers' awareness regarding MOOCs*. From findings of table 4, It is shown that 60.4% teachers of UniP were familiar about MOOCs while 64.0% teachers of UniI were having familiarity with MOOCs. Table depicts that 40.8% teachers of UniP were enrolled in MOOCs courses whereas 55.2% teachers of UniI were enrolled in MOOCs courses. Table portrays that 64.8% teachers of UniP perceived MOOCs as flexible ways towards personalized learning in online environments. While 72.2% teachers of UniI perceived MOOCs as flexible ways towards personalized learning in online environments. 70.2% teachers of UniP believed that MOOCs exposure was necessary for university teachers, whereas 73.2% teachers of UniI considered MOOCs exposure essential for university teachers.

Table 4 further reveals the digital competencies of teachers of UniP and UniI regarding MOOCs that 50.2% of teachers of UniP believed that they own skills to use MOOCs while 62.8% of teachers of UniI said that they own skills to use MOOCs. Also table illustrates that 47.6% of teachers of UniP agreed that it was easy for them to understand the content and environment of MOOCs. Whereas 62% teachers of UniI agreed that content and environment of MOOCs was easy for them to understand.

Furthermore, Table 4 illustrates the MOOCs utilization level of teachers of UniP and UniI regarding MOOCs as $M=1.44$ shows that teachers of UniP disagree to utilize MOOCs in their teaching whereas $M=2.61$ depicts that majority of teachers of UniI disagreed that they utilized MOOCs in teaching. $M=1.26$ depicts that teachers of UniP disagree that they have abilities to design content for MOOCs while $M=2.98$ shows Most of teachers of UniI were uncertain of having abilities to design MOOCs content. $M=1.48$ shows disagreement of teachers of UniP towards planning learning strategies for MOOCs, whereas $M=2.90$ shows that teachers of UniI were undecided of being capable to design MOOCs learning strategies.

Table 5

MOOCs for Teachers' Professional Development

Professional Development	AIOU		UTI	
	N	Mean	N	Mean
Attitude	100	2.09	100	2.95
	100	3.48	100	3.31
	100	3.61	100	3.48
	100	3.86	100	3.69
Readiness	100	3.54	100	3.61
	100	3.62	100	3.62
	100	3.53	100	3.67

Table 5 shows the attitude and readiness of teachers of UniP and UniI regarding using MOOCs in their professional development programs. $M=2.09$ shows dissatisfaction of teachers of UniP towards MOOCs-based training programs at university while $M=2.95$ describes uncertainty of teachers of UniI towards MOOCs-based training programs organized by university. $M=3.48$ and $M=3.31$ reveal that teacher of UniP and UniI inclined towards having intention to use MOOCs in their professional training courses respectively. $M=3.61$ and $M=3.48$ show that teachers of UniP and UniI are inclined to agree that MOOCs are valuable training tool for open and online learning. $M=3.86$ and $M=3.69$ reveal that teachers of UniP and UniI agree to become competent MOOCs-

Professionals. Also $M=3.54$ and $M=3.61$ show that teachers of UniP and UniI are motivated to learn about MOOCs in training courses. $M=3.62$ portrays that teachers of both UniP and UniI are willing to participate in MOOCs-based professional trainings. While $M=3.53$ and $M=3.67$ show that teachers of UniP and teachers of UniI are eager to promote open and online learning through MOOCs.

Table 6

Comparison of UniP & UniI regarding MOOCs

	N	Mean	Std. Deviation
UniP	100	2.67	.839
UniI	100	3.18	1.142

Table 6 shows the comparison of prevailing status of UniP and UniI regarding MOOCs on the basis of mean values. In the table, $M=2.67$ of UniP and $M=3.18$ of UniI shows that substantial mean difference is found between the MOOC-status at UniP and UTI. Mean values reveal that prevailing state of MOOCs at UniI is advanced than prevailing state of MOOCs at UniP as UniI is having greater mean value.

Table 7

Hypotheses Testing

Hypotheses	t	df	Sig. (p)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
H ₀₁ Awareness	-16.1	8	.000	-1.125	.069	-1.286	-.963
H ₀₂ Digital Competencies	-9.00	18	.000	-.750	.083	-.925	-.574
H ₀₃ Utilization	-3.34	28	.002	-.142	.042	-.230	-.055
H ₀₄ MOOCs for PD	-5.58	10	.000	-.761	.136	-1.065	-.458

Table 7 shows the findings of hypotheses testing calculated for the purpose of comparison of status of MOOCs at UniP and UTI.

- i) For H₀₁, since at $t= -16.1$ and $p < .05$, there was significant difference between UniP and UniI regarding MOOCs awareness of teachers. So null hypothesis was rejected.
- ii) For H₀₂, since at $t= -9.00$ and $p < .05$, there was significant difference between UniP and UniI regarding digital competencies of teachers. So null hypothesis was rejected.
- iii) For H₀₃, since at $t= -3.34$ and $p < .05$, there was significant difference between UniP and UniI regarding MOOCs utilization. So null hypothesis was rejected.
- iv) For H₀₄, since at $t= -5.58$ and $p < .05$, there was significant difference UniP and UniI regarding MOOCs utilization in professional development of teachers. So null hypothesis was rejected.

The qualitative analysis of interviews led to the identification of five overarching themes/factors.

Table 8
Responses Chart of interview

Themes	Favorable Responses	
	UniP	UniI
Effectiveness	6	10
University Intentions	2	9
Professional Development	0	6
Faculty Attitude	10	10

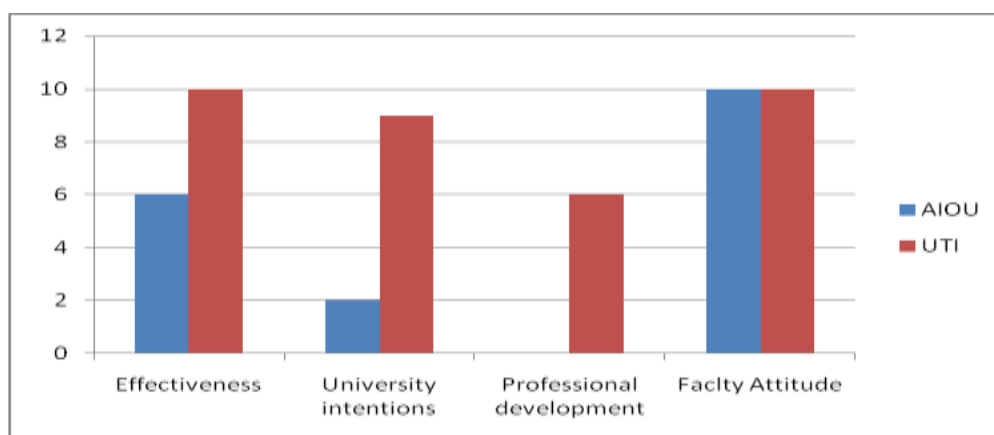


Figure 1: Themes identified from interview data

All 10 departments/programs heads of UniI were of the view that MOOCs are affordable and innovative way to acquire and update knowledge. 8 heads of departments of UniP told about MOOCs being a potential way of learning and teaching. Some of them acknowledged the flexibility, accessibility and affordability as distinguished features of MOOCs. All respondents of UniI and UniP recognized MOOCs as effective means of open and online education. Nine respondents of UniI told in their conversation that they have experienced online courses with MOOCs while five heads from UniP told that they have registered on MOOCs but only three of them had taken MOOCs courses.

All the heads from UniI told that their university intends to use MOOCs for their faculty in their teaching and other relevant tasks while it was evident that use of MOOCs by faculty is not a priority of UniP. UniI has developed strategies for MOOCs use and some respondents uttered that university plans and spends on developing MOOCs infrastructure as UniI has its own nine MOOCs developed by different departments. UniP has just started its first MOOC as university has conceded the importance of MOOCs in distance education, but earlier only OCW (Open Courseware) content was utilized in different academic courses/programs. Seven respondents from UniI said that they have attended MOOCs-based trainings or professional development programs but no respondent from UniP was evident to attend any sort of professional development course which was based on MOOCs. When asked from the heads about their attitude towards utilization of MOOCs in teacher training in future, all 20 respondents from UniP and UniI were found enthusiastic by showing high willingness, motivation, interest and readiness to use MOOCs in future.

All respondents from UniP and UniI provided valuable suggestions to promote MOOCs as vital factor of open and distance education and professional development of

teachers. Some imperative suggestions given were: i) More training of faculty may be arranged; ii) besides the university website social media, tv radio and brochures may be used to promotion of MOOCs; iii) IT teams along with experts may be appointed in each faculty for developing the MOOCs. At least each faculty must have this IT team; iv) work load of each faculty may be reduced for working on MOOCs as every faculty member is already over burden; v) credit or any sort of incentive may be given MOOCs and faculty member who works on it; vi) existing MOOCs may be made more attractive; vii) initially every faculty member may be asked to develop at least on MOOC in his/her field or course; viii) existing MOOCs have low participation due to the lack of feedback for participants which is decreasing participants' interests. For this feedback may be ensured; ix) proper schedule about MOOCs for each faculty is missing which may be firstly prepared; x) partnership with other universities and institutions having MOOCs expertise may be made focusing their professional expertise for developing the MOOCs in national context; and xi) sometimes senior lecturer feel hesitation about using the innovative mode of technology accordingly they resist. Some meetings or discussion forums may be arranged to motive them.

Interviews overall revealed the MOOCs as effective and potential way of distance and online education. MOOCs are useful in developing digital skills and literacy amongst university teachers to design e-content and practice e-Teaching. It is also clear in the light of findings that MOOCs may comprehensively be used for the professional development of university teachers.

Discussion

As underlined above, the results of this research study point out that MOOCs are admired in Indonesia and Pakistan. A considerable size of respondents confirmed their awareness about MOOCs and their potential in open, distance and online education. Although certain respondents from both universities confirmed their MOOCs experiences but irrefutably utilization of MOOCs is lacking at university level and teachers are not much competent to adopt novel trends like MOOCs in profession. In the view of findings, it is obvious that universities do not prioritize to develop MOOCs infrastructure and plans and policies to execute MOOCs at institutional level. This study has highlighted many issues surrounding the utilization of MOOCs in higher education like high dropout rates; unequal patterns of participation; recognition and accreditation of MOOCs; and lack of infrastructure. To support and enhance use of MOOCs in universities as vital gateways to modernization in distance and open education, the main challenge for universities is to provide MOOCs-based training to their teachers to produce digitally competent teachers. Findings elicit the motivation, willingness and readiness of university teachers to participate in MOOCs-based professional training courses which further emphasizes the need of MOOCs for underlined purpose of professional development.

MOOCs represent unexplored potential for professional development of teachers in higher education to seek them digital literacy (e-Knowledge), digital skills (e-Competencies), and digital content (e-Content) expertise to converge their traditional teaching into e-Teaching in digital era. Other studies also support and suggest utilization of MOOCs for professional development of teachers in higher education (Malita, Tiru & Grosseck, 2018; Misra, 2018; Laurillard, 2016; Vivian, Falkner & Falkner, 2014; Urrutia, 2016; VasIU & Andone, 2014; Gamage, Fernando & Perera, 2014; Jobe, Ostlund, & Svensson, 2014). Teachers' training based on MOOCs enhance the competencies e-

Content development attract digital instructional designers at universities to design content for their universities' own MOOCs (also endorsed by Coffman, 2015). MOOCs offer powerful and significant platform to the teachers at lower costs and enhanced effectiveness. MOOCs provide flexible, accessible and quicker completion of certified professional courses. A participation MOOCs-based professional course enhances digital literacy and skills and e-Teaching competencies of teachers (Amigot, 2017). Furthermore, Laurillard & Kennedy (2017) support those MOOCs can provide training to massive number of teachers to become digitally equipped in their profession.

Conclusions

On the basis of findings of the study, it was overall established that MOOCs are dire need of both universities particularly require for the professional development of faculty members. Therefore, initially each university on its platform may develop strategies for using MOOCs about professional development faculty members. Further both universities can work together in developing and using own MOOCs not only in professional development of faculty members but in all grey areas of universities programs. This joint effort will cause the collaborative learning environment.

Although distinguishing features and benefits of MOOCs for professional development are obvious from this research study and other researches too, but still universities are reluctant to prioritize the need of establishment of MOOCs within institutions. Even if teachers exhibit elevated motivation level, it is the responsibility of universities' administration, policy makers, teachers' training bodies and higher education commission to initiate novel policies and strategies to promote the utilization of MOOCs for professional development of teachers within institutions.

On the basis of conclusions of the study, it was recommended that more trainings of faculty may be arranged and TV, radio and brochures may be used to promotion of MOOCs in addition to the university website and social media. IT teams along with experts may be appointed in each faculty for developing the MOOCs in such a way that at least each faculty must have this IT team. Workload of each faculty may be reduced for working on MOOCs as every faculty member is already over burden. Moreover, credit or any sort of incentive may be given to MOOCs and faculty member who works on it. Study also advocates that existing MOOCs may be made more attractive, initially every faculty member may be asked to develop at least on MOOC in his/her field or course. As existing MOOCs have low participation due to the lack of feedback for participants which is decreasing participants' interests., so feedback may be ensured. It is recommended that proper schedule about MOOCs for each faculty is missing which may be firstly prepared. Partnership with other universities and institutions having MOOCs expertise may be made possible while focusing their professional expertise for developing the MOOCs in national context. As sometimes senior lecturers feel hesitation about using the innovative mode of technology accordingly, they resist. Some meetings or discussion forums may be arranged to motive them.

The study draws some valuable suggestions for future regarding utilization of MOOCs for the professional development of faculty members of universities from Pakistan and Indonesia. Study suggests that both universities should conduct faculty training programs for e-Skills development. Each faculty/department of both universities must be facilitated by providing IT teams of MOOCs experts to craft attractiveness in MOOCs utilization and elevate motivation of faculty members to attend MOOC-based

training programs. It is also suggested that incentives should be given to the faculty members who are MOOC users and also work burden should be lessened for faculty members to have time to experience MOOCs. Faculty members must be placed to design and schedule MOOCs. Additionally, both universities should take measures to minimize the hesitation and unwillingness of senior faculty members for utilizing innovative technologies. To promote MOOCs, both universities must have strong and attractive marketing strategies and partnership with other universities should be promoted for initiating training courses facilitating digital expertise development among university teachers.

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