

Article

MOOCs as Change Agents to Boost Innovation in Higher Education Learning Arenas

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Abstract: Massive open online courses (MOOCs) provide opportunities for learners to benefit from initiatives that are promoted by prestigious universities worldwide. The introduction of MOOCs in 2008 has since then transformed education globally. Consequently, MOOCs should be acknowledged as a pedagogical innovation and recognized as change agents and facilitators in the transition of opening up education, in the transition from traditional campus education to open online learning arenas, which increases learners' access to and equity in lifelong learning. There is a need to consider MOOCs as a natural part of universities' course offerings and business models and to recognize MOOCs as valuable for learners. Furthermore, MOOCs should be regarded as valuable learning and educational initiatives in the same way that journals and books are recognized. Learners should be able to take MOOCs either at their own university or from other providers. Moreover, MOOCs should be valued in policies, strategies, and action plans, and they should be included in processes of quality enhancement and quality assurance. This paper points out the merits of the innovative use of MOOCs in higher education. In this qualitative literature research, a content method analysis was conducted through a systematic review of the literature. Through the findings from the literature research it is suggested that MOOCs could be permanent change agents that boost innovation in higher education learning arenas. In particular, the findings revealed the benefits of MOOCs in various areas, such as lifelong learning, professional competence development, validation of learning, and degree recognition, in addition to clarifying several business models of higher education.

Keywords: business models; change agents; competence development; innovation; learning arenas; lifelong learning MOOCs; massive open online courses; open online learning; recognition; validation

1. Introduction

Massive open online courses (MOOCs) have become part of the transformation in education by providing opportunities for learners to benefit from the initiatives promoted by prestigious universities worldwide [1,2]. The literature has shown that MOOCs not only have filled a huge gap in the educational opportunities available for lifelong learners but also have widened their participation in higher education [1]. Hence, MOOCs should be recognized as learning resources in higher education. Scholars and researchers have argued that it is also time to acknowledge that the systematic form of higher education, to which most institutions still adhere, has failed [2–4]. Traditionally, higher education is organized using a strict, linear “downpipe” approach in which students take bachelor's, master's, and PhD degrees sequentially, usually at the same university. Instead, in real life, most students who are enrolled in higher education are aged 25 years or older. They enter and exit the educational system according to their life situations, their needs, demands, and their motivation for

learning. To accommodate these students, MOOCs should be included in business models of higher education. Hence, the courses offered by universities should be organized using a serendipitous and rhizomatic approach in order to meet the needs of both learners and society [3,5]. In its communication regarding the opening up education to boost innovation and skills in order for students to be more competitive in education and the labor market, the European Commission stated there is an urgent need for higher education institutions to reorganize and offer courses that embrace the increasing digitalization of societies [1]. The European Commission also stated that in recognition of their potential, both MOOCs and open educational resources (OER) [6] should be embraced as default learning resources. Furthermore, they stated in their recommendations the urgent need for validation of formal, non-formal and informal learning to promote lifelong learning. The commission also emphasized the importance of recognizing the role of MOOCs in raising the skill levels and increasing the employability of individuals. The European Union has thus developed several instruments to support the recognition and transparency of formal, non-formal, and informal learning, i.e., knowledge, skills, and competences in order to enable individuals to study and work anywhere in Europe [1]. Accordingly, MOOCs should be considered as follows:

- Valued as a natural part of universities' course offerings
- Valued as valuable learning and educational initiatives
- Recognized as valid courses taken at learners' own universities or from other providers
- Valued as pedagogical innovations
- Valued as change agents and facilitators in the transition to opening up education
- Valued as fostering innovation, access, equity, inclusion
- Valued as lifelong learning opportunities and continuing professional development
- Valued in policy, strategies, and action plans
- Included in quality enhancement and quality assurance processes

In this respect MOOCs could serve as a new business model of innovation strategies for higher education.

This literature research aims to reveal the merits of MOOCs in promoting the innovation and quality enhancement of higher education. As the aim of the study is to argue for the role of MOOCs as change agents, and due to the used keywords, most references thus support that. Although, critical issues and challenges are also addressed in the literature review. Hence, some of them are addressed as challenges in this article. However, as there has not been any systematic review of limitations and barriers of introduction of MOOCs, there can be no claims by the authors to address the entire picture of limitations and barriers. The implementation of MOOCs facilitates transitions to increased possibilities for lifelong learning, including continuing professional development in higher education. This business model could be used to promote innovation and MOOCs as agents of transformation and change, to validate and recognize learners formal and informal learning, and finally to contribute to offers and strategies higher education.

The Definition and Role of MOOCs

MOOCs emerged and then evolved in the first decade of the 21st century [4]. When MOOCs were first introduced in 2008, they rapidly became a popular mode of learning. Globally, they attracted the attention of both learners and other stakeholders. Indeed, 2012 was designated the year of MOOCs [7,8]. Although MOOCs are delivered in an online environment, they have major differences from previous approaches to online education, the most significant of which are that MOOCs are free of charge and open to all. They are often short courses that are organized as several modules. Each module is designed to be covered in a week, and the entire course usually lasts six to eight weeks. Generally, MOOCs have no prerequisites, and learners do not have any direct obligations, more than for themselves. Learners' participation in a MOOC is voluntary and depends on their

interests, motivations, and needs [7,9,10]. MOOCs bring together people who are interested in learning about the same topic. Some learners take MOOCs for the joy of learning, whereas others want to gain knowledge in order to pursue further studies or employment. Participants are invited, but are not obliged, to complete assignments. Learners do not receive formal accreditation or certification when they complete a MOOC. Because MOOCs are scalable and often have thousands of participants, they attract substantially larger audiences than traditional online education does. MOOCs usually include course facilitators and experts who guide the learning process. The collaborative space of a MOOC can span between many different platforms, digital technologies, and social media. The following definition [11], which is shared by many European partners in the MOOC movement, positions MOOCs as follows:

[MOOCs are] online courses designed for large numbers of participants . . . [They] can be accessed by anyone anywhere as long as they have an Internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience for free.

In the last four years, more than 35 million people have enrolled in online courses. The enrollments in these courses doubled from 2014 to 2015 [12]. Currently, more than 500 universities, mainly prestigious and highly ranked, offer MOOCs, and approximately 4500 courses were available in 2015 when Coursera, edX, Future Learn, and Udacity were known as the big four MOOC providers [8]. Most courses are offered in English, but several are offered in other widely used languages, such as Spanish and Chinese.

The first MOOCs were based on the concept of connectivism [13] and were offered mainly through OERs, social media, and real simple syndication (RSS). However, this is no longer the case, especially regarding the use of RSS. However, interactions among learners and with the course materials usually still take place through social media and networking. A set of freely accessible online resources provides the course content and the study materials. Because MOOCs do not usually offer certification, degrees, or credits, learners receive a badge or similar reward for completing the courses. Since 2008, MOOCs have been developed through “freemium” models, which are based on a pricing strategy for a product or service (typically a digital offering or application, such as software, media, games, and web services) that is provided free of charge. Fees (i.e., a premium) are charged for extra proprietary functionalities or features. In this case, the first levels of the MOOC are free; if learners want a certificate, study guidance, or contact with experts, they pay a premium [14]. Significantly, as MOOCs provide course experiences and competence development in the lifelong learning process, such innovative strategies become new business models for higher education.

Online learning in the form of MOOCs has the potential to change the locus of learning by moving it beyond formalized teaching, traditional learning management systems, and ordinary campus courses. MOOCs hold the potential for “wall-less schools” where students no longer come to class but rather follow their curriculum from wherever they are. Therefore, MOOCs serve as particle accelerators of learning. Through MOOCs, new sources of data are provided, such as learning analytics [15]. Through learning analytics, learners, academics, and institutions obtain data on a huge range of issues, which can facilitate course development, support organizations, and map learning styles and patterns, thereby fostering and enhancing personal learning. Because MOOCs are scalable, they provide rich opportunities for large-scale experiments that can advance the science of learning and innovative pedagogical development [15].

Since MOOCs first attracted widespread attention, new lines of research have been developed, but the findings have had few implications for teaching and learning [16]. According to Raffaghelli, Cucchiara, and Persico [17] (p. 1), the emerging research on MOOCs, which is still in its infancy, relies heavily on case studies and theory. They argued that the research is just beginning to identify suitable methods to deal with large cohorts of learners, very large amounts of data, and new ways of learning. They also emphasized that the current knowledge of MOOCs is fragmentary because of the “different epistemological and ontological conceptions of the authors of the papers about the nature of the issues faced and the way they should be studied”. For MOOC research to advance the

science of learning, researchers, course developers, and other stakeholders must advance the field along three trajectories: Studies of engagement in research about learning; investigations of individual courses and comparisons across contexts; and reliance on post ad hoc analyses and the greater use of multidisciplinary and experimental designs [15]. Although the learning potential of MOOCs has been acknowledged, unfortunately, learners do not yet receive formal recognition, and the courses are not validated in formal educational settings. Accordingly, the European Commission [1], in their communiqué, *Opening up Education to Boost Innovation and Digital Skills in Schools and Universities*, advocated that universities across the globe recognize and validate MOOCs because they are essential in raising the skill levels and increasing the employability of individuals.

Since the entrance of MOOCs into the learning landscape and their rapid uptake by conventional higher education institutions, they have faced major challenges that are likely to continue in the near future. Several stakeholders worldwide, including learners, have questioned the goals, settings, and linear organization of traditional higher education. Additionally, because of sustainability, there are increasing demands for collaboration among universities although they compete for research grants, student enrollments, and so on. An open global educational landscape, as provided by MOOCs, would allow access to the world's collective expertise, including prestigious international universities. Individuals would have unlimited choices: in principle, it would be possible to apply, register, and participate in online education in the form of MOOCs offered by universities around the world [18,19]. Nevertheless, the validation of MOOCs by universities presents some challenges. MOOCs are often considered disruptive because they do not follow traditional educational norms but break from most conventions, regulations, and values. MOOCs are perceived as agents of change because they will foster new, innovative, and non-traditional regulations, values, and norms. Thus, they have the power to facilitate the transition towards open online learning and "opened" education as envisioned by the European Commission [1].

Based on a systematic content analysis review of the present literature, this study aims to identify the trends, gaps, and criticalities that are related to the methodological approaches used in this emerging field of research. The study also considers some of the opportunities provided by MOOCs. It addresses concerns about the permanence of MOOCs, their acceptance and validation by higher educational institutions, and their role as agents of change in learning arenas. Thus, the study focuses on lifelong learning and continuing professional development, innovation and transformation, validation, and recognition, and business models.

2. Methods

Regardless of the debate between the supporters and detractors of MOOCs, most previous studies embraced the ideas of MOOCs [7,8,20–22]. Previous research has comprised qualitative studies that employed the methodology of content analysis and the inductive process. Using this methodology, qualitative research aims to show how patterns of problems could be revealed in an inductive process. In this method, themes that emerge from the literature are clustered and then analyzed. In this regard, a thematic analysis of related studies is needed to understand the use of MOOCs in higher education as it relates to lifelong learning and competence development, innovation and transformation, validation and recognition, and business models. In particular, the present literature study examines some opportunities provided by MOOCs, in addition to pinpointing and discussing some concerns.

2.1. Sources of Data

Several previous studies on MOOCs as permanent learning resources focused on lifelong learning, competence development, business models, recognition, and validation. In the present study, Google Scholar were the main source, as well as the online database of the Taylor and Francis Group as one of the largest, were searched. In addition policy references as the European Commissions, and the European University Associations (EUA) documentation was the foundation for this study. The following keywords were used: massive open online course, MOOC and lifelong learning, competence

development, business models, validation, and recognition. Although most of the articles retrieved were published in the period from 2011 to 2016, some articles about online learning practices were published as early as 2000.

2.2. Data Analysis

The identified articles were classified qualitatively [23–26], which is typically used by researchers who conduct similar literature reviews, e.g., [24,27]. Although this research was not aimed at developing a grounded theory, the steps described by Glaser and Strauss [25] (pp. 28–52) were used:

Identifying a phenomenon, object, event, or setting of interest.

Identifying a few local concepts, principles, structural or process features of the experience or phenomenon of interest.

Making decisions regarding the initial collection of data based on one's initial understanding of the phenomenon.

The basic unit of analysis used in this study was the individual article. The systematic content analysis and the inductive process were used to identify the theme that best described the findings of each study. All articles were examined using the same method.

The thematic content analysis was conducted based on the data sources [26]. The themes that emerged from the analysis were categorized and verified according to their focus [28]. The themes were identified as follows: MOOCs as university offerings, educational materials, recognition and policy, strategy, and pedagogical innovation. These themes then were related to the focus of the present study, which includes lifelong learning and competence development, MOOCs as agents of innovation and change, validation, recognition, and business models.

3. Results

The articles were classified qualitatively [23–26], although the constant-comparative method developed by Glaser [23] was not used to its full extent. Because previous studies were conducted to reveal the merits of MOOCs as an innovative strategy in higher education practices to foster lifelong learning and competence development, their results showed both the opportunities provided by MOOCs but also concerns related to the permanence of MOOCs and their potential as agents of innovation in higher education learning arenas. The purpose of the present literature review was to explore the implications of MOOCs for lifelong learning and competence development, as agents of innovation and change, as well as their validation, recognition, and use in business models of higher education. Some of the reviewed articles raised a set of challenges, which also are addressed as results. The issue of quality was not explicit included in the keywords, although it is of significant importance. Likewise, this theme could be the subject of a separate study.

Alcorn, Christensen, and Kapur [29], as well as Sancho and de Vries [30], examined the use of MOOCs in higher education. Their research showed how MOOC practices become and should become a natural part of the curricula offered by universities. Scanlon [31] and Mune [32] highlighted that MOOCs are valuable learning and educational initiatives that should be used as default resources in the same way that scientific journals and textbooks are used.

Several studies reported that because MOOCs are pedagogically innovative, it could be possible to consider policy, strategy, and action plans for their diffusion and implementation. Diver and Martinez [33] pointed out the opportunities and challenges of the practice of MOOCs in higher education. However, to include MOOCs in learning arenas, several issues must be addressed. Will the MOOC revolution in education promote changes in pedagogy? The main concern that emerged from the literature review was regarding quality. Additionally, especially Billington and Fronmueller [34] (p. 38) emphasized several concerns, such as grading, cheating, course credits, learner interactions, and prerequisites. Hence, this section will first point to those concerns before considering issues on

lifelong learning and continuing professional development, validation and recognition, and whether MOOCs are agents that have the potential to boost innovation in higher education learning, and then finally on business models.

3.1. MOOCs and Quality-Related Issues

Quality indicators for MOOCs are similar to those used in ordinary quality enhancement models of e-learning and open online learning [35]. One model is E-xcellence, which is advocated by the European Association of Distance Teaching Universities (EADTU). The model covers six areas: management, curricula design, course design, course delivery, student support, and staff support [36]. One approach to quality, which in 2016 has been the only documented model to certify quality, is the OpenupEd model, which was developed by the EADTU based on E-xcellence [37].

This OpenupED model contributes distinctive features to the MOOC landscape. OpenupEd aims to contribute to the opening up of education for the benefit of both learners and society while reflecting both European and UNESCO values such as access, equity, quality, and diversity. To ensure that OpenupEd courses fulfill this mission, they should incorporate the following eight features:

- *Openness to learners*—includes free of charge, free admittance, open access, learn anywhere online, start anytime, self-paced learning as well as diversity in languages and cultures.
- *Digital openness*—includes free of charge and open licenses.
- *Learner-centered approach*—includes the removal of all unnecessary barriers to learning. Courses should aid students to construct their own learning in a rich environment and to share and communicate their learning with others; they should not simply focus on the transmission of content knowledge to students. The learner-centered approach includes learner-centered activities.
- *Independent learning*—includes built-in support, tutoring, and the best online resources.
- *Media-supported interaction*—course materials should use online affordances (e.g., interactivity, communication, collaboration) as well as rich media (e.g., video and audio) to engage learners.
- *Recognition options*—the opportunity to get a badge or a certificate of course completion (as evidence of completion). Because MOOCs are considered courses, they should offer educational content, facilitate interaction among peers (including some but limited interaction with academic staff), activities/tasks, tests, including feedback, some (non-formal) recognition options, and a study guide or syllabus.
- *Quality focus*—the quality of the course is assured and is accredited by the European Qualification Framework (EQF). In short, OpenupEd provides real opportunities to participate in higher education and quality learning opportunities to all.
- *Spectrum of diversity*—diversity in languages and cultures, approaches and contexts, variety and profiling. Diversity is a main advantage of new learning technologies.

Each feature has sub-indicators and benchmarks. The eight features ensure quality and excellence. The personal learning approach is assumed by all features, but some issues might be emphasized as indicators rather than aspects of quality. A quality model should not contain unnecessary details, but it should embrace a set of characteristics [35]. Additional indicators can be considered by universities in embracing MOOCs in their course offerings, in making a difference, and contributing to innovative learning arenas:

- Allows possibilities for choice-based learning
- Fosters ownership
- Fosters flexibility
- Embraces and allows recognition and validation

3.2. Grading

Billington and Fronmueller [34] argued that because MOOCs enroll large numbers of learners, the grading and evaluating of students' assignments are important considerations. Therefore, identifying learners and their secure enrollment in a MOOC should be ensured. Regarding assessment and evaluation, there is a strong need for peer reviews, committees, and ethical procedures. As MOOCs are free of charge and anyone who wants can enroll, there are according to Zimmerman essential needs for a secure way to complete tasks and gain the verification of programs and courses [38]. In this respect, security and access play significant roles in the assessment and evaluation of online learning.

3.3. Cheating

Anyone can participate in a MOOC by registering in it. According to Billington and Fronmeller, because there are no prerequisites, there are no secure ways to verify the participants who complete and submit assignments [34]. One way to overcome this potential drawback is to offer a *Verified Certificate*, which Coursera started. Now most course providers offer this certificate for a fee. When they enroll, a picture of their face is taken by a webcam. Each time an assignment is submitted, a photo is again taken to verify the student's identity. However, there is no security yet to determine who actually writes the assignments. However, on enrolment students have to confirm that they agree with the course provider's conditions.

3.4. Course Credits

According to Billington and Fronmeller [34], at present, most universities do not give credits for completed MOOCs. MOOC learners usually obtain a certificate showing that they have participated in the course [39]. According to Ledeman [40], The American Council on Education (ACE) reviewed five MOOC courses for their credit worthiness. If the courses met the desired standards, they were deemed worthy of accreditation. Pope [40] reported that Coursera, one of the largest MOOC providers, announced that several (10) universities agreed to utilize MOOCs both online and on campus, which indicated an interesting and promising solution. However, academics in prestigious universities have raised significant concerns about the accreditation of MOOCs [34,41].

3.5. Interactions with Other Learners and with the Materials

The large enrollments in MOOCs present serious challenges to high-quality interactions between instructors and learners [42,43]. Zimmerman [38] argued that the quality of interactions between learners and of the learner and the material depends on the sophistication of the learning platform used. The results showed that interaction issues could be overcome through learning designs and through defining learning outcomes and assessments [38,44]. However, as Billington and Fronmueller [34] emphasized, MOOCs present far greater challenges to high-quality interaction compared to other delivery methods.

3.6. Prerequisites

MOOCs generally do not require prerequisites. In the future, if and when course credits are developed, there will most probably be prerequisites [34]. However, it is becoming more and more common that course providers require prerequisites. It is often then left to the single learner to decide if he or she has the prerequisites or not, which is in line with the pedagogical concept that learners should control and orchestrate their learning [35,36].

Based on the concerns raised by Billington and Fronmeller [34], the following will focus on the findings of this literature review and the concepts of lifelong learning and continuous professional development, innovation, transformation of the higher educational landscape, validation and recognition, and business models.

3.7. Lifelong Learning and Continuous Professional Development

The literature reviews clearly showed that MOOCs fulfill the mission of lifelong learning and continuous professional development. However, questions remain because of the plethora of business models, such as MOOCs for university branding, MOOCs for the common good and democracy, MOOCs as part of ordinary offerings, and MOOCs for learning. Probably the most urgent questions, as Witthaus et al. [21] emphasized, concern recognition and validation.

3.8. MOOCs Promote the Validation and Recognition of Prior and Informal Learning

As Witthaus et al. argues that the most urgent question on MOOCs, they reported skepticism about the difficulty of validating and recognizing MOOCs [21]. However, many efficient methods could be developed. In addition, open attitudes towards MOOCs should be developed among universities globally, such as the OpenupEd Consortium by EADTU who recognized MOOCs as learning experiences [37]. Other examples are that Georgia Technology University has long recognized the creditworthiness of MOOCs. Another initiative by a Norwegian university, credits were awarded for some of their MOOCs. Even Open University in UK, in collaboration with FutureLearn, announced in spring 2016 that they offer credits for their MOOCs.

Billington and Fontmueller [34] also provided examples in which students would complete the course work online and then make an appointment with the university professors to take a test, present a paper, or perform various activities assigned by the MOOC. The university probably would charge a fee for the student to take proctored exams on campus (proctored in a secure online process, or physically proctored). In this way, the grade would be posted to the student's transcript and would be used to complete an on-campus degree or to transfer to another degree-granting institution. Furthermore, universities might see the value in students taking the course without consuming campus resources.

3.9. MOOCs as Facilitators and Change Agents to Promote Innovation and the Transition to Open Online Learning

The systematic literature review reveal obviously that MOOCs serve to a large extend as facilitators and change agents in the transition from traditional campus education to open online learning arenas because they increase access, equity, and lifelong learning for all individuals [12]. Emanuel [45] emphasized that MOOCs constitute a phenomenon that requires higher education and society to take into account because they challenge the traditional organization of the university campus and its linear learning pathways.

Ferguson, Sharples, and Beale [46] argued that for open online learning to flourish by 2030, the ways in which current visions of MOOCs may become reality, pedagogy, technology, and the wider educational environment would need to have changed. As has been emphasized earlier in the results several critical issues and challenges are addressed and need to be considered and solved. One strategy to facilitate such change could be to adopt business models of higher education to open up education. They stated that by 2030, the systems that will have developed from MOOCs would have met the needs of societies by educating millions of digital citizens worldwide. Hence, learning systems will have opened access to education and enabled people from all over the world to enjoy the benefits of learning. Thus, MOOC providers, policy makers, and educators need to proceed with this vision in mind to facilitate and support this vision. For MOOCs to make a difference [46], they must

...truly open up education while enhancing learning, the pedagogies in place by 2030 must take into account entirely new groups of learners as well as vastly new roles that will emerge for educators. Such pedagogical approaches must also utilize innovative approaches to the design of that learning.

Embracing this approach requires the advancement of innovative pedagogy, learning modes, and technology, as well as increased digitization.

A few pundits according to Billington and Fronweller believe that university closures will occur [34]. However, they also confess that many counterforces make the university campus an attractive alternative for students [34]. For example, a residential college education has valuable social aspects that cannot be replicated through online education, such as sports teams, social interaction, and the first experience of living away from home. Students have face-to-face communication with faculty who are content experts. Another reason for the maintenance of physical campuses is that most MOOCs are short courses, not degree programs. MOOCs serve learners who desire to learn about specific topics and those who require continuous professional development, as well as lifelong learners. In addition, MOOCs do not attract just young learners; the average age of MOOC learners is more than 40 years.

MOOCs may become useful on campus as providers of online content that supplements or complements traditional faculty-led classes. A good presentation on a MOOC may provide a better learning experience for students than an in-class faculty lecture could. The MOOC lecture could completely replace the in-class lecture, allowing more class time for discussion, problem solving, and other in-class learning activities. In conventional courses, students are asked to purchase a textbook, whereas in the future, students could be asked to register in a MOOC. This blended or hybrid course design would use MOOC lectures instead of video lectures given by faculty.

3.10. MOOCs Change Business Models for Universities

This scenario on changing business models is similar to the previous scenario of the proctored exam site; however, proctored on-campus exam testing would not be necessary. MOOC providers would develop secure procedures to overcome the cheating problem, and then they would be able to provide letter grades directly to a university, which would collect a fee from either the student or the MOOC provider. Thus, an official transcript could be obtained from an accredited university. MOOC providers have already been granted opportunities to provide remediation courses or courses that are oversubscribed [38].

This scenario is probably the most challenging for existing universities because it eliminates the keys to their survival: accreditation and the ability to assign grades and award degrees. This scenario could become reality, but it may take some time for the accrediting agencies to determine the standards by which accreditation would occur at the degree-granting level. The Institute for Prospective Technological Studies (IPTS) [21] predicted that education is becoming less rectified, more unbundled and more flexible, and the future in-house activities of universities will be very different with regard to content, study guidance, libraries, examinations, and so on. The IPTS foresaw that the most important role for universities will be to set, oversee, and grade examinations, which will be the only authoritative factors that distinguish universities from other educational providers.

Due to the rationales for universities to offer MOOCs different business models can be applied. Some of the most common rationales are marketing and banding for the own university and research. MOOCs for common good, education for all and increased democracy, and recruitments of students to full program courses.

4. Discussion

“MOOCs appear to be here to stay” [34] (p. 41). However, their role in higher education is still evolving. The pressure to lower college tuition costs is real, yet few viable alternatives to reduce costs exist in the current business model. MOOCs may be the answer. Although faculty will be highly resistant to anything that disrupts the current university education model, the cost factor will be a significant driving force. MOOCs have become a key tool in promoting competency-based education. Recent changes in federal policy not only permit but also encourage programs that deploy competency-based applications for federal student aid [39], which may promote the usage of MOOCs. As credit hours and seat time become separate from both the learning process and the eventual

awarding of a degree, MOOCs could become a principal pedagogical tool used to prepare students for competency testing.

MOOCs add another facet to the existing research on online learning. As another type of rich data source, they provide a wealth of information for studies on online learning [18]. Pedagogical concerns, both recent and established, are yet another avenue of exploration. As an extension of the existing research, MOOCs allow researchers another way to study students' efforts, accomplishments, and behavior. This is a welcome opportunity and one that the existing online learning research community should continue to embrace and develop.

Furthermore, it is obvious that MOOCs will continue to be change agents and facilitators in the transition to open online learning and to opened-up education in accordance with the statements of the European Commission and UNESCO on equity, access, democracy, and lifelong learning, although there are challenges to face. As the educational landscape changes and education becomes less and less homogenous, flexible, new scenarios will form, such as those described below.

Billington and Frontmueller [34] emphasized that MOOCs may become useful in campus education as providers of high quality online content that supplement or complement traditional faculty-led classes. The presentation in a MOOC may provide a better learning experience for students than an in-class lecture would. The MOOC lecture could even completely replace the in-class lecture, as in the flipped learning classroom model, allowing more face-to-face interactions for discussion, problem solving, and other learning activities. This design is similar to hybrid and blended learning approaches, as well as the approach with the flipped classroom in which MOOC lectures are used instead of in-house video lectures. In conventional courses, students are asked to purchase their books and handouts. MOOCs can, as OERs already do, serve as valuable learning resources. Students may be asked to sign up for a MOOC during the course or as an introduction to a course.

If MOOCs receive university accreditation, learners could gain both the recognition and validation of their learning through such courses. This scenario would be viable if MOOCs were able to overcome some critical issues and concerns, as, for example, some which have been discussed here. If MOOCs were developed according to the classic three-credit hour standard, then universities would see the value in students taking the course without consuming campus resources. Universities would then approve the course as equivalent to an on-campus course but charge a fee for the student to take proctored exams on campus. The grade would be posted to the student's transcript and used to complete an on-campus degree or to transfer to another degree-granting institution. The student would complete the course work online and then make an appointment with the professor on campus to take a test, present a paper, or perform the various activities assigned by the MOOC.

5. Conclusions

This systemic content literature review aimed to reveal the merits of MOOCs as agents of innovation and change in higher education. The findings showed that MOOCs are key in the transformation of education, although there are concerns ahead. A systematic literature review was conducted to support the premise that MOOCs are valued because they are pedagogically innovative agents of change and facilitators of the transition to opening up educational policy, strategies, and action plans to enhance and assure quality.

The findings of the literature review conducted in this literature research study indicate that MOOCs can boost innovation in higher educational practices because of their merits of valuable learning, pedagogical innovation, and as facilitators and change agents for implementation of innovations for teaching and learning. In addition, as innovative learning arenas, MOOCs foster possibilities for choice-based learning, ownership, flexibility, recognition, and validation, which are essential for the quality of practices in higher education.

This research study also revealed the importance of considering the challenges, which have been elaborated under the themes of issues related to the quality of MOOCs and, ethical dilemmas as assessment, evaluation, grading and cheating, course credits, interactions with other learners and the

materials, course, prerequisites, lifelong learning and professional continuing development, validation and recognition. These themes indicate that, as agents of change, MOOCs can boost innovation in higher education practices. However, to benefit from the potentials and new possibilities of MOOCs there are needs for change of business models for higher education institutions.

The MOOC phenomenon must thus be addressed by higher education institutions and other stakeholders in society to answer the questions raised through the MOOC movement.

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