

WORK-BASED LEARNING THROUGH THE MULTIDISCIPLINARY DESIGN OF
EDX MOOCS FOR LATIN AMERICA AND THE CARIBBEAN

by

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ABSTRACT

WORK-BASED LEARNING THROUGH THE MULTIDISCIPLINARY DESIGN OF EDX MOOCS FOR LATIN AMERICA AND THE CARIBBEAN

Fabian Danilo Freire Jaramillo

With the application of work-based learning theory and cultural historical activity theory (CHAT) via qualitative research methods, this study considered the reported learning experiences of a group of multidisciplinary practitioners who employed the edX platform in the delivery of massive open online courses (MOOC) for Latin America and the Caribbean (LAC). This exploratory case study focused on a pioneering MOOC program, established in 2014 at the Hemispheric Development Fund (fictional organization name) for offering professional development opportunities to the LAC region. Using interviews, observation, and document analysis, it identified the kinds of knowledge, skills, or behaviors, as well as the multidisciplinary collaborations and organizational conditions that participants considered critical for the successful performance of their work activities.

The study included 20 participants, divided evenly among 4 subject matter experts, 4 instructional designers, 4 media producers, 4 platform technicians, and 4 administrative assistants. The study was based on the premise that improving our

understanding of the work activities and related learning experiences among participants may benefit the training of future practitioners and organizations interested in the multidisciplinary design of edX MOOCs for LAC and, thus, may contribute to the improved adoption of the edX MOOC platform for developing regions.

Through the iterative modeling and analysis of activity systems, as well as illuminating the significant incidents and systemic tensions reported by participants as potential triggers for their learning, four key findings emerged: 1) The totality of participants described experiences of work-based learning as they engaged in activities of value production during the MOOC design cycle; 2) Developing practical knowledge in the preparation and administration of educational resources or learning activities, and mastering effective communication skills enabled participants to excel in the performance of their work activities; 3) The need for improving organizational processes was cited as the most essential contextual condition impacting participants' work performance; and 4) A majority of participants expected future learning pressures at work in response to constant changes with the technological tools they employ for doing their jobs.

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DEDICATION

Dedicated to my beloved mother, teacher,
and friend, Elvia Rosa Jaramillo Vega.

and

Sophie and Gael Freire Lafuente,
my source of energy, surprise, and love.

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FDFJ

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Chapter I

INTRODUCTION

Adult learners today inhabit complex environments across their personal and professional lives. These spheres reflect the signs of the present Information Age, referred to also as Digital Age, which has increasingly been identified with the emergence of global information societies and knowledge-based economies. Marked by the open and abundant exchange of information as well as the rapid and constant pace of change driven by technological innovation, these fluid contextual conditions make the need for lifelong learning an integral part of adult life. The breakthrough of massive open online courses (MOOCs) into the mainstream in 2012 represented a perfect manifestation of this trend through the introduction of large-scale online learning platforms and technologies that make educational content from top-tier universities openly available for adult learners around the globe.

Lauded as a disruptive force in higher education, MOOCs have sparked a rush of interest from academic researchers concerned with studying the online learning practices, motivations, and demographics of the large number of learners who sign up for these courses globally. Thus, rather than generating one more study about the faceless mass of adult learners who are the subject of such studies, this inquiry explored the work-based learning experiences of the human talent engaged in the production of these innovative

learning environments. The essence of this investigation resided, therefore, in seeking to uncover the main disruptions faced by those called to disrupt conventional models of education through their participation in multidisciplinary work processes aimed at delivering alternative open education opportunities to Latin America and the Caribbean (LAC). As such, by focusing on the learning pressures or opportunities in connection to the adoption of MOOC technologies for professional development programs in a region like LAC, outside of the epicenters of MOOC activity and research in the United States and Europe, this study put a finger on the yet unfulfilled promise of MOOCs for democratizing access to quality education across the developing world, while at the same time heeding to their documented more suitable deployment amid contexts of training and professional development (Christensen et al., 2013).

In more concrete terms, this exploratory inquiry considered the reported work-based learning experiences of practitioners at the intersection of adult education with information and communication technologies (ICT), as it sought to further our understanding about how to employ the edX MOOC platform for training and professional development opportunities in LAC. Ultimately, this study recognized that fostering multidisciplinary professional capacities in areas such as those represented by the study participants is indispensable for developing countries to move beyond the uncritical consumption of externally-produced MOOCs and to join in the international dialog and experimentation on MOOC-based instruction, research, and knowledge construction.

Henceforth, this chapter offers an overview of the background and context surrounding the arrival of MOOCs in relation to the present technology-driven focus in

adult education. It then focuses the discussion about MOOCs on edX, a nonprofit academic consortium founded by MIT and Harvard and presently the only open-source MOOC platform, as well as on the specific region of LAC in order to introduce the research problem, research purpose, and research questions of the study. Subsequently, an overview of the study's research design is presented alongside statements on the researcher's perspectives and the assumptions of the study. Finally, this chapter concludes with a discussion of the rationale and significance of the study followed by a definition of specialized terms.

Context and Background

Following the peak of excitement generated by the arrival of MOOCs to mainstream consciousness in 2012, which caused *The New York Times* to declare that year “[t]he year of the MOOC” (Pappano, 2012), more nuanced subsequent assessments have emerged about the possible implications of these large-scale learning technologies for the field of adult education. Over the past few years, a growing body of academic and journalistic research exploring different aspects of the MOOC phenomena has helped to demystify some of the most optimistic, yet unfounded claims made in the name of MOOC technologies during the early days.

In this sense, recent studies analyzing the geographic and demographic composition of MOOC participants have been particularly helpful in setting the record straight concerning the so-called revolutionary democratizing potential of MOOCs that was often touted by their early proponents. For instance, Christensen et al. (2013) found that MOOC offerings enlisted a disproportionate majority of participants with already

high levels of educational attainment rather than the underprivileged and undereducated masses of the world, for whom MOOCs—offered by Ivy League academic consortiums and venture capital companies mainly out of the United States and other developed countries—were supposed to make access to quality education a reality.

Research studies have also shown MOOCs to be struggling in other areas like registrants' persistence and achievement. Researchers at the University of Pennsylvania, for instance, reported completion rates below 15% for the 17 first-generation MOOC offerings hosted by that academic institution on Coursera, a for-profit MOOC platform (Perna et al., 2013). Further, Chafkin (2013) reported that “for every 100 pupils who enrolled in a free course, something like five actually learned the topic.” As a result of such remarkably high dropout and low achievement rates, Sebastian Thrun, MOOC pioneer and founder of Udacity, another for-profit MOOC platform, expressed publicly his disillusionment with the real transformative potential of MOOCs at the same time that he announced a change in strategy for his company into the field of paid vocational and corporate training (Chafkin, 2013; Lewin, 2013).

Meanwhile, though showing similarly low completion rates following the first year of introduction of 17 MOOCs by HarvardX and MITx, which are sub-brands for their respective namesake universities on the edX MOOC platform, researchers at these institutions argued that traditional metrics like completion and certification “are misleading and counterproductive indicators of the impact and potential of open online courses” (Ho et al., 2014, p. 2). Their analysis went on to propose that, because MOOC registrants have different goals and expectations for enrolling in open courses in contrast to conventional college students who first and foremost seek a degree or certification,

“new metrics, far beyond grades and course certification” as absolute indicators of success or failure, are needed for conceptualizing and assessing the diverse platform-usage patterns shown by MOOC registrants (p. 3).

As it relates to the reach of edX among developing countries, the same report (Ho et al., 2014) stated that from the total number of participants in the first 17 MOOCs by HarvardX and MITx, a miniscule “20,745 (2.7%) have IP or mailing addresses from countries on the United Nations list of Least Developed Countries” (p. 2), where African nations occupy most of the entries. Thus, in order to access data relating specifically to Latin America and the Caribbean, the researcher had to refer to a separate report also by Harvard and MIT researchers (Nesterko et al., 2013), who compiled and analyzed the geographic data from a set of 18 MOOCs offered by HarvardX. There, Brazil stood out as the country from Latin America with the most registrants, totaling “11,243 students (1.96%) [out of] 572,899 all-time registrants from 206 countries”—still much lower than the United States with over 242,000 students (42.3%) and India with over 54,000 students (9.47%) (p. 2). The same study offered potential explanations for such difference in participation, as follows:

Some of potential explanations for such variety include but are not limited to the proliferation of English language, differences in marketing, cultural environment, internet access, perceived value of education, interest in the US education, state of the economy, among others. (p. 3)

An updated report by HarvardX and MITx (Ho et al., 2015) revisited the data and findings from the preceding first-year report (Ho et al., 2014) and aggregated a second year of data, covering a total of “68 courses, 1.7 million participants, 10 million participant-hours, and 1.1 billion logged events” dating from fall 2012 through summer

2014 (Ho et al., 2015, p. 2). Emerging from such big data analysis, the following two particular findings presented important considerations for this study:

1. International participants earn certifications at a rate 1.4 percentage points higher than their U.S.-based counterparts (Ho et al., 2015, p. 12). This information was consistent with a previous finding reported on the geographic evaluation of HarvardX data (Nesterko et al., 2013), which noted that, save for the exception of Peru, certificate attainment rates among Latin American countries with the highest enrollment tend to surpass the average (p. 5). This seemed to indicate that international participants place greater importance on obtaining certification than U.S.-based participants and that Latin American participants show a particular impetus for attaining certification.
2. “Year-over-year demographic shifts have been slight but indicate a direction toward courses with older, more educated, more US-based, and more female representation” (Ho et al., 2015, p. 12). While countering earlier depictions of MOOC participants as overwhelmingly male students, this finding further accentuated that the main beneficiaries from MOOC offerings continue to be already educated individuals from developed countries—despite the reiteration on the report of one of the founding principles of HarvardX and MITx in “not only increasing access but increasing equitable access to high-quality online learning opportunities” (p. 5).

Problem Statement

It is expected that with greater targeted promotion and increased general awareness about MOOCs throughout the region, the participation by adult learners from LAC will continue to grow. However, questions still remain with regard to what has been termed the “domestication” of MOOC offerings to refer to the re-contextualization for local consumption of courses imported mainly from the United States as well as to the creation of regional courses for disseminating local pedagogies and local forms of knowledge to the rest of the world.

Romero and Ventura (2010) offered a partial summary of the new educational paradigm resulting from the emergence of online learning technologies, when they announced that “the use of Internet in education has created a new context...in which large amounts of information about teaching-learning interaction are endlessly generated and ubiquitously available”; they went on to conclude that “[a]ll this information provides a gold mine of educational data” (p. 1). Accounts like this one, however, take for granted the technical and organizational components that enable the proliferation of online teaching and learning opportunities among developed countries. Additionally, upon assuming conditions of ubiquitous Internet access and general distribution of online learning resources, Romero and Ventura denoted a distinct Western-laden worldview.

In this context, the quest for an improved understanding about the multidisciplinary capacities that are necessary for designing regional MOOCs and assessing the emergent patterns of interaction through large-scale online learning pedagogies becomes of the utmost importance for developing regions like LAC—if their populations are ultimately to learn and benefit from the insights derived from such

innovations rather than just letting the big MOOC providers extract all derived gains and knowledge.

Purpose of the Study

Acknowledging the limitations and growing pains of the still young MOOC technologies, this study sought to further our understanding about the multidisciplinary design of edX MOOCs for delivering open online courses to LAC. To that effect, this study explored a specific learning context afforded by a highly-regarded financial and research institution with operations throughout the United States and LAC, which adopted the edX MOOC platform for delivering open training and professional development courses for public and private sector practitioners. In that way, the study focused within settings where research has demonstrated that MOOCs can exert greater impact (Christensen et al., 2013; Ho et al., 2014, 2015; Perna et al., 2013), namely among working professionals who have had prior exposure to higher education and who, as a result, show a greater predisposition towards learning through MOOC-mediated environments. Furthermore, by expanding the research on MOOCs into LAC, beyond its current epicenter in the United States and other developed countries, this study shone a light on the original promise of MOOCs of making quality education accessible globally via large-scale open online learning technologies.

Amid a surge of research studies that have looked at MOOCs as ready-made educational products and that generate outcome assessments based on “big data” analytical categories, this inquiry found relevance in addressing the yet-overlooked analysis of the human talent made up by a cross-section of information and

communications technology (ICT) with adult education professionals employed in the ideation, creation, implementation, and evaluation of edX MOOCs. As such, this study delved into the work-based activities and related learning experiences reported by a multidisciplinary group of subject matter experts, instructional designers, administrative assistants, media producers, and platform technicians through the design of edX MOOCs for training and professional development in LAC.

Research Questions

This exploratory case study was informed by one major research question and three additional subquestions, as follows:

1. How and to what extent, if at all, do subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers report experiences of work-based learning through their engagement with the multidisciplinary design of edX MOOCs for training and professional development in Latin America and the Caribbean?
 - a. What knowledge, skills, and/or behaviors, if any, do participants believe they need to master in order to be successful in their jobs, and to what extent can those competencies be attained via work-based learning?
 - b. In what ways do certain institutional, technological, and/or pedagogical conditions related to the multidisciplinary design of edX MOOCs in the context of Latin America and the Caribbean foster or hinder the development of those critical competencies among participants?

- c. What challenges and opportunities do participants expect having to face in response to the latest developments in MOOC technologies, and how do they expect having to adapt their current work-based performance to respond effectively to what the future of edX MOOCs targeting LAC calls for?

Research Design

The research site for this study was a long-established financial and research institution, with representation across the United States and LAC, that offers both face-to-face and online learning programs across the region. The study participants were chosen from among the organization's research and professional staff using a purposive selection strategy based on the various professional categories and job types responsible for the design of MOOCs on the edX platform. Thus, the study included a multidisciplinary pool of participants made up of subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers.

The researcher employed a qualitative research approach to investigate the relationship between the multidisciplinary design of MOOCs for the edX MOOC platform and the acquisition by study participants of pedagogical, behavioral, and/or sociotechnical competencies via work-based learning. The study employed semi-structured, in-depth interviews with a custom activity systems questionnaire as well as questions about significant work-related incidents. Additionally, it included on-site direct observation of group meetings and planning sessions, and the analysis of relevant text-based and media-based documents. The collected data were then analyzed using activity

systems analysis and according to the themes that emerged from the participants' experiences through work-based activities related to the design of training and professional development courses for LAC using the edX MOOC platform.

Researcher Perspectives

The researcher is the director of a digital content team and a media practitioner with an experienced trajectory in the higher education sector. Over the past 10 years, the researcher has worked in a context of marketing and communication at a private university in New York City, which is comprised of multiple academic divisions and over 10,000 undergraduate and graduate students. As such, in addition to leading in the conception, production, and distribution of strategic digital content for admissions and recruitment, the researcher acts as manager of the university's YouTube and Livestream channels. This has given him firsthand experience with the impact of network and digital media technologies on traditional models of the higher education as well as the work-based pressures and opportunities for the continuous renewal of competencies to respond to a rapidly-changing professional environment.

Similarly, as manager of a large collection of digital media assets, which requires constant technical support by Information Technology personnel and ongoing collaboration with diverse administrative and academic departments, the researcher is keenly aware of how indispensable it is for organizations to learn how to leverage the expertise of practitioners from diverse backgrounds for attaining the effective integration of major technological initiatives. Furthermore, as an Ecuadorian-born immigrant in the United States, the researcher maintains close ties with his home country and the rest of

LAC—a region to which he devotes much of his intellectual attention and academic pursuits. In that sense, the researcher has merged his personal, professional, and academic interests while exploring the innovative application of digital technologies as an integral component in the development of massive models of distributed education across LAC.

Assumptions of the Study

Considering the rapid and constant pace of change driven by technological innovation that characterizes most workplaces today, this inquiry explored the ways in which current professional practitioners acquire new skills and knowledge at work to fulfill newly emerging technology-driven jobs, e.g., MOOC technician, big data analyst, educational technologist, and so on. More concretely, this inquiry considered the on-the-job learning experiences of practitioners at the intersection of adult education with information and communication technologies (ICT), who employed the edX MOOC platform for the implementation of training and professional development courses in LAC.

This inquiry was, thus, premised on the assumption that research and professional practitioners with prior work experience in the creation of on-site and online learning programs in the context of LAC experienced on-the-job learning through their engagement with the multidisciplinary design of edX MOOCs. This notion corroborated Marsick, Nicolaides, and Watkins' (2014) stance concerning the complexities facing today's globalized, technologically-immersed, and hyper-connected workforce: “[a]dults are pressed to acquire new knowledge and skills, as well as translate what they know and learn into usable knowledge for work” (p. 40). Further, this inquiry was based on a key

assumption that work-based learning theories, following in the tradition of experiential learning, provide a valuable framework for examining the development of competencies, attitudes or behaviors, and institutional supports necessary for practitioners in multidisciplinary teams to lead in the creation of MOOCs.

Similarly implied in the focus of this exploratory study was the notion of organizational change by way of the structural and operational adaptation that the evolving roles of workers would necessarily bring about as they seek to better address the demands of an ever more technologically savvy and globally interconnected customer base. In that sense, this inquiry also included the analysis of how sociomaterial notions of collaboration and learning among multidisciplinary teams, particularly the concept of cultural historical activity theory (CHAT), can be applied in the context of the design of edX MOOCs for training and professional development programs in LAC.

Rationale and Significance

This investigation could potentially help online learning administrators and practitioners at higher education institutions interested in reaching LAC students through the edX MOOC platform, as well as developers of the edX platform in the United States with an interest in the region, to better understand the relationship between work-based activities related to the design of edX MOOCs for professional development across LAC and perceived changes in competency levels among study participants. In addition, this study could potentially assist in providing relevant insights for increasing the capacity of adult education institutions to support the on-the-job learning experiences of professionals responsible for the adoption of the edX platform for programs of training

and professional development across LAC, through the responsive design of effective institutional, technological, and pedagogical policies and practices.

Anticipated Outcomes

Because of the newness of MOOC technologies in general, and their application within educational contexts in LAC in particular, it was anticipated that this exploratory case study would establish a baseline of information on the competencies necessary for practitioners throughout the region seeking to undertake the multidisciplinary design of MOOCs using the edX platform. Similarly, it was anticipated that this study would provide potentially useful information for higher education administrators and education policymakers about particular institutional, technological, and/or pedagogical conditions in the LAC context that promote or inhibit the acquisition of such competencies via work-based learning.

Definition of Terms

LAC: Latin America and the Caribbean

MOOCs: Massive open online courses

SPOCs: Small private online courses

edX: MOOC platform provider and consortium of partner universities, founded in 2012 in the United States by Harvard University and Massachusetts Institute of Technology (MIT)

OERs: Open educational resources

ICT: Information and communication technologies

LMS: Learning management system

Multidisciplinary: practitioners from different professional disciplines or academic fields working together

HDF: Hemispheric Development Fund

DILAC: Development Institute for Latin America and the Caribbean, the core HDF team responsible for the creation of MOOCs as well as other online and onsite professional development courses and institutional training solutions.

HDFx: the extended collection of contributors in the HDF MOOC program, including the core DILAC team and participants from other HDF administrative offices or knowledge sectors as well as external service providers.

Chapter II

LITERATURE REVIEW

Introduction

This study considered the work-based learning experiences of multidisciplinary practitioners, who employed the edX MOOC platform as part of their work designing training and professional development courses for Latin America and the Caribbean. Thus, in order to build a conceptual and theoretical foundation for this study, it was important to review the growing body of literature on MOOCs, understood in this study as an innovation within the larger open educational resources (OER) movement, in conjunction with the literature on work-based learning, understood as a subcategory of experiential learning. Finally, to examine the sociomaterial and organizational context surrounding the acquisition of relevant competencies and attitudes while on-the-job, this study also referred to the literature on cultural historical activity theory (CHAT) and attendant activity systems analysis.

To that effect, a combined strategy with the use of ProQuest Central for general searches across disciplines and EBSCOhost for specialized searches limited to education databases was employed to identify the most relevant literature on MOOCs. Different variations of the following key search terms were used in the process: “moocs,” “massive open online courses,” “adult education,” “adult learning,” “professional development,”

“professional training,” “continuing education,” “open education,” “open educational resources,” “oer,” “edx,” “educational technology,” “instructional technology,” “online learning,” and/or “online education.” Although whenever possible the selected sources for this review were limited to research articles, a small pool of articles from well-established periodicals was also used to reflect the latest developments in the rapidly changing landscape of educational technologies that surrounds the discussion on MOOCs. In that vein, a subscription to the daily Online Learning Update, a scholarly-curated news and research blog, was employed to stay abreast with the increasing volume of publications focused on MOOCs and online distributed education in general.

A systematic revision of the results from each query based on the key terms outlined above was carried out focusing primarily on the articles’ titles and abstract information. Subsequently, all articles flagged as relevant to the study were retrieved and annotated thoroughly, while their reference lists were analyzed for additional related articles with reputed citations during the review process. Additionally, the library holdings of Teachers College and Columbia University were searched in combination with Google Scholar, adding the following variations to the original list of key search terms: “Latin America,” “South America,” “Central America,” “Caribbean,” “Antilles,” “Antillean Islands,” “informal learning,” “incidental learning,” “work-based learning,” “workplace learning,” “on-the-job learning,” “experiential learning,” and/or “learning from experience.” Once again, a systematic revision of the results was carried out based on the articles’ titles and abstract information; selections were then comprehensively reviewed and their reference lists were mined for more relevant titles and authors.

From this iterative literature reviewing process, the following two main themes emerged and are henceforth presented in this chapter: (a) MOOCs and the shifting paradigm towards digital and global education, and (b) adult education theory and practice. As such, this literature compendium addresses the different and oftentimes conflicting conceptualizations that dominate the current debate about the open large-scale teaching and learning technologies available through MOOCs. Next, the review positions MOOCs in the genealogy of OERs to reveal the challenges and opportunities confronting organizations and practitioners from emerging or developing countries. Subsequently, the review transitions to the particular regional context of LAC as a diverse site for training and professional development programs. To gain theoretical and practical perspectives from the field of adult education, this chapter further includes a review of the literature on experiential learning and its subset formulation of work-based learning theories, as well as an analysis of (virtual) learning communities in organizations. Finally, this chapter concludes with the formulation of a conceptual framework that consolidates the various topics and theories heretofore identified into a descriptive and analytical map of the terrain to be covered by this exploratory study.

MOOCs and the Globalization of Adult Education

The advent of MOOCs over the last few years signaled the abrupt awakening of higher education to the realities of the Digital Age. In their short but highly dynamic trajectory, MOOCs have traced a perfect plot along the Gartner Hype Cycle (“Hype Cycle Research Methodology | Gartner Inc.,” n.d.), which charts the initial jump in excitement and popularity brought about by newly emerged technologies, that is then

quickly followed by outright disenchantment, only to morph subsequently into a more detailed and comprehensive assessment of the new technology's true potential.

In this sense, Simpson and Anderson's (2012) historical account of distance education allowed us to take further stock from the long history of innovations in educational technology, and thus put the arrival of MOOCs into perspective, by pointing to the fact that at one point, correspondence courses were also seen as a disruptive force to the traditional education model, thanks to their provision of flexible training opportunities for very large populations of geographically-dispersed students (as cited in Stanton & Harkness, 2014). "This progression of innovations suggests that MOOCs... represent a step along a long path rather than a completely new phenomenon" (Stanton & Harkness, 2014, p. 2).

Traditionally lethargic in responding to change, higher education institutions managed for a brief period to remain indifferent to the disruptive effects of a new digital paradigm that had upended entire industries—print media being a prime example. MOOCs, however, put an end to such obliviousness along with the resulting institutional and organizational stasis in academia by forcing academics and administrators alike to confront a rapidly changing educational landscape. Thus, while the ensuing scenario posited great new challenges and opportunities for institutions of higher education, it nonetheless offered no certainty about its future other than that it would continue to be driven by a complex and unpredictable combination of multiple intersecting social, cultural, and structural factors, among which the present hyper-connected and hyper-mediated technologies have emerged as a key variable for strategic innovation.

In this sense, it was also important to highlight as an important contextual factor the timing of the rise of MOOCs to prominence on the heels of the 2008 financial crisis, which enabled MOOC providers to exploit the economic and political pressure emanating from the general public's discontent with the mounting costs of higher education and the derived increasing levels of student indebtedness found across colleges and universities in the United States (Sandeem, 2013). Citing data from the National Center for Education Statistics (NCES), Vilorio (2013) noted that during the 1980-2011 period "[t]he cost of attending college... , adjusted for inflation, more than doubled at both public and private institutions" (p. 3). Amid that climate, early MOOC proponents argued that "MOOCs could increase instructor productivity and control costs" (Stanton & Harkness, 2014, p. 15), based on their potential massive scalability.

On the other hand, critics like Rhoads, Berdan, and Toven-Lindsey (2013), for example, charged that MOOCs have responded to neoliberal tendencies dating back to the Reagan era in their permanent pulse for ideological supremacy in the United States by casting anything and everything related to the public sector with a pejorative outlook. Considering, therefore, that adult education policy and practice cannot escape the socioeconomic, cultural, and political contexts in which they exist, Rhoads et al. asked us to be cognizant that, unless MOOCs incorporate strong interactive systems for facilitating reflective discourse practices among adult learners and educators, rather than lowering costs and expanding access to quality education by jumping mindlessly into the MOOC bandwagon, we would involuntarily be promoting the ongoing conservative assault on the humanities and social sciences as well as increased cutbacks of public education programs (p. 109), along with the slashing of teacher benefits and pension plans.

From an international perspective, considering that MOOCs originated in North America and the majority of MOOC platforms are based in the United States, with only a few others coming out of Europe or other parts of the world, then one very important aspect to consider was the impact that the arrival of MOOC technologies would have on national and local education systems servicing diverse populations. Altbach (2013) offered a particular assessment on this topic, under the politically charged title of *MOOCs as neocolonialism—Who controls knowledge?* in which he criticized the educational hegemony embedded in MOOCs as U.S.-developed, knowledge-based products with limited contributions from outside the Western World. Further, he argued that, as creators and early adopters of MOOC technologies, English-speaking countries have come to control the online distribution of knowledge and, as such, they would only extend their current dominance in the academic world. Altbach then raised the charge of neocolonialism against MOOCs on grounds of the well-intentioned efforts by their mostly U.S. providers to extend quality education to “hard to reach” global populations that result, however, in the imposition of a singular pedagogical approach that has no real awareness of the “[a]pproaches to the curriculum, pedagogy and the overall philosophy of education...according to national traditions and practices” (p. 4).

Altbach’s argument, therefore, resonated with the criticism of MOOCs leveraged by Rhoads et al. (2013). Nonetheless, while the latter indicted MOOC providers, citing their narrow, video-based pedagogical methods, the former condemned them outright on the basis of the one-size-fits-all courseware packaging and mandated pedagogies that are built into their platforms. Furthermore, in his rush to dictate a verdict against MOOCs as tools of neocolonialism, Altbach closed the door to any potential act of intellectual

discernment, creativity, or plain resistance through the engagement with MOOCs from the part of students, faculty, and/or academic institutions across the developing world.

On the other hand, it was possible to infer that Rhoads et al. would leave some room for these constituencies to exert a degree of personal and institutional agency based on the emphasis they placed on the careful implementation of interactive systems for promoting reflective discourse practices among students and faculty. From that moderate standpoint, it would even be feasible to imagine the emergence of hybrid pedagogies that combine the courseware and MOOC-based learning practices of the developed world with the contextually situated learning traditions and aspirations of local constituencies throughout the developing world. Such a reconfiguration would only confirm the emergence of a remixing culture, with simultaneous global and local implications, in accord with the changing values and norms of digital natives for consuming, creating, and sharing information through hyper-connected and hyper-mediated online and mobile technologies.

However, for a pedagogically hybrid scenario to emerge, it would be essential to ensure that education institutions in developing countries foster amid their ranks professional talent with specialized knowledge and skills—in disciplines, such as software development, instructional design, media production, platform management, among others—who will be capable of leading in the design and “domestication” of MOOCs. This will enable developing countries to not only benefit from the large volume of MOOCs coming in from top-tier U.S. universities—such as Harvard, MIT, or Stanford—by adapting such content to local requirements, but also to design and produce local MOOCs in response to their own forms of teaching and learning and as a

representation of their own forms of knowledge. In sum, for the promise of MOOCs to expand open-access quality education around the world to come to fruition, developing regions and countries have to first cultivate the sufficient capacities and competencies of their own multidisciplinary professional teams to lead MOOC design operations.

MOOCs As Evolving Open Educational Resources (OER)

The open education movement provided the backdrop for MOOCs (Fini, 2009; McAuley, Stewart, Siemens, & Cormier, 2010; Siemens, 2009). Key precursors in the use of technology within this movement, among others, were the Open University in the United Kingdom, which began using radio and television for instruction in 1971, and MIT in the United States, which since 2001 has led other universities in posting lectures, courses, and supporting education materials on the Internet via the MIT OpenCourseware initiative (Olcott, 2012). Furthermore, Iiyoshi and Kumar (2008) identified three main themes behind the open education movement:

1. Open technology, related to the adoption of open-source educational methodologies and software.
2. Open content, related to the development and use of OER initiatives and courseware.
3. Open knowledge, related to open systems for managing and sharing knowledge as well as educational and institutional practices and strategies in support of open education (as cited in Fini, 2009, p. 2).

Based on these thematic areas, MOOCs in general could be considered “a special type of OER, which solves the problem of the lack of interaction that is typical of most OER initiatives” (Fini, 2009, p. 3).

In addition to making educational content available the way regular OERs do, MOOCs offer interactive characteristics afforded by Web 2.0 capabilities, which are most commonly associated with “live courses,” including direct participation of teachers and peer-to-peer discussion among participants (Fini, 2009, p. 3).

The draft declaration for the UNESCO 2012 World OER Congress held in Paris stated that OER “designates teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions” (p. 1). That same year, Olcott (2012) reported that despite “[t]he OER movement [being] a mere decade old..., [t]he growth of open educational resources (OER) by colleges and universities has been steady over the past 5 years” (pp. 11-13). In addition, the Centre for Educational Research and Innovation at the Organisation for Economic Co-operation and Development (OECD, 2007) offered the following OER examples: full courseware as mainly PDF files and smaller learning objects that may include websites, simulations, text files, images, sound or videos in digital format (p. 10).

OER implications for developing countries. Kanwar, Kodhandaraman, and Umar (2010) offered a comprehensive list of OER-derived benefits, in particular, with regard to developing countries. As cited by Olcott (2012), those benefits included:

- resource optimization—OER help developing countries save both course-authoring time and money;
- OER foster the exchange of global knowledge;
- online collaborative OER development supports capacity building in the developing world, thereby bridging the digital divide;

- collaborative OER development encourages the preservation and dissemination of indigenous knowledge; and
- the availability of high-quality OER can raise the quality of education at all levels (p. 14).

OER proponents thus pointed to the practical notion that gaining unrestricted access to OERs that can be reused and remixed without requesting permission or paying fees would enable education institutions in developing countries to adapt and contextualize such content around their particular local cultures and social realities (Butcher, Kanwar, & Uvalic-Trumbic, 2011; Kanwar et al., 2010; McGreal, 2012). On the other hand, Olcott (2012) challenged the assertion that free access translates directly into lowering costs and time saved associated with course research and development. He deemed such assertions as too simplistic and problematic for they neglect fundamental issues like institutional capacity and human talent, which are necessary for the management and deployment of OERs.

[T]he capacity of the institutional information technology and educational technology departments are critical to maximizing the potential of OER. Do these departments have well developed open and distance learning capabilities, training programs, and support infrastructures for students? The critical point is that OER management, infrastructure, and staffing must maintain service, training, and access to campus-wide OER use. (Olcott, 2012, pp. 13-16)

The same point ought to be raised concerning the fascinating prospect of aiding with the preservation and dissemination of indigenous knowledge through OER collaborations, since in the absence of strong local institutional supports and lacking the essential technical and professional competencies for carrying out such initiatives, these remain nothing more than sheer altruistic ideals. Language differences posit further obstacles for the implementation of OER in developing countries, as nations will

inevitably struggle to preserve their heritage, culture, and native language against the standardization of English as the de facto language of global commerce (Olcott, 2012, p. 17), and now increasingly as the language of global education.

This section on OER brought to the foreground important lessons that are equally valuable in the context of the adoption of MOOCs in LAC. For instance, it helped to put into sharp focus the imperative there is for generating organizational and professional capacities among education institutions throughout developing countries so that their populations may in fact benefit from OER initiatives, the same as from their more recent evolution into MOOCs. To that effect, this study advanced the notion that stakeholders across LAC higher education institutions ought to prioritize the improvement of our understanding about the competencies, skills or behaviors, and institutional supports necessary for creating local and regional OER systems that could then serve as a catalog of learning materials for MOOCs.

EdX: The open-source MOOC platform. This study reflected the sense that not all MOOC platforms currently available advance the movement for open education equally. “Coursera and Udacity do not fit the usual definition of OER because both require that registrants sign agreements not to reuse, modify, or redistribute. In fact, the legal documents on each site are worded rather strongly in the opposite direction, imposing significant restrictions on use” (Yeager, Hurley-Dasgupta, & Bliss, 2013, p. 134). Similarly, based on the major themes of the open education movement cited earlier from Iiyoshi and Kumar (2008), it was possible to discern that, among the most prominent U.S. MOOC platforms, only edX (founded in May, 2012) advanced all three fundamental aspirations of the open education movement with regard to open technology,

open content, and open knowledge. In contrast, the Coursera or Udacity platforms were deemed to advance the open content category satisfactorily but the open knowledge category only partially, while entirely failing to promote the open technology category based on their proprietary licensing.

Furthermore, while Coursera and Udacity adopted a for-profit business structure, edX remained a not-for-profit organization governed by Ivy Leaguers MIT and Harvard (Stanton & Harkness, 2014). More importantly, in connection to the open technology aspiration of the open education movement, edX was the only U.S. MOOC provider that committed to offering an open-source platform for users to adopt, contribute to, and/or reconfigure freely. This meant that anyone, anywhere, from professional web developers to open education enthusiasts, could access and deploy the main components in the edX platform—e.g., the learning management system (LMS), the authoring tool Studio, and the courseware repository xModules (soon to be migrated to xBlocks) (“Open edX,” n.d.). Coursera and Udacity, on the other hand, both opted for closed, or proprietary, commercial licenses which limited and controlled the terms of use of their platforms.

Having established that MOOCs represented OERs of a particular interactive or web 2.0 type, then it could safely be argued that all three major U.S. MOOC providers help to promote the open content aspiration of the movement for open education. In fact, independent of the provider or platform, it was hard not to see the improvement in terms of the quality of the open educational content following the arrival of MOOCs when compared to the landscape before MOOCs—a period characterized by the emergence of disparate OERs of all sorts and types, yet without any affordances for interacting meaningfully with an instructor or for connecting among peers. Thus, according to the

connectivist analysis of MOOCs promoted by Siemens (2009), the evolution of regular OERs into Open Online Courses represented a shift from the traditional content-centered education model towards “socialization as information objects,” where the hierarchical “one-to-many” relationship between a teacher and his or her students was replaced by the emergence of learning networks with horizontal “many-to-many” relationships among participants (as cited in Fini, 2009, p. 3).

Finally, in relation to open knowledge, the third area of concern for the open education movement, it could be argued that, to a certain extent, all three major U.S. MOOC platforms tried to facilitate the exchange of strategies for managing knowledge derived from the use of their respective platforms and effective practices for fostering open education. This was done generally through the establishment of two distinct knowledge management systems: first, via institutional blogs or wikis that acted as forums for keeping user groups abreast with the latest company developments, update announcements, or unique success stories about the respective platforms; and, second, via active user communities and support groups where frequent users of a given platform could collaborate and contribute in identifying problems, proposing solutions, or simply sharing preferred practices among each other and occasionally with the help of the platform developer.

However, in an important distinction that reflected the differing degrees by which each of the major U.S. MOOC providers tried to promote open knowledge, this study considered that edX singularly outpaced both Udacity and Coursera in its determination to create an open knowledge ecosystem around its platform. Based on its open source, open technology approach to platform development, edX fostered a far more active and

engaged culture of MOOC users and developers around the world—as attested to by the annual Open edX Conference on “new research in online learning best practices, and new approaches to collaborative learning” (“Open edX 2019 Conference,” n.d.).

As such, among the three major U.S. MOOC platforms, only the edX platform could be found to keep the proverbial door open for potential transfers of knowledge with adopting institutions. For such benefits to materialize, however, local institutions need to develop the necessary technical and pedagogical wherewithal to lead in the active customization of authoring tools for creating open online courses rather than simply consuming ready-made course packages built with an indistinct, universal learner in mind. Ultimately, that was the reason why this study focused particularly on the exploration of the reported work-based learning experiences by professionals who used the edX platform to design training and professional development MOOCs in LAC.

Network-based, Task-based, and Content-based MOOCs

The literature distinguished among three types of MOOCs, according to the main pedagogical direction or educational model they follow: Network-based or cMOOCs, task-based, and content-based or xMOOCs (Yeager et al., 2013). These categories are unrestricted, meaning that MOOCs may include elements or characteristics from all three categories while adopting the denomination of the dominant tendency they display. In her academic blog, Lisa Lane (Three Kinds of MOOCs, n.d.) summarized these categories as follows:

- **Network-based MOOCs, or cMOOCs**, “are the original MOOCs, taught by Alec Couros, George Siemens, Stephen Downes, Dave Cormier.” This kind of courses emphasize social connections and the emergence of socially

constructed knowledge and understanding through the use of connectivist methods for online participation. As such, their educational value resides in fostering exploratory conversations or discussions among participants leading to the co-creation of distributed forms of knowledge rather than to the propagation of specific content or acquisition of skills.

- **Task-based MOOCs** seek the development of a particular set of skills by engaging participants in work projects or problem-solving activities. While community interaction is still possible as part of these courses, it serves mainly as a source of support or outlet for sharing coursework examples. “Pedagogy of task-based MOOCs tend to be a mix of instructivism and constructivism” (Three Kinds of MOOCs, n.d., Network-based section) and participants demonstrate skills through the completion of weekly assignments.
- **Content-based MOOCs, or xMOOCs**, reflect the course catalogs of the major MOOC platforms, drawing massive global enrollments for courses from Ivy League universities and celebrity professors. Community interaction is difficult to organize given the large rate of participation, so courses tend to follow mainly instructivist pedagogies. “Content acquisition is more important...than either networking or task completion.... Traditional assessment, both formative and summative, may be emphasized. Mass participation seems to imply mass processing” (Three Kinds of MOOCs, n.d., Content-based section).

In this sense, given the large rates of enrollment and particular emphasis on content dissemination, the course offerings from major MOOC providers, like edX or

Coursera, could generally be defined as content-based or xMOOCs. Notwithstanding, they still employ elements from task-based MOOCs—such as weekly assignments for registrants to solve hypothetical problems or work situations—as well as elements from network-based cMOOCs—such as discussion or community boards for registrants to make peer connections and generate distributed forms of knowledge.

Small Private Online Courses (SPOCs)

Amid the renewed impetus for conducting research and experimentation in online learning technologies sparked by the arrival of MOOCs, a derivative instructional medium has emerged in the form small private online courses (SPOCs). As a small-scale subsidiary of the open and usually free MOOC offerings, SPOCs are reserved exclusively for paying or sponsored registrants who, as a result, receive dedicated learning support. SPOCs could be designed from the ground up to serve the educational needs of a particular group of learners, as in corporate and professional development programs. Alternatively, SPOCs could also ensue from the curation of educational materials developed for a MOOC that are then repurposed as a supplement to classroom instruction in formal education settings, from schools to colleges and universities.

Regardless of the context in which they are deployed, SPOCs have taken advantage of the same interactive rich-media technologies afforded through MOOC platforms like edX, Coursera, and others. In that sense, Armando Fox (2013), faculty director of Berkeley's MOOCLab, concluded that “[b]oth MOOCs and SPOCs are two design points in a wider space in which experiments are possible” (p. 40). He further posited that MOOC components, when reconstituted as part of blended instruction courses or SPOCs, “can increase instructor leverage, student throughput, student mastery,

and student engagement” (p. 38). He thus cited the example of an analog circuits course at San José State University in California, which used the flipped classroom model by assigning students MOOC lectures and homework activities, while preserving in-classroom time for troubleshooting design problems in the lab with core faculty and teacher assistants.

As such, when compared to the previous cohort that did not use the same supplementary materials, the percentage of students who earned credit for the course improved from 59% to 91%.

So educational quality arguably increased, and costs were lowered by helping students graduate more quickly, rather than by firing people. Productivity was enhanced because the on-campus instructors shifted their time from what they perceived as a lower-value activity—creating and delivering lectures on content that has not changed much—to the higher-value activity of working directly with students on the material. (Fox, 2013, pp. 38-39)

In sum, SPOCs have emerged in response to some of the most acute limitations identified in MOOC-based models of instruction—e.g., reduced learner support, lack of instructor-learner interactions, and questionable financial sustainability for course providers.

Relevant Research on MOOC Design Teams

Through a case study exploring the human resources and labor expenses involved in the production and delivery of a MOOC at a private U.S. university, Stanton and Harkness (2014) provided valuable data debunking the notion that, because they are free to access, MOOCs would inevitably help to curb the rising costs in higher education. This case study, conducted around an introductory-level MOOC on data science with R, was also very helpful in that it opened a window into the laborious planning and instructional development processes that make MOOCs possible. Furthermore, it offered a referential

outline of the multiple components that can be employed in the creation of MOOCs—namely, “video recordings, audio recordings, software demonstrations, annotated web resource lists, and brief textual supplements” (p. 16).

Similarly, the study (Stanton & Harkness, 2014) offered an illustrative listing of the roles and responsibilities divided among the seven faculty, students, and administrators who constituted the team that developed the R statistics MOOC—including a primary and a secondary instructor, an instructional designer, a platform support specialist, an assessment designer, a reference librarian, and students providing technical support (p. 17). Notoriously absent in this list, however, was creative input from media producers bringing professional expertise in one or more areas, like audio and video production, animation, graphic design, gamification, and so on.

While acknowledging that different institutions and MOOC productions might adopt different strategies regarding professional support, which almost invariably then gets reflected in terms of end-product quality, a more comprehensive picture of the composition of the multidisciplinary teams behind the production and delivery of MOOCs emerged from an interview by Grush (2015) with online learning expert Daniel Christian, who stated:

You might find—along with subject matter experts like faculty—specialists in digital video, digital audio, graphic design, instructional design, user experience design, Web design, programming and software engineering, accessibility and Section 508 compliance, animation, script writing/narrative, rights management, content management, project management, and more... (p. 2)

In sum, fostering the development of professionals in fields such as the ones just cited, with the necessary competencies for implementing MOOCs in LAC, was deemed essential for these regions to join in the international concert of MOOC-based research

and knowledge formulation. However, upon reviewing the growing number of research studies and general literature on MOOCs, one finds that the overwhelming majority centered on outcome measures, like persistence and achievement rates, or other quantifiable assessments, like student demographics and labor-cost analysis for course production. In addition, these studies were mainly founded on U.S. notions and standards for their valuations. Thus, this study sought to address the gap in the literature regarding the critical competencies needed by the human talent in charge of adapting the edX MOOC platform for a context outside of the United States or the developed world, namely for training and professional development programs in LAC.

Adult Education Theories: Learning From Experience (LFE)

At its most basic level, learning from experience refers to “education that occurs as a direct participation in the events of life” (Houle, 1980, p. 221). This notion captures the fact that learning may occur anywhere and at any time as the result of the active participation by individuals in different types of experiences—with or without the sponsorship of a formal education institution. What is key in the conceptualization of learning from experience, or experiential learning, is that learners have a “direct encounter with the phenomena being studied rather than merely thinking about the encounter, or only considering the possibility of doing something about it” (Borzak, 1981, p. 9).

Seeking to elucidate how meaning is constructed from experience, Kolb’s (1984) model of experiential learning offers one of most widely researched approaches to experiential learning there are. Kolb drew from the work of the pragmatist philosopher

and educator John Dewey, as well as from the cognitive psychology work by Piaget and action research formulations by Lewin, to advance his particular theoretical approach. His experiential learning cycle model—and accompanying learning styles inventory (LSI)—is thus based on the existence of four key learning abilities, categorized in the following order:

1. Concrete experience, describing the learners' openness and willingness to learn from new experiences (learning by experience).
2. Reflective observation, referring to the reflective and observational skills of the adult learner (learning through reflection).
3. Abstract conceptualization, relating to the analytical skills of adult learners for creating concepts and ideas derived from observation (learning by thinking).
4. Active experimentation, considering the decision-making and problem-solving skills of adult learners regarding the use of concepts and ideas in actual practice (learning by doing).

Kolb's model reflects a constructivist paradigm, which means that it pays particular attention to how adult learners make sense, create meaning, and ultimately construct knowledge from their learning experiences. In sum, through the retrieval and integration of insights drawn from new experiences with those from the past, as well as with those that will emerge into the future, Kolb's view of experiential learning is to be understood as a process of permanent knowledge creation.

Fenwick (2000), on the other hand, presents a more circumspect assessment of learning from experience by framing it as "a process of human cognition...that flows across arbitrary denominations of formal and informal education, private and public sites

of learning, and compliant and resistant meaning formation” (p. 245). In this way, Fenwick sought to complicate the increased management of experiential learning in adult and lifelong education beyond the “reductionist, binary, individualized notions” that tend to dominate most texts on the subject (p. 244). Furthermore, rather than focusing on reflection as the exclusive avenue for understanding experience—the way the Kolbean (1984) approach tended to do, Fenwick presented reflection as the corollary of applying a constructivist perspective to the phenomenon of experiential learning, which in her view was just one out of five perspectives reflected in the theory—each designed to manifest a distinct cognitive current.

As such, the five perspectives on experiential learning that Fenwick (2000) highlighted are:

- Constructivism, used to expound the prevalent reflexive practice with an emphasis on the individual construction of meaning and subsequent elaboration of knowledge systems;
- Psychoanalysis, used to explore the interference to learning due to unresolved psychological tensions;
- Situatedness, used to assess the impact of participation in specific contexts upon learning choices;
- Cultural Criticism, used to uncover methods of resistance or emancipatory narratives in adult education to confront the cultural hegemony and power structures set in place by dominant groups; and
- Enactivism, used to unearth the ecological or systematic co-emergence of learning and finally of knowledge from the interaction of learner and setting.

In sum, in Fenwick's (2000) view, reducing the learning that we gain from experience to the prevailing practice of reflection—a fundamental staple of the modernist and humanist view of education—paints an incomplete picture of the learner as an undistinguished yet “stable, unitary self that is regulated through its own intellectual activity” (p. 249), while turning a blind eye to the influence of specific contexts over the learning process.

Work-based Learning

With roots in Dewey's (1933) pragmatist formulation of learning from experience and Kurt Lewin's (1947) conception of human behavior as resulting from the interaction of the person with the environment, work-based learning is “an integral element of vocational, occupational and professional education and training,...oriented towards gainful employment and professionalism (Blankertz, 1977; Billett, 2008, as cited in Weber, 2013). Furthermore, Marsick and Watkins (1990, as cited in Marsick, 2006) argued that “[l]earning at these different levels is all the more apparent in informal and incidental modes because learning is not subject to design and control by trainers...[but] rests primarily in the hands of the learner” (pp. 53-54).

Two levels of workplace learning are identified in the literature: (a) “Labor-related learning,” resulting from formal or informal activities that are separate from production or value creation processes, referred to explicit “educational or training interventions,...such as...meetings,...training courses, counseling sessions, vocational schools, continuing education programs, virtual learning communities etc.” (Malloch et al., 2011; Sonntag & Stegmaier, 2007; Stenström & Tynjälä, 2010, as cited in Weber, 2013); and (b) “Labor-integrated learning,” resulting from production or value creation

processes, was described by Watkins “as a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organisational culture, trial-and-error experimentation, or even formal learning” (Marsick & Watkins, 1990, as cited in Marsick & Watkins, 1999, p. 237). Watkins also noted that even though people might experience instances of incidental learning, a derivative form of work-based learning, “[they] are not always conscious of it” (Marsick & Watkins, 1990, p. 12, as cited in Marsick, 2006, p. 54), which can only make the documentation of incidental learning harder for researchers.

Learning Communities

The foundation for learning communities emerged in the 1970s, as theories of knowledge acquisition migrated their foci from cognitive to social explanations of learning, following patterns “of increased participation in activity” (Bruner, 1973; Cole, 1988; Lave, 1988; Mehan, 1983; Norman, 1980; Rogoff, 1994; Wertsch, 1997, as cited in Riel & Polin, 2004, p. 17). Social learning theories favor a systems- or network-based view of practice and interaction. “Intellectual development becomes a process of negotiation of meaning in everyday practice with others” (Dewey, 1916; Vygotsky, 1978, as cited in Riel & Polin, 2004, p. 17).

Against that backdrop, Lave and Wenger (1991), Cole and Engeström (1993), and again Wenger (1998) proposed that the change of roles in a community, or context of activity, by individuals promotes their knowledge acquisition. In this sense, learning is considered to be intimately related to a process of identity transformation—always in connection to the particular social context in which the experience is embedded (Riel & Polin, 2004, p. 19). Wenger (1998) further stated that a learning community “includes

learning, not only as a matter of course in the history of its practice, but at the very core of its enterprise” (pp. 214-215). As such, learning communities are intentionally designed to support learning and the acquisition of new knowledge identities by its members.

Additionally, Wenger (1998) maintained that learning as part of a community results from the combination of experience and competence, as newcomers get exposed to the competence of previous members and integrate such mastery into their own identities through personal experience and participation in the community. Wenger, nonetheless, warned that for learning to not become stagnant in a community, the interaction between experience and competence should “remain in tension [and not] settle down into a state of lock-in congruence” (p. 215). In that sense, he proposed that communities employ the following four conditions to keep learning alive:

- Learning and identity in practice: This condition refers to the incorporation of members’ past trajectories and future expectations into the community design, so that each member can contribute “what they have done, and what they know...to the constitution of its practice” as well as placing members’ participation in the community “in the context of a valued future” (p. 215).
- Participation and non-participation: This condition refers to distinctions of core versus marginal membership in a community, taking into account that certain members are full participants, while others are not based on different levels of competence as well as recognizing that certain experiences get marginalized “because they are repressed, despised, feared or simply ignored” (p. 216). Thus, for communities to foster learning and the creation of new

knowledge, they need to allow the interaction among peripheral and core activities and participants.

- Combining modes of belonging: This condition refers to the significance of engagement, imagination, and alignment for learning in a community.

The combination of engagement and imagination results in a reflective practice[, t]he combination of imagination and alignment produces the ability to act with respect to a broad and rich picture of the world[, and t]he combination of engagement and alignment brings various perspectives together in the process of creating some coordination between them. (pp. 217-218)

- Reconfiguring identification and negotiability: This condition refers to the socio-structural reconfiguration that follows from the transformations brought about through processes of community learning. Internally, for instance, a learning community wrestles with the positioning of its members according to “economies of meaning,” where newcomers occupy the bottom ranks until their “ownership of meaning” about the community’s activities and artifacts improves, compared to that of old-timers. Externally, such issues manifest as a learning community weighs its ownership and responsibilities for the meanings of its practices “through its position in broader configurations” (pp. 219-221).

Virtual Learning Communities

Kling and Courtright (2004) took a critical stance against the blanket use of the term *community* for referring to all sorts of groups formed over the Internet. They contended that such widespread and commonly-accepted tendency, rather than being based on empirical evidence, responds to an aspirational outlook that seeks to represent indistinguishable online interactions “as a highly desirable form of social relations, characterized by warmth, cooperation, and mutual support” through connotations associated with the concept of community (p. 98). What is lost in the process, however, is the complexity of social relations as well as the substantial investments required to facilitate group formation.

In that sense, Kling and Courtright (2004) proposed a Socio-Technical Model to analyze the constructedness of online environments in connection with the different levels of group interaction and interpenetration they afford. Thus, in contrast to the Standard Model, which presents “the Internet as a ‘level playing field’ ...[with] highways from a user to every site, this socio-technical view emphasizes carefully structured electronic forums where people experience walls, hallways, and doors...[-] different kinds of spaces, each structured both socially and technically” (pp. 92-94).

Finally, Kling and Courtright (2004) differentiated between IT-led and IT-supported electronic forum designs for the development of virtual learning communities. According to this categorization, in IT-led e-forums, “the various and complex processes of group formation and group development rely principally on an electronic forum.” On the other hand, in IT-supported e-forums, “the role of the e-forum is to enhance, extend, and support wider group processes and goals.” Kling and Courtright concluded that

handing over “the leading role of forming close, trusting groups” to the technical functionality of electronic forums will likely fail to fulfill such expectations. Thus, they pointed to the essential, yet highly demanding work by teachers, organizers, or moderators who “must be willing to engage in professionally risky conversations in order to build trust and group identity” for enhancing learning as part of virtual communities (pp. 115-116).

Similarly, seeking to shed light on “the different forms of social organization, goals, and outcomes of learning in communities,” Riel and Polin (2004) identified the following three distinct but overlapping forms of participation in a learning community: task-based, practice-based, and/or knowledge-based. According to this view, each classification embodies ever deeper levels of social activity and learning complementarity among participants, starting with task-based learning communities whose engagement and learning respond to the shared enterprise of delivering a product within a given period of time. Practice-based learning communities extend beyond the impetus for fulfilling a task or assignment by providing members with ample support for learning in context. In turn, while knowledge-based learning communities might replicate the strong support systems of practice-based constituencies, their main intent is “the deliberate and formal production of external knowledge about the practice” (p. 21).

Despite the fluid boundaries among such formulations, Riel and Polin (2004) posited that each category raises particular design considerations about the organizational context that surrounds them, as follows:

- While the specific group may not, in the strictest sense, share all of the properties of a community, the people who participate in them often experience a strong sense of identification with their partners, the task, and the organization that supports them.

- [S]ome corporate organizational groups are evolving their approach to workplace learning to leverage the learning power of community. The term community of practice (Lave & Wenger, 1991) was created to provide a way of talking about the institutional and interpersonal activities that unite groups of people who are engaged in the same occupation or career.
- [K]nowledge-building learning communities have made the overt commitment to record and share knowledge outside of its immediate use or active context. (p. 21)

Cultural Historical Activity Theory (CHAT)

In its preoccupation for the material condition of human activity, cultural historical activity theory (CHAT) complicates the prevailing focus on individual, social, and cultural factors of most conventional analyses of work practices, including learning at work. Fenwick (2010) highlighted the importance of such complications given that “[w]ork life is fully entangled with material practice, technologies, vehicles, architectural spaces, roads and roadblocks, nature and objects of all kinds, in ways that are often not even acknowledged in the preoccupation with understanding human activity and meaning-making” (p. 107).

In the same way that Fenwick (2000) alerted us about the individualistic, isolationist reflexivity of the constructivist approach towards experiential learning, Fenwick (2010) further problematized distinctions about formal vs. informal learning—along with similar categorizations like individual vs. collective learning or workplace and organizational learning—due to the implied discoverability of their conceptualizations in contrast to their actual indistinguishable and permeable borderlines. Thus, sociomaterial frameworks like CHAT become essential in the analysis of work-based practices and interactions, as these are viewed no longer as isolated phenomena, detached from all

linkages that provide them with substance, but in relation to their dynamic processes of materialization and enactment (Fenwick, 2010).

With roots in Marxian sociopolitical theory as reflected in the work of 1920s Russian scholars Vygotsky, Leontiev, and Luria, CHAT introduces an expansive view on the relationship between individual and environment, whereby both are reciprocally and indivisibly intertwined. Thus, by moving beyond the simplistic cause-effect explanations for human behavior set forth in behaviorism and subsequent overly individualized and overly psychologized formulations for learning (Fenwick, 2008), “Vygotsky attempt[s] to capture the co-evolutionary process individuals encounter in their environment while learning to engage in shared activities” (Stetsenko 2005, as cited in Yamagata-Lynch, 2010, p. 15). Precisely, Vygotsky explained human participation in activities through the key concept of mediated action, which refers to:

[T]he semiotic process that enables human consciousness development through interaction with artifacts, tools, and social others in an environment and result in individuals to find new meanings in their world.... Signs do not have concrete physical existence in the environment, but they serve as a byproduct of the interaction between individuals and artifacts/tools to mediate thought processes. (Vygotsky, 1978, as cited in Yamagata-Lynch, 2010, p. 16)

Leontiev (1981) further expanded the applicability of activity theory by proposing the concept of object-oriented activity as the unit of analysis for investigators who adopt this framework. Leontiev’s object-oriented activity introduced a view on human activity as a bounded system of unified mental and physical processes derived from a participant or group of participants’ mediated engagement with material objects in consideration of their goals and motivations, sociohistorical context, and activity outcomes (Davydov, 1999; Galperin, 1992; Lazarev, 2004, as cited by Yamagata-Lynch, 2010). Additionally, Leontiev differentiated object-oriented activity from goal-directed actions, which are far

more temporary and often individually focused in contrast to the former's usual greater permanence and community-wide orientation. Goal-directed actions may also be “a means for individual or groups of individuals to participate in the object-oriented activity” (Yamagata-Lynch, 2010, p. 21).

Activity Systems Model and Activity Systems Analysis

Leontiev's developments in CHAT understood activity settings as the bounded contextual background against which object-oriented activities and goal-directed actions are performed by subjects, who in turn can be plotted along the three possible sociocultural planes of analysis—personal, interpersonal, and institutional (Yamagata-Lynch, 2010, pp. 24-25). Thus, building on the Vygotskian notion of mediated action and on Leontiev's view of bounded activity systems, Engeström (1987) proposed the activity systems model and related activity systems analysis as methods for identifying and analyzing human interaction using human activity as the unit of analysis.

The activity systems model incorporates Vygotsky's original mediated action triangle (Figure 2.1), with one angle representing the *subject* that can be an individual or a group, another one representing the *tool* that can be the artifacts or social others employed in the pursuit of the activity, and the last one representing the *object* that can be the goal or objective of the activity.

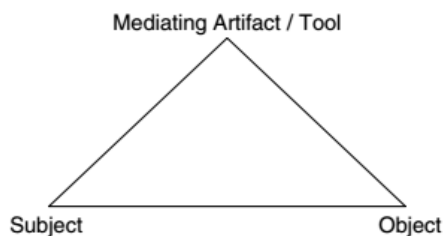


Figure 2.1. Vygotsky's basic mediated action triangle (adapted from Cole & Engeström, 1993)

Furthermore, drawing from Leontiev's expansive view on the sociohistorical aspects and collective context of the mediated action, Engeström added three new components to the model—*rules*, *community*, and *division of labor* (Figure 2.2). In turn, the activity systems analysis derived from this model enables

a systematic and systemic approach to understanding human activities and interactions in real-world complex environments [and]...can help researchers and practitioners understand individual activity in relation to its context and how the individual, his/her activities, and the context affect one another. (Yamagata-Lynch, 2010, p. 1)

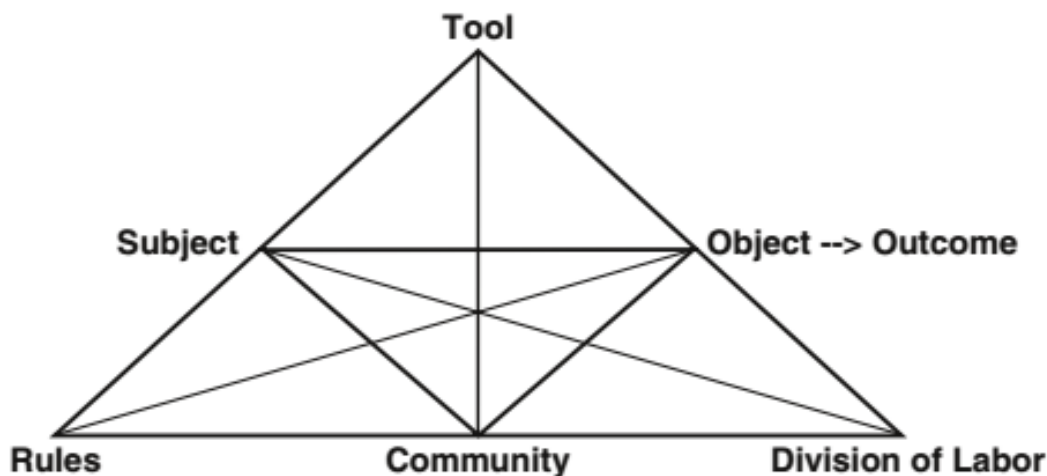


Figure 2.2. Engeström's activity system (adapted from Engeström, 1987)

Conceptual Framework

Figure 2.3 presents the conceptual framework for this exploratory case study examining the reported work-based learning experiences of multidisciplinary professionals at an international financial and research organization engaged in the creation of MOOCs for LAC using the edX platform. Depicted by two circumferences, the heart of the conceptual map focuses our consideration of work-based learning activities from a wide gamut of possibilities into those key ones that are labor-integrated.

As referenced previously, learning from labor-integrated activities at work ensues in connection to processes of production or value creation (Marsick & Watkins, 1990).

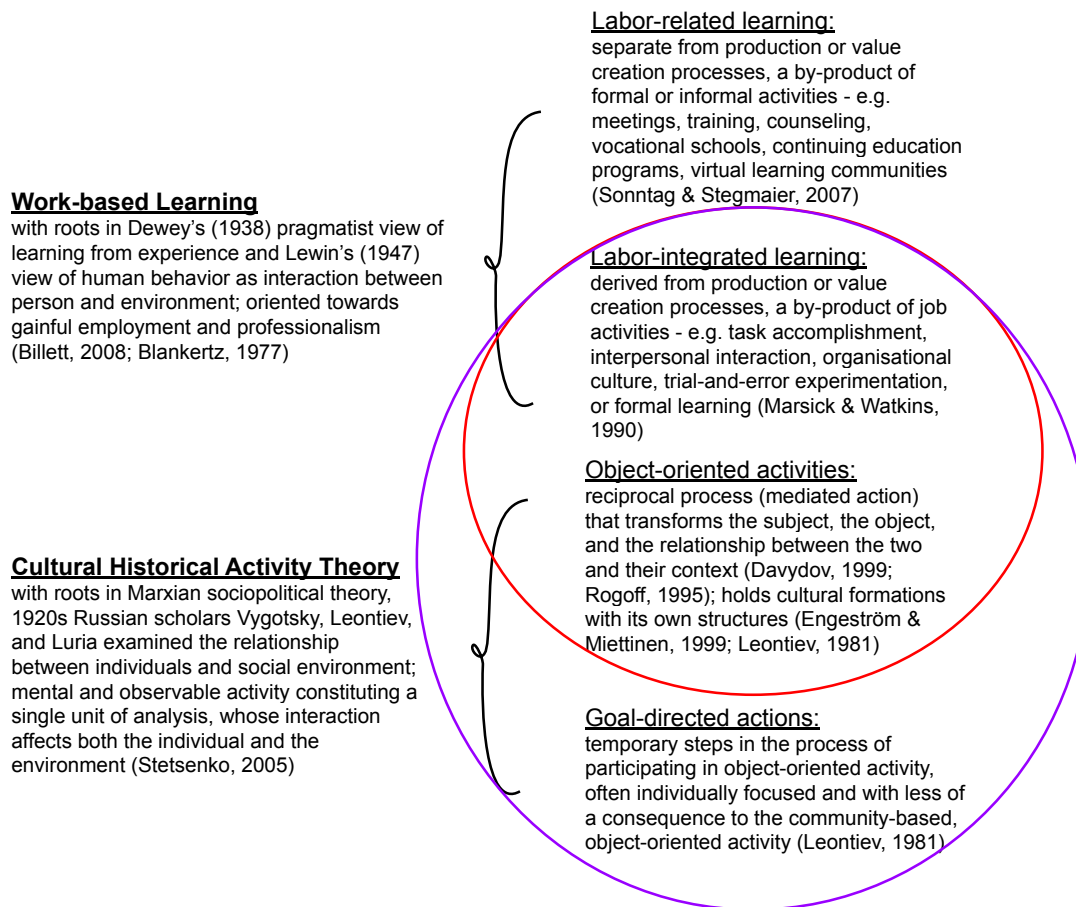


Figure 2.3. Conceptual framework

In this sense, when viewed at the light of CHAT, labor-integrated learning will emerge as the multidisciplinary participant population of subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers engaged in object-oriented activities and supporting goal-directed actions for bringing MOOCs to LAC through the use of the edX platform. Thus, CHAT allows for considerations of the impact on the participants' work-based learning derived from their

often temporary and individual actions (goal-directed) as well as from their generally longer-lasting and collectively informed activities (object-oriented). This framework further accounts for the materiality of work experiences, highlighting the reciprocal effects of the various interactions among participants and of the tools or artifacts they employ within a contextually bounded system.

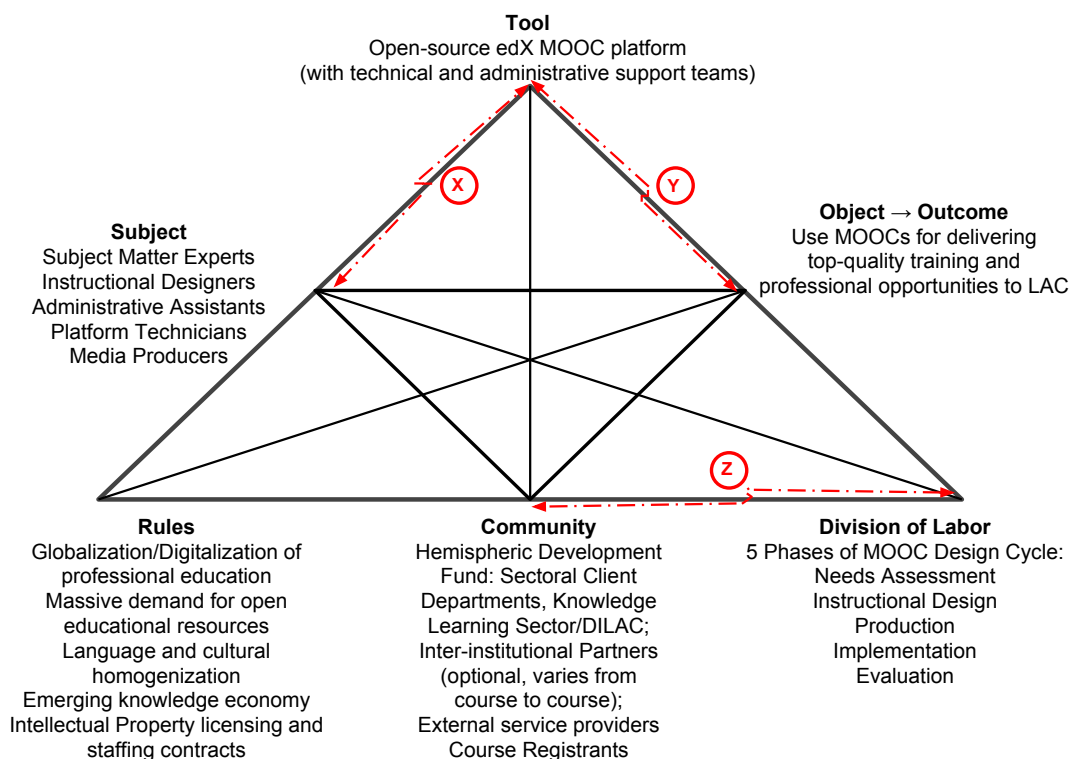


Figure 2.4. Activity systems analysis: HDFx MOOC program (adapted from Engeström, 1987)

Figure 2.4 introduces a preliminary model of the activity system analysis (Engeström, 1987) for the five-phase design cycle of edX MOOCs at the selected activity setting. In that sense, it anticipates three individual, interpersonal, and systemic tensions as prospective sources of work-based learning, as follows:

- Tension X, depicting a clash between the subject and tool components of the HDFx MOOC program system, addressed challenges of professional practice deriving in learning pressures for members of the HDFx team in relation to the adoption of the edX platform for the creation and delivery of MOOCs for LAC. As such, it identified gaps of practical knowledge or skills reported by subject matter experts, instructional designers, administrative assistants, media producers, and platform technicians through their multidisciplinary collaborations.
- Tension Y, depicting a clash between the tool and object/outcome system components, documented the technical and/or pedagogical challenges with the functionality of the edX platform and contingent MOOC-based modalities of instruction that were identified by participants as obstacles hindering the HDFx program's primary objective of using MOOCs for delivering top-quality training and professional development opportunities for LAC.
- Tension Z, depicting a clash between the community and division of labor system components, captured the political and institutional conditions at play at the HDF that support or hinder participants' work performance and multidisciplinary collaborations. Thus, it reflected contextual factors impacting the HDFx program's evolution towards greater professionalization.

Conclusion

This chapter considered the significance of the arrival of MOOCs, both in the context of the rapidly changing adult education environment and in the context of the

OER initiatives within the field. Furthermore, the current landscape of MOOC technologies was described, while providing research-based counterfactual information to correct some of the most exorbitant assertions made by early MOOC proponents and while calling attention to their yet-unfulfilled promise of making quality education available for underserved populations. Additionally, this chapter presented the literature on experiential learning and work-based learning alongside with an overview of CHAT and its accompanying activity systems analysis, after considering that these adult learning theories provided a valuable framework for analyzing the reported work-based experiences as well as the contextually relevant factors and conditions that enable multidisciplinary teams to lead with the design of MOOCs for LAC using the edX platform.

In sum, the research and analysis of the reported work-based learning experiences by the first multidisciplinary professionals engaged with the design of MOOCs across LAC presented a unique opportunity for drawing valuable lessons that helped to identify those key competencies, attitudes or behaviors, and institutional supports for creating local and regional MOOCs from conception to online delivery and course assessment. It was expected that such a study would provide practical insights into the recruitment and training of future generations of subject matter experts, instructional designers, platform technicians, media producers, and administrative assistants, who seek to collaborate with the design of MOOCs for LAC. Ultimately, it was anticipated that professional development of this multidisciplinary kind would be indispensable for education institutions and diverse populations throughout the region to become active participants

and contributors in the international exchange of MOOC-mediated learning opportunities and knowledge construction.

Chapter III

METHODOLOGY

Introduction

Based on the premise that valuable lessons can be learned from the pioneering work activities and reflective testimonials reported by one of the first groups of multidisciplinary professionals engaged with the design of MOOCs for LAC, this exploratory case study employed naturalistic inquiry methods (Lincoln & Guba, 1985) to document, analyze, and report on their work-based learning experiences. By delving into the work-based activities and reported on-the-job learning experiences of a selected pool of participants in relation to the design of edX MOOCs for LAC, this study sought to surface qualitatively reliable data that might potentially benefit higher education institutions interested in creating MOOCs as well as the adult education and ICT professionals looking to work with MOOCs in the LAC context.

As such, this chapter describes the methodology employed to investigate the study's research questions:

1. How and to what extent, if at all, do subject matter experts, instructional designers, platform technicians, media producers, and administrative and administrative assistants report experiences of work-based learning through

their engagement with the multidisciplinary design of edX MOOCs for training and professional development in Latin America and the Caribbean?

- a. What knowledge, skills, and/or behaviors, if any, do participants believe they need to master in order to be successful in their jobs, and to what extent can those competencies be attained via work-based learning?
- b. In what ways do certain institutional, technological, and/or pedagogical conditions related to the multidisciplinary design of edX MOOCs in the context of Latin America and the Caribbean foster or hinder the development of those critical competencies among participants?
- c. What challenges and opportunities do participants expect having to face in response to the latest developments in MOOC technologies, and how do they expect having to adapt their current work-based performance to respond effectively to what the future of edX MOOCs targeting LAC calls for?

Further, this chapter provides the rationale for the study design, participant population, data collection methods, data analysis and synthesis, issues of trustworthiness, and study limitations.

Study Design

This inquiry used an exploratory case study research design grounded in naturalistic inquiry methods. In contrast to the quantitative empirical approaches of logical positivism, naturalistic inquiries employ qualitative methodologies that focus on understanding and making meaning about a phenomenon in context (Merriam, 1998).

Highlighting the open-ended approach that qualitative inquiry methods offer to researchers in many social science disciplines, Lincoln (1990) pointed to a shift in connection to scientific knowledge away from predictability and certitude towards uncertainty and anxiety. She cited Bernstein (1983) and Popkewitz (1984) to argue that scientific inquiry has moved away from the “persistent claim that it is science and science alone that is the measure of reality, knowledge and truth” (p. 46) and given way to a notion of reality as socially constructed, of knowledge as problematic and contested, and of truth as locally and politically situated.

Qualitative methodologies further recognize the active and interpretative capacities of the inquirer and inquiry participants, while bringing these to the foreground of the social inquiry process. This marks a stark contrast with the passive and disinterested observer role of an objective researcher and with the total exclusion of the study subjects from any relevant decision-making process by strict mandate of the chiefly quantitative approaches in traditional positivism. Precisely, Lincoln and Guba (1985) identified the role of the investigator in naturalistic research as a highly adaptable human data collection instrument, who combines his or her original outsider’s perspective (etic) with the development of an insider’s perspective (emic) through the research process. In this sense, Yamagata-Lynch (2010) proposed that “[t]he role of an activity theory investigator is to vicariously experience, make sense of, and become able to report participants’ lived experiences” (p. 65).

Creswell (2014) identified five qualitative research approaches: narrative research, phenomenological research, grounded theory research, ethnographic research, and case study research. Each of these represents a variation within qualitative research

and, while sharing similarities with the rest of qualitative traditions, each presents distinctly different ways for how an investigator conducts research. Patton (1990) explained further that, among other possible alternatives, common methods of data collection in qualitative research include: (a) in-depth, open-ended interviews; (b) physical observation of participants; and (c) analysis of written documents.

Thus, by employing an in-depth, semi-structured interview protocol based on open-ended questions, this case study privileged a key component of qualitative research as the primary step for investigating the chosen phenomena. Meanwhile, the use of observation and document analysis was also planned as complementary processes for the triangulation of data (Diagram 1). This three-pronged methodological approach responded to an exploratory case study research design which, as defined by Yin (2014), aspires “to understand a real-world case and assume[s] that such an understanding is likely to involve important contextual conditions pertinent to [the] case” (p. 16).

Case study research is concerned with identifying the specifics and uniqueness of a particular setting rather than making general claims about the studied phenomena (Stake, 1995). As such, by considering the present discussion in relation to its particular sociocultural and organizational contexts as well as to the unique sociomaterial conditions that surround it—i.e., the selection of the edX MOOC platform and related types of multidisciplinary professional interactions—this exploratory case study sought to present an integral and complex portrayal of the environmental factors that might have influenced the selected participants’ perceptions and understandings of their work-based learning in relation to their work activities.

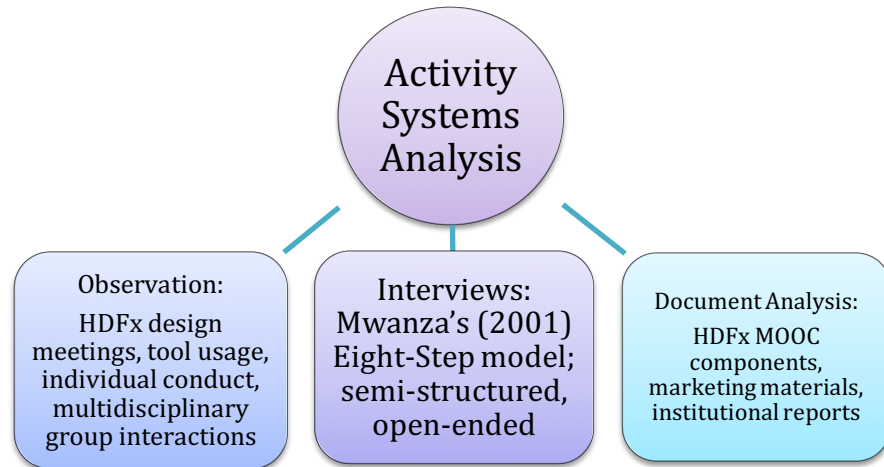


Figure 3.1. Collection methods and analysis of data

Table 3.1

Research Questions/Method Matrix

Research Question	Research Methods			
	Demographics	Interviews	Observations	Document Analysis
1 "Work-based Learning"		X	X	X
1a "Competencies Needed"	X	X	X	X
1b "Contextual Conditions"	X	X	X	X
1c "Future Learning Needs"		X		X

Activity Setting and Study Sample

The research site and activity setting for this exploratory case study were at a multinational finance and research organization with representation across the United

States and LAC, which has a reputed trajectory offering on-site and online training and professional development courses throughout the region. Beginning in 2014, the organization expanded its robust educational offerings with the delivery of MOOCs via the edX platform, employing professionals from various disciplines in the process. A sample of 20 participants was selected for conducting in-depth, semi-structured interviews.

Using a purposive selection strategy, which in the context of qualitative research refers to the purposeful selection of sites or individuals (Berg & Lune, 2012; Creswell, 2014), participants were, first, recruited on the basis of their professional specialization and the work activities they carried out in connection with the design of edX MOOCs and, second, on additional criteria such as age, gender, and country of origin. In this sense, the participant sample in this study included practitioners representing five distinct professional disciplines with related job functions (see Table 3.2).

Table 3.2

Professional Specializations/Job Functions of Study Sample

Professional Disciplines	Job Function
Subject Matter Experts	Research, content generation, knowledge dissemination via videos, consultancy for discussion forums and student assessments
Instructional Designers	Instructional design, mapping course objectives with learning activities, pedagogical support, educational technology optimization
Platform Technicians	Learning management system, course configuration with edX authoring tools (Studio, xModules/xBlocks), providing technical support
Media Producers	Video production, graphic design, animation, gamification, text transcription and translation
Administrative Assistants (Communication and Production Coordinators)	Transversal coordination and scheduling of operations, budgeting, hiring and liaising with external service providers, managing educational resources, managing communications with edX

According to the recruitment target for this study, the researcher secured the participation of four practitioners from each of the five professional fields identified in Table 3.2, for a total of 20 semi-structured, in-depth interviews. Additionally, in close coordination with the activity setting, five workgroup sessions and/or planning meetings coinciding with each of the five phases of MOOC design determined by the activity setting were selected for conducting direct and naturalistic observations. These five phases, as depicted in Figure 3.2, represented the MOOC design cycle adopted by the selected activity setting: (a) Needs Assessment, (b) Instructional Design, (c) Production, (d) Implementation, and (e) Course Evaluation. As anticipated, the five activities selected for observation had variable member participation and representation among the multiple target professional disciplines.

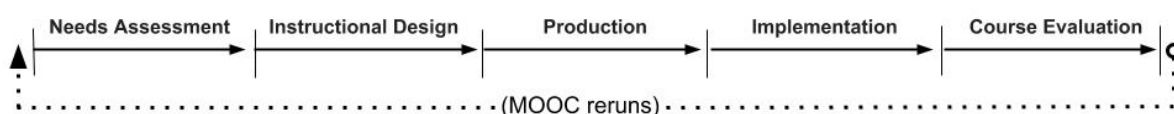


Figure 3.2. Five phases of the MOOC design cycle
(adapted from HDF internal documents, 2015)

In sum, the group of multidisciplinary professionals employed in the design of edX MOOCs for LAC at the activity setting provided a large enough pool of participants, rendering the researcher's recruitment goals feasible and attainable in his attempt to secure a participant population that was professionally and socioculturally diverse. Ultimately, the total number of conducted direct observations and in-depth interviews afforded sufficient data collection opportunities for documenting critical interactions

among the study's multidisciplinary participants as well as rich descriptions about their work activities and usage of artifacts and tools, thus enabling the investigator to answer the study's research questions thoroughly and efficiently.

Methods for Data Collection

Demographic Survey

The researcher planned to distribute the study's demographic survey among the broadest possible set of professionals working in the creation of MOOCs at the activity setting, in order to compare the demographic composition of the 20 study participants against the broader universe of MOOC collaborators. However, that plan turned out not to be feasible, given the uniquely complex organizational structure of the activity setting's MOOC program, which spans multiple departments and procures services from a large array of external providers. This meant that the distribution of the demographic survey was limited to the core group of MOOC collaborators, resulting in the completion of a total of 25 surveys. The researcher then opted for focusing the analysis of demographic data on the 18 out of 20 study participants who completed the demographic survey through a combination of in-person and electronic means.

As such, the demographic survey was used to determine the eligibility of candidates based on the identification of their areas of professional expertise and to ensure a balanced representation of specializations among participants, while striving for diversity across gender, age, ethnicity, and country of origin. Similarly, the survey collected participants' birthplaces, multi-language proficiency, and current employment location, generating valuable information about the global phenomenon of labor

migration which has contributed to the international dissemination of MOOC technologies. Additional demographic information included educational background and titles of MOOCs that participants had worked on, as factors that may have influenced their work-based experiences and, as such, the perceptions they reported during interviews or behaviors demonstrated through observed group sessions. Overall, the study's demographic strategy supported a more nuanced and comprehensive analysis of the data. Appendix A includes a sample of the demographic survey in English, while Appendix B includes the Spanish version.

Interviews

Interviews constituted the primary method of data collection during this exploratory case study. Using a semi-structured interview protocol with open-ended questions based on Mwanza's (2001) Eight-Step model, the aim of this interpretative data collection instrument was to elicit and document participants' accounts about work activities and related work-based learning. In this sense, the basis for this study's interview protocol was provided by the Eight-Step model, which consists of a sequence of eight open-ended questions structured to help translate data into components in the activity systems analysis triangle model (see Table 3.3).

Recognizing the difficulty in the application of CHAT's conceptual affordances around the sociocultural elements of individual and collective action due to the absence of established methods, Mwanza (2001) developed her Eight-Step model as a way to enable the methodological operationalization of the activity systems model and related activity systems analysis based on Engeström's (1987) interpretation of CHAT.

Mwanza's (2001) contribution resulted from her quest for identifying a practical and

methodological means of applying CHAT's principles in order to improve computer system design in the context of the larger field of human computer interaction. The investigator was referred to Mwanza's (2011) Eight-Step model through one of his academic advisors at the Adult Learning and Leadership Program at Teachers College and he immediately recognized its relevance in the context of this exploratory case study.

Table 3.3

Eight-Step Model (Mwanza, 2001)

Activity System Component	Question to Ask
Activity	What sort of activity am I interested in?
Objective	Why is this activity taking place?
Subjects	Who is involved in carrying out this activity?
Tools	By what means are the subjects carrying out this activity?
Rules and Regulations	Are there any cultural norms, rules, and regulations governing the performance of this activity?
Division of Labour	Who is responsible for what, when carrying out this activity, and how are the roles organized?
Community	What is the environment in which activity is carried out?
Outcome	What is the desired outcome from this activity?

Moreover, given the distinct role that tensions play as catalysts for the longitudinal or historical development of individuals, collectives, and systems within the CHAT framework, the interview protocol was complemented with additional questions and probes that drew partially from critical incident questionnaires. These complementary questions were intended to dig deeply into the practical and psychological circumstances influencing participants with regard to the studied phenomena. Using MOOC components that participants had worked on and self-identified as meaningful objects for discussion (e.g., videos, wikis, discussion forums, readings, assignments, quizzes, etc.), participants were asked to consider significant

work-related incidents or interactions as a means of eliciting their opinions and perspectives of those experiences “in such a way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles” (Flanagan, 1954, p. 327).

Acknowledging that learning as a result of the engagement with work activities is often semiconscious (Marsick & Watkins, 1990), which makes its reporting difficult to access, the interview protocol employed a probing strategy that sought to maximize the benefits of an open-ended dialogue approach through four levels of inquiry. This questioning strategy is known as ORID (Stanfield, 2000), because it seeks to generate the following kinds of dialog-based data: Objective, Reflective, Interpretive, and Decisional. In that sense, while Mwanza’s (2001) Eight-Step model generated rich descriptive data about participants’ work-based routines, relations, tool applications, etc., the interview probes derived from the ORID framework aimed at producing extended descriptions of actions and events, that revealed the introspective layers of reflection and interpretation beyond the objective or factual levels of discourse, through such follow-up questions as:

- “And then what happened?”
- “Who were the parties involved?”
- “Why did you act that way?”
- “How did you feel about that?”
- “How do you think things could be improved?”
- “What were you experiencing in that moment?”
- “What influenced your choices, decisions, actions?” or

- “What were the challenges, surprises and/or turning points you encountered, and why?”

The interview protocol consisting of 10 questions is included in Appendix C. As it was expected that many participants would be originally from Spanish-speaking countries, the interview protocol was also made available in Spanish (Appendix D) to give them the opportunity to express their opinions and ideas in their preferred language. The interview protocol was piloted with two directors of multidisciplinary professional teams in the summer of 2016, resulting in the implementation of certain adjustments to the wording and formatting of the questions. Interviews lasted approximately 1 hour, with six interviews exceeding that duration by a range between 4 and 24 minutes. All 20 interviews were audio-recorded and transcribed using professional transcription services. Eighteen interviews were conducted in Spanish and then translated into English using professional translation services.

Whenever possible, respondents received a copy of their respective transcripts to allow them to review, clarify, or expand on their ideas. Only one participant used that opportunity to contact the investigator to request that the titles of MOOCs she had worked on be removed from the transcript so as not to compromise her future prospects for collaborating with the activity setting as an external service provider. Additionally, the identity of every interview participant and the confidentiality of his or her statements were protected by using pseudonyms instead of real names on each transcript, prior to saving it to a password-protected partition on the researcher’s computer, which itself was password-protected. Once audio recordings were transcribed, all such recordings were deleted.

Observations

In parallel with the conduction of participant interviews, the researcher conducted direct and naturalistic observations of five MOOC design work sessions with teams of multidisciplinary professionals at the activity setting. The observed group activities were selected from each of the five phases of MOOC design identified by the activity setting, which were depicted on Figure 3.1: (a) Needs Assessment, (b) Instructional Design, (c) Production, (d) Implementation, and (e) Course Evaluation. The researcher worked closely with his liaisons at the activity setting to obtain a schedule of relevant collaborative activities and identified a total of five such opportunities to observe during the summer and fall of 2016.

Since a key objective for conducting naturalistic observations was documenting the multidisciplinary group interactions and engagement with technological artifacts and tools as potential channels for work-based learning, the researcher prioritized observational opportunities with representation from multiple disciplines. Thus, whenever possible, collaboration among multidisciplinary practitioners through the various phases of the MOOC design cycle was preferred as a target for conducting observations over meetings among practitioners from the same workgroup or activities carried out by individual participants. Observations were documented through the combined use of a structured observation form and the researcher's keen field notes. The observation form is included in Appendix E.

Furthermore, observations provided additional context for the study's interview phase as well as served as a triangulation method for the data obtained via the latter methodological approach. While it was not mandatory for this study that members in the

observed group meetings repeat as interview participants, observations were used in general terms to contrast participant actions and behaviors during the observed group sessions against the work processes and activities reported in participant testimonials during interviews. In that way, the researcher developed more sophisticated insights into and understandings of the case study, as “some relevant social or environmental conditions will be available for observation” (Yin, 2014, p. 113). It was thus expected that direct and naturalistic observations helped to reveal significant elements that otherwise would have gone unreported in interviews by participants as a result of the inescapable subjectivity of their opinions and the coercive influence of deeply ingrained institutional models over what they chose to say or not to say when interviewed.

Document Analysis

The analysis of documents was undertaken as an ongoing practice throughout this study. Document analysis supplemented the data acquired via interviews and observations to paint a fuller picture of this exploratory case study, as well as to provide material evidence for guiding the discussion with interview participants. Yin (2014) posited that “[f]or case study research, the most important use of documents is to corroborate and augment evidence from other sources” (p. 107). Hence, this study explored different types of relevant documentation as a means to investigate records that may validate and confirm or, to the contrary, question and challenge conclusions drawn from data gathered via interviews and observation methods. Table 3.4 lists the kinds of documents that were slated for collection, along with the relevant information they produced, and the means that were used for accessing them.

Table 3.4

Document Analysis

Documents Types	Analytical Relevance	Means of Access
Job descriptions of MOOC team members	Competencies needed, professional qualifications, design issues	Researcher's professional liaisons at HDF
MOOC listings and promotional materials	Competencies needed, design issues	HDF's publicly available MOOC listings on edX
MOOC courseware elements	Competencies needed, design issues	Subscription to HDF's selected MOOCs on edX
MOOC evaluations	Competencies needed, professional qualifications, design issues	Researcher's professional liaisons at HDF
Institutional reports on HDFx MOOC program	Competencies needed, professional qualifications, design issues	Researcher's professional liaisons at HDF

Methods for Analysis and Synthesis of Data

Data collected via open-ended interviews and direct observation were analyzed according to the constant comparative method (Corbin & Strauss, 2008; Strauss & Corbin, 1998), and then processed with the selective application of the activity systems analysis framework (Engeström, 1987) for identifying the activity systems models for each of the five phases in the MOOC design cycle adopted by the activity setting. More specifically, this sustained and systematic processing of data entailed initially an open approach, whereby the investigator took a first pass at annotating the interview transcripts with anything and everything of significance that emerged from them until saturating the entire data set. In a second stage, the researcher applied a thematic approach to come up with groups or clusters of related ideas organized around particular themes or patterns, while writing down memos that would begin to draft definitions for those themes.

Finally, the researcher applied a selective approach to categorize the various data sets according to each of the components in the activity systems model and to offer naturalistic generalizations with clear definitions for the themes or patterns identified in the previous stages. Building on the rich, thick descriptions afforded via the activity systems model and related activity systems analysis, both techniques were employed “to map the co-evolutionary interaction between individuals or groups of individuals and the environment, and how they affect one another” (Yamagata-Lynch, 2010, p. 22). Such an analytical approach enabled the extraction and graphic representation of complex data sets by way of the expanded triangle model (Figure 2.2), synthesized from compatible interviewing and observation methodologies based on Mwanza’s (2001) Eight-Step model, which ultimately facilitated the interpretation and communication of the study’s findings.

In all, through this exhaustingly iterative and continued analysis, the researcher developed a coding scheme from the concurrent deductive application of the study’s conceptual framework and the inductive interpretation of insights that emerged from interview transcripts. Through the former deductive strategy, for example, participants’ testimonials about their job functions and collaborative undertakings in the context of the HDFx MOOC program were classified into each of the two concepts outlined in the work-based learning literature that distinguishes between processes of value creation as opportunities for *labor-integrated learning* and processes outside of any value production activity as opportunities for *labor-related learning*.

In turn, through the latter inductive approach, data from participant interviews were interpreted according to the themes or propositional patterns that emerged from the

thematic and selective stages of analysis. For example, although *work-based learning* as a category could be derived deductively from the study's main conceptual framework, the emergence of the larger overarching concept of *professionalization*—to define the developmental journey towards a more formal organizational structure undertaken by the first group of professionals engaged in the multidisciplinary design of MOOCs for LAC—was only possible through the inductive association among plausibly interrelated categories.

Additionally, the researcher shared various selections of the transcribed interviews plus his proposed coding scheme with two researchers with experience in data analysis in order to establish inter-rater reliability (Bloomberg & Volpe, 2012; Miles & Huberman, 1994). Specifically, this procedure entailed calling for the separate review and feedback from fellow researchers at different stages of the process, aiming at generating intercoder agreement (Creswell, 2014). Initially, the researcher shared a preliminary set of codes along with the first full interview transcript with a fellow researcher, who went on to code the data and provide feedback that was used to refine the code definitions and overall coding scheme.

Subsequently, the principal investigator discussed the revised set of codes with another researcher, who received a work-in-progress file from NVivo and used that software application to code a second selection of interview transcripts. After additional rounds of discussion with that researcher about the code descriptions, we eventually reached “excellent agreement,” as assessed by a Cohen Kappa value of .89 using NVivo's Coding Comparison tool. “Cohen's Kappa coefficient is a statistical measure of inter-rater reliability” (“Coding comparison query,” n.d.), upon which values greater than

.75 indicate an excellent metric of convergence. In turn, the final list of codes was organized according to alphanumeric descriptors and applied to the entire dataset, providing relevant information repositories and major thematic categories for identifying the main units of analysis in the case study. The final coding scheme is available in Appendix F.

Using NVivo Application for Qualitative Data Analysis

Upon citing the diversity and complexity of the evidence from most case studies, Yin (2014) warned about the practical limitations of using computer-assisted tools for extracting and analyzing case study data:

The case study will typically be about complex behavior, occurring within a complex, real-world context. Unless you convert all of your evidence—including your field notes and the archival documents you might have collected—into the needed textual form, computerized tools cannot readily handle this more diverse array of evidence.... For a diverse set of evidence, you therefore need to develop your own analytic strategies. (p. 135)

In that sense, although the researcher used the computer application NVivo as an aid for organizing, coding, and analyzing this study's interview transcripts, that application was used only partially in the analysis of field observations and archival documents. More precisely, the researcher employed a dual strategy for recording and analyzing direct observations, which entailed, on one hand, keeping a form-based record (Appendix E) of the sociotechnical interactions surrounding the MOOC design cycle and, on the other hand, keeping field notes structured in a narrative format. In that way, whereas the data resulting from the former approach were processed using the aforementioned activity system analysis, only the data from the latter approach were processed via NVivo. In both instances, however, the insights drawn from observations

served to triangulate, by corroborating or challenging, the evidence presented through the analysis of the interview transcripts.

Similarly, although references to institutional documents and assessment reports about the MOOC program were also coded using NVivo, a broader and carefully executed document analysis strategy made it possible for the researcher to offer concrete examples and rich contextual information about the case study. Thus, document analysis was conceived as a tertiary data source in search of evidence to support or contest participant testimonials expressed via interviews or behaviors detected via observed work processes. In sum, beyond the software support, the methodological collection and evaluation of multiple data points strived for “the development of *converging lines of inquiry*” that would ultimately reveal the most significant analytical and conceptual categories to be reported by the case study. “Thus, any case study finding or conclusion is likely to be more convincing and accurate if it is based on several different sources of information, following a similar convergence” (Yin, 2014, p. 120, emphasis in original).

Rationale for Methods Selection

Interviews

Interviews were used as the primary method for qualitative data collection in this exploratory case study. A total of 20 interviews were conducted with a multidisciplinary study population made up of subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers, seeking to delve into their perceived work-based learning experiences in connection to their engagement

with the design of MOOCs for Latin America and the Caribbean. Stake (2010) cited three main purposes for conducting interviews in qualitative research:

1. Obtaining unique information or interpretation held by the person interviewed,
2. Collecting a numerical aggregation of information from many persons,
3. Finding out about “a thing” that the researchers were unable to observe themselves. (p. 95)

In the particular context of case study research, Yin (2014) noted that interviews “will resemble guided conversations rather than structured queries” (p. 110), which makes it possible for the collection of data via interviews to be a fluid (Rubin & Rubin, 2012) and in-depth (Weiss, 1995) process. Interviews are, thus, singularly dependent on the quality of the communication that develops between researcher and participant in their respective roles of interviewer and interviewee to produce valuable insights into the case study. “It takes a really good interview or survey question for most interviewees to get deeply into the complexity of the things being studied” (Stake, 2010, p. 97).

While interviews offer the benefit of having direct and targeted access to relevant actors and their personal perceptions on case study topics, they also present “a methodological threat created by the conversational nature of the interview...sometimes referred to as reflexivity” (Yin, 2014, p. 112). This refers to the influence that researcher and participant might exert on one another through the statements they express during the interview, which might ultimately condition their responses in an unconscious attempt to say what the other party wants to listen. Interviewers are, thus, advised to guard against “an undesired coloring of the interview material” (p. 112) by minimizing the biases and opinions they express about the case study, both through their verbal as well as their body language.

Observations

Observation of social practices and contextual conditions related to this case study were used as a secondary source of information, complementing participant interviews as the primary source. To that end, a total of five workgroup sessions were observed corresponding to each of the five phases in the MOOC design cycle. Observations were conducted according to emergent conditions and behaviors encountered in the field as well as according to an observation form (Appendix E) based on Mwanza's (2001) Eight-Step model. The researcher's observational foci during each of the five sessions were always keen on identifying the main components in the activity system and related multidisciplinary interactions as probable indicators for individual or collective work-based learning.

Yin (2014) noted that direct observations are a natural outgrowth of conducting case study research, "[b]ecause a case study should take place in the real-world setting of the case" (p. 113). Yin further pointed out that observation approaches can range from formal to casual, including "observations of meetings, sidewalk activities, factory work, classrooms, and the like" (p. 113). In keeping with the more active role played by the researcher in the collection and interpretation of evidence that is emblematic of qualitative research, Stake (2010) noted that when engaging in observation, "the researcher [i]s the instrument, capitalizing on intuitive ability to see in depth, to recognize the influence of context, to probe, and to progressively focus" (p. 91).

In that sense, it is important to note that observation adds strength to a study by the immediacy it offers for documenting events and actions in real time as well as by its embeddedness in the very context of the study. On the other hand, observations present

certain challenges that are also important to acknowledge. For example, observations are time-consuming and thus expensive to execute, given the infinite possibilities there are for documenting seemingly relevant events and settings in a study, which would require a team of observers to carry out. To counter that threat, it is imperative for researchers to delimit early on the kinds of activities or processes along with the specific surrounding circumstances that, when observed, will render the most valuable information for a case.

As with interviews, observations are also subject to the phenomenon of reflexivity. In this context, however, the threat resided in the possibility that participants might behave differently and thus events might develop differently, given that they were being observed. To counter the reflexivity phenomenon, researchers ought to hold as many observation sessions as needed for participants to begin to perceive them as fellow insiders, reducing the need for altering normal conduct. Ultimately, the researcher as the instrument holds the key because a successful observer would be able to detect even when participants are trying to impress with false behaviors. “The first responsibility of the observer is to know what is happening, to see it, to hear it, to try to make sense of it. That is more important than getting the perfect note or quote” (Stake, 2010, p. 94).

Document Analysis

To triangulate the data obtained via interviews and observations, the researcher reviewed and analyzed selected documentation of particular relevance for the case study. As listed in Table 3.4, the following documents were collected: job descriptions for MOOC contributors, MOOC listings, MOOC courseware elements, MOOC evaluations, and institutional reports on HDFx MOOC program, among others. Considering the overabundance of online and offline information which characterizes the process of doing

research today, Yin (2014) recommended that “documents must be carefully used and should not be accepted as literal recordings of events that have taken place” (p. 109).

Documentation has the advantage of being unobtrusive as a data collection approach because it does not impose any additional requirements on the case study participants. Furthermore, documentation offers a stable source of information that can be accessed and analyzed repeatedly as well as granting much needed levels of specificity for referencing exact names, titles, and details of an event or setting. On the other hand, documentation also faces certain criticisms. For instance, access to important or sensitive documents can be difficult to locate or intentionally withhold, while the documents that are released are inevitably subject to reporting bias, which refers to the (often unknown) bias of the document’s author. Hence, the ultimate responsibility falls again on the researcher to distinguish trustworthy evidence amid all the noise, and so it is essential “to have a strong sense of [the] case study inquiry and focus on the most pertinent information” (Yin, 2014, p. 109).

Issues of Trustworthiness

Concepts such as *validity* and *reliability* act as barometers for determining whether the claims made by research projects everywhere, regardless of paradigmatic persuasion, merit being held as credible and their findings trustworthy to be acted on or not. For *validity*, we are generally to understand that what is measured or observed as part of an inquiry gets accurately represented throughout the various phases of a study. For *reliability*, we are to understand the capacity of a research project, if it was to be replicated, for producing the same results time and time again. Seeking to breach the

(post)positivistic stronghold on rigor along with its quantitatively derived standards of internal validity, external validity, reliability, and objectivity as unique criteria for validating a study's findings, Guba (1981) proposed an alternative set of four *trustworthiness* categories, which respond to a fundamentally constructivist orientation and derived qualitative methods: *credibility*, *dependability*, *transferability*, and *confirmability*.

Yin (2014) favored using the conventional (post)positivistic criteria of rigor for assessing the validity and reliability of case studies. In that sense, he noted that “by developing convergent evidence, data triangulation helps to strengthen the *construct validity*. The multiple sources of evidence essentially provide multiple measures of the same phenomenon” (p. 121). As such, triangulation was emphasized through all stages of this case study, not only with the use of diverse and contrasting research methods or data sources, but also with a conceptual development founded on multiple adult education theories as well as a final data analysis that strived for inter-rater reliability.

Furthermore, the investigator employed the alternative trustworthiness categories proposed by Guba (1981), with particular emphasis on notions of credibility and dependability. Guba's proposed concepts of transferability and confirmability were not factored in when discussing this study's trustworthiness because they refer to issues of research generalization and replication, which arguably contradict the main impetus for understanding the uniqueness and singularity of a given context that is supposed to be the signpost of case study research.

Credibility

Credibility in quality research acts as a criterion of trustworthiness, which is comparable to the criterion of internal validity in quantitative research. As such, it considers the steps enacted by the researcher during the duration of the study to ensure that findings are consistent with and offer an accurate representation of the events or phenomena being studied (Merriam, 1998). Thus, the researcher employed various measures to preserve the study's credibility. First, the researcher reflected on and documented his personal perspectives or assumptions about the subject of this study in Chapter I. Similarly, the researcher continued to record his reflections through the different phases of the research process by keeping a research journal.

Second, the researcher's academic specialization and professional experience as an aspiring adult education investigator and a seasoned director of digital content gave him a unique perspective of the world of the study participants, populated both by scholars and digital media practitioners, which ultimately enhanced his credibility for leading this exploratory case study. Given such background, the researcher was able to engender trust with the participants (Patton, 1990) by expressing his deep appreciation and respect for their lived professional experiences and their reported perspectives. Last, by adhering to a disciplined methodological approach for collecting and analyzing data, the researcher also preserved the credibility of this study. That is, when conducting interviews, the interview protocol guided the exchanges between participants and the researcher so that the biases of the latter would not contaminate the perspectives reported by the former. Likewise, by employing three different data collection methods and, thus,

triangulating the emerging evidence they produce, this study reduced the limitations of each particular approach while enhancing its strengths.

Dependability

Dependability in qualitative research replaces the reliability criteria from quantitative research. Bloomberg and Volpe (2012) viewed dependability as the means of “track[ing] the processes and procedures use to collect and interpret the data” (p. 113). Additionally, Lincoln and Guba (1985) pointed to the complementarity between credibility and dependability, indicating that a clear demonstration of one criterion can lead to the demonstration of the other. In that sense, the researcher used the research journal he kept as a permanent repository for all major decisions and reflections concerning the case study. Rich accounts and thick descriptions were provided in the journal to substantiate the multiple steps and conditions involved in the research and analysis of data.

Limitations

This exploratory case study research had the following limitations:

1. Informed by many years of professional practice working with digital media technology, the researcher had a predisposition or bias in favor of educational technologies.
2. This study was based on a limited number of participants, 20 in total, who in turn were divided into four distinct professional fields.
3. While exploring the design of MOOCs for Latin America and the Caribbean, the activity and research setting for this case study was nonetheless based in

the United States. Subsequent studies looking at the same phenomena directly from the Latin American or Caribbean contexts should help to address this limitation.

4. The reliance on English as the main language in the study and Spanish as a translated alternative presented certain limitations: first, the unavoidable loss of nuances and meaning in language translation; and, second, the diversity of language preferences beyond English and Spanish among study participants.
5. While the purposive selection of participants based on their professional specializations sought to attain equal representation among the professions in the study population, it nonetheless altered the actual professional distribution found at the case study setting.
6. The use of interviews as the primary source of data presented a limitation in that interviewees could only speak from their recollections of events and might not always choose to provide genuine responses.
7. The tacit but powerful influence exerted by the host institution over the case study participants, who are all dependent on it for their livelihood, could induce participants to unknowingly or knowingly align themselves with the institutional value system.

Chapter IV

DESCRIPTION OF THE ACTIVITY SETTING

The purpose of this exploratory case study was to investigate the work activities of a multidisciplinary team of professionals engaged with the design of MOOCs for LAC using the edX platform, to better understand how the 20 selected participants—4 subject matter experts, 4 instructional designers, 4 platform technicians, 4 media producers, and 4 administrative assistants—made meaning of their practice and whether and how they reported any related experiences of work-based learning. The study was based on the premise that improving our understanding of the work-based activities and learning experiences among participants may benefit the training of future multidisciplinary practitioners engaged with the design of edX MOOCs for LAC and, thus, may contribute to the improved implementation of the edX MOOC platform for international populations.

This chapter describes the selected activity setting, the study participants, and the general demographic data of the study participants. It is important to note that this study used qualitative research methods for delving into the work-based activities and experiences of participants, which meant that the researcher had to ask participants to share professional and, at times, personal stories concerning their work relations and interactions. Therefore, considering that some of the information shared might be

revealing and sensitive and thus hold possible implications for work relations among participants, the researcher used utmost care to preserve the confidentiality of their identity. Similarly, as participants in this study included some external service providers who expressed particular concern about the prospect of hindering important business relationships, pseudonyms and non-descriptive identifiers were adopted to protect any and all identifying information like personal names, institutional references, and even the MOOC titles to which participants had contributed.

Moreover, given that the cultural historical activity theory (CHAT) framework employed by this study emphasizes the provision of “a thick description of participants, their activities, and the activity setting” (Yamagata-Lynch, 2010, p. 71) as a means of reporting contextually rich qualitative data, the researcher determined that simply presenting a demographic chart would have failed to portray accurately the nuanced work and personal stories that informed this study as well as to situate the context sufficiently for the findings to be discussed in the next chapter. In this sense, after presenting the activity setting and the participants’ demographic data, a narrative description of each study participant is provided according to his or her respective professional disciplines in order to paint a detailed and heterogeneous picture of the multidisciplinary teams and practitioners who comprised this study.

Activity Setting

The activity setting that was the focus of this study is a long-established, well-respected multinational institution that provides financial and technical assistance for development projects across Latin America and the Caribbean, all the while conducting

extensive research on the planning, execution, and impact of such projects. With headquarters in northeastern United States and local offices throughout Latin America and the Caribbean, the researcher gave the site the fictitious name of Hemispheric Development Fund (HDF). Organizationally, the vast administrative and research apparatus of the HDF is divided into over 15 knowledge sectors. The HDF has an established trajectory offering training and professional development opportunities for public service officials throughout the region, using traditional on-site and online learning courses. Since 2014, the organization has expanded its robust educational offerings with the design and delivery of over two dozen MOOCs on the edX platform, demanding the work of professionals from multiple disciplines in the process.

In that sense, the team who was given the responsibility of leading the HDF MOOC program received the fictitious acronym of DILAC by the researcher, which stands for Development Institute for Latin America and the Caribbean. DILAC had been traditionally and affectionately referred to as HDF's own "little school," because in addition to consulting with the various HDF knowledge sectors for producing on-site and online training programs for external audiences, it also coordinates the production of materials and courses for internal training initiatives. Thus, in 2014, as the HDF contemplated the prospect of launching its own MOOC program, it was only natural that the DILAC team was tapped to play a central coordinating role in that process.

As a precursor to its experimentation with MOOCs, the DILAC had also set up and administered HDF's open educational resources (OER)—an initiative that is still active today and responds to the organization's strong commitment to open-access knowledge as part of its mission to promote economic and social development in Latin

America and the Caribbean. A major component of the learning materials used across the different types of courses facilitated by the DILAC—be that in-person or online instructor-led courses, OERs, or even MOOCs—is based on the extensive body of research the HDF has accumulated over the years by providing technical and financial assistance for development projects throughout the region. It was in accordance with such institutional vision, then, that the HDF and DILAC selected the edX platform as a solution for offering MOOCs to the LAC region. As stated by Matías, a leading specialist at DILAC and the HDFx program: “[edX] was the only non-profit MOOC platform available at the time and because it also offered an open-source version” (Personal communication, November 27, 2017).

It is important to note, however, that although DILAC members played a leading role in the management of several transversal processes through the various phases of the MOOC design cycle, they were not the only group of professionals involved in that effort. Quite to the contrary, they reported collaborating closely with practitioners from other disciplines across different departments and knowledge sectors at the HDF as well as with a diverse set of external service providers. In that sense, of the five key disciplines identified in this study among collaborators in the HDFx MOOC program, only three—instructional designers, platform technicians, and administrative assistants—were directly embedded within the DILAC team. Collaborators performing activities that pertained to the remaining two disciplines—subject matter experts and media producers—held affiliations with different HDF knowledge sectors or with external service providers.

As stated in previous chapters, the researcher liaised with three members of the HDFx program to identify and establish initial email correspondence with prospective study participants. Appendices I and J include samples of such emails sent in English and Spanish, respectively. The study design set a target of 20 interview participants, divided into four participants from each of the five key disciplinary categories employed in the MOOC design process. Having then coordinated all necessary scheduling and logistical details, the researcher conducted nine such interviews in person in various office and meeting spaces at the activity setting and held the remaining 11 interviews over the phone or online via Skype or Google HangOut.

The researcher distributed physical copies of the demographic inventory to eight of the nine participants who were interviewed in person, whereas the remainder interviewee—whose interview had run longer than the agreed 1-hour duration—received an electronic link to the survey, as did the 11 other participants who were interviewed remotely. Altogether, 12 participants received electronic surveys. Of these, two never completed their demographic inventories, despite various reminders sent to the same email addresses used to schedule their interviews in the first place. In all, 10 participants completed electronic surveys and 8 completed physical surveys, for a total of 18 demographic inventories completed. Table 4.1 presents a summary of the demographic data of 18 of the 20 study participants who completed the demographic survey through a combination of in-person and electronic means.

Table 4.1

Summary of Participants' Demographic Data

Professional Specialization	Pseudonym	Gender	Age Range	Country of Birth	Country of Residence and Work	Race or Ethnicity	Language Proficiency	Highest Level of Education	Year Since Working in Professional Field	Year Since Working With MOOCs	Number of MOOCs Worked on	Number of MOOCs Completed
Subject matter expert: Integration and Trade sector	Kevin	Male	45-54	USA	USA	White	Spanish, English,	Master's	2005	2015	2	0
Subject matter expert: Knowledge and Learning sector	Simón	Male	45-54	Spain	USA	White	Spanish	Master's	2011	2015	2	0
Subject matter expert: Education sector	Karla	Female	35-44	Argentina	USA	Hispanic	Spanish, English	Master's	2006	2015	1 SPOC	0
Instructional designer/Team leader	Celia	Female	35-44	Colombia	USA	Hispanic	Spanish	Master's	2014	2014	1	0
Instructional designer (external)	Silvana	Female	45-54	Venezuela	Spain	Hispanic	Spanish	Doctorate	2009	2015	4	0
Instructional designer/Team leader	Xiomara	Female	35-44	Spain	USA	Other: European	Spanish, English, French	Doctorate	2014	2014	5	4
Instructional designer	Beatriz	Female	35-44	Chile	USA	Hispanic	Spanish, English	Bachelor's	2002	2014	4	2
Communications and contracts coordinator	Cristina	Female	45-54	Venezuela	USA	Hispanic	Spanish, English	Master's	1999	2015	11	1
Production coordinator	Luisa	Female	25-34	Spain	USA	White	Spanish, English, Catalan	Master's	2015	2015	2 MOOCs 1 SPOC	0

Table 4.1 (continued)

Professional Specialization	Pseudonym	Gender	Age Range	Country of Birth	Country of Residence and Work	Race or Ethnicity	Language Proficiency	Highest Level of Education	Year Since Working in Professional Field	Year Since Working With MOOCs	Number of MOOCs Worked on	Number of MOOCs Completed
Production coordinator: Platform specialist	Valeria	Female	25-34	Colombia	USA	Hispanic	Spanish, English, French, Portuguese, German	Bachelor's	2014	2014	10 MOOCs 1 SPOC	1
Production coordinator: Evaluation specialist	Daniel	Male	25-34	Colombia	USA	Hispanic	Spanish, English	Master's	2013	2014	10	0
Platform technician	Emilia	Female	35-44	Spain	Spain	White	Spanish, English	Bachelor's	2005	2015	6	2
Platform technician	Alberto	Male	25-34	Peru	USA	Hispanic	Spanish, English	Master's	2010	2014	8	0
Platform technician	Marcela	Female	35-44	Argentina	USA	White	Spanish	Master's	2005	2015	6	0
Platform technician	Patricio	Male	35-44	Spain	USA	Hispanic	Spanish, English	Master's	2008	2015	4 MOOCs 1 SPOC	0
Media producer: Graphic designer	Teresa	Female	25-34	Colombia	Colombia	Hispanic	Spanish, English, French	Master's	2011	2015	4	3
Media producer: Translator	Pamela	Female	35-44	Uruguay	USA	White	Spanish, English, French, Portuguese	Master's	2000	2016	2	0
Media producer: Video producer	Victor	Male	35-44	Uruguay	Uruguay	Hispanic	Spanish, English	Bachelor's	2002	2015	3	3

Taking into account the gender of the two participants who did not return the demographic inventory, the pool of participants included 8 males and 12 females. The age brackets for the 18 who completed the survey included 5 respondents in the 25-34 range, 9 in the 35-44 range, and 4 in the 45-54 range. Among these, 11 respondents self-identified as Hispanic or Latino/a, 6 self-identified as White, and 1 self-identified as Other: European. Reflecting the international composition of the participant pool as well as the transnational workforce that characterizes the activity setting, 5 respondents indicated they had been born in Spain, 4 in Colombia, 2 in Venezuela, 2 in Uruguay, 2 in Argentina, 1 in Peru, 1 in Chile, and 1 in the United States. Of these, 14 live and work currently in the United States, 2 in Spain, 1 in Uruguay, and 1 in Colombia.

Given its hemispheric orientation throughout the Americas, the research site has adopted four official languages—Spanish, English, French, and Portuguese—for its institutional activities. In that context, the reported language proficiency—understood in terms of both reading and writing competencies—among the 18 survey respondents breaks down as follows: Spanish is the dominant language among participants, with all 18 respondents reporting proficiency in Spanish. However, while 4 of these reported Spanish as their only language, the other 14 reported different variations of multilingualism that includes Spanish in combination with other language or languages. For example, 9 respondents reported being fully bilingual in Spanish and English. In turn, 3 respondents reported proficiency in 3 languages—with 2 of them being proficient in Spanish, English and French and the third one being proficient in Spanish, English, and Catalan. Finally, 2 respondents reported exceptional multilingual skills, with the first one mastering Spanish, English, French and Portuguese—all of the research site’s four

official languages — while the second listed not only the same four languages but included German as a fifth language.

It is also important to note the advanced levels of education indicated by the demographic survey respondents. Of the 18 respondents, 2 reported Doctorate degrees, 12 reported having completed Master's degrees, and 4 reported completing Bachelor's degrees. While one cannot draw any general conclusions from the limited data represented by this group of respondents, it is rather interesting that in their overall high levels of educational attainment, the selected members of the multidisciplinary MOOC-maker team seem to represent one of the qualities ascribed in the literature to people who are more prone to become MOOC registrants themselves, i.e., professionals with advanced education (Christensen et al., 2013).

Furthermore, all survey respondents—and all study participants, for that matter—reported having worked on at least 1 MOOC or SPOC, with 2 respondents reporting to have worked in as many as 10 MOOCs, and yet another one topping the number of MOOCs worked on at 11. However, in another arguable similitude to the general population of MOOC registrants, among whom just a small percentage of those who start a course actually complete it, 11 of the 18 respondents reported not having completed even a single MOOC themselves, regardless of the MOOC platform or provider. On the other hand, 7 respondents reported having completed at least one MOOC, with 1 respondent reporting three MOOCs completed and another one topping the number of MOOCs completed at four.

At the very least, this demographic disaggregation must have painted the picture of a highly complex operation, run by highly educated multidisciplinary professionals of

diverse national backgrounds and with a range of different language skills, who for the most part are currently living and working in the United States, and who—in their constant strive for self-actualization through education as well as in their varying degrees of persistence and achievement when registering for MOOCs themselves—are not unlike the common MOOC registrant population (Chafkin, 2013; Perna et al., 2013).

Study Participants

Subject Matter Experts

Subject matter experts possess the body of knowledge that is necessary for the creation of MOOCs. Most experts working with MOOCs at the HDF today have held prior experience as instructors of traditional online or on-site courses. The majority of experts are embedded within the different HDF sectorial areas, others are members of the DILAC team at the HDF, and yet another set are hired as external consultants to complement the available institutional expertise in the given subject area of a MOOC. In general, subject matter experts are responsible for sourcing texts and other educational content to be used as learning resources during the course, preparing the scripts for the various video segments of a MOOC, and collaborating closely with the instructional designers and other key members of the DILAC team to establish the objectives and structure for the course.

Felipe. Born in Argentina and currently living and working in the United States, Felipe is a subject matter expert with over 30 years of professional experience in topics of economic development for LAC. He was the first of two participants who did not complete the demographic survey for this study, although he received an electronic link

to do so following an unusually long in-person interview. In 2014, he acted as a leading contributor for the first MOOC offered by the HDF on the edX platform, using a published book that he co-authored as the core foundation for the course. He is also featured in multiple video segments through the weekly modules of the MOOC, where he introduces key concepts and discusses particular case studies related to the subject of the course.

Felipe reflected on his pioneering experience working in the first MOOC for the HDF as follows:

And this year [2016], a couple of weeks ago, we just finished the third course. We were sort of “guinea pigs”—ours was the first course, the first MOOC. Putting it all together was also quite an experience, because it is one thing when you already have a methodology of work and another thing is when you go to a MOOC, right? So we are very happy with the experience, it has had a big impact. (Personal communication, July 28, 2016)

Felipe’s statement illuminated the sense of discovery he and other subject matter experts at HDF may have experienced through their engagement with MOOCs. That is, while they had had previously-set methodologies of work for teaching on-site, online, or even hybrid courses, MOOCs have demanded that they adapt those methodologies to the new modality of instruction. Another important factor Felipe highlighted was the serialization of MOOCs, by noting that the MOOC he had worked on was already into its third edition. Serialization is a particularly important feature in the context of the HDF, because as a multinational organization that recognizes four official languages, it aspires to offer different MOOC versions in each of those languages and keep the option of simply updating an earlier version and scheduling it as a re-run.

Kevin. Kevin is a subject matter expert with over 12 years of professional experience and the only U.S.-born participant in this study. His work at the HDF deals

with topics of integration and trade in LAC, and while he has served as an expert for two MOOCs to date, he has yet to complete his first MOOC as a registrant. Looking back on the MOOCs he has worked on, he described the roles and responsibilities among the different HDF areas involved in the following terms:

Well, our department...is responsible for the technical content or technical expertise, DILAC for the knowledge management side of things and interacting with the platform, external relations for the kind of dissemination side. But there is a little bit of overlap in each one, because DILAC of course knows how the platform works—to some degree, although they are not the ones that directly manage it—and, for instance, we know the message we want to convey through the dissemination. So, it's quite an interactive process. (Personal communication, July 28, 2016)

Though general in nature, Kevin's remarks called attention to the complex and multilayered (technical, administrative, and educational) processes necessary for managing an effective MOOC operation as well as to the high level of interdependency among the multidisciplinary professionals that support it.

Simón. Born in Spain, Simón is a subject matter expert with over 6 years of professional experience who currently lives and works in the United States. Unlike the three other subject matter experts in this study, Simón is a member of the DILAC team and, as such, is embedded within the same group that coordinates the general design of MOOCs at the HDF. This meant that in addition to acting as subject matter expert for a MOOC on the management of development projects—the most successful MOOC offering from the HDF in terms of number of registrants, he also acted as team leader and instructional designer during the various phases of the MOOC design process. During the interview, he shared the following remarks about his experience adapting a conventional course into a MOOC format:

[W]e simplified the content so that it was not so deep; a more introductory level and the applied activities that we have always maintained. From the beginning we have maintained the philosophy that what one does not apply, one does not learn. So we wanted to have even a very basic application of the concepts of the course—we made a case study. Normally, we work on real projects, but here we work on a case study and the response to the exercises of the case was already partially resolved, so that [registrants] did not have to start from scratch and there was a recommended solution so that they could validate if what they had done was more or less in line with what was recommended as a solution. (Personal communication, August 12, 2016)

Simón’s comment illuminated an important challenge concerning the preparation of learning activities and the supporting resources for MOOCs. That is, MOOC design teams are faced with the difficult task of designing activities and materials that are consistent with their genuine pedagogical philosophies, even when dealing with regionally dispersed registrants who bring diverse needs and different levels of understanding about the course’s subject matter. Thus, as argued by Simón, given the large number of MOOC registrants and the inability to provide them with direct personal feedback and support, one possible solution is to simplify the course’s content in an attempt to make it as widely accessible as possible.

Karla. Karla is an Argentinian-born subject matter expert who today lives and works in the United States. With over 11 years of professional experience, her current work at the HDF specializes in education policy for LAC. In that capacity, her only experience with the edX platform has been through a SPOC (small private online course) for regional leaders in education, for which she worked closely with the DILAC team and shared credits as instructor along with 15 other experts from the HDF. She recalled some of the highlights from participating in such a collaborative project like this:

[T]his type of training was done with Moodle; interaction with students, assign students to a tutor—that is, a group of students to a tutor, that the tutor does a back and forth. All that part was normally done with Moodle. When we started

designing this course, the HDF had just signed the agreement with edX and we quickly realized that in reality for the user it was much more friendly to navigate edX than Moodle, so we tried to find ways to use edX and to bring to edX the functionalities of Moodle that we needed such as, for example, this group of students by tutors or that the tutors may be able to communicate and grade the activities we were assigning and that the participants can submit the activities through the platform. Then [DILAC] helped us to design—and they finally achieved—an interface between edX and Moodle. (Personal communication, September 16, 2016)

In her interview, Karla thus referred to the potential for innovation inherent in online learning technologies, while identifying important limitations of form and function across different learning platforms as the propellers for such innovations. Particularly, it is interesting to note that in the context of the HDF, said platform experimentation has taken place in connection to SPOCs more so than with MOOCs. The reason for this distinction might have to do with the fact that when used for the former type of courses, the edX platform has had to be adapted to reach a smaller, niche audience that demands more conventional features like group discussions and direct tutor-student interaction, whereas when used for the latter type, its out-of-the-box functionality has remained largely unchanged. After all, given the sheer volume and global nature of the massive audiences targeted by MOOCs, any attempt to break away from the standard functionality of the edX platform would be technically difficult and organizationally unsustainable.

Instructional Designers

Much like the rest of roles engaged at the HDF with MOOC design operations, the role of instructional designers has evolved and been redefined over time. Following organizational and operational structures that were previously in place, the instructional design for the first MOOCs of the HDF was initially divided among team leaders with

former experience in face-to-face, online, and hybrid-format courses. As the HDFx MOOC program has continued to expand, there has been a realization about the centrality of instructional design throughout the entire MOOC design process.

In that sense, new personnel have been added to the DILAC team to fulfill the role and responsibilities of instructional designers, whereas external consultants continue to be hired for carrying out selective complementary activities. In general terms, though, instructional designers are responsible for working closely with subject matter experts in defining the objectives for each MOOC along with its week-by-week structure and an outline of relevant learning resources. Instructional designers then rely on the support from production coordinators to bring the various MOOC components to life.

Celia. Born in Colombia and presently living and working in the United States, Celia is a DILAC team leader who has also acted as instructional designer for a MOOC about the management of development projects. Asked during the interview about any significant incident in connection to her work with MOOCs, when she might have felt that she did not know what was needed to carry out her job activities and someone or something was helpful, she answered as follows:

At the beginning we did not have the processes documented, so we did not know clearly what was the sequence of activities that had to be carried out for the implementation, for the development. So, at that time it was complex, just as you ask the question, there was no clarity about the activities to be carried out. It was then a previous experience that was shared by another colleague, who shared his knowledge and guidance and the coordinator of MOOCs, who provided us with information and guided the work. So, we sought orientation instead of following documented processes, which would have been a relevant input for the work. (Personal communication, July 28, 2016)

Celia's response signaled an experiential approach towards learning in the absence of formal or documented processes for the development of MOOCs at the HDF.

In that context, people with prior operational experience become valuable resources for passing knowledge onto their less experienced peers and for guiding their work activities.

Silvana. Silvana is a Venezuelan doctor in psychology, who currently lives and works in Spain. She collaborates remotely with the DILAC team as an external instructional designer, consulting on the evaluation component of the HDF MOOC program. In that capacity, she has researched and developed quizzes and other assessment instruments compatible with the edX platform for four MOOCs. During the interview, Silvana emphasized the importance of adapting to non-sequential ways of working as follows:

[I]n an ideal world, we can anticipate, have all the time available, processes follow sequentially without jumping steps. But, I think that is unreal; I believe that there is no job with such a context, in which teams and dependencies have been involved in processes where everything happens linearly. We have to learn to manage with omissions, with building blocks, with U turns. Rather, learn to work in spirals instead of working linearly. (Personal communication, August 12, 2016)

In general terms, Silvana's statement remarked on the increasing complexity and ambiguity of current work dynamics. In the context of her actual work as an external consultant for the HDF MOOC program, this dynamic gets further complicated by the geographic dispersion and necessary technological mediation of collaboration activities given that Silvana works from Spain and the HDF is based in the United States.

Xiomara. Born in Spain, Xiomara holds a doctorate in anthropology and currently works in the United States as a DILAC team leader for the HDF. In that capacity, she has acted as instructional designer for five MOOCs. She reported having registered and completed four MOOCs as a student herself—the most of any participant

in this study. In her interview remarks, she illuminated the centrality of the instructional design phase for the remainder of the MOOC design process as follows:

[T]he instructional design is in all phases, as we are preparing the scripts for the videos we have to do them from an instructional perspective. On the one hand, the content has to answer the learning questions and, on the other hand, the structure of the video must also have a didactic structure linked to the target audience of that course. Therefore, when you are designing each of the MOOC activities you also have to keep this map in your head. And...in the end everything has to be aligned with the learning objectives and the evaluation, the same, you have to assess that you really have acquired the skills you want. (Personal communication, August, 26, 2017)

From these comments, it becomes evident that all phases of the MOOC design are structurally and integrally informed by the instructional design. Because it dictates both the form and content of a MOOC, it also provides a general outline of the multiple disciplines and functions that will be needed during the different phases of its construction.

Beatriz. Born in Chile, Beatriz was hired in 2016 by the DILAC team as an instructional designer with over 15 years of professional experience. Her appointment, which has since been followed with the addition of yet another full-time instructional designer, confirmed the relevance of instructional design at the heart of the MOOC design process. Because she was interviewed only 3 months after joining the HDF, her comments offered a relatively fresh perspective on the HDFx MOOC program, as noted here:

So, up to now I have been intervening in products that are already in production, some that are already finishing, others are beginning. So, okay, I mean, I have my own idea of how it should be and how we could improve it and then how it's working, because the MOOC team right now is in a process of, as it were, professionalization. So we are trying to map out processes, to effectively define everyone's tasks, to see how we improve the learning outcomes. So in time you will see changes from here on out. (Personal communication, September 16, 2016)

Thus, among other topics, Beatriz reflected on the DILAC team's efforts for formalizing the HDFx program's operational processes and division of labor. After an initial experimental phase, and given the growing demand for MOOC development services at the HDF and beyond, the DILAC team has undertaken an internal review of its practices and operations. In that context, the incorporation of new team members, like Beatriz, who can perform dedicated instructional design functions has been identified as essential towards instituting a more professional organizational structure.

Administrative Assistants: Three Production Coordinators and One Communications Coordinator

As stated previously, this subset of administrative assistants, made up of production coordinators and a communications coordinator, was included in the study only after the researcher realized how integral their roles are within the HDFx MOOC program. For instance, the communications and contracts coordinator oversees the planning, implementation, and assessment of the HDFx program's communication and dissemination strategies as well as manages the hiring processes of external firms and independent consultants while meeting departmental budgets. On the other hand, as the DILAC team undertook the mapping and improvement of its operational processes amid a context of increasing demand for MOOCs, the job title of production coordinators was redefined from that of production assistants to better reflect this group's growing responsibilities helping to run most day-to-day administrative and production operations.

Production coordinators thus serve a broad set of transversal functions, like managing the development of learning activities and resources for MOOCs and SPOCs, tracking procurement requests and hiring processes for courses, conducting quality

control of products delivered by external contractors, coordinating the technical configuration of courses on the edX platform, configuring complementary applications, and participating in the planning and execution of the communications strategy for courses, among others. Production coordinators thus function much like a connecting tissue throughout the multiple phases of MOOC design and, in that capacity, they also interact with the different parties and disciplines involved, such as instructional designers, platform technicians, media producers, and, to a lesser extent, subject matter experts.

Cristina. Born in Venezuela, Cristina resides currently in the United States and works at the HDF as communications and contracts coordinator. She has over 17 years of professional experience, the last 2 of which she collaborated with the HDFx program by overseeing the communications strategy and contracting external consultants for MOOCs. In such capacities, she reported having worked on 11 MOOCs while having completed only one MOOC as a registrant herself. When asked during the interview about the relevance of her work activities, she remarked on the need to deploy an outreach plan for promoting HDFx MOOCs throughout LAC:

Well, in the case of MOOCs because in Latin America there is not much awareness about massive open online courses. So, it is a way to let our target audience in Latin America know about this option of mass education and open knowledge, and also that the HDF is gathering all that knowledge and making it available for countries to have good practices or for different countries to know what is being done amongst each other. (Personal communication, July 26, 2016)

In her response, Cristina thus pointed to one of the objectives of the HDF for instituting a MOOC program—namely, to raise awareness throughout LAC about its educational products and for countries in the region to gain practical knowledge by looking at each other's experiences.

Luisa. Born in Spain and based currently in the United States for work, Luisa is a trilingual production coordinator who first came on board the DILAC team in 2015 to assist with the creation of a SPOC about education policy. She has further worked on two MOOCs and reported not having completed any MOOC as a registrant herself. She reflected on the nuances and particularities of the Spanish language and their impact on her work, coordinating the creation of different learning activities and resources for MOOCs as follows:

I address people with *you* [tú]. I mean, I do not use the deferential *You* [Usted]; I use *tú* instead, or even *you* [os]: ‘I send you these photos, I send you I don’t know what’ [‘Os envío estas fotos, os envío no sé qué’]. Internally, it doesn’t make a difference; that is, for my internal coordination communications, it doesn’t matter. But, if I ask registrants to send...normally, in MOOCs the manner of speak is slightly more informal—you address people with *you* [tú]...I mean, you don’t want to be so formal—that is, it’s a friendlier treatment; yes, friendlier. In the SPOC we are doing, the treatment is with the deferential *You* [Usted], but also the target audience is like, it is very specific and includes like Ministries of Education. So, I think that’s why we changed the focus a bit. (Personal communication, July 26, 2016)

In her interview responses, Luisa thus placed a spotlight on the cultural and institutional ramifications of language by describing a tolerant workspace that accepts diverse uses of language for internal communications. At the same time, she illuminated some of the different factors that inform the selection of tone of voice and other language cues particular to Spanish when preparing learning resources and other communications for MOOCs versus SPOCs.

Valeria. Born in Colombia, Valeria is a production coordinator with over 3 years of professional experience who currently lives and works in the United States. Valeria reported extraordinary multilingual skills, declaring proficiency in five languages on the demographic survey. Similarly, she reported having worked on 10 MOOCs and one

SPOC, while having completed only one MOOC as a registrant herself. At the time of the interview, Valeria disclosed that she would be leaving her job at the HDF due to a long list of grievances. Her statements thus reflected a tell-all attitude and contrasted radically with those from her colleagues. Following is one such a reflection, in which she voiced her concerns about the type of work-sponsored visa that defines labor relations between the HDF and employees like her by granting them work and temporary residence status in the United States tied to an employment contract:

Truth be told, the need to comply with things and knowing that the life one has here is really a bit of a motivation.... It should not be the only motivation, but being that one depends from a contract; that one's stay in the United States depends from a contract, then one tries to give not 100%, but 200% of oneself so that they may continue to renew the contract and one may still have the status of the visa. (Personal communication, July 28, 2016)

Thus, Valeria expressed profound ambiguity about the fact that she depended on her employment at the HDF for keeping a legal non-immigrant status in the United States. During the interview, she further criticized the lack of planning and clear operational processes for the creation of MOOCs as well as the pervasive “macho” Latin American culture in her team. While hers might be an outlier’s perspective, Valeria raised important questions about the activity setting’s division of labor and overall organizational environment. As anticipated, Valeria has since left her job and is no longer at the HDF.

Daniel. Born in Colombia, Daniel is a production coordinator with over 4 years of professional experience who lives and works currently in the United States. He reported having worked on the creation of 10 MOOCs, while having completed none as a registrant himself. In addition to his duties as production coordinator, Daniel also acted as the MOOC program’s evaluation specialist, preparing reports of registrants’ performance

indicators for each MOOC, aggregating registrant surveys, and parsing through data from the edX platform. Because he had been part of the MOOC program since Day One, he was able to serve as a mentor for new staff members of the DILAC team while gaining a broad perspective on the nuts and bolts of the MOOC program. His remarks in the interview reflected such insight:

[O]ne of the challenges and I say it here in the HDF, and I believe that in all the institutions that are generating MOOCs, is the subject of how these MOOCs are financially sustainable. That is, we are talking about a course that has seventy videos, that you have to design readings, that you have to hire facilitators, that you obviously have to pay for the use of the platform and, obviously, you have to have a team like us that is behind that. The question is how to make these programs sustainable. (Personal communication, August 5, 2016)

Daniel thus developed a clear grasp of the various moving parts that are needed for bringing MOOCs online. Since then, however, he has also left the DILAC team and his dual role as production coordinator and evaluation specialist has been split into two separate jobs, each with its own specialization. On the evaluation side, particularly, the DILAC team now includes a dedicated data analyst who oversees the evaluation of the MOOC program from a statistician's perspective and the visualization of participants' learning behaviors on the edX platform.

Platform Technicians

In general terms, platform technicians serve two very concrete functions related to the delivery of MOOCs for the HDF: to provide technical support in the configuration and delivery of courses on the edX platform, and to evaluate the rollout of new platform features and tools. Like the rest of roles that perform operative functions in relation to the MOOC program, platform technicians are also embedded in the broader DILAC team. They, however, report to a different manager and occupy offices in a separate building

than the rest of DILAC members who work in the MOOC program. As such, the platform technicians' subunit has received the distinct moniker of "the virtual classroom," given its members' technical expertise in the operation of Learning Management Systems (LMS), including working with Moodle for the delivery of conventional online courses—an activity that preceded and has continued in tandem with the more recent engagement with the edX MOOC platform.

In order to meet the growing demands of the MOOC program, three contractors were incorporated into the team to serve as external platform technicians complementing the work of the four in-house platform technicians. Thus, once the in-house technicians have configured a given MOOC on the edX platform, they then delegate the moderation of the technical forums for the duration of the course to the external technicians. This coordination takes place online and across geographic and time-zone boundaries, for while three in-house platform technicians are based in the United States at the HDF headquarters, the remaining one is based in Spain, whereas all three external platform technicians are dispersed through different countries from Latin America and Europe.

Emilia. Working remotely from Spain, Emilia is a Spaniard in-house platform technician with over 12 years of professional experience. She reported having configured six different MOOCs on the edX platform since 2015 on behalf of the HDF, at the same time that she completed two MOOCs as a registrant. In the interview, she remembered how she learned to upload content to edX during the production of her first MOOC:

[I]n the upload of the first MOOC I learned on the fly. That is, I did not have any training and the training that was done was minimal and it was more a question of how edX works—not a question of how a MOOC platform is mounted. So, for me my teammates were fundamental; they taught me and showed me how everything was done. (Personal communication, July 27, 2016)

Alberto. Originally from Peru and residing currently in the United States, Alberto is a platform technician with over 7 years of professional experience. He was part of the HDF MOOC program since its inception in 2014 and, as such, he helped to train other members of the DILAC team. He reported having configured eight different MOOCs on the edX platform on behalf of the HDF, although he could not report having completed any MOOC as a registrant himself. He recalled getting trained on the edX platform during the early days of the HDF MOOC program and then getting appointed by management to help train his colleagues as follows:

At the beginning, only Matías, another person, and I went to the edX training in Boston. So, one of the decisions he made was that I, since I had gone to the training, would give training to all the people that were on the team.... Besides, he sent more people to Boston to be trained, also on these topics. Then, with several people who had also taken the course on site, we came back and set as a stronger foundation, because when you looked at the platform and talked about edX and talked about MOOCs, at that time, nobody understood them well, nobody knew what was needed, nobody really knew. (Personal communication, July 28, 2016)

Subsequently, at the expiration of his employment contract with the HDF, Alberto left the DILAC team and his position was filled by a former external platform technician from Colombia who joined the in-house team in the United States.

Marcela. Born in Argentina and currently living and working in the United States, Marcela is a platform technician with over 12 years of professional experience. She started working at the HDF MOOC program in 2015 and, since then, she has configured six MOOCs on the edX platform. On the other hand, she reported not having completed any MOOC as a registrant herself. During the interview, she distinguished between providing technical support for brand-new or first-edition MOOCs versus MOOC reruns, which are in their second or third editions:

Generally, things like that happen when courses are in their first editions and where there are, usually, the greatest amount of adjustments, because you already know that through the experience—and on the fly—you are learning for the second edition. This happens with almost all the MOOC teams we work with when it is a first edition of the course. For second and third editions, the type of organization is different—unless it was very disastrous in the first edition, which we have never had that happen—the materials are delivered much sooner to be changed and things are already more fluid. (Personal communication, July 28, 2016)

It is also important to note that MOOC reruns by the HDF may take different flavors—the most common, for example, being when the active period of a course on the edX platform runs out and is scheduled to reopen again at a later date, based on its ongoing popularity or any other consideration by the HDF. Then, although not exactly a rerun, a very common reason why an HDF course might get published multiple times under the same title ensues from the need to host the same course in multiple languages, from the four official languages of the HDF. In all, though, as denoted by Marcela's comments, the production of first-edition MOOCs can be expected to be far more demanding and complicated than the production of second- or third-edition MOOCs, as the latter demand changes or updates far less in the structure or content of the course.

Patricio. Born in Spain and recently relocated in the United States for work, Patricio is a platform technician who made the transition from the external to the in-house “virtual classroom” subunit of the DILAC at the HDF headquarters. He has over 9 years of professional experience and, since joining the HDF in 2015, he has configured four MOOCs and one SPOC using the edX platform. In the interview, he remarked on the challenges that platform technicians encounter when trying to steer away from the standard functionality of the edX platform and the elements it supports:

[T]he biggest problem that usually appears in MOOCs is when you try to get away from the standard of videos, questionnaires and other such elements. You try to do activities so that there is interaction between registrants, for example, to evaluate a document among them and things like that become more complicated... I think that that with MOOCs it is more complicated to have some work in groups and group participation. (Personal communication, July 29, 2016)

Media Producers

Media producers are external service providers hired by the HDF during the production phase of a MOOC to generate learning materials for the course. Based on the different media elements supported by the edX platform, learning materials may include videos, graphics, and/or text-based resources. In this sense, media producers refer to video producers, graphic designers, and even transcribers or translators from throughout the United States, Latin America, and the Caribbean. They, in turn, coordinate their work with the DILAC team at the HDF headquarters in the United States, using electronic communications and the liaising role of production coordinators.

Ricardo. Ricardo is the general manager of a video production company based in Colombia. He was the second of two participants who did not complete the demographic survey for this study, although he received an electronic link to do so and multiple subsequent reminders following his Skype interview. During the interview, among other points, he remarked in the following manner on the learning curve of working with institutions which up to recently had not been used to dealing with video producers:

We have learned so because it has been very difficult, as I say, it is a new platform and at the beginning not all of these companies and financial, banking, educational institutions had any relationship with production studios. So, they did not know how to handle us; then, everybody would chime in with an opinion and what they did was increase the delays. We also ran the risk of losing them as clients, because then there could be some kind of dissatisfaction. So, the idea was how to standardize everything; do what any company does, establish processes. (Personal communication, August 5, 2016)

Teresa. Based in Colombia, Teresa is a graphic designer with over 6 years of professional experience who has collaborated with the HDF MOOC program as an external service provider since 2015. She reported being proficient in three languages: Spanish, English, and French. She further reported having produced the graphic design of four MOOCs for the HDF, while she herself has completed three MOOCs as a registrant from different MOOC providers. Among other topics covered in the interview, she highlighted the important function that graphic design serves for helping to imbue each MOOC with a particular visual identity:

On the graphical side, I also consider that each MOOC is a unique learning experience and, therefore, they have different personalities. From the graphic point of view, it is very important to give them a particular identity so that the person who will ultimately see them and will take them can have an experience not only in terms of content, but also in terms of the visual. (Personal communication, August 8, 2016)

Pamela. Born in Uruguay and currently based in the United States for work, Pamela is a translator of technical writing with over 17 years of professional experience. Her collaboration with the HDF MOOC program as an external service provider began in 2016; since then, she has lent her translation services for two MOOCs. She reported having exceptional multilingual skills, being proficient in all four of the HDF official languages: English, Spanish, French, and Portuguese. On the other hand, she reported not having completed any MOOC as a registrant herself. In the interview, she remarked on the nuances of translating texts with consideration to cultural or national differences as follows:

[A]s a translator, you have to try and do your best to match the original but sometimes you have to adapt a little bit. And, you know, it's just...the main thing is trying not to use idioms or any language that's very typical of one country or another. And so, people would mainly understand what you are saying, I will mainly understand what a person from Nicaragua is saying if even though they're

speaking in a Nicaraguan type of dialect instead of a Uruguayan one. But if they talk to me only in idioms, I'll be lost and so will they if I'll do that from a Uruguayan standpoint. (Personal communication, August 15, 2016)

Víctor. Located in Uruguay, Víctor is a Uruguayan video director with over 15 years of professional experience, whose company started rendering video services for the HDF MOOC program in 2015. Since then, he reported having collaborated as an external service provider in the video production of three MOOCs for the HDF as well as having completed three MOOCs as a registrant himself. In the interview, he commented on the growing appeal of video as an educational resource aided by widespread cultural trends around digital video consumption set by platforms such as YouTube and Netflix:

[I]t is important to make this type of system, well, of audiovisual learning because it is much more attractive. And, obviously, because we are in a world that consumes much more video than in other times, than ten years ago. In other words, the fact that they say YouTube, Netflix and all portals similar to them makes everyone want to see a video of something. That is, since a year ago, now you enter Facebook and it is pure video publications, basically, when it used to be much more text. It seems to me that audiovisuals become more attractive and make certain concepts understood quicker than perhaps reading them. (Personal communication, September 13, 2016)

Chapter Summary

This chapter introduced the activity setting as well as the study participants for this exploratory case study, presenting demographic information and offering a brief narrative portrayal of each participant. By documenting participant profiles in addition to a demographic chart, the researcher sought to illuminate the nuanced personal and professional experiences that informed this study and to offer qualitatively rich descriptions about its context. Such descriptions, in turn, were organized according to the participants' respective professional disciplines in order to depict the innate heterogeneity

among the multidisciplinary teams and practitioners that comprise this study. Ultimately, it was this diversity of professional disciplines, national backgrounds, and personal experiences coalescing around the creation of edX MOOCs for LAC that gave meaning to this study.

Some participants came to their engagement with the HDF MOOC program as the natural next step in their long careers leading on-site and online professional development programs; others simply had related assignments added to their portfolios, and still others were hired to provide supporting external services. As the researcher investigated the essence of the participant interviews for the personal and professional interactions among the different groups of collaborators in the MOOC program to identify systemic tensions and opportunities for work-based learning, some participants became deeply reflective, remarking on perceived shortcomings in the current organizational processes or even questioning the pedagogical value of MOOCs altogether. Overall, nonetheless, participants expressed a shared optimism and belief that their efforts for developing MOOCs for LAC will, in fact, benefit the general populations throughout the region for which these offerings were created, and most are as committed to this endeavor as when they first started.

Chapter V

RESEARCH FINDINGS

The purpose of this exploratory case study was to investigate how a multidisciplinary group of 20 practitioners made meaning of their work together using the edX platform in the creation of MOOCs for LAC, as well as whether and how they reported any related experiences of work-based learning. The researcher considered that understanding the work-based activities and interactions among these multidisciplinary practitioners, representing the adult education and information and communications technology (ICT) sectors, may contribute to the training of similar professional groups seeking to use the edX platform for offering MOOCs in the context of LAC.

One overarching research question and three subquestions motivated this investigation as follows:

1. How and to what extent, if at all, do subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers report experiences of work-based learning through their engagement with the multidisciplinary design of edX MOOCs for training and professional development in Latin America and the Caribbean?

- a. What knowledge, skills, and/or behaviors, if any, do participants believe they need to master in order to be successful in their jobs, and to what extent can those competencies be attained via work-based learning?
- b. In what ways do certain institutional, technological, and/or pedagogical conditions related to the multidisciplinary design of edX MOOCs in the context of Latin America and the Caribbean foster or hinder the development of those critical competencies among participants?
- c. What challenges and opportunities do participants expect having to face in response to the latest developments in MOOC technologies, and how do they expect having to adapt their current work-based performance to respond effectively to what the future of edX MOOCs targeting LAC calls for?

This chapter presents the four key findings of the research which were obtained by (a) 20 in-depth interviews conducted with participants in the Hemispheric Development Fund's MOOC program, who were comprised of four subject matter experts, four instructional designers, four administrative assistants, four platform technicians, and four media producers; (b) five direct observations of work sessions coinciding with each of the five phases of MOOC design developed by the activity setting: Needs Assessment, Instructional Design, Production, Implementation, and Evaluation; and (c) document analysis of job descriptions, publicly available MOOC listings and promotional materials, MOOC courseware elements, and institutional reports. Table 5.1 identifies the main findings of this case study and outlines participant responses individually and by disciplinary group.

Table 5.1

Findings Chart

Participant Groups	Platform Technicians				Instructional Designers				Administrative Assistants				Subject Matter Experts				Media Producers				Totals	Percentage
	Alberto	Patricio	Emilia	Marcela	Celia	Xiomara	Beatriz	Silvana	Valeria	Luisa	Daniel	Cristina	Felipe	Kevin	Karla	Simón	Víctor	Pamela	Teresa	Ricardo		
Participants																						
Finding																						
Learning by Doing: Work-based Learning via Labor-integrated Activities	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	20	100%
Practical Knowledge in the Preparation and Administration of Educational Resources or Learning Activities		X		X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	16	80%
Communication Skills	X	X		X	X	X	X	X	X				X	X		X	X	X	X	X	15	75%
Need for Improvements in Organizational Processes	X	X	X	X	X	X	X	X	X		X	X		X		X	X	X	X	X	17	85%
Facing Constant Developments in Technological Tools		X	X	X		X	X	X	X	X	X		X	X	X		X		X	X	15	75%

Four Key Findings

The four key findings of this study were:

1. *Learning by Doing: Work-based Learning via Labor-integrated Activities.* All participants (100%) reported experiences of work-based learning as they engaged in labor-integrated activities related to the needs assessment, course design, production, implementation, or evaluation of edX MOOCs. This finding related directly to the principal research question of this study, which aimed to understand whether and how participants experienced work-based learning through their engagement with the multidisciplinary design of edX MOOCs for LAC.
2. *Practical Knowledge in the Preparation and Administration of Educational Resources or Learning Activities, and Effective Communication Skills.* A majority of participants identified the practical knowledge of how to prepare educational resources or learning activities for MOOCs (80%) and effective communication skills in multidisciplinary collaboration (75%) as essential factors for them to excel in the performance of their work activities. This finding corresponded directly to subquestion 1a, which sought to understand the types of knowledge, skills, or behaviors participants believed were necessary to succeed working with edX MOOCs.
3. *Need for Improvements in Organizational Processes.* A majority of participants (85%) identified the need for improvement in organizational processes as the most essential contextual condition exerting an impact over their work performance. This finding related directly to subquestion 1b, which

aimed to understand the institutional, technological, or pedagogical conditions that supported or inhibited learning among participants in connection to their multidisciplinary work with edX MOOCs.

4. *Facing the Constant Development of Technological Tools.* A majority of participants (55%) reported expectations of future work-based learning in response to rapid and constant changes with the technological tools they employed for doing their jobs. This finding related directly with subquestion 1c, which sought to understand the challenges and opportunities for learning at work that participants anticipated in connection to future changes in MOOC technologies.

Finding 1: Work-based Learning via Labor-integrated Activities

The basic premise of this exploratory case study, which had anticipated favorable conditions for exploring manifestations of work-based learning in the context of the newly established HDFx MOOC program, was proven valid as all 20 participants (100%) in the study reported having experienced some kind of learning pressure and/or opportunity in connection to their work activities delivering MOOCs for LAC via the edX platform. Specifically, the kind of learning reported by the total number of participants responded to their engagement in labor-integrated activities, or activities that were directly related to value-creation processes during the different phases of the MOOC design cycle. According to the documentation of DILAC's operational processes, labor-integrated activities related to the creation of MOOCs were organized into a cycle that includes the following five phases: needs assessment, instructional design, production, implementation, and evaluation.

In response to systemic tensions related to one or more of the five phases of the MOOC design cycle, all 20 participants in this study, including subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers, reported diverse work-based learning experiences. As documented in Table 5.1, the analytical review of the various themes reported by the participants determined they had encountered significant learning experiences or anticipated having to face future learning experiences as a result of: preparing educational resources or learning activities (80%), the need for improving organizational processes (85%), and the constant development of technological tools (55%).

In this sense, practitioners' testimonies helped to map such experiences through varied and complicated learning trajectories, starting with the adoption of the novel edX platform as a MOOC hosting solution; going through an intense process of multidisciplinary collaboration guided instinctively by a learning-by-doing approach to the development of educational resources or learning activities; and concluding with the update of organizational processes for professionalizing previously nonexistent roles and responsibilities or for structuring the multiple multidisciplinary interactions and collaborative tools required for making MOOCs available for LAC.

As such, in response to a questionnaire protocol (Appendix C) that was based on Mwanza's (2001) Eight-Step model and followed a combination of scripted and non-scripted questions, participants initially provided basic general descriptions of their work activities within the HDFx MOOC program. Subsequently, they adopted an increasingly reflective demeanor until eventually offering more detailed accounts about the individual and systemic objectives of their activities, the types of multidisciplinary collaborations

required to fulfill them, the means or tools that enabled such interactions, and the institutional context that surrounded that work, among other important themes related to their experiences throughout the different phases of the MOOC design cycle.

The uncharted origins of the HDFx MOOC program: Adopting the edX platform for delivering MOOCs to LAC. With its inception in September 2014, the HDFx MOOC program represented a new chapter for the HDF and its DILAC institute, responsible for administering professional development solutions within the HDF as well as for high-ranking public service officials from member countries throughout LAC. Furthermore, the adoption of an entirely new learning management system—the edX MOOC platform—introduced yet another important development with major implications for the technical, administrative, and instructional human talent charged with creating the first MOOCs for the HDF. This pioneering step had introduced the modality of massive open online courses as mediated through the technological tools of the edX learning platform to a multidisciplinary group of practitioners, who up to then had no prior experience working with MOOCs or the edX.

As a consequence, professionals of different disciplinary backgrounds, some of whom had limited or no former work experience in creating conventional on-site or online courses, found themselves working together all of a sudden with the responsibility of offering MOOCs to LAC for the first time in their careers. Marcela, for example, a platform technician at DILAC's virtual learning team who used to employ Moodle's learning management system for supporting online learning solutions for the HDF, reflected on how her team took on the responsibility of working with MOOCs: "It fell in our area, because we are the only area in the HDF that handles the topic of online

training.... Moodle was the closest thing we had” (Personal communication, July 28, 2016).

Similarly, Valeria, an administrative assistant responsible for the production coordination of MOOC resources, recollected the HDF MOOC program’s beginnings:

When we started the program two years ago [2014], it was like: Good morning! And we need the first MOOCs in a year! But nobody had worked with MOOCs, nobody knew what the process was like; what we had to do, what we didn’t have to do, nor the contracts that we had to sign. And it was a whole year of learning and we got a MOOC in the first six months, but everything was done in a sprint, with long hours of work. (Personal communication, July 28, 2016)

Another administrative assistant and production coordinator, Luisa remarked on the notion of having gotten her first encounter with the edX platform and the way it operated only after she joined the DILAC team: “When I joined here, I had not worked on the edX platform. I knew what a MOOC was; I had taken MOOCs and so on, but I had not created courses on the edX platform. I got to learn all the edX functionality, to explore its capabilities. Each implementation is a learning” (Personal communication, July 26, 2016).

Multidisciplinary collaboration as the outgrowth of an instinctive learning-by-doing approach to the development of educational resources or learning

activities. At the start, in fact, a core group of DILAC team members went to Boston, where edX is based, to get trained on the operation of the platform. Alberto, a platform technician, was among those attending with the intent that he then “would give training to all the people that were on the team...with several people who had also taken the course on site, came back and set as a stronger foundation” (Personal communication, July 28, 2016). Another platform technician, Patricio, insisted on the importance of communicating and sharing learning experiences with colleagues as an effective

problem-solving and collaboration strategy: “As we are all in the same office, then if anything comes up that we don’t know, then we ask if they have had that problem or that question in previous courses and that is how we usually solve everything” (Personal communication, July 29, 2016).

Daniel, an administrative assistant and production coordinator who had been part of the DILAC team since the inception of the HDFx MOOC program, corroborated both the notion of having learned to do his job from scratch using any formal or informal means at his disposal as well as having then become a resource for the new members who would join the team:

Our first MOOC came out at the end of September 2014, so basically at that moment we were a reduced, smaller team; let’s say that everyone did pretty much anything and everything.... I arrived without knowing absolutely anything about it and little by little we were getting it done and we were learning with the edX guides, the Internet or things like that...because I am one of the oldest in the program, more than anything, I have had to do like a little mentorship with colleagues in the past. Basically, give them guidance or generate documents to explain more or less the tasks, or generate meetings to show them how the platform works and what they should do. (Personal communication, August 5, 2016)

From the perspective of a subject matter expert, Simón recognized the central role that video plays in the instructional modality of MOOCs while also voicing a desire for increased training opportunities in how to become an effective instructor in front of the camera:

I think that if video, that seems to be, is a fundamental piece of the edX platform, to have a training of trainers on how to make videos well could be something magnificent that does not have to be very long. It can be something short for a few hours, but that those who are going to make a video can benefit from this micro-training on how to make an effective video. (Personal communication, August 12, 2016)

Xiomara, an instructional designer, identified particular challenges with the integration of video into MOOCs. She reported on the action steps she took for troubleshooting a critical situation with the procurement of video services for one of the MOOCs she had collaborated with as follows:

The company that was going to do the post-production of the videos, they did not understand our needs, they took a long, long time to understand it. And, in addition, they had previously worked with us; it seemed that we had overwhelmed them...that is, they were working on other courses, they were working on too many demands at the same time and they were not able to respond with the necessary quality or speed to get the times, right? I had to put three companies to work in parallel. Fortunately, it did not cost more, rather in the end it was a little more economical. But it was a complicated moment, in which it seemed that we were not going to be able to meet the objectives. But, in the end, by this strategy of spreading and having three production companies at the same time we were able to deliver on time. (Personal communication, August 26, 2016)

The journey towards professionalization: Structuring previously nonexistent roles and responsibilities according to organizational processes for multidisciplinary collaboration. As evidenced by the multiplicity of testimonials presented in this finding report, making MOOCs available on the edX platform requires of a number of complex operations and multidisciplinary collaborations. Celia, an instructional designer, reflected on the arduous path followed by the HDFx MOOC program towards developing a foundational set of organizational processes:

At the beginning, we did not have the processes documented, so we did not know clearly what was the sequence of activities that had to be carried out for the implementation, for the development.... In other words, irrespective of the theme, it was essential to know the stages it took, how long did each take. For example, what is expected of the development phase, is it done in fifteen days or it is done in five months. So, it wasn't clear. Then we worked on that and now we have some patterns, some references. There are already some guides on how the processes begin, who intervenes, what are their responsibilities, what are the check points. But in the beginning, when I arrived there was nothing, we built them together. (Personal communication, July 28, 2016)

From the preceding narrative, it should be evident that the diverse learning experiences reported by the multidisciplinary professionals employed at the HDFx MOOC program were intrinsically related to the performance of their work-based activities. In a context brought about by the tumultuous launch of a pioneering program that sought to offer large-scale, quality professional development opportunities to LAC using the latest MOOC technologies, the multidisciplinary practitioners behind that program underwent a continuous process of professionalization. Beatriz, an instructional designer who joined the team almost 2 years after its launch, summarized this transformative process almost to perfection in the following statement:

The MOOCs team is now in a process of, as it were, professionalization. We are trying to draw processes, to establish well the tasks of everyone, to see how we improve learning results. So, you will have changes from here on out... Then, the HDFx team is now undergoing a transformation process that is very interesting, because it is becoming more professional. It is something that also motivates me, because until recently all the responsibilities of generating MOOCs were in the hands of a team with lots, lots of will for doing the work but with little technical knowledge. So, that is taking an important turn and I think it was very necessary. (Personal communication, September 16, 2016)

In sum, the addition of a brand-new MOOC program to the portfolio of on-site and online training offerings run by the DILAC unit of the HDF provided a bounty of unprecedented labor-integrated experiences and learning opportunities for the multidisciplinary practitioners who worked as part of that initiative.

Finding 1 summary. The first major finding of this research study was that the totality of participants (100%) identified experiences of work-based learning in connection to the performance of their work activities through the various phases of the MOOC design process at the HDF. As documented in Table 5.1, all 20 participants, including subject matter experts, instructional designers, administrative assistants,

platform technicians, and media producers, reported different learning experiences in response to systemic tensions at the activity setting related to one or more of the following categories: preparing educational resources and learning activities (80%), improving organizational processes (80%), and facing the constant development of technological tools (55%). These areas, in turn, represent the remaining three major findings of this study and are subsequently expounded in detail.

Finding 2: Practical Knowledge in the Preparation and Administration of Educational Resources or Learning Activities and Effective Communication Skills

A subset of the first and principal finding of this research study, Finding 2 indicated that a majority of participants (80%) reported having developed practical knowledge in the preparation and administration of educational resources or learning activities for MOOCs as a result of their engagement with the HDFx MOOC program. Additionally, a slightly narrower majority made up of a different distribution of participants (75%) identified effective communication skills as an essential factor for succeeding in their multidisciplinary collaborative work. Table 5.2 demonstrates the prevalence of these results, especially emphasizing the dominant instances of practical knowledge development among participants.

It is important to note, however, that despite the variation in the distribution of participants reporting the two top responses, the researcher opted for synthesizing and presenting them together as part of this finding, given their coexistence as mutually interdependent factors in the context of the activity setting. In other words, considerations about the practical knowledge for preparing and administering educational resources or learning activities and about effective communication skills in multidisciplinary

Table 5.2

Participant Responses: Competencies Needed to Succeed in Work With edX MOOCs

Pseudonym	Professional Discipline	Practical Knowledge: Preparing/ administering educational resources and/or learning activities	Communication Skills: Providing feedback, negotiating, clarifying, mediating	Adaptability/ Flexibility: Working in parallel, spiral, non-sequentially	Time Management: Task prioritization, timely vs. delayed product delivery
Alberto	Platform technician		X		
Patricio	Platform technician	X	X		X
Emilia	Platform technician				
Marcela	Platform technician	X	X	X	X
Celia	Instructional Designer	X	X		
Xiomara	Instructional Designer	X	X	X	X
Beatriz	Instructional Designer	X	X		
Silvana	Instructional Designer	X	X	X	X
Valeria	Administrative Assistant	X	X	X	
Luisa	Administrative Assistant	X		X	
Daniel	Administrative Assistant			X	
Cristina	Administrative Assistant				X
Felipe	Subject Matter Expert	X	X	X	
Kevin	Subject Matter Expert	X	X	X	
Karla	Subject Matter Expert	X		X	X
Simón	Subject Matter Expert	X	X		
Víctor	Media Producer	X	X		
Pamela	Media Producer	X	X	X	X
Teresa	Media Producer	X	X	X	X
Ricardo	Media Producer	X	X	X	
Totals		16	15	12	8

collaboration were found to be closely interwoven and, as such, were both identified as critical for the performance of participants' work activities.

As outlined in Table 5.2, the top two responses were identified across all age, gender, and racial or ethnic demographic categories, although with certain variations across professional backgrounds that are subsequently considered. For instance, 16 out of 20 participants (80%) described situations related to their work with MOOCs for the HDF in which they encountered challenges or opportunities in the preparation of educational resources or learning activities. While such responses transcended all professional disciplines, they were most prevalent among instructional designers, subject matter experts, and media producers. All four participants from each of those disciplines reported such a perspective, while only two of four platform technicians and two of four administrative assistants shared the same viewpoint.

Similarly, 15 participants (75%) identified communication skills as a determinant success or failure factor in the performance of their work-based activities, including the totality of instructional designers (4) and media producers (4), as well as three platform technicians, three subject matter experts, and one administrative assistant. A third significant set of responses emerged from 12 participants (60%), who reported the need to demonstrate adaptability or adaptable behaviors when working with HDFx MOOCs, including three subject matter experts and the same number of administrative assistants and media producers as well as two instructional designers and one platform technician.

This finding report henceforth elaborates on the key elements that substantiate the interplay between the development of educational content for HDFx MOOCs and effective communication by: (a) defining what constituted educational resources and

learning activities in the context of this study from the perspective of participants themselves; (b) reporting on conflicting perspectives among subject matter experts and instructional designers as these groups decide on course content; (c) illuminating the multiple challenges of implementing video-based instructional methodologies; (d) identifying participants' effective communication skills and/or communicational strategies for multidisciplinary collaboration; and (e) highlighting the value of practicing adaptability or adaptable behaviors as a third and narrower success factor for working with HDFx MOOCs.

Educational resources and learning activities for HDFx MOOCs. Teresa, a freelance media producer and graphic designer, outlined in very clear terms the different kinds of media-based educational resources that can be incorporated into a MOOC and the opportunities or challenges for innovation that these bring about:

With MOOCs being multimedia tools that are a mixture of several formats—because we know that there is video, we know that there is text, we know there are graphics and audio—it allows us to play a little more with the image text and be much more creative with it than for example with a table of economic results, in ways that a printed document will not allow us to do. So that freedom that up to now has been possible in the management of MOOCs does allow us to have that slightly more modern identity of the HDF's graphic content management in terms of the web platform. (Personal communication, August 8, 2016)

Meanwhile, Celia, an instructional designer and team leader, offered a concrete example of the various types of learning activities that can be used as part a MOOC:

In the MOOC of management of development projects that I am in charge of, we have a case study, we have instructional videos, we have reinforcement readings, we have forums, we also have a live activity with experts, and the questionnaires that are being made progressively throughout the course from start to finish. (Personal communication, July 28, 2016)

See Table 5.3 for a summary of educational resources and learning activities for HDFx MOOCs.

Table 5.3

Summary of Educational Resources and Learning Activities for HDFx MOOCs

Educational Resources for HDFx MOOCs	Learning Activities for HDFx MOOCs
Video: Faculty videos, animations, student-generated content	Instructional videos
Text: Readings	Readings: Subject matter texts, Case studies
Graphics: Motion graphics, infographics	Discussion forums
Audio: Podcasts, instant messaging	Live Q&A with experts
Multimedia: Rich-media, games, simulations, interactive elements	Quizzes and questionnaires

Conflicting perspectives on content selection: Instructional designers vs. subject matter experts. Participants described the process for defining the content of HDFx MOOCs, be it via educational resources or learning activities, as a contested one. On the one side, some subject matter experts, in many instances, have devoted lifelong careers to developing extensive bodies of knowledge, while on the other side, some instructional designers are responsible for distilling that highly advanced and voluminous information into practical lessons for MOOC registrants. This became immediately evident in the following example, in which Felipe—a subject matter expert with an extensive trajectory as an instructor and public sector official in areas of economic planning and development for LAC—identified the curriculum foundation for his first MOOC in a previously published book that he had co-authored:

Well, first let's mention what is the curriculum of the course; let's say it stayed more or less the same, based practically on a book that we wrote in 2010 about management by results in Latin America and the Caribbean—of which I was the author together with [co-author's name omitted here] who is the other co-author. There we analyze the development of a management index by results and therefore all the definitions we use in the course; and in fact, the book that I

mention is a bibliographic reference. We tell the students: “Go to Chapter Three to see such a thing. Chapter Four...” In short, it is one of the bibliographical references. (Personal communication, July 27, 2016)

Conversely, Beatriz—an instructional designer critical of MOOCs that tend to be simply informational rather than instructional—advanced a general view about the common MOOC registrant as “a person who is just getting introduced to this content, just getting to know a topic.” She thus admonished against “overwhelm[ing] them with all the information in the world. You have to identify what is essential and what is nice to know.” Ultimately, she reflected on the challenges of collaborating with subject matter experts in the selection of learning materials as follows:

The relationship with the experts is complex, it is complex. At the beginning, you always find resistance from them. Resistance of two types: the first is the resistance to trying to simplify what they know. It seems that they think it is negative that we try to explain in other words something that seems highly complicated.... And, the second is trying to identify the central content from the complementary one. Because for them everything is important, everything is super relevant so that [registrants] understand a problem.... So, those are the two most complex things at the beginning; but, once you start to have a dynamic with them, as they begin to see results or how the course is getting structured, it becomes easier. But at the beginning I would say that it is always difficult, it is always difficult. (Personal communication, September 16, 2016)

Simón, a subject matter expert acting as one of three leading instructors for an HDFx MOOC on management for development projects, corroborated Beatriz’s perspective of the simplification of content that is used in MOOCs while remarking on the massive reach of these kind of courses:

What we did first was to see what material we had from courses about project management that could be suitable for an open massive course. So, the first thing we did was to simplify what we already had for our courses, due to the fact that there was not going to be feedback in an individualized way given the characteristics of massive courses that make it very difficult or impossible to provide feedback on the activities that students do. (Personal communication, August 12, 2016)

Beatriz then qualified the communication strategy she used to help bridge the seemingly antagonistic position of subject matter experts with her own professional perspective: “Although it’s a struggle, my main objective at the beginning is to try to get them to put themselves in the role of a small child and pretend they are explaining to a small child how this works.” As previously indicated, this communicational dynamic then carries important implications for how the different parties negotiate, clarify, and compromise on a vision for the selection of educational resources and learning activities. This process would then continue until the first components of the course start actually coming together for both parties to see. As such, this account represented a clear example of contested decision making among instructional designers and subject matter experts and of the intersectionality between effective communication and the development of educational content for MOOCs.

Challenges of adopting video-based instructional methodologies. Further reinforcing the learning-by-doing approach for the preparation of educational resources and learning activities that prevailed at the HDFx MOOC program, the adoption of instructional videos introduced significant learning pressures for many participants who had no prior experience working with this methodology. Simón, for example, identified the lack of formal training for subject matter experts like himself before standing in front of the cameras to shoot instructional videos:

There are many things that we do that are important, for which there is no formal training and they are new things that we do not all know how to do and there is no formal training that may give us all quick tools to make it better. In the end, it rests a lot on the person who is there, the ideas that they may give you and such, but I would reinforce that. For me, that’s an area that needs improvement, because the issue of instructional videos is not something that we’ve been doing for thirty years and everyone knows what we’re talking about. It’s not like picking up the phone and making a call; it requires a series of skills that not everyone has

and we would have to think on how to develop them. (Personal communication, August 12, 2016)

Felipe, another subject matter expert, described in a compelling manner the dual technological-communicational demands that those with teaching responsibilities via HDFx MOOCs had to confront:

[W]hen we started to record the course there were lots of, let's say, comments about the use of the language. They told us: "Okay, this is very long. Make a joke!" Ah, well, we have to make a joke next time, or comments with concrete examples. That is, let's say, when you are used to teaching somewhat traditionally, you talk and talk, and there might be some questions out there, but you speak for an hour or half an hour. Here you have to summarize in ten-fifteen minutes, no more, the most important ideas. Also, I had an exercise of not sharing more than three important messages in a session.... So, there's a whole communicational issue there. Even the gestures, right? The gestures before the cameras and all that, for me at least, in the first two courses was an unprecedented experience—that you have to talk more as a television communicator than as a teacher. (Personal communication, July 27, 2016)

For subject matter experts, therefore, the challenge of adopting video-based methodologies originated from two distinct but interlinked considerations with ultimate pedagogical implications. The first consideration responded to the technological mediation of instruction through digital media and online distributed methodologies. The second aspect, in turn, required that the lecturer's communicational approach conform to the form and format set by said technologies and to the current viewing and learning habits of the target MOOC audience.

On the other hand, media producers reported their own experiences of work-based learning upon undertaking the shooting and editing of instructional videos for the HDFx MOOC program. Ricardo, head of a video production company from Colombia, for instance, identified some of the key early lessons he had learned through the various MOOC projects in which his company had participated:

Many producers were making corporate videos instead of educational videos for the platform. What I mean is we were making Hollywood-style videos, very loaded with images, animations, things. And, when you are taking a course, you are going to class, you do not need to see special effects and you do not need to see a big production either. You need a single camera, or at most a two-camera production against a white background, that texts be reflected via slides in which the images of the concepts being referenced come out, and the simpler the better because that way you will get the attention from the person who is taking the class. (Personal communication, August 5, 2016)

Effective communication skills or communicational strategies for multidisciplinary collaboration. Amid a context characterized by complex multidisciplinary collaborations forged in the heat of performing actual labor-integrated tasks, participants reported having developed the know-how necessary for preparing educational resources and learning activities for MOOCs. As anticipated, carrying out said activities demanded effective communication skills from the various multidisciplinary participants at the HDF. In certain positive instances, such communicative impetus informed the creation of reports and subsequent training sessions for transferring practical knowledge across the different working groups involved with the generation of MOOC content. Patricio, a platform technician, for example, identified how he expected to communicate to his immediate colleagues and their collaborators across the HDF the most valuable lessons he learned after testing a new tool for organizing discussion forums:

Everything I can report, I will let the team know so that they are aware of the pros and cons of each new tool they are installing and the same also for my internal team; that is, all the experiences that we are acquiring via a test pilot you let the internal team know. So, in fact, on the account of the forums, I will have to do like one or two trainings on how it works, so that if they have to use this tool in the future they know how it works. Because, in my case, it was a bit of personal experience of just going and trying the tool. But it's okay. (Personal communication, July 29, 2016)

Conversely, in certain negative instances, the lack of effective communication channels among participants became an inhibitive factor for the successful fulfillment of specific content-generation objectives. For example, Teresa illuminated the detrimental effect that the absence of clear and precise feedback communication from her counterparts at the HDF had on her work as a freelance graphic designer:

I remember a specific case we were working on, it had to do with [course subject omitted by researcher]. There were a few difficulties, because the person behind the selection of the graphic part was not very clear in the feedback, which is super important. Then, when they are not that clear and are ambiguous, it is very hard to understand what is expected from the image.... When feedback is not too clear, it tends to become an obstacle; proposals are made, and remade, and remade, and they are always getting turned back, but it is never clear the reason why they are wrong. In that specific case that I remember, it took us a long time to arrive at a final image and at the end they had to change the responsible team, because we were not going to get anywhere and time was running out for presenting the images that were needed to publish the MOOC. (Personal communication, August 8, 2016)

Similarly, Daniel, an administrative assistant and production coordinator, reported on the negative consequences that tend to follow from the want of effective internal communication. In this sense, denoting the overlap of the communicational factor with the call for improving organizational processes outlined in Finding 3, he remarked on the need to share essential information about the different roles and responsibilities among the various members of the DILAC team as a remedy for not overloading certain team members with too many work responsibilities:

[A]n determining factor could be internal communications because there are many times when we don't know exactly what another team member is up to or whether or not he or she is working on anything. And, sometimes, this generates work overload for some people and not so much for others. Then things are left a little out of balance, but precisely for not communicating among ourselves or for not having a more effective means of communication. So, we had a MOOC that we were handling practically among just two people and there were two other people that basically I don't know what they were doing—I don't know whether

they were attending to something else or they were not doing anything at all. (Personal communication, August 5, 2016)

Further previewing the results of Finding 3, Xiomara, an instructional designer, highlighted the impact of effective communication over key considerations about organizational processes throughout the general MOOC design cycle. She remarked on the implementation of a project charter, which captures the collaborative output from the initial Needs Assessment phase, as a central planning document that sets and communicates realistic expectations about roles and responsibilities, including time commitments for the various subject matter experts who agree to participate in any given MOOC:

That's why in the project charter we always mark down the hours that they, the HDF partners, have to allocate to the course; otherwise, they have to hire external personnel to cover that time. However, they still have to organize their work because they are the ones who know about the content part. So, it is a negotiation and, above it all, the communication aspect of making them understand what is the required workload, what is the importance, and that before they agree to do it they know how much time it is going to take and that they really assign it in their work plan. That is not always the case, but that is something that we ought to look at, because once you have it already in your work plan, and you set goals, and you have assigned the time, it is much easier to develop the project. (Personal communication, August 26, 2016)

Adaptability as success factor for working with HDFx MOOCs. As anticipated, 12 participants (60%) reported the necessity of demonstrating adaptability or adaptable behaviors in connection to their work with HDFx MOOCs. While denoting a narrower incidence than the top two factors illuminated by this finding—practical knowledge in the development of educational resources or learning activities (80%) or effective communication skills for multidisciplinary collaboration (75%), the researcher still deemed worth recognizing that a majority of participants identified the capacity to be adaptable as a success factor for the performance of their work activities. Furthermore,

the mention of adaptability in this context only reinforced the main two factors of this finding, since participants remarked specially on the relevance of remaining flexible or adaptable in connection to some of the pitfalls they had encountered during the creation of educational resources or learning activities for MOOCs, as well as with regard to the communication problems they had faced through multidisciplinary collaboration.

For example, Xiomara, again, identified a particularly challenging episode with the commissioning of videos from an external service provider as a hallmark of the extraordinary adaptability that was required for troubleshooting the multiplicity of issues related to the design of educational resources and learning activities for MOOCs:

In any project, there are always moments in which things don't quite work out, things you didn't plan or you didn't take into account all the risks involved and you have to reformulate to be able to respond. For example, in the last course, it turned out we had a very bad communication. The company that was going to do the post-production of the videos, they did not understand our needs, they took a long, long time to understand them. And, in addition, they had previously worked with us; it seemed that we had overwhelmed them. That is, they were working on other courses—they were working on too many demands at the same time and they were not able to respond with the necessary quality or speed to get the times right. I had to put three companies to work in parallel. Fortunately, it did not cost more; rather, in the end it was a little more economical. But it was a complicated moment in which it seemed that we were not going to be able to meet the objectives. But, in the end, by this strategy of spreading and having three production companies at the same time, we were able to deliver on time. (Personal communication, August 26, 2016)

Similarly, from the point of view of subject matter expert Kevin, who was affiliated with the HDF who had participated in the Spanish and English versions of a MOOC on integration and trade in LAC, the development of learning questions based on the particular texts employed in a course demanded both clear communication and a certain degree of flexibility from the different parties involved, as Kevin indicated:

[W]hen developing texts and everything, people say, well, you know: "Is this the final, final text?" And there's never a final, final text until, you know, the day

of the course. So, yeah, this is the text that we can base all the learning questions on, the forum questions on, but yeah, we are still deciding, you know, on this preposition here or something like that. Or, you know, are we going to use dollar sign or USD? Or how do we delineate thousands in Spanish—is it with commas or *puntos*? Those kind of things, yeah, the development of, say, a learning question doesn't have to wait until that part of the text is done, so.... Part of it's on the person developing the text, which is me, saying: "Okay, yeah, this is what we can work with here," you know. (Personal communication, July 28, 2016)

The opposite perspective, however, was reported by Pamela, a freelance media producer responsible for the translation of texts. While she insisted on the importance of basing the translation of any text on its final version to avoid the duplication of efforts, she still acknowledged the multiple responsibilities borne by the subject matter experts who supply those texts, which complicates the enforcement of such an ideal scenario and requires instead the adoption of adaptive problem-solving strategies:

[T]he ideal thing for the translator is to get a final document. So, if there's a document that you need to get to be translated and that document is still under revision, it's double the work. It's not as easy as going into the document and saying: "Oh, these are the changes. That's it!" No, you have to redo a lot of it, because you have to see that the text still flows and, you know.... What tends to happen is that because everybody is always, you know, in a very hectic world and everybody is doing too many things, what I try to do is, if I ask questions, I either give the answers and ask for A, B, C, you know. So that people don't have to think too much, or I ask yes/no questions, or I tell them: "This is what I put, if you need to change it to that, you can put this other thing." If there are a couple of different things that could be changed, so that they don't have to get back to me and they can still, you know, get a full finished product. (Personal communication, August 15, 2016)

Finding 2 summary. The second finding of this study was that a majority of participants (80%) identified the practical knowledge for preparing and administering educational resources and learning activities as the most important factor for succeeding in their work with MOOCs. Similarly, two different narrower majorities reported positive communication skills (75%) and adaptable behaviors (60%) as critical factors for the

effective performance of their multidisciplinary work activities. As documented in Table 5.2, all three responses were supported across all age, gender, and racial or ethnic demographic categories, while highlighting the respective differences across disciplines. Finally, as illuminated by the mention of adaptability as a less frequent but still indicative factor for participants' successful work performance, it was found that all three sets of responses did not represent mutually exclusive factors. Rather, it was demonstrated that they shared a high level of complementarity through the different phases of the MOOC design process.

Finding 3: Improving Organizational Processes

A subset of the first and principal finding of this research study, Finding 3 was that a majority of participants (85%) described the need to improve the organizational processes currently in place for collaborating among members of the HDFx MOOC program as the most important contextual condition impacting their work. As outlined in Table 5.4, 17 out of 20 participants, transcending all professional disciplines, age, gender, and racial or ethnic distribution, remarked on the importance of developing organizational processes for the effective performance of their work activities.

Initially, these comments ranged from recollections about the early days of the HDFx MOOC program, when collaborators were attending to their work activities guided primarily by an instinctive sense of discovery, to more recent statements arguing about how to prevent the duplication of roles and responsibilities resulting from the lack of properly documented work processes. As an example of the former scenario, Ricardo, an external service provider whose media production company was hired to shoot and edit

Table 5.4

Participant Responses: Contextual Conditions That Foster or Hinder Work-based Learnings

Pseudonym	Professional Discipline	Improving Organizational Processes, e.g., workflows, roles and responsibilities, collaboration tools	Power Dynamic: Equal commitment among HDF departments, inter-institutional partners, client-service providers	Inter-institutional Partnerships	Registrant-centered Instruction rather than informational or promotional products
Alberto	Platform technician	X			
Patricio	Platform technician	X	X		
Emilia	Platform technician	X			
Marcela	Platform technician	X		X	
Celia	Instructional Designer	X		X	
Xiomara	Instructional Designer	X	X	X	X
Beatriz	Instructional Designer	X	X	X	X
Silvana	Instructional Designer	X			X
Valeria	Administrative Assistant	X	X	X	
Luisa	Administrative Assistant				
Daniel	Administrative Assistant	X	X	X	X
Cristina	Administrative Assistant	X	X	X	
Felipe	Subject Matter Expert				
Kevin	Subject Matter Expert	X			
Karla	Subject Matter Expert				
Simón	Subject Matter Expert	X			X
Víctor	Media Producer	X			
Pamela	Media Producer	X			
Teresa	Media Producer	X	X	X	X
Ricardo	Media Producer	X	X		
Totals		17	8	8	6

videos for different MOOCs, expressed the following when asked about ways in which the current way of working could be improved upon:

Look, that question seems complicated. Let's go back to where this was born. I think we've learned from trial and error. This is new, I would say that this year, for example, at the HDF things have just been standardized, but before, for example, there were courses that did not have the same look and feel—that things changed from video to video. So, we have been learning, we have learned as providers, they have learned as customers and students have also learned from the platform. (Personal communication, August 5, 2016)

In sum, the call for the improvement of organizational processes emerged quickly as a common theme among participants and was shared unanimously by all four platform technicians, all four instructional designers, and all four media producers in this study. Respectively, three of the four administrative assistants expressed the same position, along with two of the four subject matter experts. As such, this widely accepted viewpoint included references about the value of managing collaboration workflows and tools as well as updating or clarifying roles and responsibilities, including considerations on the latest industry practices around big data analysis.

Identifying multidisciplinary, multinational, and multi-tool collaboration workflows. Platform technicians identified special challenges in the manner in which the various MOOC components for which they are responsible to upload to the edX platform—e.g., quizzes, texts, graphics, videos, etc.—are delivered by their administrative assistant colleagues. They described instances when the delivery of such resources occurred very close to the actual deadline for their publication, complicating thereby the proper fulfillment of their responsibilities according to the course calendar set on the edX platform. Patricio, a platform technician for the DILAC team, illuminated this

issue by remarking on the multidisciplinary linkages that are necessary for making edX MOOCs available for LAC:

We depend and, for example, we insist a lot on the fact that the content must be ready with enough lead time to avoid errors and incidents. So, we do not depend on ourselves; we depend on the person assigned to us within the MOOC division, who is in contact with the experts managing the whole issue of content and, in turn, she does not depend on herself either because she is requesting those things from the subject matter experts and others. (Personal communication, July 29, 2016)

Valeria, an administrative assistant and production coordinator, further recognized the general interdependency of her role with that of other disciplines, as she stated:

I will always depend on somebody else. In many instances, we work a lot as a team and, let's say, if I want to upload a video, then I depend on another person giving me the video, or uploading it as well as the video meeting our expected quality standards—that there are no mistakes. But that is the risk, right? (Personal communication, July 28, 2016)

However, she criticized her platform technician colleagues at DILAC's virtual team and blatantly pointed at them for complicating the process of uploading MOOC resources to the platform:

I depend on the virtual team, which sometimes is responsible for helping us upload content to the platform. But at the same time that they are an asset they are like a stone in your shoe, because they ask you to send them everything super chewed. That is, they do not give anything in return...that is, many times, it'd be easier for me to upload things than to ask them and depend on them to upload it, to look at it, and move it along. (Personal communication, July 28, 2016)

Although Valeria's comments represented an extreme position among participants, as noted in Chapter IV, her comments were included in this study as an illustration of the challenging, high-stakes work environment that characterized the early stages of the HDF MOOC program. In fact, her tell-all attitude during the interview helped to identify areas of systemic or institutional importance impacting collaboration workflows at the HDFx MOOC program.

The multiple, interwoven processes required for setting up a MOOC constitute a highly complex operational dilemma—specially within the context of an organization like the HDF, given its multinational, multilingual, and multisector structure. From Cristina’s perspective, as an administrative assistant responsible for the budgeting and communications strategy of the HDF MOOC program, an important factor contributing to constant delays resulted from the busy work schedules of the high-profile subject matter experts that the HDF employed for its MOOCs. “[O]ur experts are people who are...well, internally it’s a little easier even though they travel a lot, but externally they are ex-finance ministers or finance ministers, national or international bank ministers, high-level academy professors. Then, it is not that easy to book them” (Personal communication, July 26, 2016).

One of the most powerful statements describing such a difficult environment for the effective management of collaborative work processes came from Silvana, an instructional designer hired to develop quizzes for MOOCs, who said:

In an ideal world, we can anticipate, have all the time, processes follow a sequence without jumping steps. But I believe that is unreal; I believe that in no work context, where teams and dependencies have been involved in processes, everything will happen linearly. We have to learn to manage with omissions, with steps, with U-turns. Work rather in spiral, instead of working linearly. (Personal communication, August 12, 2016)

Silvana’s comment thus corroborated Finding 2 of this study as related to the usefulness of demonstrating adaptable competencies and behaviors in the context of working with edX MOOCs for the HDF. The same viewpoint was previously attributed to Kevin, a subject matter expert affiliated with the HDF, as he emphasized the value added to organizations by professionals who know how to adapt to uncertain and fluid

multidisciplinary workflows while insisting on the benefit of having clearly delineated and even redundant job responsibilities to ensure their satisfactory fulfillment:

I think clear delineations of responsibility is always important, so somebody is responsible for certain tasks, but then also having fallback, you know, having backups that can do things; people that are multifaceted, managing tasks where people work in parallel. I think there is a tendency at any organization, or any process for that matter, for people to say: I can't do this until this other.... I can't do A until B happens. And that prevents things from happening, but when everyone is...when somebody says: Okay, I'm gonna work on A and when B happens, I can do like the last twenty percent of A that I need to do. Then that's how you get results, you know. (Personal communication, July 28, 2016)

As yet another concrete example of the complex collaborative processes that participants have to sort out in order to deliver on their shared responsibilities, Ricardo identified the learning pressures that media producers like himself and their counterparts on the DILAC team experienced through the management of their collaboration and communication workflows for the production of instructional videos for MOOCs:

[A]t the beginning, we started sending these videos via WeTransfer—or I don't know, via Dropbox or GoogleDrive—and we copied them to seven, ten people. Imagine ten people providing corrections and between one person and the next contradicting each other. So, misunderstandings were generated and the work environment became somewhat difficult. We discovered that it was better to work one on one with a single person from the client side—in this case, the HDF or university institution, because we also work with universities. So, they select somebody, they receive the video and they organize themselves over there, and they send a single email. That is, they come to a consensus on their own, then one person sends a single email with all the changes to us and we make them. All the while, we also appoint a single person for it, who in this case is going to be an editor or an animator.... But I think that less is more; that is, it is a team effort that has to be coordinated with people assigned as with any project management—a project management with a specific work schedule, with the people in charge of each phase, and I think that this way the work can be strengthened more. (Personal communication, August 5, 2016)

As a media producer responsible for the visual and graphic design of MOOCs, Teresa shared the same point of view: “It was easier to let a single person decide via a visual image than to get a consensus among five or six people who all think differently and

will make constant changes that will ultimately delay when the image is finalized and approved.” In this way, all the while remarking on the necessity of streamlining organizational processes, Ricardo’s and Teresa’s comments also corroborated Finding 2 of this study with regard to practicing effective communication skills for the multidisciplinary collaboration in the design of educational resources or learning activities for MOOCs.

Disparate collaboration tools. Hand in hand with the reflections and recommendations on how to improve the multiple organizational processes for the design of MOOCs reported thus far are the participants’ remarks on the selection and use of disparate collaboration tools among members of the HDFx MOOC team. Simón, for example, identified particular limitations with the adoption of online collaboration tools, related to their lack of universal adoption or to their misuse by members of the same working group. As a result, Simón acknowledged having to voice his opinion in favor of keeping conventional in-person meetings for the coordination of collaborative processes instead:

I remember that there was a theme here that I felt a bit the need to express my opinion. Virtual collaboration is very difficult, very difficult. We use Basecamp, we use another series of tools so that people could collaborate in their own way—providing feedback for reviewing resources or sending stuff. I remember being very lost and it did not only happen to me as part of this project; it happens to me in other projects where there is a virtual collaboration tool that is not used by everyone and that they do not use it well. And what I think may be necessary is a kind of DropBox, if you want, where we keep a version of what we are talking about, but do not eliminate the synchronous coordination which is something else I mentioned at some point. (Personal communication, August 12, 2016)

From her unique perspective as a team leader and instructional designer, Xiomara described the root causes for the divergent uses of collaboration technologies and the quest for evolving such practices as she participated in an experiment to consolidate

multiple project management, resource management, and vendor communication functions related to the creation of MOOCs via a single tool—Microsoft’s SharePoint software:

That depends on each team leader. There are people who use Basecamp for the project management. We also use SharePoint, where we put all the materials—both in their intermediate and final stages—and all communication with the vendors who do part of the work for us, like the production and post-production of the videos that we hire.... [I]n my case, I use SharePoint, I use spreadsheets for the tasks of project management in Excel—the old-fashioned way. We aim to use more SharePoint and we are trying to intensify it. Now I’m working on a pilot project to see if we can use the workflow feature in SharePoint to handle the project management aspect, too. More specifically, so we can then do everything that is the division of project tasks, phases, times in SharePoint. That would be great, because we already have almost all the materials there, but it is still in a pilot phase. So, let’s say, we depend on the team leader for the tools that are used to coordinate the whole team. And we use a lot of video conferences, conferences, and meetings. (Personal communication, August 26, 2016)

Updating or clarifying roles and responsibilities. In turn, multiple redefinitions of the roles and responsibilities of the human talent that facilitate the operations of such hardware and software tools have been necessary since the inception of the HDFx MOOC program in 2014. The most obvious among these was the sheer increase in the number of staff members, as a result of the growing demand for HDFx MOOCs. Hence, following an initial phase in which the different members of the DILAC team would do basically anything and everything in their path to publishing the first MOOCs on the edX platform, the team added an operations coordinator to its ranks with the task of assessing and then structuring their different work processes, as well as adding first one and then a second dedicated instructional designer to fill a role that was previously divided among team leaders.

In this context, it is important to note that the researcher conducted all participant interviews, observations, and document collection for this research study precisely as the

HDF had embarked on its own exploration of the MOOC program's processes—seeking to take stock of a tumultuous initial period characterized by the intense learning and trial-and-error discovery of participants and the organization as a whole on how to create edX MOOCs for LAC. Daniel, an administrative assistant and production coordinator who has since left the HDF, summarized such progression as follows:

At the beginning, almost from scratch, we found ourselves with an entirely different animal because it was the first time, I believe, for everyone doing a MOOC—especially for Latin America and MOOCs in Spanish, the immense majority. So, of course, this topic was a little more “organized” in the U.S. and European market, but in the Latin American market many of our first participants said: “What do you mean by MOOC? What is that? Where am I taking the course?” Then, of course, at the beginning many in the team would do a little of everything. Now, we are trying to structure ourselves a little more, at least on the subject of activities and designing all the processes. That's where we are at now. (Personal communication, August 5, 2016)

As a result, the researcher witnessed first-hand only some of the organizational changes emerging from such restructuring exercises while learning about other subsequent changes second-hand by continued liaising with members from the activity setting. For example, references to the job title update of production coordinators from their former title as production assistants were gathered and contrasted via a combination of direct interviews with the very professionals under discussion and their colleagues as well as via job description documents, all of which pointed to a need to reflect more precisely the transversal responsibilities of this group of participants—not only in support for but in the comprehensive management of major production processes throughout the different phases of the MOOC design cycle.

Staffing up with a technology coordinator and a big data analyst. By contrast, references to the recent creation of two new positions within the DILAC team—a big data analyst plus an audiovisual and technology coordinator—were obtained via

participant interviews, excluding the very professionals under discussion, and follow-up communications with the researcher's liaisons at the HDF. So, for example, Beatriz commented about the incorporation of a big data analyst into the team from her perspective as an instructional designer:

I understand that now a person who is going to help with the big data part has also joined, because apparently, there are a lot of data that we are not taking advantage of—that we are not interpreting properly and that it is going to be very good for us, to have someone who can shed for us a little extra light on it. (Personal communication, September 16, 2016)

Through the last institutional report available for this study, dated April 17, 2017, a total of 474,945 registrants had taken a MOOC (474,283) or a SPOC (662) offering from the HDF since September 2014. Given such a massive aggregate of registrants, there was an urgent need for the HDFx MOOC team to fill the missing role of a big data analyst as part of its staff in order to capitalize on the unprecedented opportunity for studying registrants' online learning behaviors and evaluating the overall efficacy of the program's offerings. Similarly, upon considering the preceding report on Finding 2 of this study that described how essential video and other media technologies are within the instructional methodology of MOOCs—inclusive of key problem areas with their associated processes of pre-production, production, and post-production, then the addition of an audiovisual and technology coordinator to the DILAC team can also be understood as a decided step for solving one of the main challenges faced by the HDFx MOOC program and for the continued improvement of its organizational processes.

Finding 3 summary. Finding 3 of this exploratory case study was that 17 of the 20 participants (85%) identified the improvement of organizational processes for multidisciplinary collaboration as the most important contextual condition affecting their

work for the HDFx MOOC program. Such widespread result transcended all professional disciplines, age, gender, and racial or ethnic distribution, as tabulated in Table 5.4. This finding denoted the participants' reflections on the origins of the HDFx MOOC program, a period characterized by intense experiential learning through the direct engagement with labor-integrated activities and work processes that were very loosely organized. Henceforth, participant responses described the ongoing depuration of operational processes undertaken by the HDFx MOOC program, resulting in the proper documentation of collaboration workflows and tools and in the subsequent clarification of roles and responsibilities for the DILAC team. Although the timeline for this study did not allow for the immediate documentation of all organizational changes reported via this finding, specifically related to the latest addition of roles in areas like big data analysis and audiovisual technology coordination, it was expected that the participants' call for the continued improvement of organizational processes had sufficiently captured the top contextual condition impacting their work with HDFx MOOCs.

Finding 4: Constant Development of Technological Tools

The fourth major finding of this research study was that a majority of participants (75%) identified the constant development of technological tools as the most anticipated driver for their future learning at work. Statements about technological developments in this case ranged from generalizations about the inevitability of technological disruption and advice on the preferred attitudinal approaches for addressing such changes, to comments about upgrades of the edX platform and suggested improvements to its user functionality. Despite the alternative and wide-ranging responses documented in

Table 5.5

Participant Responses: Anticipated Future Challenges for Working With edX MOOCs

Pseudonym	Professional Discipline	Constant Developments in technological tools—including edX upgrades	Growing Demand for HDFx MOOCs	New Trends in Higher Education	Keeping Content up to date: Course re-runs, Resources
Alberto	Platform technician				
Patricio	Platform technician	X			
Emilia	Platform technician	X	X		
Marcela	Platform technician	X	X		
Celia	Instructional Designer			X	
Xiomara	Instructional Designer	X		X	
Beatriz	Instructional Designer	X			
Silvana	Instructional Designer	X			
Valeria	Administrative Assistant	X		X	X
Luisa	Administrative Assistant	X	X		X
Daniel	Administrative Assistant	X			X
Cristina	Administrative Assistant			X	
Felipe	Subject Matter Expert	X			X
Kevin	Subject Matter Expert	X			
Karla	Subject Matter Expert	X			X
Simón	Subject Matter Expert			X	
Víctor	Media Producer	X	X		
Pamela	Media Producer		X		
Teresa	Media Producer	X	X		
Ricardo	Media Producer	X		X	
Totals		15	6	6	5

Table 5.5, this finding transcended all professional disciplines as well as age, gender, and racial or ethnic distribution.

When asked to envision the future of their work vis-à-vis the delivery of MOOCs for LAC, participants would generally adopt a positive outlook and share the expectation that the current high demand for this kind of courses throughout the region would only continue to grow in the future. Emilia, for instance, conveyed such an idea from her perspective as a platform technician: “Many people around the world are taking our MOOCs, although the majority is from LAC. So, I think this will continue to grow, especially because our offerings will increase; there are new topics that the HDF wants to develop into MOOCs” (Personal communication, July 27, 2016).

Since the emergence of MOOCs was itself a manifestation of the rapid and continuous stream of changes introduced by the latest developments in online learning technologies, it was not entirely unexpected that the multidisciplinary practitioners who work in the field would point in that same direction when asked to consider future pressures and opportunities for learning at work. Thus, as noted in Table 5.5, of the four participants from each of the disciplines represented in this study, three cited technological developments as the most anticipated factor for future work-based learning. Similarly, given that edX as the chief technological platform enables the HDFx MOOC program, it was only likely that it would receive constant mentions as a prospective driver for future learning at work. As such, from the total of 15 statements that informed this finding, 12 included references to the edX platform. Such references varied from common expectations about periodic platform upgrades to wishful improvements in the platform’s functionality related to its perceived pedagogical and design limitations.

Ultimately, there was a clear dividing line among the technical concerns raised by platform technicians and media producers, and the pedagogical preoccupations brought forth by subject matter experts, instructional designers, and administrative assistants.

Platform technicians' and media producers' shared technical concerns and learning expectations over future technological developments. Among platform technicians and media producers, the idea of facing future learning challenges or opportunities at work in connection to the latest developments in technological tools was perceived as a fundamental matter of survival. Such a marked preoccupation over prospective future changes in the technological landscape could be largely attributed to the pivotal role that software and hardware tools occupy in the work activities of both of these disciplines related to the development of MOOCs. This point was elucidated by Patricio, a platform technician, in the following very clear and practical terms:

[A]ll tools are constantly getting updated. Then in our line of work is either you update yourself or you die, because new things are constantly coming out. EdX is also making changes; personally, I really liked getting to know this platform, because we were so used to Moodle and other kind of tools and also on topics of web pages and others. So, the truth is that I am happy to get to know other alternatives to those I already knew and, yes, I am sure that any changes that might be coming out and any improvements will be helpful towards being able to apply them in different contexts. (Personal communication, July 29, 2016)

A comparable position was conveyed by Teresa, a media producer hired by the HDF MOOC program to assist with the graphic design of four MOOCs. She remarked on the urgent need to keep up with changes in software applications from the point of view of an external service provider. In her comments, she illuminated how technological tools not only mediate the contractor-client relationship, but even promote their continuation with the potential discovery of new business opportunities:

For me, technology is a necessity yes or yes in terms of being updated on what is happening—not only because of my relationship with the HDF, but because the world today demands it from you, my work expertise requires it. Then not only the handling of the most recent versions of software, but discovering what possibilities do these newer versions enable; discovering, for example, parallel to MOOCs what else can be done to then being able to make novel proposals to the HDF that might be of interest to them. But I also think that it has a lot to do with what the HDF wants from an integral vision of the future. That is, one thing is what one as a collaborator conceives vis a vis what MOOCs could be and another very different thing is how the HDF really sees them. (Personal communication, August 8, 2016)

Subject matter experts’, instructional designers’, and administrative assistants’ shared pedagogical concerns and learning expectations over future technological developments. Although administrative assistants, instructional designers, and subject matter experts also cited changes in educational technologies as a prospective driver for future learning at work, their stance reflected primarily a common pedagogical concern. Thus, in contrast to the predominant technical impetus of media producers and platform technicians, this set of professionals expected facing future demands for work-based learning geared towards the diversification of the limited instructional activities available on the edX platform. By taking up those learning opportunities, participants hoped to improve the platform’s functionality and overall end-user experience. More so, with a stated goal of expanding their practical knowledge in the preparation and administration of educational materials, these responses carried echoes from Finding 2, which seemed to indicate that participants anticipated continued learning in connection with such processes into the future.

Administrative assistants. Administrative assistants expected future learning challenges related to their work supporting the organization of discussion forums or developing alternative assessment activities for MOOC registrants. In this sense,

Valeria commented on the need to explore alternative evaluation tools for assessing the performance of MOOC registrants: “We already took the first step of making MOOCs with multiple-choice questions as a very basic thing, but I think that at this moment we should start adding other variables that may help towards making the courses richer from one version to the other” (Personal communication, July 28, 2016).

In his response to the same question, Daniel combined the preoccupation for generating better learning activities using the latest instructional techniques with the drive for honing his skills as a platform programmer:

I really think that all of us who are working would like to know a little more about the programming of the platform.... So, I believe we should strengthen a bit the areas of programming to make the course more enjoyable, ultimately better for the participant. I also believe that we could even get training in new trends in virtual education, especially in the subject of instructional design, because instructional designers develop questionnaires and all of that but it would be good to know also which other methodologies we can use to evaluate the participants or evaluate the same learning resources. (Personal communication, August 5, 2016)

Subject matter experts. Although, within the context of the HDFx MOOC program, subject matter experts relied mainly on the DILAC team for selecting the technological tools that powered up their courses, they also manifested aspirations of future upgrades to the platform’s functionality with the hope of improving instructional outcomes. As such, they were quick to envision the integration of new technologies as part of future MOOC offerings. For example, Kevin, an integration and trade specialist, proposed the beginnings of an idea for using additional video resources as a means for facilitators to share content with greater immediacy:

I think live content or, not live interactive content, but live like livestreaming of perhaps a classroom or something or...not even live, because part of the point of online learning is having something asynchronous, but...being able to post video content in somewhat real time. So, like the facilitator can post something at the end of the day with a video. (Personal communication, July 28, 2016)

Alternatively, Karla reflected her interest in understanding what future developments in learning platform technologies might bring about for her practice as an education policy specialist:

As for the challenge that I see, which I am already seeing in our [SPOC], is that these courses are quickly outdated, so the challenge I see ahead is that you will have to adapt and adjust the content to maintain it relevant. Thus, I believe that this can become one of the biggest challenges of this kind of courses, keep the content relevant...basically, keep up with the different platforms, how the functionalities of the platforms are evolving to be able to understand what can be done with them, what kind of contents or interactions can be achieved. So, I think that is a task that all of us who work in these issues have to be very aware of. (Personal communication, September 16, 2016)

Instructional designers. Upon considering how future technological changes might impact their work-based activities and influence their learning, instructional designers tended to connect their responses to the edX platform either to comment on anticipated platform upgrades or to project aspirations for its improved user functionality. In this sense, Silvana, an external instructional designer and evaluation specialist, concluded her description of different motivational factors that aid or deter people's learning in response to technological changes by remarking on the determinant role of the edX platform:

I believe that the possibility for us to adapt is subject, on the one hand, to the positive attitude that we may have before what is going to come up and, on the other hand, the flexibility to accept that technology is subject to accelerated changes, at a far greater rate than we can assimilate—at some point these changes will arrive. So, I believe that getting updated and being receptive to changes; for many times the problem is that we do not accept that things change and that we have to update our way of doing things. Being receptive and understanding that you can do things that you were not used to by studying and keeping up to date. At any rate, the same edX platform package is going to offer you updates and new possibilities. (Personal communication, August 12, 2016)

On the other hand, Xiomara, a team leader and instructional designer, conjured up aspirational future technology developments in the edX MOOC platform that would enable personalized learning pathways for registrants:

[W]ith regard to edX itself, it could offer more personalized courses; courses that you could choose and build your own course with modules from different courses. That would also be something quite interesting, and that in the end lets you acquire the capabilities that you are interested in by doing activities or whole modules in a course. Then, it could be something quite interesting when it comes to your self-training. (Personal communication, August 26, 2016)

Finding 4 summary. The fourth major finding of this study was that the majority of participants (75%) expected having to face future learning pressures at work in response to constant developments in technological tools. This expectation was reported predominantly in technical terms by three platform technicians and three media producers, whose labor-integrated activities depended directly on a diverse array of such tools. On the other hand, three subject matter experts, three instructional designers, and three administrative assistants described in pedagogical terms the need to understand changes in learning platform technologies. Lastly, all but 3 of the 15 participants whose perspectives helped to inform this finding referred to aspirational improvements to the edX platform itself in connection to their expected future learning at work.

Chapter Summary

This chapter presented the findings related to the principal research question and three subquestions of this study:

1. How and to what extent, if at all, do subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers report experiences of work-based learning through their

engagement with the multidisciplinary design of edX MOOCs for training and professional development in Latin America and the Caribbean?

- a. What knowledge, skills, and/or behaviors, if any, do participants believe they need to master in order to be successful in their jobs, and to what extent can those competencies be attained via work-based learning?
- b. In what ways do certain institutional, technological, and/or pedagogical conditions related to the multidisciplinary design of edX MOOCs in the context of Latin America and the Caribbean foster or hinder the development of those critical competencies among participants?
- c. What challenges and opportunities do participants expect having to face in response to the latest developments in MOOC technologies, and how do they expect having to adapt their current work-based performance to respond effectively to what the future of edX MOOCs targeting LAC calls for?

The principal research question examined whether and how participants reported any work-based learning experiences through their engagement with the multidisciplinary design of edX MOOCs for LAC. All of the participants (100%, 20 of the 20) indicated having learned as a direct result of their performance of work-integrated activities related to the needs assessment, course design, production, implementation, or evaluation of edX MOOCs on behalf of the HDF.

Subquestion 1a sought to understand the types of knowledge, skills, or behaviors participants believed were necessary to be effective in working with edX MOOCs. There were two outstanding sets of responses for this question. The first one, provided by 80%

of participants (16 out of 20), identified the practical knowledge of how to prepare and manage educational resources or learning activities for MOOCs as a key success factor. The second one, provided by 75% of participants (15 out of 20), identified effective communication skills in multidisciplinary collaboration as an essential factor. A third response, provided by a narrower 60% of participants (12 out of 20), identified flexible and adaptable behaviors as a determinant factor for excelling in the performance of work activities for the development of HDFx MOOCs.

Subquestion 1b aimed to identify which institutional, technological, or pedagogical conditions supported or inhibited learning among participants in connection to their multidisciplinary work with edX MOOCs. Eighty-five percent of participants (17 out of 20) recognized the improvement of organizational processes as the most essential contextual condition impacting their performance and learning at work.

Subquestion 1c sought to understand the challenges and opportunities for learning at work that participants expected to encounter in the future with relation to changes in MOOC technologies. A majority, or 75% of participants (15 out of 20), anticipated having to respond to future pressures for learning at work in response to constant technological changes with the tools they employ for doing their jobs, including aspirational improvements to the edX platform itself.

Chapter VI

ANALYSIS AND DISCUSSION OF THE FINDINGS

The objective of this exploratory case study was to identify whether and how a group of 20 multidisciplinary practitioners reported experiences of work-based learning through their engagement with the creation of edX MOOCs for LAC. The investigator sought to gain a better understanding of the work-based activities and interactions among these multidisciplinary practitioners, who provided the human and professional talent for the Hemispheric Development Fund's pioneering MOOC program, as a potential contribution to the training of other professionals interested in employing the edX platform for delivering MOOCs to LAC.

One principal research question and three secondary questions guided this investigation:

1. How and to what extent, if at all, do subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers report experiences of work-based learning through their engagement with the multidisciplinary design of edX MOOCs for training and professional development in Latin America and the Caribbean?

- a. What knowledge, skills, and/or behaviors, if any, do participants believe they need to master in order to be successful in their jobs, and to what extent can those competencies be attained via work-based learning?
- b. In what ways do certain institutional, technological, and/or pedagogical conditions related to the multidisciplinary design of edX MOOCs in the context of Latin America and the Caribbean foster or hinder the development of those critical competencies among participants?
- c. What challenges and opportunities do participants expect having to face in response to the latest developments in MOOC technologies, and how do they expect having to adapt their current work-based performance to respond effectively to what the future of edX MOOCs targeting LAC calls for?

This research used in-depth participant interviews, a demographic survey, field observation, and document analysis. The 20 study participants included professionals at the intersection of adult education with information and communication technologies (ICT), divided evenly into the following five disciplines: subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers. The emerging data were organized, coded, and analyzed according to the constant comparative method (Corbin & Strauss, 2008; Strauss & Corbin, 1998), and then processed with the selective application of the activity systems analysis framework (Engeström, 1987) to identify the activity systems models for each of the five phases in the MOOC design cycle adopted by the HDFx program.

Thus, the analysis section of this chapter presents a thorough description of the activity systems models for each of these five phases in the MOOC design cycle: Needs Assessment, Instructional Design, Production, Implementation, and Evaluation (see Figure 6.1). The activity systems analysis culminates with the identification of the systemic tensions that acted as triggers for the work-based learning experiences that participants reported in the preceding Findings chapter.

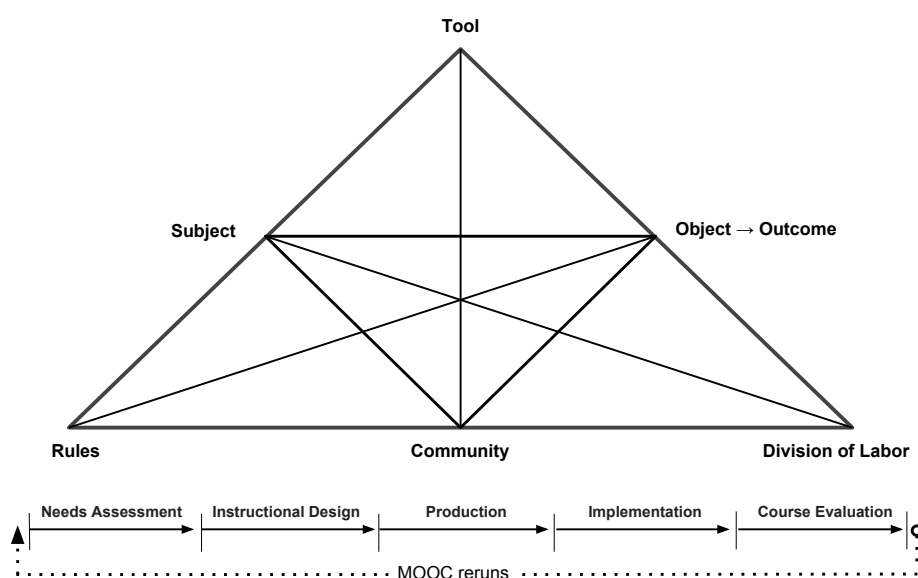


Figure 6.1. Activity system model (Engeström) with the five phases of MOOC design cycle (adapted from HDF internal documents, 2015)

Activity System Models and Systemic Tensions Across Five Phases of MOOC Design Cycle

Phase One: Needs Assessment Activity System

Figure 6.2 depicts the Needs Assessment activity systems model, corresponding to the first phase in the MOOC design cycle as determined by the DILAC team at the HDF. As noted in the subject and community components of the model, not all

professional disciplines in this study participated in needs assessment activities. Instead, participants were mostly limited to subject matter experts from the various HDF knowledge sectors or client departments along with team leaders or instructional designers, different kinds of DILAC administrative assistants, and, in certain selective cases, representatives from inter-institutional partners.

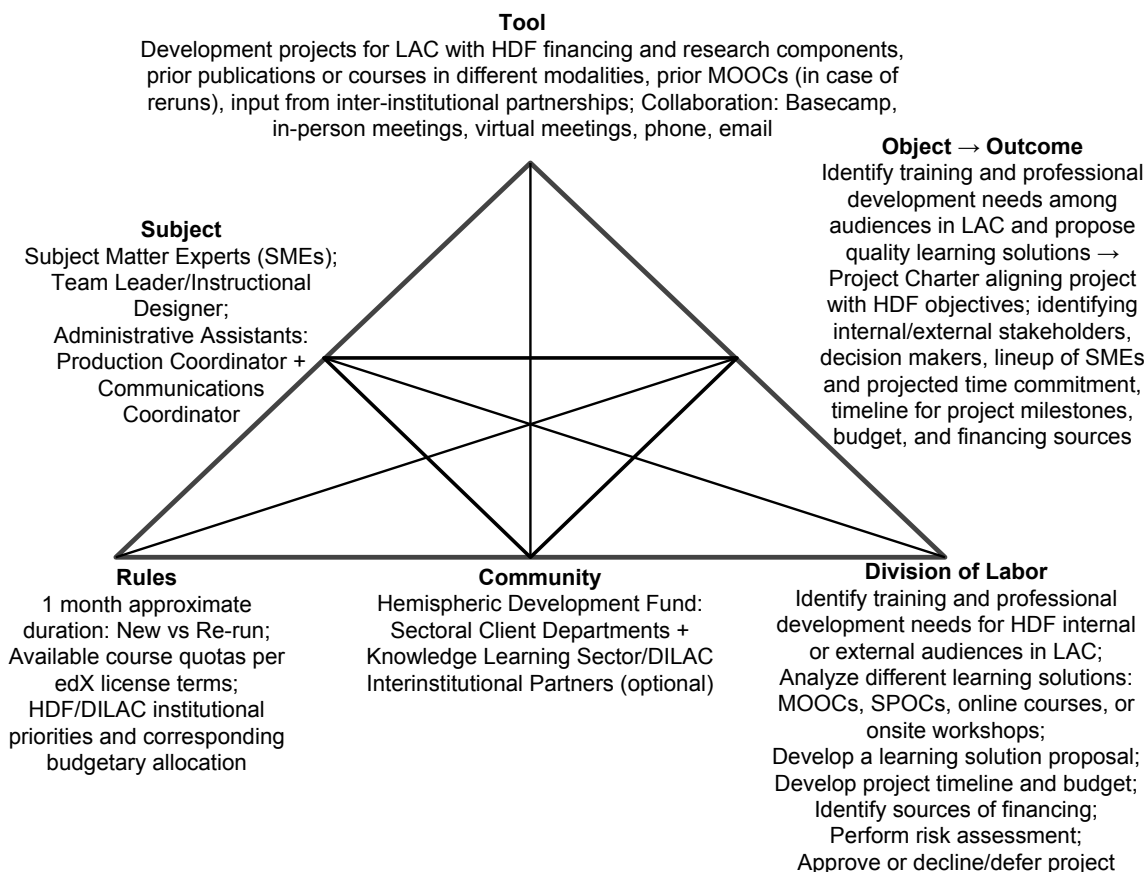


Figure 6.2. Activity systems analysis: Needs Assessment

In this sense, a common project launch scenario would entail a given client department or subject matter expert approaching the leadership of the DILAC team—or vice versa—with the concept for a new MOOC or a MOOC rerun. The key foundational processes and interactions for such ideation would be facilitated via tool components in

the model, e.g., past or ongoing regional development projects with financing and research stipulations, past publications or courses in different modalities including prior MOOC versions, and/or input from inter-institutional partnerships.

In all, the general MOOC design process developed by the DILAC team at the HDF stipulated an approximate duration of a month for the Needs Assessment phase, setting a timeline that acted like a rule in the activity systems model for this phase. This rule, however, allowed for possible fluctuations depending on whether the MOOC under discussion was a brand-new or a rerun offering. Similarly, the usage terms outlined in the edX platform license purchased by the HDF determined additional considerations acting as a rule in the activity systems model. For example, depending on the licensing terms and associated budgetary implications, any prospective MOOC project would have to be weighed against other competing requests and contingent to the MOOC hosting quotas negotiated with edX during any given period of time.

In turn, the division of labor component itemized the different activities or processes to be carried out during this phase by the subjects previously identified, including the documentation of actual training and professional development needs for internal or regional audiences and the analysis of different learning solutions against the intended project goals. Once a learning solution is identified—be it a MOOC, a SPOC, or an online or on-site course—then a corresponding project proposal would be developed outlining an anticipated timeline and budget. Other related processes then followed, like the identification of financing sources and the performance of risk assessment for the project. Ultimately, the project would be approved, declined, or deferred.

The object of the Needs Assessment phase was to ascertain the demand for training and professional development programs among target audiences in LAC and to offer top-quality learning solutions in response, among which MOOCs were but the latest option available. Meanwhile, the outcome from this activity systems model would be summed up in a project charter document, aligning the project with the institutional objectives and priorities of the HDF, identifying all key project stakeholders and decision makers, as well as proposing a lineup of subject matter experts along with their projected time commitment. This charter document would also outline a timeline for the different project milestones and identify the working budget and financing sources.

Needs Assessment systemic tension. Figure 6.3 depicts the systemic tension identified by study participants during the Needs Assessment phase. As such, Tension (a) illuminated a clash between the division of labor and the object/outcome components of the Needs Assessment activity system model, reflecting the varying levels of compliance by different stakeholders in preparing a MOOC with regard to their assigned responsibilities and anticipated time commitment for the duration of the project. These and other determinant project considerations, referring to their alignment with institutional goals, key decision makers, milestones, and budget, would all be incorporated into the final outcome from the Needs Assessment phase in the form of a project chart or master development plan for the entire lifespan of the course.

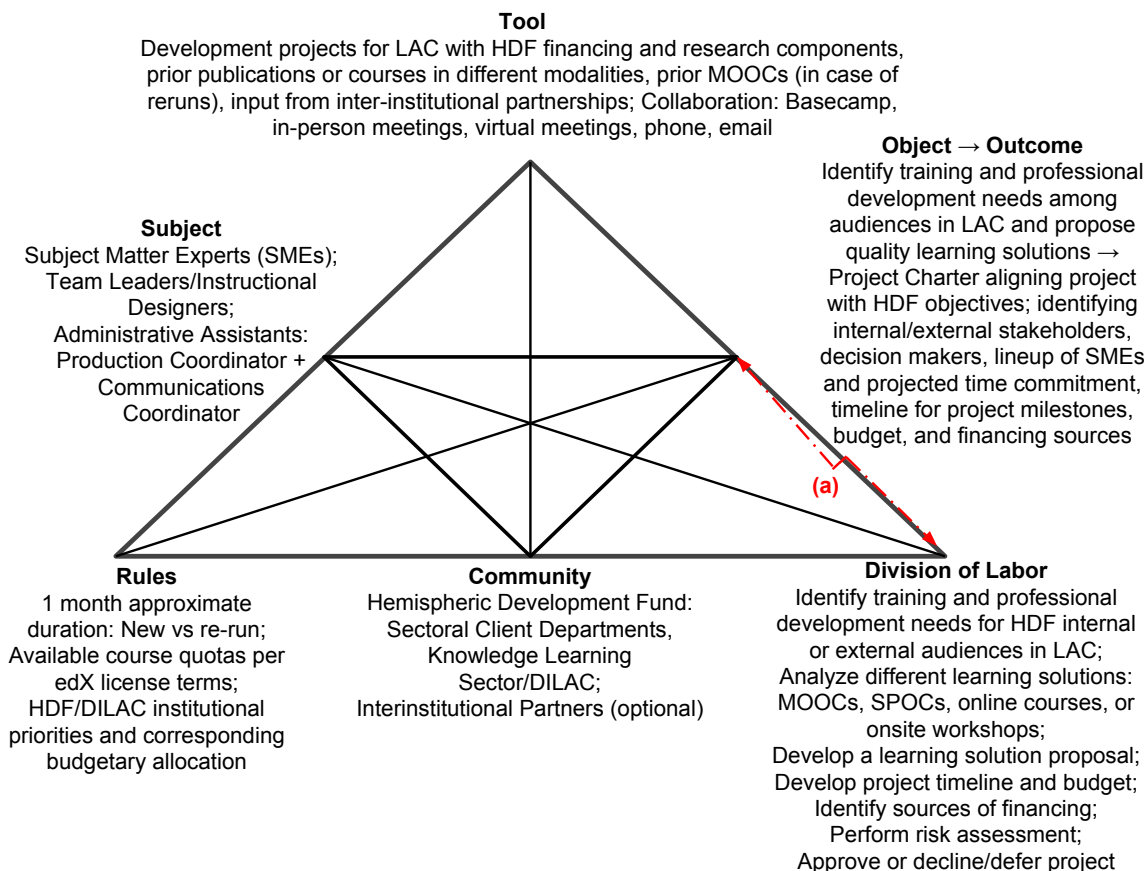


Figure 6.3. Activity systems analysis: Needs Assessment tensions

However, participants reported uneven adherence to the terms of the project chart, especially by client departments or their inter-institutional partners and the subject matter experts they appointed with the responsibility of providing the course content. For example, Xiomara, a team leader and instructional designer, contrasted the informational and communicational spirit of the project chart as a planning document with the unpredictable applicability of its multiple considerations among client departments and subject matter experts:

[I]n the project charter we always put in how many hours they, the HDF partners, have to dedicate to the course and, if not, they have to hire external people who dedicate it. But, at any rate, they have to organize their work

accordingly because they are the ones who know about the content part. So, it is a negotiation and above all the communication outreach to make them understand what is the workload, what is the importance, and before they commit themselves to know how much time they will take from their work and that they really put it in their work plan. This is something that is not always achieved, but it is something that we have to attend to because once you already have it in your work plan, and have goals, and have the time allotted it is much easier to develop the project. (Personal communication, August 26, 2016)

Tension (a) within the Needs Assessment activity system corroborated both Findings 2 and 3 of this research study in that it, respectively, identified effective communication skills and the improvement of organizational processes as critical factors for the successful performance of multidisciplinary work activities as well as for the work-based learning of participants in the HDFx MOOC program. Tension (a), thus, considered significant aspects beyond this initial planning phase, revealing implications of a systemic type.

For example, as the outcome from the Needs Assessment phase, the project chart then provides the main framework for the instructional design and the remaining activity systems. Failure by project stakeholders to establish a work plan based on such a framework may then result in negative cascading effects or delays within subsequent work processes. In this sense, demonstrating the close interrelatedness and interdependence among MOOC design operations, participants reported instances of reading materials not being approved or proofread in time, which then delayed their uploading schedule to the edX platform, or created complications with the video production and post-production processes as a result of video scripts not being developed in time, among other similar challenges.

Phase Two: Instructional Design Activity System

Figure 6.4 represents the Instructional Design activity system model, which corresponds to the second phase in the multidisciplinary MOOC design cycle at the HDF. As anticipated, the project chart outcome from the preceding Needs Assessment phase went on to become the main input or tool component for organizing the key collaborations and main activities of this system. The professional disciplines listed under the subject component included subject matter experts, instructional designers, as well as production and communication coordinators as administrative assistants, and even possibly external consultants—depending on the type of course being developed. The community component reflected the same aggregate distribution of sectoral departments within the HDF as well as the possible inclusion of inter-institutional partners.

The division of labor during the Instructional Design phase included activities geared towards defining the course's learning objectives, developing a detailed course structure with supporting educational resources and learning sequences, identifying a grading system and assessment strategy, as well as developing and validating a comprehensive instructional design proposal. The rules component dictated a 2- to 3-month duration for this phase, depending on whether the course under construction was a brand new or a rerun offering, as well as on whether it emerged through an inter-institutional partnership or through an exclusive HDF initiative. Additional rules also recognized that the teaching methods and learning activities of HDFx MOOCs were bound by the predetermined text-based and multimedia-based instructional functionality of the edX platform as well as by the average 8-week MOOC duration. Ultimately, the object/outcome of this activity system was to develop a top-quality instructional design

proposal that would then inform the production of educational resources and learning activities in the next phase of the MOOC design cycle.

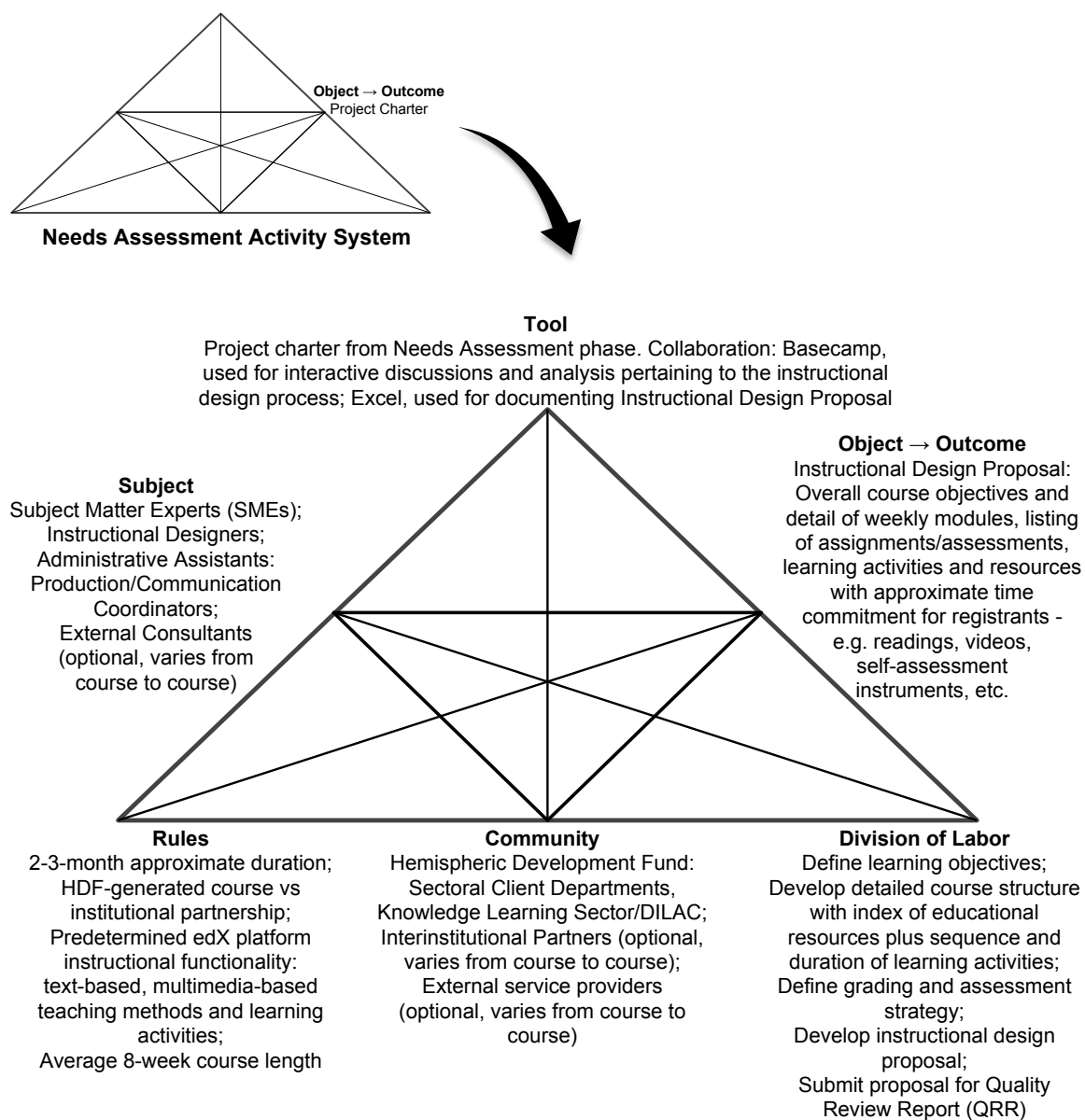


Figure 6.4. Activity systems analysis: Instructional Design

Instructional Design systemic tension. Figure 6.5 illuminates the main systemic tension identified during the instructional design phase of the MOOC development cycle. Tension (b), depicted by a clashing line between the subject and object/outcome components of the instructional design activity system model, reflected the often-complicated negotiation process between subject matter experts and instructional designers as they set out to attain the main object and outcome of this activity system—the instructional design proposal for a MOOC or SPOC. What was at stake, therefore, was the roadmap for any given course’s learning objectives and its associated learning activities, educational resources, and other key elements that could ultimately determine whether the course itself became a tool for simply sharing and disseminating information or for actually providing a genuine learning experience for registrants.

Upon contrasting the perspectives on what constituted an effective instructional experience among subject matter experts and instructional designers, what emerged was a shared belief that fostering new understandings, competencies, and practical skills among registrants sat at the center of their mission. Where these groups differed, however, was in their assessment of how and whether it was possible to achieve such a goal via MOOCs. Subject matter experts, for example, emphasized the importance of distilling vast research publications on a given field of study and their own expertise on the topic to its most basic and common form of content in order to make it as informative and relevant as possible for the massive number of MOOC registrants. On the other hand, instructional designers prioritized the translation of that content into actual learning resources and practical learning activities in a way that they could be assessed and measured with respect to the course’s overall learning objectives.

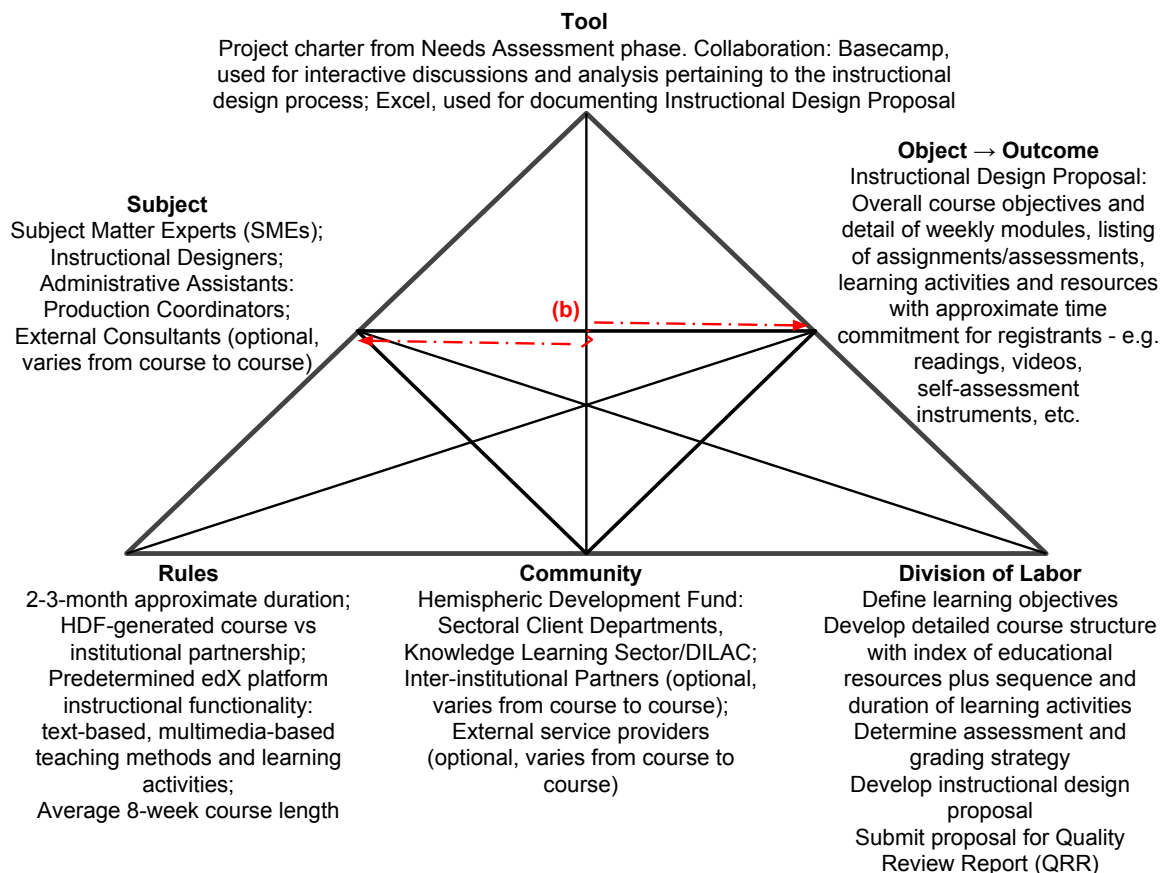


Figure 6.5. Activity systems analysis: Instructional Design tensions

Xiomara, a team leader and instructional designer at the HDFx MOOC program, described such a differentiated content strategy between these two distinct disciplines:

[O]nce we have identified the audience and their learning needs, we begin with the design phase of the course—we describe the learning objectives, how these objectives are going to be evaluated, and what is the knowledge that can be acquired. This leads normally to the subject matter experts having to do a job of starting to produce documents of that content, since we have books, we have publications, and we have the knowledge of the same experts. What we do, in turn, is creating specific contents for reaching specific learning objectives. The important thing is not the content itself but how we plan the different activities, the videos, the readings, the practices—we are filling knowledge gaps so that those competencies are acquired. Let's say, it is an iterative process; that is, it is not done once but rather it is reviewed throughout the entire project. We will always review the instructional design until the end of the project. (Personal communication, August 26, 2016)

Similarly, in a moment of radical transparency by Simón, a subject matter expert, he evidenced his disillusionment with MOOCs as an educational solution for the masses in favor of an alternative, more focused instructional means that in his view allowed for more substantive kinds of learning:

Personally, and this is very personal, it seems to me that MOOCs have more of an effect of universalization and much more of promotion than of learning.... So, personally, it generates doubts of where to focus my time. I have to allocate very valuable time every day and I have to think if I allocate it to an event, to a job like the MOOCs, or to a course that is generating substantive learning. For me, MOOCs do not generate substantive learning, they offer very basic learning.... [T]he fundamental limitation is the fundamental reason why it exists, which is its massiveness. The name says it, then from an educational point of view massive is not the best, because I have to simplify documents, I have to simplify the case studies, I have to simplify the way of giving feedback or do not give it at all. In short, all these factors represent sacrifices in learning. (Personal communication, August 12, 2016)

Ultimately, Tension (b) within the Instructional Design activity system corroborated the report on Finding 2 of this research study, presented in the previous chapter, by illuminating the experiential and iterative processes that practitioners from different disciplines had to sustain in order to increase their practical knowledge in the preparation and administration of educational resources or learning activities for MOOCs. Similarly, the same finding report further identified the bridging of the often-contradictory positions championed by subject matter experts and instructional designers as examples of the need to apply effective communication skills and adaptable work-based behaviors for the successful completion of multidisciplinary collaborative processes.

Phase Three: Production Activity System

Figure 6.6 depicts the Production activity system model, corresponding to the third and most laborious phase in the multidisciplinary design cycle of HDFx MOOCs. As represented by the tool component, the instructional design proposal elaborated in the previous phase provided the main input for the production activity system, outlining the various educational resources and learning activities required as well as the structure for all course materials being uploaded to the edX platform. Additional tools included Basecamp, a project management application, and SharePoint, a cloud-based document sharing application that enabled essential collaboration workflows among geographically dispersed, multidisciplinary team members. Different social media platforms, like Facebook, Twitter, Instagram, YouTube, and others, were further identified as key channels for the dissemination and communication plan of the HDFx MOOC program.

Evidencing the most collaborative and demanding phase in the MOOC design cycle, the subject component of the Production Activity system model included participants from all professional disciplines represented in this study: subject matter experts, instructional designers, administrative assistants, media producers, and platform technologists. In turn, the rules governing this activity were bound by the staffing and contracting policies of the HDF and an assigned timetable of up to 6 months in duration. Similarly, the professional coda of each of the participating disciplines exerted a determinant role throughout this phase. For instance, the rules bounding the generation of educational videos responded to the preferred practices of video professionals and technical standards of their industry, in conjunction with the norms of subject matter experts, as knowledge providers, and administrative assistants, as coordinators between

the two antecedent disciplines. Ultimately, the complementary or antagonistic relationship among the various disciplinary principles and practices could play a significant role over the success or failure of a project.

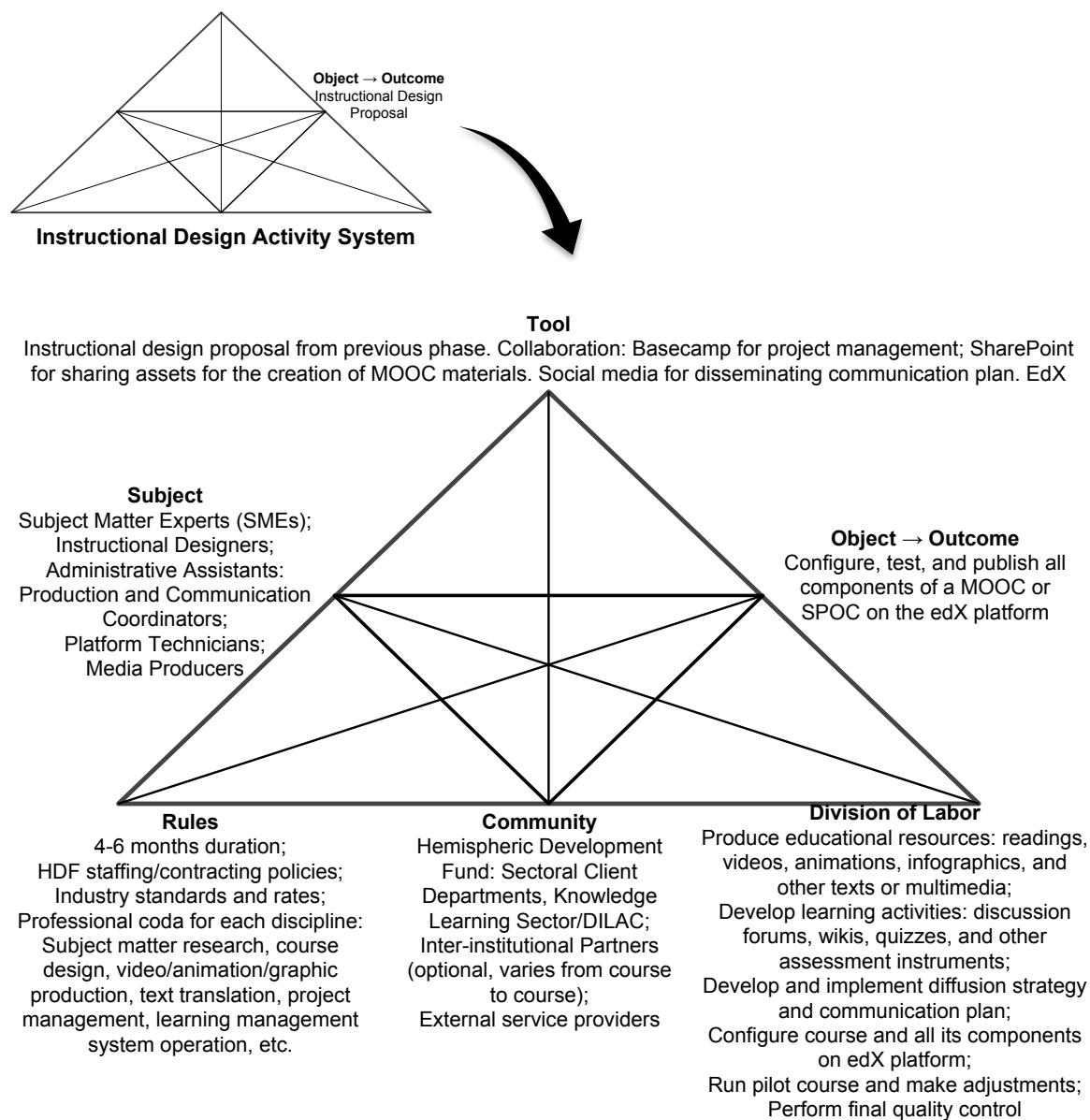


Figure 6.6. Activity systems analysis: Production

As in preceding activity systems, the community component during the production phase identified a variable distribution of sectoral departments within the HDF, with the possible inclusion of inter-institutional partners. However, it also included a key variation in the inclusion of independent contractors as providers of external media production services. The division of labor component reflected a busy schedule of object-oriented activities, such as producing a diverse set of educational resources and learning activities, developing and implementing a communication plan, configuring the course components on the edX platform, piloting the course and making adjustments, and performing a thorough final quality control of all systems. The object and outcome components of the production activity system were, thus, one and the same—to get all components of a MOOC or SPOC configured, tested, and published on the edX platform, ready for the subsequent Implementation phase, when the course would be available “live” for its online audience.

Production systemic tensions. Figure 6.7 illuminates the systemic tensions reported during the Production phase at the HDFx MOOC program. Depicted by a clashing line between the rules and division of labor components in the production activity system model, Tension (c) identified the cumbersome multidisciplinary collaborations and related expensive contracting solutions implemented by the HDF in generating educational resources and learning activities for MOOCs. To cite only a few common examples, MOOC materials could demand the hiring and coordination of a slew of external service providers, each guided by his or her own set of professional codas—such as copy editors and/or translators, graphic designers, video and/or animation producers, course tutors, evaluation specialists, and so on. Thus, Tension (c) within the

Production Activity system corroborated Finding 2 of this research study by evidencing the learning pressures faced by multidisciplinary participants in connection with the preparation and administration of educational resources or learning activities for MOOCs.

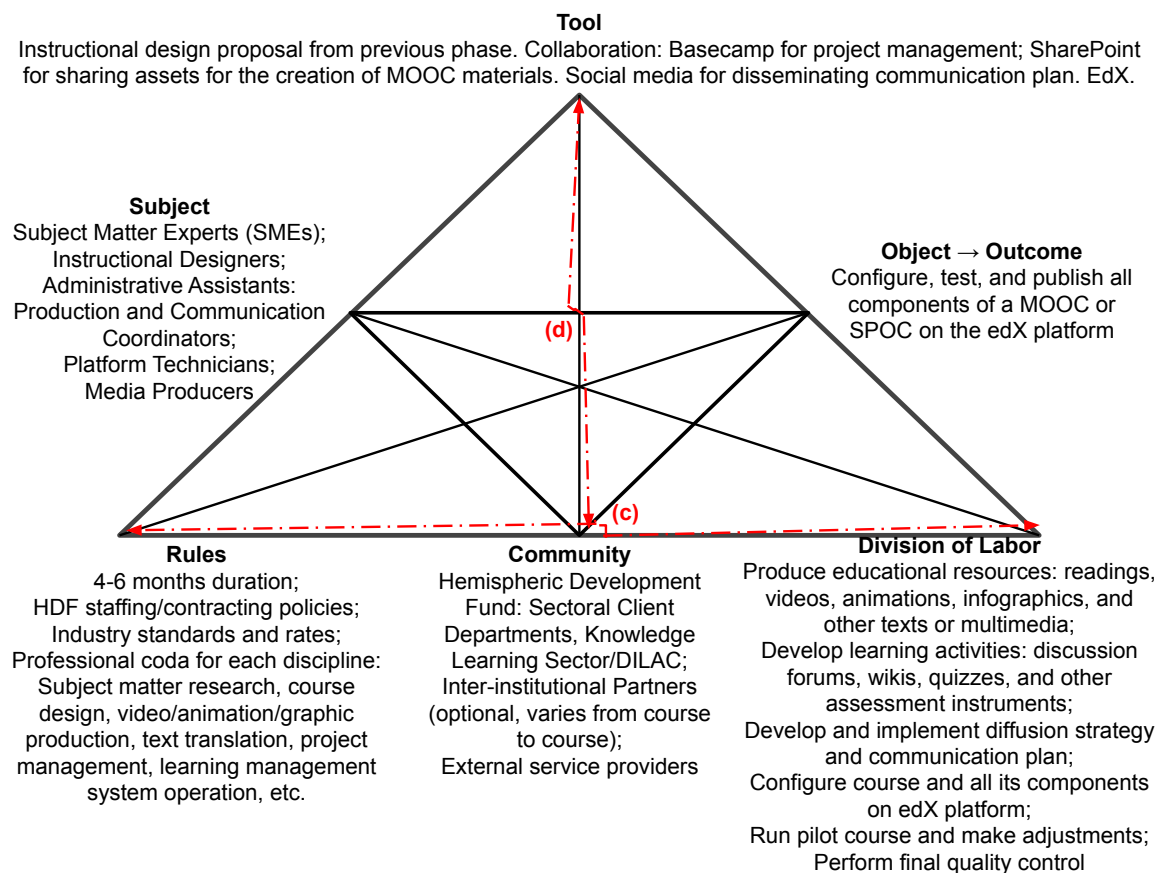


Figure 6.7. Activity systems analysis: Production tensions

Among these, the process of contracting video services and the associated management of video production and post-production were consistently reported as being the costliest, most time-consuming, and overall most complicated. There were many reasons that was the case. For example, the geographical dispersity of locations

throughout Latin America where subject matter experts were normally found made it necessary to hire an array of video companies from different countries, which limited the possibility of implementing economies of scale while also complicating the standardization of processes and general quality. Furthermore, given that the content and aesthetic quality of videos needed to pass through different rounds of approval by multiple stakeholders, then trying to stay on schedule through the final delivery of video products for the edX platform became a real challenge for anyone involved. In this sense, Tension (c) also corroborated Finding 3 of this research study in that it further illustrated the need to improve organizational processes as the most important contextual condition affecting the multidisciplinary collaboration among the professionals who run the HDFx MOOC program.

Tension (d), depicted by a clash between the tool and community components of the production activity system model, responded to the challenges faced by participants regarding constant developments in the technological tools they use. For instance, while collaboration tools played an indispensable role enabling multidisciplinary work streams among participants, the selection of such tools and inconsistent adoption by different members of the HDFx MOOC team proved to be an area of concern for many. Daniel, an administrative assistant and production coordinator, described the recent introduction of SharePoint—a cloud-based, team-oriented repository of documents and materials for collaborators—as the latest attempt for addressing this organizational challenge:

[T]he HDF uses SharePoint and we are trying to create a site there to place the relevant information of all the courses and so that everyone in the team has access to documents, lessons learned, guides that can serve us all and, obviously, improve internal communication. That way, we do not depend so much on email, because it is typical that: “Hey, I sent you the mail two weeks ago...” “No, I can’t find it.” Or: “Where is the latest updated version of such a document, a forum

guide?” So, we are trying to boost that shared space, also for placing videos and other learning resources there, so that all of us have direct access and in an easier manner. (Personal communication, August 5, 2016)

As previously reported in Finding 4 of this study, the edX platform itself was identified as the ultimate tool to face constant updates. This, in turn, increased the learning pressures among members of the HDFx team, especially for the platform technicians responsible for configuring course materials on the platform. As a result, this group developed a custom solution for documenting their ongoing learning into a knowledge base that could then help to train future or remote members of their own workgroup, or anyone at the HDF with an interest in the operation of the edX platform. Emilia, a platform technician, described this knowledge transfer strategy in the following terms:

Our group created the virtual training site we have, it is ours...our team created this training site for external technical assistants. Our learning was self-taught and, afterwards, we turned that knowledge into a platform so that anyone who has to set up a course can go there and know how to do it. But the knowledge poured into this toolkit is made ad hoc for us; that is, it helps us to execute our part of the job for a MOOC. (Personal communication, July 27, 2016)

Overall, the themes illuminated by Tension (d) within the laborious production activity system corroborated two of the main findings of this study. Upon remarking on the importance of improving organizational processes by better integrating tools for multidisciplinary collaboration, Tension (d) validated Finding 3 of this study. Similarly, upon capturing the participants’ preoccupation with the constant development of technological tools, Tension (d) further emphasized the demand for learning at work in response to technological changes, as reported in Finding 4 of this research.

Phase Four: Implementation Activity System

Figure 6.8 represents the Implementation activity system model, corresponding with the period of 6-8 weeks when a MOOC is “live” on the edX platform. The tool component for this system consisted of the MOOC or SPOC course itself with all of its constituting elements published to the edX platform as the outcome from the previous

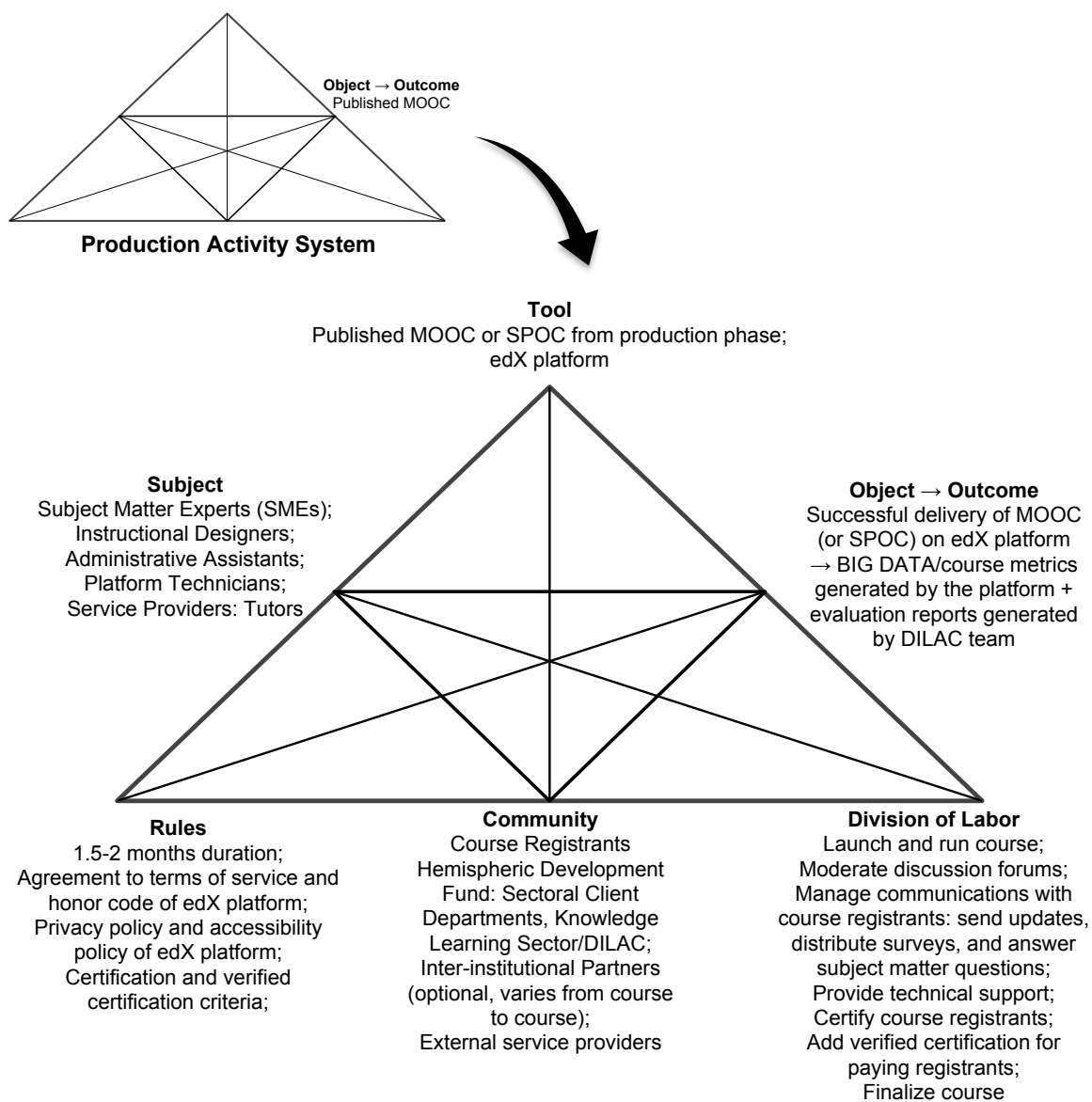


Figure 6.8. Activity systems analysis: Implementation

Production phase. The subject and division of labor components identified the participation of subject matter experts, although in a much more limited and advisory capacity when compared to their more engaged participation in the previous phases.

The same was the case with instructional designers, who would transition to a more basic project management or team leader role during this phase after having led the processes for laying out the general course structure during the previous ones.

Administrative assistants, acting as production and communication coordinators, would continue to serve as the nexus for all required professional and technical resources throughout the duration of the course. Platform technicians would, in turn, maintain their strictly technical support role, while freelance tutors would be temporarily contracted as external service providers to lend the limited content support available for registrants in a MOOC.

The community component for this activity system emerged from the same constituent elements as in the previous phases, with the key distinction being that, for the first time, it included the active participation of course registrants through their engagement with the course materials and activities. In turn, the first set of rules for this activity system were determined by the typical duration of HDFx MOOCs, which ranged from 6 to 8 weeks. Additionally, implementation activities were bound by the terms of service agreement, the honor code, and the privacy and accessibility policies dictated by the edX platform. The last set of rules consisted of the criteria for issuing certificates of completion to registrants, which in addition to stipulating minimum performance requirements would also distinguish between a free but non-verified type of certificate and a \$25-alternative with verification by the HDF.

Naturally, the ultimate object of the Implementation activity system was to deliver a successful MOOC to registrants as determined by a variety of metrics about the course. Altogether, these metrics constituted the system's main outcome and included a combination of registrant or user data reported by the platform itself (big data) and data from evaluations or surveys developed by the HDFx MOOC team. In general terms, and among a wide range of alternative variables, a high rate of completion or percentage of registrants who obtained their certification would indicate a positive outcome. To the contrary, if a course received a large rate of technical incidents or complaints about its content from registrants, the final outcome would be deemed negative.

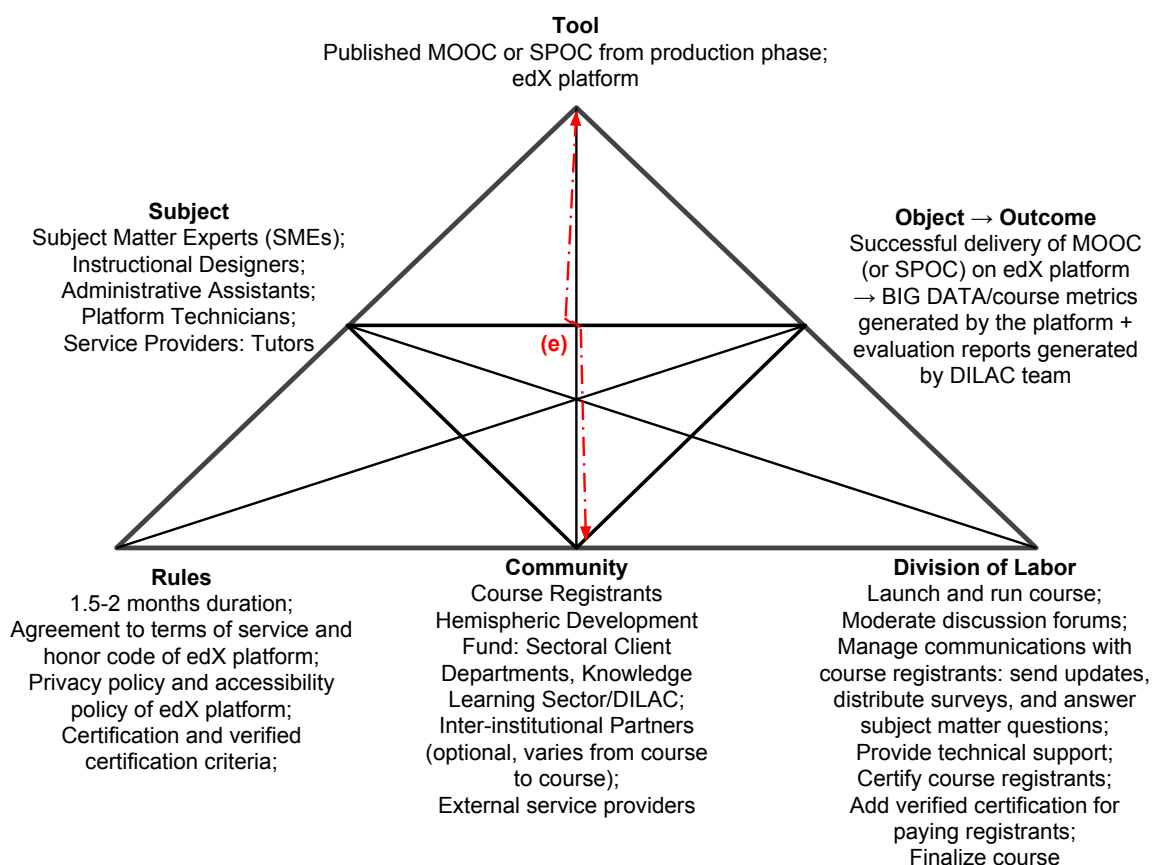


Figure 6.9. Activity systems analysis: Implementation tensions

Implementation systemic tensions. Figure 6.9 depicts Tension (e) within the Implementation activity system model, via a clashing line between the community and tool components. As such, it pointed to the most important elements in the delivery of any MOOC or SPOC—the course registrants or end users, the HDFx MOOC support team, and the platform itself.

During any given course, these elements could eventually get in conflict with each other. For example, a feature of the edX platform that received repeated mentions as an area in need of integral improvement was the discussion forums, where registrants posed comments and/or asked questions related to the content of the course. Given the massive number of registrants participating in these community boards, the moderation of the ensuing peer discussions was quickly identified as problematic and overdue for a revamp. Beatriz, an instructional designer, described her point of view on this topic as follows:

An important challenge I think that for me; both for me and for the MOOCs that have been created on edX is to better manage the communities that are created around the courses—the theme of the participation tool that right now are basically the forums. We have to be able to learn to manage them better, to get more information, more content, so that they are more meaningful for people. I strongly believe that.

Further frictions could result for a variety of reasons, like registrants failing to grasp how upgrades to the edX platform were supposed to work or as a result of actual glitches with how the platform was configured by the content generators. In such instances, technical assistance would be offered by platform technicians. Conversely, when registrants generated content questions related to the subject matter of the course, external service providers acting as course tutors would offer the first line of assistance and, in instances of last resort, subject matter experts would be called forth to offer

guidance as well. The impact of these varying scenarios in relation to the performance of the edX platform and how registrants engaged with it during the Implementation phase of a course could end up spreading throughout the entire community component of the activity system.

In sum, Tension (e) within the Implementation activity system corroborated two of this research study's main findings: Finding 2 and Finding 4, respectively. It upheld Finding 2 by emphasizing the learning pressures for participants in connection to the practical development and management of educational materials for MOOCs, such as discussion forums. Meanwhile, it substantiated Finding 4 by recognizing the participants' preoccupation with the administration of technical and content support for course registrants in response to changes to the functionality of the edX platform.

Phase Five: Evaluation Activity System

Figure 6.10 represents the Evaluation activity system model, the final stage in the MOOC design cycle of the HDFx program. The tool component in this system included elements from the outcome of the previous Implementation phase, through the aggregation of various registrant data reports. One set of data emerged, for example, from periodic surveys distributed among registrants before, during, and after the course, aiming to capture insights like demographic information, achievement of learning objectives, quality of course content and educational methodology, usefulness and applicability of weekly modules, and usefulness and applicability of the course itself. Ultimately, the DILAC team developed an average based on these indicators to constitute an overall MOOC quality index.

Additional sets of registrant data were sourced automatically from the edX platform, in the form of what has been termed *big data*. However, among the vast universe of registrant performance indicators available through the systematized analysis of user interactions with the edX platform, the DILAC team considered only a very limited selection when conducting final course evaluations. Such a limitation responded

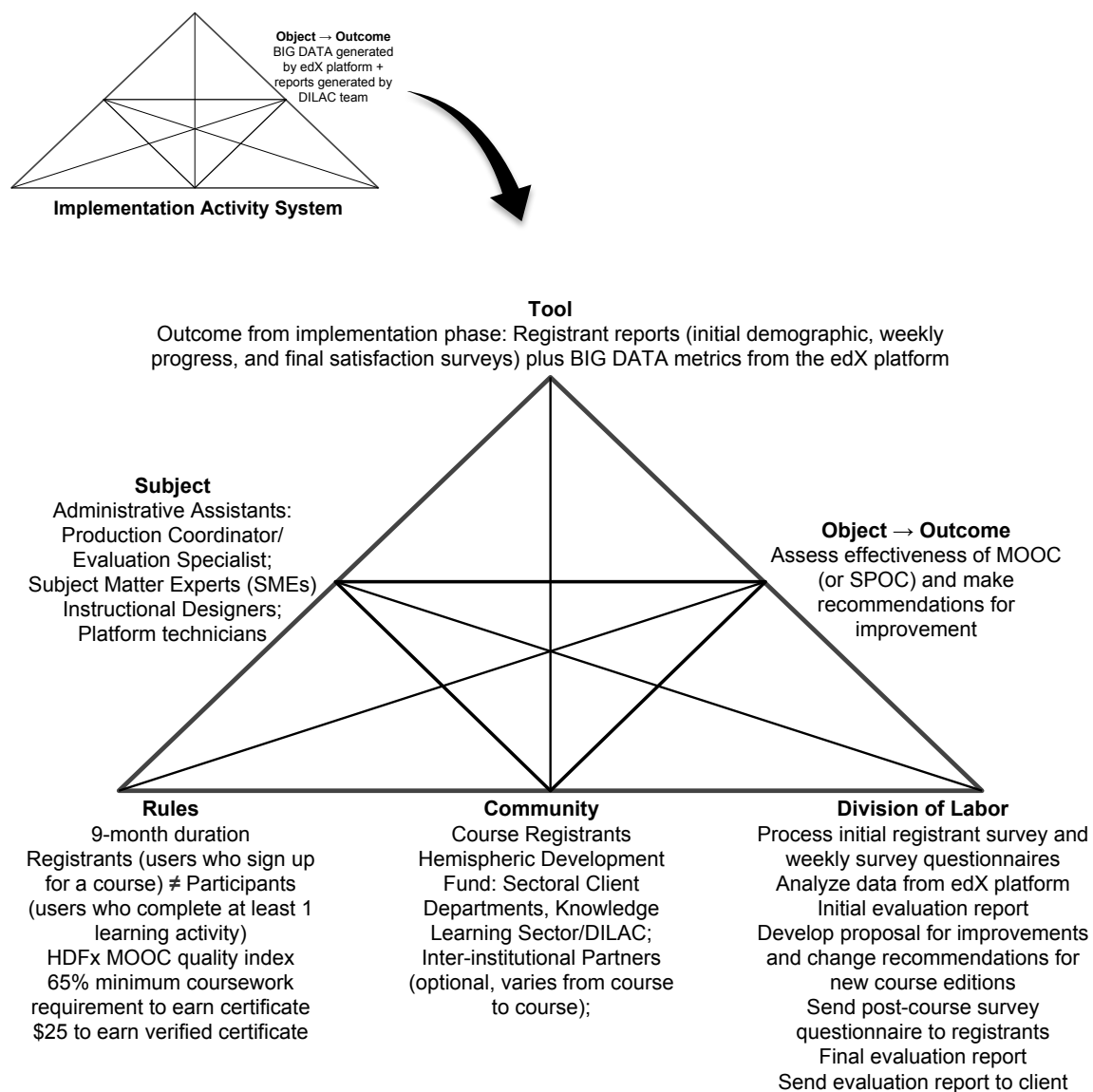


Figure 6.10. Activity systems analysis: Evaluation

to the fact that for the first couple of years of the HDFx program, it did not include a data analyst in staff. In this sense, data queries for the edX system aimed mainly at determining the number of registrants in a course and their countries of origin, the number of registrants who completed at least one learning activity as part of the course, the number of registrants who met the minimum 65% of the requirements to pass the course, and the number of registrants who paid the \$25 fee for a verified certificate of completion.

As such, the kinds of data procured via the tool component signaled a strict alignment with the rules component of the Evaluation activity system. The set of evaluation rules spanned up to 9 months past the culmination of a given course, turning this activity system into the longest-lasting one of the five phases of the MOOC design cycle. Rules further reflected the basic principles for measuring retention, participation, and certification rates among course registrants. Similarly, the aforementioned MOOC quality index developed by the DILAC team acted as additional rules or guidelines for this activity system.

Under the subject component, the singularly prominent role of an administrative assistant who served dually as a production coordinator and an evaluation specialist was identified at the top of the list. The remainder multidisciplinary participants from the previous phases were also included for playing albeit moderate roles within the Evaluation activity system, except media producers and other external service providers who altogether ceased to participate during this phase. In turn, the community component reflected the grouping or affiliation of the various subject classes, according to the same

basic distribution from the previous phases, while denoting the inclusion of course registrants with regard to any survey they filled after the culmination of the course.

The division of labor component identified the lengthy and analytically intense set of work-based activities corresponding to the Evaluation phase. In essence, these tasks involved the processing and analysis of the different kinds of surveys and system reports described thus far, with the aim of making recommendations for improvements or changes for subsequent course editions. As such, the DILAC team presented to the corresponding client department(s) final evaluation reports with improvement recommendations and detailed breakdowns of registrant data for each course. The object and final outcome of this activity system, therefore, was to assess the ultimate effectiveness of each MOOC or SPOC as well as to take stock of any opportunities for future improvements through the compendium of an evaluation report.

Evaluation systemic tensions. As depicted in Figure 6.11, Tension (f) illustrates a clash between the tool and division of labor components within the Evaluation activity system model. This systemic tension corroborated Finding 3 of this research study related to the necessary improvement of organizational processes, as it documented a key personnel gap among the ranks of the DILAC team in the absence of a data analyst who would be able to lead the evaluation of its educational offerings and conduct research via big data analytics.

As indicated previously, the brunt of the statistics compilation work since the launch of the HDFx MOOC program was carried out by a single team member, whose functions as administrative assistant were divided between production coordination and course evaluation. Ultimately, this prevented the furthering of new understandings or

insights that could then be looped back into the planning, execution, and delivery of future courses. It should also be noted that, although the DILAC team recognized such a personnel gap and eventually recruited a data analyst, the researcher did not interview that person because her onboarding fell outside the period covered by this case study.

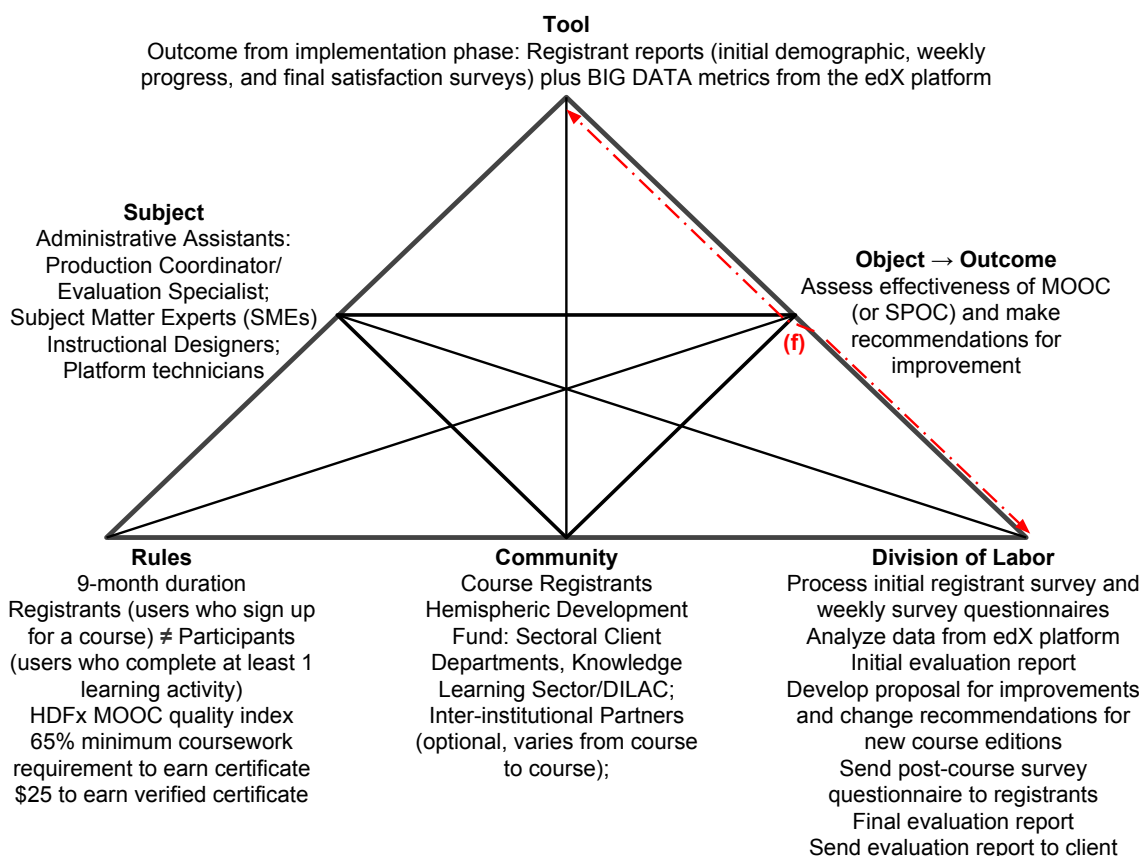


Figure 6.11. Activity systems analysis: Evaluation tensions

Activity Systems Analysis: System-wide Tensions

Tensions (a-f) resulting from the individual activity systems analysis of each of the five phases in the MOOC design cycle could, in turn, be synthesized into the

following activity systems model of the HDFx MOOC program, integrated with its corresponding system-wide tensions, as illustrated in Figure 6.12.

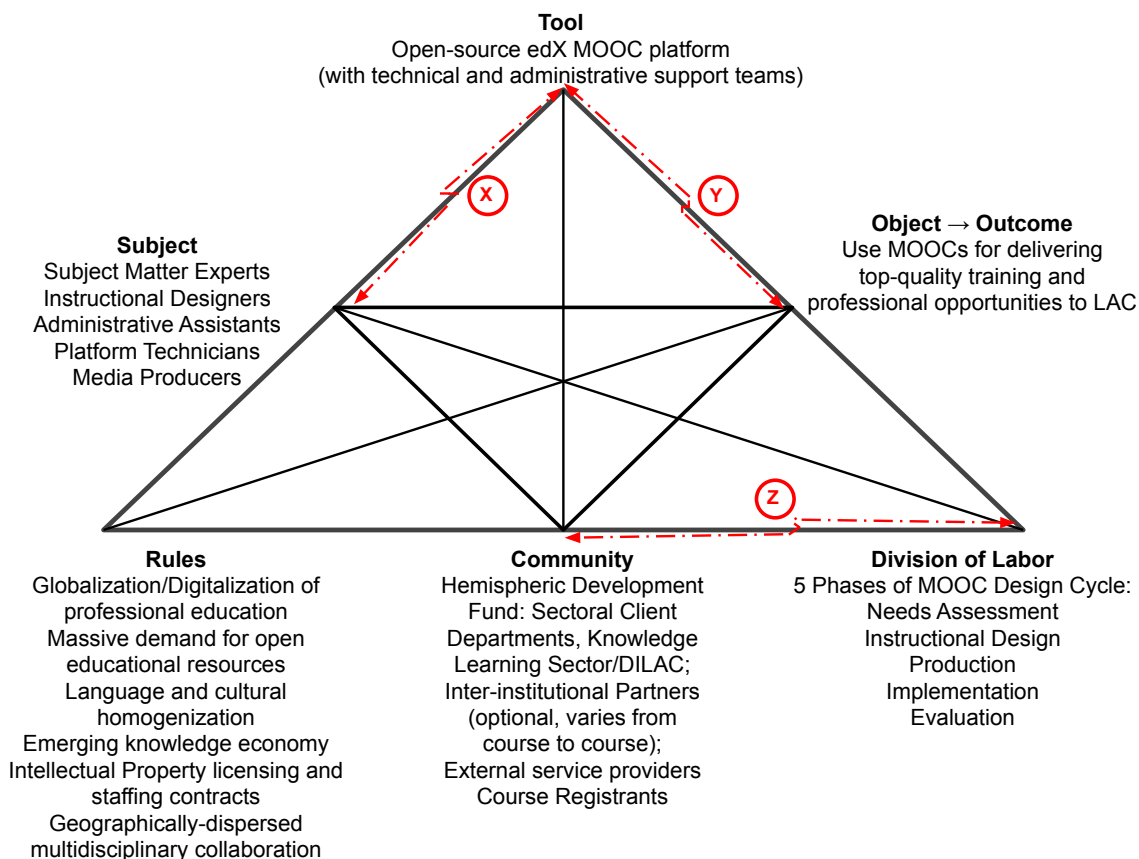


Figure 6.12. Activity systems analysis: HDFx MOOC program tensions

- Tension X, depicting a clash between the subject and tool components of the HDFx MOOC program system, addressed challenges of professional practice deriving in learning pressures for members of the HDFx team in relation to the adoption of the edX platform for the creation and delivery of MOOCs for LAC. As such, it identified gaps of practical knowledge or skills reported by subject matter experts, instructional designers, administrative assistants, media producers, and platform technicians through their multidisciplinary collaborations.

- Tension Y, depicting a clash between the tool and object/outcome system components, documented the technical and/or pedagogical challenges with the functionality of the edX platform and contingent MOOC-based modalities of instruction that were identified by participants as obstacles hindering the HDFx program's primary objective of using MOOCs for delivering top-quality training and professional development opportunities for LAC.
- Tension Z, depicting a clash between the community and division of labor system components, captured the political and institutional conditions at play at the HDF that support or hinder participants' work performance and multidisciplinary collaborations. Thus, it reflected contextual factors impacting the HDFx MOOC program's evolution towards greater professionalization.

Table 6.1 presents a summary of the study findings along with the incidence of the related systemic tensions through both a disaggregated analysis of the various phases of the MOOC design cycle and the aggregated analysis of the HDFx MOOC program. As a result, it can be seen that, in its disaggregated form, the activity systems analysis of the five phases in the MOOC design cycle resulted in Tensions (a-f), which substantiated the secondary findings of this study, respectively, Findings 2, 3, and 4. By contrast, the aggregated activity systems analysis of the HDFx MOOC program resulted in Tensions X, Y, and Z, which corroborated this study's principal finding, Finding 1, related to the emergence of work-based learning through multidisciplinary collaborations among participants in labor-integrated activities.

Table 6.1

Study Findings With Aggregated and Disaggregated Systemic Tensions

Findings	Phase of MOOC Design Cycle	Systemic Tensions	Description
Finding 1: Work-based Learning via Labor-integrated Activities	Instructional Design, Production, Implementation	(X) Subject vs. Tool	Challenges of professional practice deriving in learning pressures for members of the multidisciplinary HDFx team upon using the edX MOOC platform for delivering MOOCs to LAC
	Instructional Design, Production, Implementation	(Y) Tool vs. Object/Outcome	Technical or pedagogical challenges with edX platform/MOOC modality hindering the HDFx program's objective of delivering top-quality educational opportunities for LAC
	Needs Assessment, Instructional Design, Production, Evaluation	(Z) Community vs. Division of Labor	Political and institutional environment at HDF that support or hinder participants' work performance and multidisciplinary collaborations – contextual factors impacting the HDFx MOOC program's evolution towards greater professionalization
Finding 2: Practical knowledge in preparation and administration of MOOC educational resources or learning activities	Instructional Design	(X), (Y), (Z) ↔ (b) Subject vs. Object / Outcome	Complicated negotiation between SMEs and instructional designers over educational resources and learning activities for instructional design proposal
	Production	(Y), (Z) ↔ (c) Rules vs. Division of Labor	Complex multidisciplinary collaborations and expensive staffing solutions required for producing media-based educational materials for MOOCs
	Implementation	(X), (Y) ↔ (e) Tool vs. Community	Learning pressures for participants in connection to the practical development and management of educational materials – e.g. discussion forums
	Needs Assessment	(Z) ↔ (a) Division of Labor vs. Object / Outcome	Uneven compliance among participants with the assigned responsibilities and anticipated time commitments listed on project chart
	Communication Skills	Instructional Design	(X), (Y), (Z) ↔ (b) Subject vs. Object / Outcome

Table 6.1 (continued)

Findings	Phase of MOOC Design Cycle	Systemic Tensions	Description
Finding 3: Improving Organizational Processes	Needs Assessment	(Z) ↔ (a) Division of Labor vs. Object / Outcome	Uneven compliance among participants with the assigned responsibilities and anticipated time commitment listed on project chart
	Production	(Y), (Z) ↔ (c) Rules vs. Division of Labor	Complex multidisciplinary collaborations and expensive staffing solutions required for producing media-based educational materials for MOOCs
	Production	(X), (Z) ↔ (d) Tool vs. Community	Inconsistent adoption of collaboration tools by different team members with implications for multidisciplinary work streams
	Evaluation	(Z) ↔ (f) Tool vs. Division of Labor	Key gap of data analyst position for evaluating course offerings and conducting research via big data analytics for DILAC team
Finding 4: Facing Constant Developments in Technological Tools	Production	(X), (Y) ↔ (d) Tool vs. Community	Learning pressures in connection to constant upgrades by edX platform
	Implementation	(X), (Y) ↔ (e) Tool vs. Community	Preoccupation among participants with the provision of technical or content support for course registrants in response to changes with the functionality of the edX platform

Discussion of Findings

As stated in Chapter II, the foundation of this exploratory case study rested on John Dewey's (1933) pragmatic philosophy of learning from experience. Summed up into the motto of "learning by doing," Dewey's views offered a simple and direct perspective on learning as innately experiential that has endured in time to inform other more elaborate conceptualizations about the complex and multidimensional ways in which adults learn. Two such formulations, work-based learning and cultural historical activity theory (CHAT), were then combined into the conceptual framework of this

investigation which sought to determine and gain a better understanding of whether and how participants at the HDF reported experiences of work-based learning related to multidisciplinary collaborations employing the edX platform for delivering MOOCs to LAC.

As a theoretical formulation preoccupied with “vocational, occupational and professional education and training,...oriented towards gainful employment and professionalism” (Blankertz, 1977; Billett, 2008, as cited in Weber, 2013, p. 1), work-based learning allowed the researcher to distinguish between *labor-related* and *labor-integrated* learning processes (Sonntag & Stegmaier, 2007; Stenström & Tynjälä, 2010; Malloch et al., 2011, as cited in Weber, 2013; Marsick, 2006; Marsick & Watkins, 1990). Thus, instances in which participants engaged in processes separate from the actual value creation at work were considered opportunities for labor-related learning, whereas instances in which participants engaged in work processes directly connected to the value production or value creation were considered opportunities for labor-integrated learning.

Similarly, through its formulation of “mediated action” to reflect the indivisible linkage between the material condition of human activity and the environment, cultural historical activity theory (Vygotsky, Leontiev, and Luria) allowed the researcher to discriminate between “goal-directed actions” and “object-oriented activities” (Davydov, 1999; Galperin, 1992; Lazarev, 2004, as cited by Yamagata-Lynch, 2010). In this sense, goal-directed actions represented often temporary and individual processes which led towards the fulfillment of specific tasks, whereas object-oriented activities represented longer-lasting and community-based undertakings geared towards the attainment of system-wide objectives.

Ultimately, as depicted by the conceptual and analytical framework in Figure 6.13, this exploratory case study focused on the crucial overlap between labor-integrated processes and object-oriented activities as a means of unearthing participants' most significant experiences of work-based learning. As such, the researcher adopted as the unit of analysis the multidisciplinary interactions of participants through their engagement with labor-integrated processes and object-oriented activities during each of the five phases in the MOOC design cycle: Needs Assessment, Instructional Design, Production, Implementation, and Evaluation.

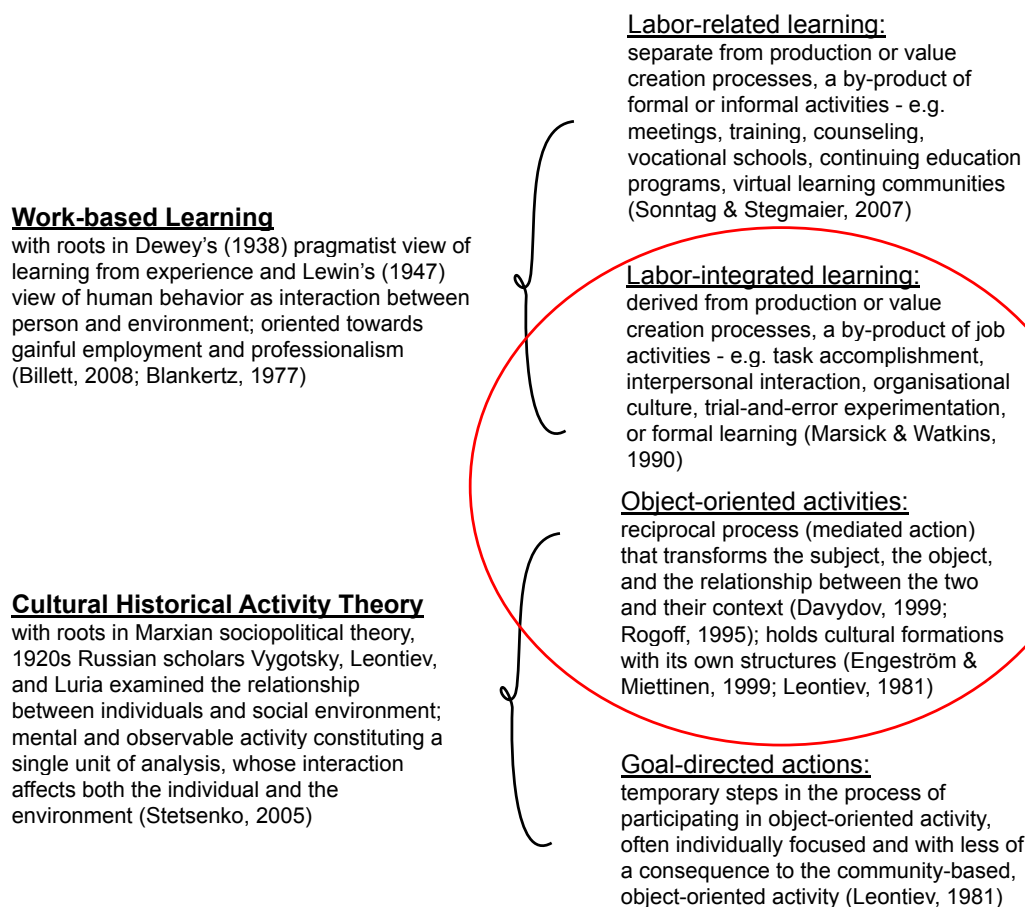


Figure 6.13. Conceptual framework for analysis

Therefore, the discussion section of this chapter presents the synthesis of the four main findings of this study with the conceptual underpinnings of work-based learning theory and CHAT. At the same time, the systemic tensions identified through the preceding application of the activity systems analysis framework are illuminated as catalysts for the learning experiences reported by participants.

Finding 1 Discussion: Unanimous Work-based Learning via Labor-integrated Activities

As documented in Chapter V, Finding 1 determined that the totality of participants' (100%) reported experiences of work-based learning through their engagement with labor-integrated activities related to the Needs Assessment, Course Design, Production, Implementation, or Evaluation phases of edX MOOCs. This finding corresponded to the principal research question of this study, which aimed to understand whether and how participants experienced learning through their work with the multidisciplinary design of edX MOOCs for LAC. A more specific analysis of participants' responses—corresponding to the subsequent findings of this investigation in response to its secondary research questions—identified that they had encountered significant learning experiences or anticipated having to face future learning experiences as a result of: preparing and administering educational resources or learning activities for MOOCs (Finding 2), the need for improving organizational processes at the HDFx program (Finding 3), and the constant development of technological tools (Finding 4).

Finding 1 aligned closely with the literature on work-based learning, as it determined that the learning reported by all the study participants conformed to the concept of “labor-integrated learning” which, as stated previously, described learning at

work as resulting from the direct participation in processes of value production (Malloch et al., 2011; Sonntag & Stegmaier, 2007; Stenström & Tynjälä, 2010, as cited in Weber, 2013). Thus, in contrast to the concept of “labor-related learning” describing learning at work separately from processes of value creation, participants reported labor-integrated learning experiences as an outgrowth of their direct participation in multiple collaborative processes geared towards the generation of value for the enterprise—namely, the performance of multidisciplinary object-oriented activities aimed at the successful completion of each of the five phases in the HDFx MOOC design cycle.

In this sense, Finding 1 corroborated Watkins’s description of labor-integrated learning “as a by-product of some other activity,” based on Marsick and Watkins’ (1990, as cited in Marsick, 2006) argument that “[l]earning at these different levels is all the more apparent in informal and incidental modes because learning is not subject to design and control by trainers...[but] rests primarily in the hands of the learner” (pp. 53-54). Furthermore, in keeping with Dewey’s (1933) practical view of learning from experience, which expounded on experiential learning in response to the reflective and systematic processing of “disjuncture[s] between what is expected and what occurs” in problem solving or trial-and-error experimentation (Marsick, 2009, p. 266), the systemic tensions identified through the application of the activity systems analysis framework (Engeström, 1987) became a prospective catalyst for individual, communal, and organizational learning inherently linked to the sociohistorical conditions of the HDF as a contextually bounded activity system. Such an expansive view of work-based learning aligned with Lewin’s (1947) interpretation of human behavior as emerging from the interaction between person and environment.

Thus, as outlined in Table 6.1, three system-wide tensions (X, Y, Z) substantiated Finding 1 by sparking reports of work-based learning via labor-integrated activities among participants. Tension X documented challenges of professional practice and related learning pressures among members of the multidisciplinary HDFx team following the adoption of the edX platform for delivering MOOCs to LAC. Such factors were identified to have played a determinant role during the collaborative work processes pertaining to the Instructional Design, Production, and Implementation phases. The same three phases were concurrently influenced by the effects of Tension Y, representing technical or pedagogical challenges with the functionality of the edX platform that were reported as hindering the HDFx MOOC program's objective of delivering top-quality educational opportunities for LAC. Finally, Tension Z represented the political and institutional conditions at play at the HDF that supported or hindered participants' work performance and multidisciplinary collaborations. The factors illuminated by Tension Z were detected during the Needs Assessment, Instructional Design, Production, and Evaluation phases, thus leaving only the Implementation phase outside of its influence.

Furthermore, as Finding 1 framed the subsequent findings corresponding to the secondary questions guiding this investigation, Tensions X, Y, and Z were also manifest in the labor-integrated processes that informed such findings via corresponding phase-specific tensions (Tensions a-f). Through this prism, the Instructional Design phase was the most contested of all five phases in the MOOC design cycle, given the overlapping incidence of all three system-wide tensions during labor-integrated processes of instructional design. Such confluence, then, set the context for how participants

developed practical knowledge in preparing and administering educational resources or learning activities and necessary communication skills (Finding 2).

Meanwhile, the predominance of Tension Z regarding the conditions contributing to the need for improving the HDFx MOOC program's organizational processes (Finding 3) revealed the transcendental effects of the reigning political and institutional climate at the HDF over the organizational structure of its nascent MOOC program. Lastly, as illuminated by the combined effects of Tensions X and Y, the participants' concern over forecasting a future need for learning in response to the constant development of technological tools (Finding 4), anticipated issues of professional practice as well as technical or pedagogical challenges concentrated mainly during the production and implementation phases.

In sum, by analyzing participants' widespread reports of on-the-job learning via labor-integrated experiences through the dual CHAT consideration of individual and collective object-oriented activities, all within a given contextually-bounded activity system, this research study upheld a core assumption of work-based learning in which "[v]ocational achievement is not only related to fulfilling the goals of the particular workplace, but also to support personal (e.g. emotional stability) and organizational goals (e.g. creating a positive working climate, proposing meliorations, generating additional resources)" (Sonntag & Stegmaier, 2007, as cited in Weber, 2013, p. 2). Furthermore, as Finding 1 set the groundwork for the subsequent findings in a way that recognized gaps of practical knowledge or skills among participants, the need for updating outdated organizational processes, and future learning pressures in connection to constant technological changes, it ultimately also corroborated that "[t]he corresponding learning

and developmental processes take place in workplace settings—especially for purposes of gainful employment for unskilled workers as well as those aspiring to advance their careers” (Weber, 2013, p. 4).

Finding 2 Discussion: Practical Knowledge in the Preparation and Administration of MOOC Educational Resources or Learning Activities

Finding 2 of this study, as reported by 80% of responses documented in Chapter V, determined that participants had developed practical knowledge in the preparation and administration of educational resources or learning activities through their engagement with labor-integrated activities at the HDFx MOOC program. This finding also documented the perspective shared by 75% of participants that effective communication skills represented a critical factor for the successful performance of their multidisciplinary work activities. This finding corresponded to subquestion 1a, which sought to understand the types of knowledge, skills, or behaviors participants believed were necessary to succeed in working with edX MOOCs.

As anticipated by the preceding discussion on Finding 1, the emergence of learning among the first generation of multidisciplinary professionals following the HDF’s launch of a pioneering program for delivering MOOCs to LAC denoted a typical pattern of experiential learning, in which participants learned by doing. That is, they learned through the “direct encounter with the phenomena being studied rather than merely thinking about the encounter, or only considering the possibility of doing something about it” (Borzak, 1981, p. 9). Within a context in which “nobody had worked with MOOCs, nobody knew what the process was like; what we had to do, what we

didn't have to do" (Valeria, administrative assistant, Personal communication, July 28, 2016), the only certainty was the abundance of learning challenges and opportunities.

Table 6.1, for example, listed the most prominent systemic tensions encountered by participants—a group of generally well-educated but formerly MOOC-inexperienced professionals—through their engagement with labor-integrated processes of value creation during the various multidisciplinary phases of the MOOC design cycle. In this sense, it was determined that participants developed practical know-how in creating educational resources and learning activities for MOOCs amid the heat of complicated negotiations between subject matter experts and instructional designers over the selection of such content. On one hand, subject matter experts tended to advance an expansive approach to content management during the Instructional Design phase that considered their vast and advanced knowledge on a given topic for possible inclusion in a MOOC. On the other hand, instructional designers promulgated a reductionist view that prioritized essential and specific content aimed at fostering the development of practical skills among course registrants.

The mediation outcome between these two perspectives would then inform the development of an instructional design proposal, providing a blueprint for the subsequent production and implementation of the respective course's educational resources (e.g., texts, videos, graphics, games, simulations, etc.), and associated learning activities (e.g., watching instructional videos, responding to case study exercises, participating in discussion forums, etc.). However, while at a first glance the origins of this tension could be reduced to an argument between information-based and practice-based methodologies of instruction, further analytical elements emerged when larger systemic conditions were

factored in. For instance, as much as instructional designers advocated for the production of more specific resources and practical activities, the lack of a consistent knowledge base among the large number of MOOC registrants, coupled with the edX platform's generic, media-based interface imposed systemic limits on their eventual implementation.

As a consequence, through the period covered by this investigation, the HDFx MOOC program has produced a general outcome characterized by courses of a predominantly basic or introductory level. Felipe, a subject matter expert, referred to a MOOC he participated in as “a course, I would say, 101...but basic to understand the language, understand the principles, the basic concepts” (Personal communication, July 28, 2016). In that sense, when comparing that outcome against the three categories of MOOCs identified in the literature—network-based or cMOOCs, task-based, and content-based or xMOOCs (Yeager, Hurley-Dasgupta, & Bliss, 2013)—the researcher concluded that HDFx MOOCs mainly represented an example of content-based or xMOOCs. As cited in Chapter II, a distinguishing factor of this kind of courses is that “[c]ontent acquisition is more important in these classes than either networking or task completion, and they tend to use instructivist pedagogy. Traditional assessment, both formative and summative, may be emphasized. Mass participation seems to imply mass processing” (Three Kinds of MOOCs, n.d.)

It is important to note, however, that these categories are unrestricted and, as such, MOOCs may include elements or characteristics from all three categories while getting defined by the dominant tendency they display. In this sense, while HDFx MOOCs may generally be defined as content-based or xMOOCs, many of its courses still employed elements from task-based MOOCs—such as case study exercises that required

registrants to demonstrate analytical skills towards the completion of hypothetical problems or situations. Similarly, the DILAC team has begun to experiment with different methods for improving the administration of discussion forums, borrowing in a way from the high value and emphasis that network-based or cMOOCs place on facilitating timely and meaningful interactions among registrants towards the generation of distributed new insights and understandings.

Finally, the complex multidisciplinary collaborations and expensive staffing solutions necessary for satisfying the media-based instructional functionality of the edX MOOC platform represented yet one more systemic pressure for participants as they learned how to prepare and administer educational resources and learning activities. Chief among these challenges were the intense labor-integrated processes required for producing instructional videos, especially when considering that most participants had not had any prior exposure to working with this methodology. As such, the coordination, production, and deployment of instructional videos highlighted the learning-by-doing approach to the preparation of educational resources and learning activities that prevailed during the beginning stages of the HDFx MOOC program.

For example, subject matter experts needed to adjust their normal teaching style away from the presentational or online formats they were used to in order to adapt it to the video-based modality of MOOCs. Similarly, instructional designers needed to map the course's educational content with the production of videos to ensure proper sequential and messaging alignment. Video producers, in turn, discovered that shooting instructional videos demanded the use of a unique stylistic approach, characterized by the emphasis on scripting and messaging rather than on the elaborate production values or effects of other

kinds of videos. Administrative assistants, and production coordinators in particular, became the essential nexus in charge of researching and contracting video companies from throughout LAC, scheduling shoots on the limited availability of subject matter experts, marking scripts and providing feedback during post-production, and approving final edits. Lastly, platform technicians handled the upload and hosting of videos according to each course's corresponding configuration on the edX platform. In sum, participants discovered how to prepare and manage instructional videos and the rest of educational content necessary for hosting MOOCs on the edX platform by delving directly into different processes of multidisciplinary collaboration.

On communication skills. As described via the communication skills summary in Table 6.1, the mediation between the divergent perspectives of subject matter experts and instructional designers over the selection of educational content for MOOCs demanded that participants hone their communication skills while engaged in heated work processes. Furthermore, the uneven compliance among participants with the assigned responsibilities and anticipated time commitment listed on a MOOC's project chart illuminated the need to improve the communicational outcome of the initial Needs Assessment phase. Both these examples, in turn, reflected larger system-wide challenges concerning the political and institutional nature of the HDF.

In fact, Leontiev's conceptualization and analysis of object-oriented interactions—such as the dynamics around the drafting of a project chart document at the outcome of the Needs Assessment phase—granted the researcher the dual capacity to look at individual and collective action at the light of its situated environment (Davydov, 1999; Galperin, 1992; Lazarev, 2004, as cited by Yamagata-Lynch, 2010). Ultimately,

this systemic and systematic approach revealed the contextual conditions at play at the designated activity setting—namely, the power play among institutional factions of the HDF. The former, then, highlighted the interdependent relationship between subject(s) and environment as well as the sociomaterial and expanded sociohistorical aspects of the mediated action principle on which CHAT stands (Engeström, 1987; Vygotsky, 1978, as cited in Yamagata-Lynch, 2010).

Finding 3 Discussion: Improving HDFx MOOC Program's Organizational Processes

Finding 3 of this study reported that 17 out of 20 participants (85%) defined the need to improve the organizational processes for collaborating among members of the HDFx MOOC program as the most important contextual condition impacting their work. This finding emerged in response to subquestion 1b, in which participants identified the main institutional, technological, or pedagogical factors that supported or inhibited their work performance. While highlighting the complexities of structuring multidisciplinary collaboration, an essential requirement for delivering MOOCs to LAC, the reported emphasis on organizational processes corroborated the relevance of social explanations of learning identified in the adult education literature.

As an alternative to overly cognitive approaches, social learning theories favor a systems- or network-based understanding of practice and interaction, derived from patterns “of increased participation in activity” (Bruner, 1973; Cole, 1988; Lave, 1988; Mehan, 1983; Norman, 1980; Rogoff, 1994; Wertsch, 1997, as cited in Riel & Polin, 2004, p. 17). “Intellectual development becomes a process of negotiation of meaning in everyday practice with others” (Dewey, 1916; Vygotsky, 1978, as cited in Riel & Polin,

2004, p. 17). Thus, in the context of this study, work-based learning and CHAT theories enabled the researcher to document, analyze, and identify manifestations of labor-integrated experiential learning amid participants' personal accounts of multidisciplinary collaboration within the HDFx MOOC program.

Moreover, the application of derived forms of work-based learning, such as the learning community framework discussed in Chapter II, added extra dimensionality to considerations about the role of the HDF in structuring the systemic conditions that make such kind of learning possible. As a key element in the learning community literature, Lave and Wenger (1991), Cole and Engeström (1993), and again Wenger (1998) proposed that the change of roles in a community, or context of activity, by individuals promotes their knowledge acquisition. Learning, as such, is considered to be intimately related to a process of identity transformation—always in connection to the particular social context in which the experience is embedded (Riel & Polin, 2004). In this sense, the adoption of an entirely new modality of instruction via edX MOOCs by the HDF was guaranteed to propel identity changes and knowledge acquisition among the multidisciplinary professionals responsible for deploying such technologies.

Through this lens, the researcher could contrast the organizational structure of the HDFx MOOC program with the type of work-based learning that it was found to have fostered among participants against the various structures and goals of learning in communities identified by Riel and Polin (2004). While insisting on the overlapping and fluid boundaries among their proposed categories, Riel and Polin argued that learning in communities tends to follow patterns of task-based, practice-based, and/or knowledge-based participation. According to this view, each classification embodies ever deeper

levels of social activity and learning complementarity among participants, starting with task-based communities whose engagement and learning respond to the shared enterprise of delivering a product within a limited time scope.

In this sense, given the intersecting emphasis on learning from processes of task completion and value creation, it could be argued that the multidisciplinary collaboration and reported labor-integrated learning among members of the HDFx MOOC program followed fundamental patterns of task-based community participation—reflecting a similarly predominant task-based organizational structure. This meant that, while the work-based experiences that participants reported might have included certain aspects of the more developed practice-based or knowledge-based forms of learning in communities, the overall organizational structure of the HDFx MOOC program could not be found to have supported those levels of learning in a predominantly consistent manner.

The adult education literature further recognized that even though people might experience instances of informal or incidental learning, derivative forms of work-based learning, “[they] are not always conscious of it” (Marsick & Watkins, 1990, p. 12, as cited in Marsick, 2006, p. 54). Such lack of awareness complicates the documentation of learning episodes and, thus, the management of organizational support systems for professional development. Li et al. (2009, as cited in Marsick, 2009) argued that the construction and administration of knowledge depend on the capacity “to turn tacit knowledge into explicit, codified knowledge that can be shared through different kinds of systems.... The emphasis is on share-ability so that others can benefit from what individuals have learned” (p. 270).

As a longstanding financial and research institution, the HDF places high value on documenting its practices in search of learning from them and constantly improving its processes. From this institutional context, then, it followed that the evaluation phase in the MOOC design cycle included joint activities between the DILAC team and client departments in which participants discussed general problem areas and made improvement recommendations at the end of every MOOC offering. Similarly, platform technicians identified the ongoing mechanisms employed by their work group to document and share the practical knowledge emerging from labor-related activities—such as course-specific technical incident reports, guidelines for implementing new edX platform features or third-party applications, and online tutorials for new team members.

However, because of the very fact that the HDF is a longstanding institution that represents the diverse interests of countries from throughout Latin America and the Caribbean, it has also developed a unique set of cultural and political norms that can stave or inhibit organizational change. Precisely, Tension Z (see Figure 6.12 and Table 6.1), referring to the political and institutional environment of the HDF and its impact over participants' work-based performance and multidisciplinary collaborations, was identified through activity systems analysis as the most recurrent factor associated with the need to improve the organizational processes of the HDFx MOOC program. In this sense, the institutional environment at the HDF was found to have acted both as a support system that promoted the documentation and exchange of knowledge while also cultivating systemic tensions that inhibited the HDFx MOOC program's professional development.

Per the summary of systemic tensions for Finding 3 available in Table 6.1, the manifestation of system-wide Tension Z through the various phases in the MOOC design cycle determined that, although organizational tensions played a role during processes related to Needs Assessment and Evaluation activities, such challenges were more pronounced during the Production phase. As a result, labor-integrated processes pertaining to the Production phase reflected these two specific complications:

(a) complex multidisciplinary collaborations and expensive staffing solutions required for producing media-based educational materials, and (b) inconsistent adoption of collaboration tools by different team members with implications for multidisciplinary work streams. Ultimately, the DILAC team implemented a series of personnel changes to address such factors through its ongoing analysis of organizational processes.

As such, the role of production assistants was reorganized under the new title of production coordinators to reflect better the need for transversal support for production processes. Moreover, although the timeline for this study did not allow for the immediate documentation of the latest addition of roles in areas like big data analysis and audiovisual technology coordination, it became clear that such staffing changes responded to contextual pressures to improve the management of the complex multidisciplinary, multinational, and multi-tool collaboration workflows required for the production of MOOC educational materials. In sum, the need to improve the organizational processes of the HDFx MOOC program identified by 85% of participants should be understood in connection with the predominantly task-based structure that bounds their participation within similarly oriented labor-integrated processes and activities. Moreover, by grounding individual learning within a social or communal

context, it is possible to understand better the reported labor-integrated learning experiences of participants in light of larger systemic tensions that both supported and inhibited their professional development in an indivisible relationship with the professionalization of the HDFx MOOC program.

Finding Four Discussion: Facing Constant Developments in Technological Tools

As reported through the fourth and final finding of this investigation, a majority of participants (75%) identified the constant development of technological tools as the most anticipated driver for their future learning while working at the HDFx MOOC program. This finding corresponded to subquestion 1c, which sought to understand the challenges and opportunities for learning at work anticipated by participants in connection with future changes in MOOC technologies. Finding 4 carried echoes from the preceding findings in the study, evidenced by participants' preoccupation with the impact of future technological changes over the generation and administration of educational content as well as over the stated institutional goal of using MOOCs to deliver top-quality education opportunities for LAC.

Therefore, by connecting individual learning expectations with institutional objectives, the study participants upheld a core assumption of work-based learning in which “[v]ocational achievement is not only related to fulfilling the goals of the particular workplace, but also to support personal (e.g. emotional stability) and organizational goals (e.g. creating a positive working climate, proposing meliorations, generating additional resources)” (Sonntag & Stegmaier, 2007, as cited in Weber, 2013, p. 2). As such, the expectation of future on-the-job learning as a result of technological

changes was reported by three of the four participants from each of the disciplines represented in this study.

However, despite a seemingly homogeneous rate of acceptance, participant responses reflected two fairly distinct patterns across disciplines. For instance, given the central role of software and hardware tools in the work activities of platform technicians and media producers, both of these disciplines spoke about the impact of future technological developments over their projected learning needs from a predominantly technical perspective. On the other hand, subject matter experts, instructional designers, and administrative assistants based their responses on fundamentally pedagogical grounds.

Moreover, the summary for Finding 4 available in Table 6.1 revealed that, among all five phases in the MOOC design cycle, those with the most anticipated incidences of systemic tensions were precisely the two phases in which technical and pedagogical elements intersected through labor-integrated activities—namely the Production and Implementation phases. For example, the Production phase was the only one to include the effective engagement of all five disciplines in processes of value creation. In fact, media producers were usually contracted just during this phase to assist with the creation of the various types of educational resources selected for a given MOOC or SPOC (e.g., videos, texts, graphics, animations, games, etc.). In this sense, administrative assistants acted as production coordinators steering the required multidisciplinary interactions of media producers or platform technicians, on the technical side, with subject matter experts and instructional designers, on the instructional side.

As a corollary of the intersection between the technical and pedagogical aspects that make HDFx MOOCs possible, participants zeroed in on perceived shortcomings with the current instructional functionality of the edX platform and connected their on-the-job learning projections with aspirations for undertaking future fixes. The leading complaint in this respect, voiced primarily by administrative assistants, instructional designers, and subject matter experts, had to do with the dysfunctional moderation of MOOC discussion forums. In their view, as a result of overcrowded registrant participation, the ensuing peer community discussions were rendered incoherent and ultimately lacked any substantial instructional value for course registrants. Thus, they were quick to identify future learning challenges in the quest to revamp a lackluster user experience that contradicted the stated institutional goal of the HDFx MOOC program.

As previously reported, some of those efforts were already underway as the DILAC team begin experimenting with different methods to improve the administration of discussion forums. In this sense, future collaborations among the technical and instructional arms of the HDFx MOOC program will only be more indispensable, if the aim of facilitating timely and meaningful interactions among registrants capable of generating distributed new insights and understandings is to be accomplished—as proposed by the connectivist or cMOOC model of instruction (Three Kinds of MOOCs, n.d.; Yeager et al., 2013).

Ultimately, it must be noted that during the period covered by this investigation, participants reported certain innovative experiments regarding the moderation of learner communities happening around the HDFx program's SPOC offerings, or small private online courses, more so than with MOOCs per se. When added to the multiple areas in

which MOOCs have been found to struggle, such as low persistence and achievement rates among course registrants (Chafkin, 2013; Lewin, 2013; Perna et al., 2013), this fact then reflected ongoing questions about the quality of learner support and ultimate sustainability of MOOC-based models of instruction, such as those found in the literature:

Whether MOOCs can be as successful without providing the same level of learner support [as SPOCs] is still an open question. After MOOC mania subsides, it may be that SPOCs will emerge as the preferred model for specialized learning, taking the online approach to smaller, targeted—and revenue generating—classes. (“SPOCs may provide what MOOCs can’t,” 2013)

Chapter VII

CONCLUSIONS AND RECOMMENDATIONS

This exploratory case study used a qualitative research design to explore whether and how a group of multidisciplinary professionals reported experiences of work-based learning through their engagement with the design of edX MOOCs for LAC. The study sought to better understand the work-based activities and possible learning experiences of multidisciplinary professionals who use the edX platform for designing MOOCs for LAC. The study was framed by one principal research question and three subquestions:

1. How and to what extent, if at all, do subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers report experiences of work-based learning through their engagement with the multidisciplinary design of edX MOOCs for training and professional development in Latin America and the Caribbean?
 - a. What knowledge, skills, and/or behaviors, if any, do participants believe they need to master in order to be successful in their jobs, and to what extent can those competencies be attained via work-based learning?
 - b. In what ways do certain institutional, technological, and/or pedagogical conditions related to the multidisciplinary design of edX MOOCs in the

context of Latin America and the Caribbean foster or hinder the development of those critical competencies among participants?

- c. What challenges and opportunities do participants expect having to face in response to the latest developments in MOOC technologies, and how do they expect having to adapt their current work-based performance to respond effectively to what the future of edX MOOCs targeting LAC calls for?

This final chapter outlines and explains the conclusions developed by the researcher, makes recommendations for practice and future research, and ends with the researcher's reflections.

Conclusions

Conclusion 1: MOOC Contributors Gain Experience by Disrupting Past Professional Practices

Following the boisterous breakthrough of MOOCs into the landscape of online education, the multidisciplinary teams that were formed by institutions seeking to offer their own MOOCs faced their own kind of disruption. In other words, the very professionals called to disrupt the otherwise lethargic world of higher education experienced intense learning pressures of their own, as they collaborated with practitioners from different disciplines in the creation of the first MOOCs. In the particular context of the HDF, which in 2014 established a pioneering program for delivering MOOCs to LAC via the edX platform, multidisciplinary practitioners, including subject matter experts, instructional designers, administrative assistants, platform technicians, and media producers, learned how to prepare and administer

educational resources for MOOCs in the heat of their collaborative labor-integrated activities.

In that sense, subject matter experts who in the past were used to teaching in conventional onsite or online environments had to adapt their instructional practices to the predominantly video-based methodology of MOOCs. In turn, media producers like graphic designers, video makers, or copy editors, among others, discovered an entirely new genre of educational media, for which they had to learn to develop new creative vocabularies. Similarly, instructional designers had to learn to translate the encyclopedic body of knowledge offered by subject matter experts into concise and practical learning activities for the massive number of globally-distributed registrants signing up for MOOCs.

Furthermore, although platform technicians were mainly responsible for the configuration of course content on the edX platform and providing technical support to registrants during the course implementation, they were also key participants in the experimental quest for overcoming persistent limitations with the edX user interface (e.g., overcrowded discussion boards, lack of meaningful peer-to-peer interactions, or custom feedback functionality). Likewise, administrative assistants, including production coordinators and a communications coordinator, had their roles restructured in light of their key transversal function as a bridge among all other functions and processes pertaining to the creation and delivery of HDFx MOOCs. In sum, all participants in this study reported intense learning experiences in connection with their multidisciplinary work delivering alternative open education opportunities to LAC.

Conclusion 2: Technical-Pedagogical Multidisciplinary Collaborations Shape up MOOC Teams

Mirroring the same technological forces that introduced the various MOOC types of distributed education, the teams charged with the creation of course content for MOOC platforms demand strong collaboration among technical and instructional disciplines. Thus, while subject matter experts and instructional designers provided the pedagogical know-how for the HDFx MOOC program, platform technicians and media producers provided the necessary technical support—all under the stewardship of administrative assistants or production coordinators who acted as the connecting tissue between these two fundamental and complementary areas of expertise.

At the heart of such multidisciplinary collaboration sat the edX platform, influencing the different types of interactions necessary through the various phases of MOOC design for getting courses published via its learning management system. For instance, given that edX MOOCs would generally rely on videos as a central educational resource, then subject matter experts were called to engage with production coordinators and media producers in the preparation of educational videos. A similar example could be found as instructional designers collaborated with assessment specialists in the development of multiple-choice questions and then with platform technologists for the configuration of such questions on the platform.

Ultimately, while the researcher had originally set out to investigate the essential set of competencies or skills developed by the first generation of MOOC contributors, what emerged at the end was a realization about the key role of multidisciplinary collaboration as a mechanism for activating the complex multinational and multi-tool work processes required for delivering MOOCs to LAC. In this context, technical

capacities were called increasingly to complement, not simply support, the pedagogical goals of instruction by aligning these with the technologies and functionality of the edX platform. The latter, in turn, acted as a superstructure whose interface dictated the tools or artifacts that would mediate any process of instruction, along with the sociotechnical relationships called to enact them—all in all, corroborating once again that “the medium is the message” (McLuhan & Fiore, 1967).

Conclusion 3: Professionalization of MOOC Teams Demands Responsive Institutional Support and Organizational Engineering

After a turbulent initial period marked by an instinctive learning-by-doing approach to the development and delivery of MOOC offerings for LAC, the HDFx team embarked on an intense professionalization process. In this sense, although the metaphor “building the plane while trying to fly it” might have described fairly accurately the scenario encountered by the first contributors of the HDFx MOOC program, it should also be noted that the HDF lent its institutional and organizational support to the continued enhancement of the newly-formed MOOC initiative. This meant that in keeping with its mission as a research and financial institution that is invested in furthering the regional development of LAC while promoting open knowledge policies, it allocated organizational resources to identifying possible areas of improvement at the end of each MOOC.

Through that strategy, the HDFx team conducted an internal exploration of its operational processes, resulting in the restructuring of certain roles like that of production coordinators, whose former title as production assistants was redefined to better reflect their growing responsibilities of helping to run most day-to-day administrative and

production operations. Additionally, two new positions were created—a big data analyst plus an audiovisual and technology coordinator—that, respectively, would allow the HDFx MOOC program to extract meaningful insights from the large-scale participation garnered by its course offerings and lend more targeted instructional technology support to their design.

While not all organizations that would like to begin offering MOOCs might have the resources or impetus to review their internal processes in the same manner as the HDF did, it is important to highlight those aspects as contributing factors to the successful implementation of a MOOC program. At the same time, however, a number of other organizational challenges still remained in need of a solution at the HDFx MOOC program, such as its surrounding politically-charged work environment with contrary perspectives over the selection of educational content among different disciplines, or the inconsistent adoption of collaboration tools by different team members with negative implications for multidisciplinary work processes. In sum, the embeddedness of the HDFx MOOC program within a specific institutional context reflected larger systemic tensions capable of both supporting and inhibiting the professional development of individuals as well as teams, with implications for the professionalization of the HDFx MOOC program as a whole.

Conclusion 4: The MOOC Evolution Comes With Individualized Instruction and Direct Instructor Feedback (for a SPOC Premium!)

As MOOC technologies evolve, questions about their perceived value continue to generate debate while prompting a general reassessment of their once much-touted transformative potential. Originally lauded as a marvelous technological breakthrough

and a vehicle for the ultimate democratization of education around the globe, a recalibrated view on MOOCs has positioned them instead as part of the executive or professional education niche after realizing that the majority of MOOC registrants were people with a track record of prior academic achievement. In turn, institutions offering MOOCs have identified different strategies for gaining value from such enterprise—for example, conducting big data research on the learning habits of large pockets of online learners, training staff members in new online learning formats, offering verified certificates of completion for nominal fees, generating leads about market demand for new academic programs, experimenting with interactive deployment of educational resources, pursuing corporate partnerships, and brand marketing, among others.

In the specific context of the HDFx MOOC program, established in accordance with the HDF's stated objective of delivering high-quality educational opportunities for LAC, the introduction of MOOCs has not escaped its own share of controversy. For example, although practitioners in the HDFx team expressed unwavering commitment to and felt motivated by HDF's institutional mission of improving lives in LAC through education, they also raised concerns about how effective MOOCs can ultimately be in that respect. The main areas of discrepancy seemed to emanate from the lack of a common baseline across the diverse learning trajectories of MOOC registrants prior to the start of a given course as well as from the lack of hard evidence about their learning outcomes once a course has ended.

These conditions thus demanded that the course content be simplified to broaden its reach across the massive number of registrants, while relying on learners' self-assessment or the platform's automated grading as indicators of learning outcomes. As a

consequence, instructional designers in the HDFx MOOC team would constantly have to limit the ample and advanced knowledge offered by subject matter experts into its most basic and practical applications, while platform technicians would try to hack the edX platform's interface seeking ways to enable more effective peer-to-peer or tutor-learner interactions. Ultimately, SPOCs would emerge to provide some relief for these limitations and, for a premium, enable small-group or individualized forms of instruction and dedicated instructor feedback to learners.

Conclusion 5: LAC Educators Will Do Well to Question the xMOOC Direction Plotted by the Major Platform Providers

MOOCs have reached a certain “plateau of productivity” (“Hype Cycle Research Methodology | Gartner Inc.,” n.d.), in which the oversized expectations that surrounded their rapid ascent just a few years ago have morphed into a more nuanced understanding about their true potential within the growing niche for executive and continued education. If during the early stages of the so-called MOOC “Revolution” (Friedman, 2013) there was any prospect that such open learning technologies would democratize access to quality education for all, what followed soon was the stark realization that the main beneficiaries were professionals with prior academic achievement (Christensen et al., 2013; Ho et al., 2014, 2015; Perna et al., 2013) rather than the underprivileged masses of the world.

Such convergence around the executive education demands of a growing global workforce has turned the major U.S. MOOC providers into bottomless course catalog systems of predominantly content-based offerings, or xMOOCs. This has meant that among the 3 types of MOOCs identified by Yeager et al. (2013)—network-based

cMOOCs, task-based MOOCs, or content-based xMOOCs—the dominant market forces have coalesced around content-based alternatives that cater to the broadest audience possible using instructivist pedagogical approaches to promote content acquisition over networking or task accomplishment (Three Kinds of MOOCs, n.d.).

Amid that context, educators from LAC and other developing regions will do well to question the direction plotted by the main platform providers for the maturation of MOOC technologies. For an educational innovation that once promised unbridled and unlimited potential, the content-based xMOOCs that boast about massive enrollments, Ivy League sponsorships, and celebrity instructors represent nothing more than the concept of “banking” education that Freire (2000) vehemently opposed as vehicles of oppression. For that reason, unless LAC academic institutions are to become the digital dumping grounds for the excessive instructional output of commercial MOOC catalogs, —which tend to reflect a low-common-denominator approach in order to reach the largest global audience possible—they must cultivate a multidisciplinary group of practitioners and the necessary organizational infrastructure that would allow them to reclaim the essence of the original connectivist cMOOCs.

Ultimately, only by gaining the necessary technical and pedagogical wherewithal will LAC academic institutions be able to join fully in network-based conversations around the most pressing issues of our time and, thus, to be active contributors in the generation of socially-constructed, distributed forms of knowledge. The alternative would relegate them to mere consumers of pre-packaged educational content, while perpetuating that the epicenters of knowledge and power will remain behind the ivory towers of higher education institutions in the United States and Europe.

Recommendations

At the end of this exploratory case study, the researcher offers recommendations for practice as well as recommendations for further research.

Recommendation for Practice One: Leveraging Adult Education Theories Towards the Development of a Scholar-Practitioner Paradigm

With the accelerated rate of technological change confronting organizations today, learning at work is a constant and increasingly inescapable requirement of professional adult life. Technological transformation at the workplace rarely affords practitioners the luxury of learning in sequential or carefully structured pathways. Rather, professionals are having to adapt with agility through the actual application of new tools and processes while in the midst of high-stakes work operations. The intense on-the-job learning experiences described by the HDFx MOOC team responsible for the creation of innovative and potentially disruptive forms of education for LAC represented a prime, almost meta, example of the present technology-driven landscape—with significant implications for the field of adult education.

As such, the conceptual formulations proposed by adult education theories, like experiential learning, work-based learning, activity systems, learning communities, among others, can help us to think about the diverse, complex, and intersectional ways that adults learn within organizations. In particular, by considering learning in connection to processes of value creation or regarding activity systems that encompass a symbiosis of sociomaterial interactions, work-based learning and CHAT can, respectively, generate valuable insights into the social organization of work and the material foundation of human enterprise. Thus, the field of adult education can make substantial contributions to

the development of a genuine scholar-practitioner mentality that, while engaged in collaborative praxis, also understands the systemic and situational principles that govern our evolving professional interactions to help organizations navigate the constant of change.

Recommendation for Practice Two: Designing Adaptive Organizational Structures That Support a Plurality of Collaboration Workflows

The activity setting explored by this case study offered a particular example of the multidisciplinary collaborations that are needed to create MOOCs, emphasizing the intensive human resources and sociotechnical capacities required by organizations seeking to venture into similar pursuits. The activity site also offered a unique window on the challenges that follow from the need to operationalize such collaborations into efficient organizational processes. The HDF is a large multinational institution with its main hub of operations located in the United States and representation offices distributed throughout LAC.

In that sense, the subject matter experts who participate in the HDFx MOOC program can be anywhere in the region, demanding that media producers from throughout LAC be contracted to shoot instructional videos following the coordination directives from the central administration offices in the United States. In turn, such geographic dispersity increases the need for reliable Internet-based communication and collaboration tools via the kind of applications for which there is an overabundance of options available—both a blessing and a curse, since too many options inevitably result in the disorderly adoption of and compliance with preferred practices.

As a consequence, it is essential to realize that there is no one-size-fits-all or assembly-line type of solution that can account for the multidisciplinary, multinational, and multi-tool collaboration requirements of organizations like the HDF. Instead, organizations seeking to implement MOOC programs might be better off designing for complexity and a plurality of sociotechnical work streams rather than trying to impose rigid processes that garner little compliance among key stakeholders. Ultimately, while ensuring certain fundamentals like interactivity, scalability, and security, organizations ought to favor responsive technology systems that reflect the non-linear and heterogeneous ways of working of an increasingly diverse workforce.

Recommendation for Practice Three: Via cMOOCs LAC Institutions Could Become Effective Knowledge Nodes in Distributed Global Networks Rather Than Simple Data Mines for U.S. MOOC Providers

The listings of the major U.S. MOOC providers denote a general orientation towards content-based courses, or xMOOCs (Yeager et al., 2013), responding in large part to the basic functionality and user interface of each platform. Such an approach to MOOC environments as content repositories has resulted from template learning solutions that rely primarily on text-based and video-based forms of instruction. At the same time, the pursuit of alternative, more interactive educational resources or learning activities requires the allocation of substantial additional resources—e.g. staffing, time, economic, etc.—for experimentation.

These considerations were keenly illuminated in the context of this case study, as HDF subject matter experts and instructional designers would clash over how to translate vast amounts of information on a given course topic into practical learning activities for registrants beyond the passive reading of seminal texts or watching instructional videos.

Furthermore, if course creators wanted to steer away from any of the basic template functions of the MOOC platform—e.g. by enabling peer-review activities or theme-based discussion boards—, platform technicians would bear the brunt of the implementation. Ultimately, the time commitment necessary for achieving an effective implementation among the various disciplines would render the proposed solution unsustainable in the long run.

With that in mind, the researcher recommends that LAC academic institutions explore alternative opportunities for reorienting their MOOC programs towards the connectivist principles of the original network-based MOOCs, or cMOOCs. In that way, instead of replicating the instructivist pedagogies of content-based xMOOCs that prioritize simple deposits or transfers of information—or the acquisition of particular skills, as in the case of task-based MOOCs—, LAC MOOC creators could help to position regional academic institutions as nodes of learning on the open web while joining in the development of distributed and socially-constructed forms of knowledge in conversation with other institutions that experiment with connectivist MOOCs around the world.

To do that, however, LAC institutions will have to be willing to take a critical stance against the dominant discourse about online learning technologies, resisting the urgency to jump immediately into the bandwagon of the latest “miraculous” gadget or tool. When it comes to MOOCs and the major U.S. platform providers, which offer the temptation of accessing a global market with millions of prospective registrants, LAC institutions will do well to reconsider the very concept of *massive*, following the realization that only a small fraction of those who register for a course tend to access its

contents, and an even smaller segment ultimately complete it or get certified. Once the hype tapers off, then the fundamental discussion should be less about the platforms that make such courses available and more about the partnerships and connections that the exploration of pressing social and intellectual pursuits can foster among communities of learners in the Digital Age. For LAC, this distinction can be the difference between becoming an effective knowledge node for emerging global networks or a simple data mine for the major U.S. MOOC platform providers.

Summary of Recommendations for Practice

The researcher recommends leveraging the conceptual framework of adult education theories towards the development of a genuine scholar-practitioner paradigm amid multidisciplinary teams and organizations seeking to implement MOOC programs. Additionally, given the increasing multidisciplinary, multinational, and multi-tool collaboration requirements of organizations, the researcher recommends designing responsive organizational systems for a plurality of collaborative work processes. Finally, the researcher recommends that LAC institutions prioritize connectivist or network-based cMOOCs over the more popular content-based alternatives in order to turn the region into an effective knowledge node in distributed global networks rather than into a simple data mine for the major U.S. MOOC platform providers.

Recommendations for Further Research

There are numerous opportunities for furthering the research around the topics covered by this exploratory case study. The researcher recommends that further research be conducted in the following three areas:

1. Continued exploration of the professionalization efforts undertaken by the HDFx MOOC program in order to document its evolution over an extended period of time. In keeping a prolonged engagement with the activity setting, as recommended by activity theory research strategies, researchers might be able to follow up on certain key organizational changes initiated during the closing phase of this study, which could not be fully incorporated in the present report. Those changes included the addition of a data analyst and an audiovisual technology coordinator to the HDFx MOOC team as well as the development of corporate and interinstitutional partnerships for the creation of joint MOOC ventures.
2. Conduct a comparative case study exploring the reported learning experiences of a MOOC team based in a LAC country and contrast those experiences with the experiences from participants in the HDFx MOOC team. HDFx MOOCs are designed for target audiences from LAC; however, the HDF itself is headquartered in the United States. As a consequence, it would be very valuable to study the multidisciplinary interactions among MOOC contributors at LAC-based institutions in order to account for differences of professional competencies, collaboration technologies, instructional approaches, and/or surrounding structural conditions.
3. Limit the investigation by following a single MOOC—or a single MOOC component, like reading materials, instructional videos, quizzes, and the like—through all phases of the design cycle, from conception, design, and production to delivery and final evaluation. While the present case study

offered a window on the multidisciplinary collaborations necessary for implementing a MOOC program without making any discrimination about course subject, course format, or variations in the number of contributors participating in a course, the researcher recommends narrowing such variables by studying the lifespan of a single MOOC—or a single MOOC component—in a future study. In that way, the inductive and interpretative cornerstones of qualitative research will be grounded on ever more precise and particular data.

Researcher Reflections

The Local/Global Tension Among MOOC Registrants Anticipates the Universal Future Learner

As director of a digital content team with over 10 years of professional experience in the context of marketing and communication for a higher education institution in New York City, the researcher has witnessed the impact of various cycles of technological innovation on the pedagogical and/or professional competencies of human talent responsible for integrating said technologies into the support of university operations. In that sense, while the arrival of MOOCs sparked a wave of research focusing on the learning behaviors of the large number of registrants who are attracted to these courses, the researcher opted to shed light instead on the intense learning pressures and institutional challenges facing a multidisciplinary team through the creation and delivery MOOCs for LAC. At the conclusion of this investigation, the researcher recognizes and feels humbled by the tremendous resourcefulness, resiliency, and professionalism demonstrated by the HDFx team as it launched and developed a pioneering MOOC program for LAC entirely from scratch. This appreciation cannot but be accompanied by

the conviction that institutions need to provide their increasingly diverse and geographically dispersed workforces with flexible collaborative tools and responsive organizational support in order to help them succeed.

Similarly, an important aspect of this investigation was the study of an organizational context that employed MOOCs as a means of reaching populations from LAC, beyond the epicenters of MOOC activity in the United States and Europe. Thus, while the researcher's main goal was to identify the learning pathways and institutional supports that enabled a multidisciplinary group of practitioners to develop the competencies necessary for delivering edX MOOCs to LAC, questions about the adoption of MOOCs vis-à-vis their instructional diversification and value proposition according to the pedagogical needs of a developing region were also a permanent—albeit secondary—preoccupation. In that respect, however, it was difficult for the researcher to arrive at any relevant conclusions that would point to unique regional considerations for the implementation of MOOCs in LAC beyond the most obvious differentiating factors, such as diverse languages of instruction, regionally-based course topics and learning materials, or social and structural challenges like limited Internet access among the target populations.

What can be inferred from these references, therefore, is that the process of instruction—at least at the training and professional development levels—will be increasingly predetermined by the platform in which these are hosted—the medium is still the message. The universal future learner hangs thus on the technical underpinnings of online learning technologies, whereby individuals need to develop the essential self-determination and critical skills in order to identify their own personal—departmental or

organizational, as in the instance of group managers—knowledge gaps, and then design a corresponding learning trajectory outside of formal educational settings towards closing them. Amid this context, the researcher remains convinced that developing regions like LAC need to foster educational systems that cultivate citizens with sufficient critical thinking and digital literacy competencies that would allow them to participate fully—not simply as consumers—in the emerging global information societies that characterize our present Digital Age.

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Appendix A

Demographic Survey

Protocol Number: 16-409

1. What is your gender?
 Female _____
 Male _____

2. What is your age group? 18-24 ___; 25-34 ___; 35-44 ___; 45-54 ___; 55-64 ___;
 65-74 ___; 75+ ___

3. What is your country of birth? _____. In what country do you live
 and work now? _____.

4. Please specify your ethnicity or race.
 American Indian or Native American ___; Asian or Pacific Islander ___;
 Black or African American ___; Hispanic or Latino/a ___; White ___;
 Other _____

5. What language(s) do you speak and write proficiently?
 English ___; French ___; Portuguese ___; Spanish ___;
 Other(s) _____

6. What is the highest degree or level of education you have completed?
 Undergraduate degree ___. Please list your specialization (and country of degree
 granting institution): _____ (_____)

 Master's degree ___. Please list your specialization (and country of degree
 granting
 institution): _____ (_____)

 Doctoral degree ___. Please list your specialization (and country of degree
 granting institution): _____ (_____)

 Other ___. Please list your specialization (and country of degree granting
 institution): _____ (_____)

7. Current job overview

	What is your main job function as part of your current position? (Select all that applies)	Since what year have you worked in your current professional field?
Research Teaching/Training Instructional Design Learning Platform Management or Development Multimedia Production Other. Please specify: _____	_____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____

8. Working and Learning with MOOCs

Since what year have you worked in the creation of MOOCs?	List the titles of all MOOCs you have worked on as part of your current position	List the titles of all MOOCs you have completed as a student (by any provider)

Appendix B

Demographic Survey (Spanish) \

Número de Protocolo: 16-409

1. ¿Cuál es su género?
Femenino ____
Masculino ____
2. ¿Cuál es su rango de edad? 18-24 ____; 25-34 ____; 35-44 ____; 45-54 ____; 55-64 ____; 65-74 ____; 75+ ____
3. ¿Cuál es su país de nacimiento? _____. ¿En qué país reside y trabaja hoy? _____.
4. Por favor especifique su etnicidad or raza.
Indio Americano or Nativo Americano ____; Asiático or Isleño del Pacífico ____;
Negro or Africano Americano ____; Hispano/a o Latino/a ____; Blanco ____;
Otro _____
5. ¿Qué idioma(s) habla y escribe proficientemente?
Español ____; Francés ____; Inglés ____; Portugués ____;
Other(s) _____
6. ¿Cuál es el título o nivel de educación más elevado que ha completado?
Licenciatura _____. Por favor indique su área de especialización y país de la institución académica certificante:

Maestría _____. Por favor indique su área de especialización y país de la institución académica certificante:

Doctorado _____. Por favor indique su área de especialización (y país de la institución académica): _____ (_____)

Otro ____. Por favor indique su área de especialización (y país de la institución académica): _____ (_____)

7. Actual perfil profesional

	¿Cuál es su principal función de trabajo en su posición actual? (Escoja todas las opciones aplicables)	¿Desde qué año ha trabajado en su actual campo profesional?
Investigación	_____	_____
Enseñanza o Instrucción	_____	_____
Diseño Instruccional	_____	_____
Administración o Desarrollo de Plataforma de Aprendizaje	_____	_____
Producción de Multimedia	_____	_____
Otro(s). Por favor especifique: _____	_____	_____

8. Trabajando y Aprendiendo con MOOCs

¿Desde qué año ha trabajado en la creación de MOOCs?	Por favor liste los títulos de todos los MOOCs que ha ayudado a crear como parte de su posición actual	Por favor liste los títulos de todos los MOOCs que ha completado como estudiante o participante (de cualquier proveedor)

Appendix C

Interview Protocol

Eight-Step Model (Mwanza, 2001)

1. What sort of activity(ies) do you perform as part of your job designing edX MOOCs for LAC?

Probe: Please provide an extended, step-by-step description of the activity(ies) you perform as part of your job.

2. Why is this activity taking place?

Probe: Why is this activity relevant in connection to the design of MOOCs for LAC?

3. Who is involved in carrying out this activity?

Probe: Who do you interact regularly as a result of performing this activity?

4. By what means do you carry out this activity?

Probe: What tools or professional support do you rely upon for performing this activity?

5. Are there any cultural norms, rules and/or regulations governing the performance of this activity?

Probe: What influences your choices, decisions, and actions when carrying out this activity?

6. Who is responsible for what, when carrying out this activity and how are the roles organized?

Probes: Please provide a detailed description of the roles and responsibilities of each of the parties involved.

7. What is the environment in which this activity is carried out?

Probes: How do you feel when performing this activity? What do you experience upon carrying out this activity?

8. What is the desired outcome from this activity?

Probes: How do you assess the success or failure of performing this activity? What are the most rewarding aspects of performing this activity? How do you think that things could be improved when carrying out this activity?

Significant Incident – ORID (Stanfield, 2000)

9. Can you tell me about a specific project you worked on when you faced challenges carrying out this activity? What about it made it challenging? Who else was involved? How did you feel at that time? How did you deal with the situation? Why did you decide to do that? Looking back, what alternative actions do you think might have helped in that situation?

Probes: Can you tell me about a time when you realized that you did not know what was needed to carry out this activity and felt that someone or something helped you? What do you think it was that helped you?

10. What do you see as the future of MOOCs, specially those based on the open-source edX platform and that target LAC, and what challenges or opportunities does this pose with regard to the way you currently perform this activity?

Probes: How do you expect that you will have to adapt in the way that you carry out this activity to respond to what the future of edX MOOCs targeting LAC calls for? What tools, skills or knowledge you expect that you will have to master and what professional or institutional supports you expect you will have to secure to carry out this activity into the future? Is there anything else you feel I neglected to ask or need to know regarding how you perform your job designing edX MOOCs for LAC?

Appendix D

Interview Protocol (Spanish)

1. ¿Qué tipo de actividad(es) ejecuta usted como parte de su trabajo diseñando edX MOOCs para LAC?

Seguimiento: Por favor provea una descripción extensiva, paso a paso de la(s) actividad(es) que usted ejecuta como parte de su trabajo.

2. ¿Por qué se realiza esta actividad?

Seguimiento: ¿Por qué esta actividad es relevante en conexión con el diseño de edX MOOCs para LAC?

3. ¿Quiénes están involucrados en ejecutar esta actividad?

Seguimiento: ¿Con quiénes interactúa usted regularmente como resultado de ejecutar esta actividad?

4. ¿Por qué medios ejecuta usted esta actividad?

Seguimiento: ¿De qué herramientas o apoyos profesionales depende usted para ejecutar esta actividad?

5. ¿Existen algunas normas culturales, reglas, y/o regulaciones que gobiernen la ejecución de esta actividad?

Seguimiento: ¿Qué influye sobre sus elecciones, decisiones, y acciones cuando usted ejecuta esta actividad?

6. ¿Quiénes son responsables por esto o aquello al ejecutar esta actividad y cómo están organizados los distintos roles?

Seguimiento: Por favor provea una descripción detallada de los roles y responsabilidades de cada una de las partes involucradas.

7. ¿Cuál es el entorno en que se ejecuta esta actividad?

Seguimientos: ¿Cómo se siente usted al ejecutar esta actividad? ¿Qué experimenta usted al ejecutar esta actividad? ¿Cómo piensa usted que el escenario actual podría mejorar para la ejecución de esta actividad?

8. ¿Cuál es el objetivo deseado al ejecutar esta actividad?

Seguimientos: ¿Cómo evalúa usted el éxito o fracaso después de ejecutar esta actividad? ¿Cuáles son los aspectos más gratificantes de ejecutar esta actividad?

9. ¿Puede contarme acerca de algún proyecto específico en el que usted trabajó y en el que encontró algún tipo de obstáculo al efectuar esta actividad? ¿Qué fue lo que lo hizo particularmente complicado? ¿Quién más estaba involucrado en ese episodio? ¿Cómo se sintió en ese momento? ¿Cómo actuó usted en ese momento? ¿Por qué decidió usted hacer eso? ¿En retrospectiva, qué tipo de acciones alternativas cree usted que pudieron haber ayudado en esa situación?

Seguimientos: ¿Puede contarme acerca de algún episodio en el que usted se dio cuenta que no sabía lo que se necesitaba para efectuar esta actividad y sintió que alguien o algo le ayudaron? ¿Qué cree usted que fue lo que le ayudó?

10. ¿Cómo ve usted el futuro de los MOOCs, especialmente aquellos basados en la plataforma abierta edX y que apuntan a LAC, y qué tipo de retos y oportunidades esto presenta con relación a la manera en la que usted efectúa esta actividad actualmente?

Seguimientos: ¿Cómo espera tener que adaptar su manera de ejecutar esta actividad para responder a lo que el futuro de edX MOOCs para LAC demanda? ¿Qué tipo de herramientas, habilidades o conocimientos espera tener que dominar y qué tipos de apoyos institucionales espera tener que asegurar para ejecutar esta actividad en el futuro?

Appendix E

Observation Form—Eight-Step Model (Mwanza, 2001)

Phase of MOOC Design Cycle	Activity System Component	Question to Ask / Observational Focus	Probable Indicators (?)	Observations
Assessment___ Design___ Production___ Implementation___ Evaluation___	Activity	What sort of activity am I interested in?		
Assessment___ Design___ Production___ Implementation___ Evaluation___	Object-ive	Why is this activity taking place?		
Assessment___ Design___ Production___ Implementation___ Evaluation___	Subjects	Who is involved in carrying out this activity?		
Assessment___ Design___ Production___ Implementation___ Evaluation___	Tools	By what means are the subjects carrying out this activity?		
Assessment___ Design___ Production___ Implementation___ Evaluation___	Rules and regulations	Are there any cultural norms, rules and regulations governing the performance of this activity?		
Assessment___ Design___ Production___ Implementation___ Evaluation___	Division of labor	Who is responsible for what, when carrying out this activity and how are the roles organized?		
Assessment___ Design___ Production___ Implementation___ Evaluation___	Community	What is the environment in which activity is carried out?		
Assessment___ Design___ Production___ Implementation___ Evaluation___	Outcome	What is the desired outcome from this activity?		

Appendix F
Coding Scheme

Code

Code Type

Definition

Example

(4 pages)

CODE	CODE TYPE	DEFINITION	SAMPLE QUOTES
AA Activity	Parent	Data pointing to the type of work activity performed by participants, from either of the five phases of MOOC design established by the activity setting: Needs Assessment, Instructional Design, Production, Implementation, or Evaluation	
01 Needs Assessment	Child	Refers to the initial phase of the MOOC design process, during which the viability of the MOOC as a learning solution is analyzed and, when applicable, a project charter is developed.	Felipe: That is my scope of work, we practically started this at the FHF in 2005, so we have been working for more than 10 years on the agenda of improving public management, orienting it to effective results for development. In this we have more advanced countries, countries that are still in the middle, and some countries that are in an initial stage. As part of this strengthening activity, the need for training and training arose. We started this with a couple of face-to-face courses, we did two courses here in Washington, the face-to-face courses were about managing for overall results and after that experience we realized that there was a very significant cost problem - bringing in for 4 weeks 20 Participants to Washington, the cost of that was very high. So we decided to explore other alternatives and started to move more towards a design of mixed courses with a part face-to-face and a part [online] and we saw that the greatest need was in subnational governments... From these courses we did several and then we adopted the modality of MOOCs. From there we moved to the MOOC. The difference between the MOOC and these mixed courses that I mentioned is that the MOOC is fully open and therefore a lot of people are listed who are not civil servants, who may be students, who may be a person who is bored at home and does not know what to do and registers... It is a course, I would say, 101. Management by results applied to a subnational government but basic to understand the language, understand the principles, the basic concepts.
02 Course Design	Child	Refers to the second phase of the MOOC design cycle, during which the learning objectives, grading strategy, and detailed course structure with sequence of activities get defined, among other instructional design processes.	Felipe: Well, first of all, let's say... in what is the curriculum of the course, let's say it remained more or less the same, based almost entirely on a book that we wrote in 2010 on management by results in Latin America and the Caribbean of which I was author together with [co-author's name has been omitted here] which is the other co-author. Where we analyze the development of an index of management by results and therefore all the definitions that we use in the course come from this book that I mention, in fact, it is a bibliographical reference. To the students we say: "Go, chapter 3 to see such a thing. Chapter 4..." Finally, it is one of the bibliographical references.
03 Production	Child	References to the Production phase of MOOC design cycle, during which course materials are planned and developed - e. g. readings, texts, videos, infographics, multimedia, quizzes, tests, etc. During this phase, the course is announced, configured, and pilot-tested on edX and a promotional Communications plan gets defined and rolled out.	Cristina: And upon defining a work plan what is key is to define together with the client who will be the experts who are going to participate in the different videos, and make a recording schedule with these experts. Also the search for the support materials, be it presentations, be it readings and / or infographics, as well as extra activities.
04 Implementation	Child	Refers to the Implementation phase of the MOOC design cycle, which covers the six-week "live" period of a course from the moment it launches until it closes on the edX platform. It includes the facilitation of discussion forums, sending surveys and communications, and providing technical support to registrants.	Cristina: But then there's the part done by the virtual classroom team... it's not so big, as most of it takes place when the course is already being implemented, which is the part of posting course materials, the part of answering questions about the edX technical platform.
05 Evaluation	Child	Refers to the final phase of the MOOC design process, during which the various user surveys and Analytics data from edX are processed, analyzed, and reported.	Felipe: So we are very happy with the experience, it has had a lot of impact. I do not know if you have the statistics or you want the statistics... OK... how many people enrolled for the first, second, and the third course... but, basically, it fulfilled if you want with the condition that it is massive on the one hand, by the number of people that registered. The rate on this course at least, the certification rate let's say, is a little above the standard of 7.47 - 8 percent, we are at 14 - 15 percent.
BB Object	Parent	Data pointing to the ultimate objective or motive of the activity	Valeria: To launch the course, that is, to launch the course on time and working without problems - that is the main objective. And that the people enjoy it, learn from it... so that they learn and that they value the contents... A good course and a good learning experience for the ones that registered in it.
CC Tools	Parent	Means by which participants carry out a work activity. Tools include social others and artifacts that act as resources for the subject in the activity	
01 edX	Child	Data referring to the open-source edX MOOC platform	Q: And why have not they used this functionality? Valeria: Because it's still on BETA in edX and we do not want to be guinea pigs.
01a MOOCs	Grandchild	Data referring to the use of MOOCs as a technology for disseminating open online courses	Valeria: I believe that MOOCs and the education revolution is allowing people who do not have access to education to learn, to study, and to develop skills that may be more important and gain experiences that are worth more than a person who went to college and paid for it. Because... I also realized that what you learn in college, 90% of the time, is irrelevant when it comes to working.
01a.x Re-runs	Great-grandchild	Data referring to a second, third, or any subsequent version of an original MOOC offering	
01a.y Internet Access	Great-grandchild	Data referring to Internet service access, or lack thereof, as the main requirement for registrants to access MOOCs.	
01b SPOCs	Grandchild	Data referring to Small Private Online Courses (SPOCs)	Felipe: As a result of this first experience we are now working on a second MOOC, which is still at the design stage for parliamentarians. So it would not be a MOOC, but - as they call it at IDLAC - a SPOC. Because let's say it is not for the whole public but for parliamentarians, or people who work in Parliament, shall we say? And it is a little also about bringing parliamentarians to this discussion of an orientation towards a public management that is more in search of results.
02 Social Media	Child	Refers to social media platforms, like Facebook, Twitter, YouTube, etc.	Cristina: Specifically speaking of the communication strategy, we use a lot of social networks for the dissemination part. Then we contact customers also through Twitter, through Facebook, through LinkedIn.
DD Rules and Regulations	Parent	Data pointing to cultural norms, rules or regulations that govern the performance of a work activity, including any formal or informal regulations that affect how the activity takes place.	
01 Staffing	Child	Related to the hiring and staffing practices of the activity site	
02 Time Factor	Child	Data pointing to temporal considerations and their impact on the MOOC design process.	Cristina: For me, the determining factor is the start date of the course. The course that starts first is the one we work on first and once it is already started we start with the next one. So... this year we are trying to organize ourselves a little better because well this has all been new, all this is... we are defining the processes that we started last year so that we are all clear on the time, or clearer on the time it takes to do one thing or another.

03 Diversity, Inclusion, and Equal Opportu	Child	Data pointing to adherence to these categories, or lack thereof, both as part of the work setting as well as of the materials being used or produced for a course. An example of the former would be any kind of discriminatory practice at the workplace, while examples of the latter would refer to choices around gender, race, age, religion, or any other type of media representation on videos or texts assigned during the course.	Valeria: Unfortunately, being a Latin organization, it is an organization where there is still a lot of machismo. But it is not a frontal machismo, but a machismo that nobody accepts, but that exists. Personal experiences of mine, that is, that one as a woman experiences and the counterpart does not and even more when one is surrounded by a team of men.
04 Open Knowledge	Child	References to the institutional push for sharing its knowledge and resources openly as well as for making it operations transparent	
EE Community (HDF)	Parent	Data pointing to the Fund for Hemispheric Development (FHF, for its Spanish acronym) as context for the performance of work activities and as environment for the formation of various social groups.	
01 IDLAC	Child	Data referring to the Institute for Latin American and Caribbean Development (IDLAC, from its Spanish acronym)	Cristina: Inside the FHF, here we are ... well I'm going to talk to you about the part of operations or implementation, in the team of MOOCs we are 8 people, with Matias 9, plus the subject matter expert. But then there's the part of the virtual classroom that do a part ... But from this side we are 9 people, not all are doing the same.
01a Leadership	Grandchild	Refers to the role and impact of leadership in the activity setting	Cristina: Since the beginning of the year... we have the team leader of the MOOCs who is Matias and since the beginning of the year, he already has... well, they have already given him a budget from a technical cooperation.
01b Virtual Learning Unit	Grandchild	Refers to the virtual learning unit at IDLAC	Cristina: [For] the only thing Gabriela's team comes in is the virtual classroom - that the only thing they are in charge of is uploading questions and also... to conduct a fast review of the course.
02 Knowledge Sectors	Child	Refers to the different client departments and their knowledge sectors, which seek to offer MOOCs in their particular research and practice areas. These departments house in turn the various subject area experts who act as MOOC instructors.	Cristina: For the re-runs we meet with the client, we ask if they want to have a second edition, a third. The client says yes, we ask if there has been any changes in the subject for updating the information that exists on the videos, including readings.
03 Administrative Departments	Child	Data referring to the Department of External Communications (DEC), Procurement Department, Information Technology, or any other administrative department within FHF	Cristina: And then I meet with the different communicators of the External Communication Area (DEC) and the communicator from the client department along with other people to define a little how the plan will be, whether they liked the strategy or not, which audience we are going to target, to which countries.
04 External Vendors	Child	Refers to external vendors or external service providers	Valeria: I have one of my suppliers who lives in Colombia and ended up being a FHF provider because I knew him from before and he's on my phone book because I'm always asking for something like, "I need you to change this, I need you to move this. I do not like it, change it." Then he sometimes laughs and says, "I speak with you more than with my girlfriend!"
05 Workplace Environment	Child	Data pointing to the work climate or environment at the activity setting	Cristina: As for the context of the IDLAC and the FHF, I would like to do a little more to let people know internally what MOOCs are, because it seems to me that not many people know internally. But there is so much daily information that people get from the FHF, that it feels sometimes that they are overwhelmed with so much information.
05a. Working Remotely	Grandchild	References about the physical or psychological experience of working remotely.	
FF Division of Labor	Parent	Data pointing to who is responsible for what when carrying out a work activity, indicating how the roles are organized and how the tasks are shared among participants.	
01 Subject Matter Expertise	Child	Refers to the role and function of providing subject area expertise	Valeria: Then I went to ask the expert and said: "Felipe, this is happening. Is this the correct answer or is this?" "No, this is it." It was that they were wrong and made a mistake... All the research to see what had happened and say, "well, the correct answer is actually the one that had been marked before."
02 Instructional Design	Child	Refers to the role and function of engaging in instructional design processes	Felipe: one of the important changes we have made is that we also opened a space to have dialogue tables. So, it's not just the teacher but you incorporate dialogue tables. To give you a concrete example, well, the mayor meets with three or four of his officials to discuss a specific topic. Let's say this... how is the progress with the results-oriented budget, for example, or in monitoring and evaluation. So, there you have a different dynamic than the previous courses, here you have a group of 5 people arguing. Another change that incorporates the course are animated cartoons for telling certain stories. So, in a traditional classroom course you do not have those tools.
02a Course Registrants	Grandchild	Data about registrants - the students or participants in a MOOC or SPOC.	The difference between the MOOC and this course that I mention is that the MOOC is fully open and therefore a lot of people are listed who are not civil servants, who may be students, who may be a person who is bored at home and does not know what to do and signs up. So here what's key is the dissemination, but we did it. It is a course, I would say, 101. Management by results applied to a subnational government but a basic level - to understand the language, understand the principles, the basic concepts.
02b Teaching Methods and/or Learning Ac	Grandchild	Data pointing to the design of teaching methods and/or learning activities as part of a MOOC or SPOC.	
02b.x Discussion Forums	Great-grandchild	Data referring to the ideation and/or usage of discussion forums in MOOCs, where participants and tutors or experts engage in dialogue related to the thematic content of the course.	
02b.y Testing or Learning Assessments	Great-grandchild	Data referring to the planning and/or implementation of testing activities in MOOCs for assessing registrants' learning. Keyterms: evaluation, grading, quizz, test(ing), assess(ment), certification	
02b.z Feedback or Interaction	Great-grandchild	Issues related to the provision of feedback and/or varying levels of interaction, or lack thereof, as part of a course.	
02c Educational Resources	Grandchild	Data pointing to the curation, production, and/or use of educational resources as part of a MOOC or SPOC.	Felipe: Now in this course, the course is fully recorded. It is a filmed course and the same course gets repeated - obviously, at least in these three versions, the course is still a course in Spanish and it is still in the same sequence, the same 6 weeks, the same exercises.
03 Administrative Assistance	Child	Refers to the role and function of providing administrative and/or production assistance	
03a Production Coordination	Grandchild	Refers to the role and function of providing production assistance	Valeria: A production assistant is the person who is doing... helping the client department as project manager. At one point I did that, but at the same time I am the person who is on top of what it is being done on edX, what needs to be changed. Then as they do not have an official title for me, I think they will change it to a technical assistant.

03b Communication Strategy	Grandchild	Refers to the role and function of developing and implementing promotional Communications strategies	Cristina: The idea is that everyone will know about MOOCs and to disseminate them. They are not, for now, maybe in the future - 3-4 years from now and people will already know about them - so that they could only be posted and people will already know, but right now there are very few people in Latin America who are aware.
03c Operations and Budget	Grandchild	Refers to the role and function of managing operations and budget	Cristina: The budget strategy is key because without the money, if we do not know how to administer it, suddenly instead of putting out 5 MOOCs we could just get two out and the idea is to put out as many as we can be within the quality established by Quality Matters.
03c.x Financial Indicators	Great-grandchild	References to financial data - e.g. costs of MOOC production	Valeria: Production is not something of \$5,000, but each MOOC is about \$150,000 including the hours of work, our wages - about \$150,000.
04 Platform Management	Child	Refers to the role and function of managing the edX platform	Cristina: Once the production is done, the production is already complete and the communication plan is already underway, we proceed to upload all the material to the platform and test the course so that all the questions are working per standard quality. And then the course launches.
04a Technical Forums	Grandchild	Data referring to the management of technical forums in MOOCs, where participants pose questions related to the technical functions of a course and moderators provide responses.	
05 Media Production	Child	Refers to the role and function of producing audiovisual resources, text-based documents, animations, graphics, games, etc.	
05a Video Production	Grandchild	Refers to the role and function of producing and editing audiovisual materials, as well as to the use of audio and video products as part of a course.	Cristina: we have the company that records the videos, which can be one or more depending on where the experts are going to be recorded. Sometimes they are here, but sometimes they are in different countries and we have to get companies or producers in different countries. Then, the company that is responsible for editing the videos, the company that is responsible for doing the layout.
05b Translation and/or Transcription	Grandchild	Refers to the role and function of translating text materials and/or transcribing audiovisual materials, as well as to the use of either of these products as part of a course.	Cristina: If the MOOC is in Spanish, we do not have to translate. Unless it is an English version and then we would have to translate it into Spanish. So we would have to hire a translator, or a translation company, from English to Spanish or vice versa.
05c Graphic Design	Grandchild	Refers to the role and function of designing (info)graphic materials, as well as to the use of graphic products as part of a course.	Cristina: We also have to send the banners for the new MOOC and then in parallel when the Course About Page is being created, I am in charge of creating the banner together with an external vendor who is a graphic designer. And well giving that person ideas of what we would like the banners to have according to the subject of the MOOC.
GG Outcome	Parent	Data pointing to the desired or actual end result of a work activity	Valeria: I have seen it as a participant in a MOOC, or being on the other side when I am developing it, and I see the interactions that are being made between the participants and how they start creating multinational work teams.
HH Latin America and the Caribbean	Parent	Data referring to the region and/or countries of Latin America and the Caribbean	Cristina: In the first editions we generally want to reach all countries, but when we are going to a second edition, a third, a fourth, we already do it based on the previous analysis that was done to evaluate the MOOC. We can already define which are the audiences we want to reach.
01 Language Factors	Child	Data pointing to the challenges and/or influence of language in the MOOC design process.	Cristina: We take great care to be culturally sensitive, and above all, because Latin America is so vast and with a broad cultural diversity. Even with the content, ensuring that words can be understood in all countries, not using words that suddenly cannot be understood in one country or another, but using standard words for messages.
II Professionalization	Parent	Information about processes and/or actions, or about the absence of these, which point to the need for improving work performance.	
01 Work-based learning	Child	Refers to formal or informal work-based opportunities for learning from experience, whereas human behavior is understood per Lewin (1947) to be the result of the interaction between person and environment; oriented towards gainful employment and professionalism.	Cristina: For me to learn, because I just started last year, but for me to learn how the whole process of production and implementation of a MOOC was, I asked for the option of carrying a MOOC as well. So this year, for the moment I am carrying a MOOC that came out right now. And at this stage, I can see the different details that are needed and how to improve processes - the quality process when the MOOC is already on the platform.
01a Work-integrated Learning	Grandchild	Accounts of experiential learning, as participants report gaining insights from their engagement in work activities related to production or value creation processes; a by-product of job activities - e.g. task accomplishment, interpersonal interaction, organizational culture, trial-and-error experimentation, or formal learning	Valeria: When we started the program two years ago, it was like, "Well now... and we need the first MOOC in a year!" But no one had done MOOCs, nobody knew what the process was like, what we had to do, what we did not have to do, or what contracts we had to sign. And it was a whole year of learning and we pulled out a MOOC in the first six months, but everything was done in a hurry and with long hours of work.
01a.x Problem Solving	Great-grandchild	Data pointing to learning as a result of troubleshooting problems and identifying solutions	Valeria: we had to upload things to edX and we saw that each thing looked different and I did not understand why: "Why it looks different if I did the same for all? I have done the same. Why don't they all look the same? What happened?" Then I saw something that said HTML... and I said: "What is this?" And I started learning and now I design web pages... I learned what HTML was and that's where I learned how to upload the banner in HTML, edit the field, that is, I work everything in HTML... I do copy and paste, but I see everything in HTML, I do not see it any other way because I got used to it. I already read the code, it is like learning another language.
01a.y Innovation	Great-grandchild	Data pointing to learning derived from innovation initiatives in the design of MOOCs or SPOCs	
01a.z Formal Training	Great-grandchild	References to formal training programs offered by the activity setting	
01b Work-related Learning	Grandchild	Accounts of formal or informal activities that are separate from production or value creation processes, refers to explicit "educational or training interventions, such as meetings, training courses, counseling sessions, vocational schools, continuing education programs, virtual learning communities etc."	Cristina: Quality Matters is a company that has a methodology of how to ensure that courses, not only the MOOCs, but all online courses go through a process... meet quality standards that make the course successful or impactful for users. We went through a course and within that course there were quite a few different rubrics to determine if the MOOC was successful or not.
02 Operational Processes	Grandchild	Data referring to operational processes related to the creation and delivery of MOOCs or to the need for implementing and/or updating said processes.	
02a Roles and Responsibilities Definitions	Great-grandchild	Data referring to the MOOC team's definition of roles and responsibilities, or lack thereof, and the resulting effects on its operations	
03 Inter-institutional Partnerships	Child	Data referring to prospective future partnerships with complementary institutions throughout LAC, like governments, universities, certification boards, etc.	Cristina: So this year, depending on the course, we are also trying to reach key institutions - non-profit institutions in the region, where they also have their niche group and we know that this course may be of interest to that group and we might do different dissemination campaigns, different things with them. Right now we are going to try to start partnerships with some of them.
04 Challenges	Child	Data pointing to perceived challenges or limitations. Areas where professional development and learning are needed.	
JJ Multidisciplinary Collaboration	Parent	Data referring to instances of work-based collaboration among professionals of different disciplines	

01 Communication	Child	Data referring to communicative processes, including reflexions on the importance of prompt and precise communication for team work or mentions of practices and activities that need an improvement in this area	
01a Interpersonal Relations	Grandchild	References about the positive or negative effects of interpersonal relationships for collaborating in multidisciplinary teams	
02 Adaptability	Child	References to the importance of being highly adaptable in the context of multidisciplinary group or team work.	Marcela: With MOOCs we interact with different teams, each one of them has their way of working, so we have to handle that flexibility in some way to adapt that each one brings things their own way. To cite an example, in the subject of instructional design or instructional structure, there are groups that handle an Excel file and have it structured in a way so that we can take from there the information on how to build the classroom and others handle a Google document Drive. Then, we try to relax in that sense and take both, but the ideal is, as we have already proposed to them, to maintain the same scheme of entry of this information so that nobody gets lost in the middle.
KK Future Vision	Parent	Data pointing to participants' expectations for their future practice as well as the future of MOOC technologies	
LL Memorable Quotes	Parent	Salient remarks worthy of being included in final report	Felipe: We were little "guinea pigs," the first MOOC was ours. It was also quite an experience putting it all together, because it is one thing when you already have a methodology of work and another thing is when you go to a MOOC, right? So we are very happy with the experience, it has had a lot of impact.
MM Data Triangulation	Parent	Concerning processes of data validation via the triangulation of data sources	
01 Document Analysis	Child	References to relevant documents and/or materials, like institutional reports, evaluations, learning objects, digital resources, etc.	Cristina: Then the evaluation of the edX data plus the information collected from these interviews is done. Sorry, this Survey Monkey. A report is made, that if you want I can share it with you (inaudible). And that report is passed on to the client so he has an idea of how many people were registered, how many people passed with more than 65 points, and what those people said about the course.
01a Introducción a la Gestión para Resultados en el Desarrollo	Grandchild	Materials and data related to the MOOC titled Introducción a la Gestión para Resultados en el Desarrollo	Felipe: Well, I brought you a small brochure that I leave you... I am the executive secretary of the community of practice for management by results in development of Latin America and the Caribbean...
01b Agua en América Latina - Abundancia en Medio de la Escasez Mundial	Grandchild	Materials and data related to the MOOC titled Agua en América Latina: Abundancia en Medio de la Escasez Mundial	Valeria: A year ago we made... it's going to be a year... we made a course with the University of the Andes in Colombia about water... and managing strategic alliances is very difficult, when there are the egos of the people overthere, the egos of specialists overhere - and it's like a fight: "I am the owner and I want this to be mine." And like that, having no good channels of communication has repercussions on the work of people, because things are not getting communicated well and everything like that gets amplified more than it has to be.
01c Líderes en Educación	Grandchild	Materials and data related to the SPOC titled Líderes en Educación	
01d Project Management Gestión de Proyectos	Grandchild	Materials and data related to the MOOC titled Project Management Gestión de Proyectos	Well, in particular, my collaboration has been very limited to the area of instructional design, but I would limit it to the Subject Matter Expert of the subject of the course. I have experience with only one course, the Project Management MOOC, and in that course I used the content we had from other courses to adapt it to the type of course they do in edX and that was a course that still worked from the instructional point of view. So I was a little Subject Matter Expert in the instructional design of this course.
02 Observation	Child	References to the observation of relevant events or activities carried out by study participants	

Appendix G

Participant Informed Consent

Teachers College, Columbia University
525 West 120th Street
New York NY 10027
212 678 3000

Protocol Title: Work-based Learning through the Multidisciplinary Design of edX MOOCs for Latin America and the Caribbean: Interview, Observation, and Document Analysis Consent

Principal Investigator: Fabian Freire, 973-429-3326, fdf2110@tc.columbia.edu

INTRODUCTION

You are being invited to participate in this research study called “Work-based Learning through the Multidisciplinary Design of edX MOOCs for Latin America and the Caribbean.” You may qualify to take part in this research study because you are over 18 years old and have worked or are working on the design of massive open online courses (MOOCs) for Latin America and the Caribbean using the open-source edX platform. Participating in this study includes being interviewed by the principal investigator as well as the option of being observed during normally occurring work activities and providing references about digital and non-digital resources for document analysis. Approximately, twenty people will participate in this study and it will take 1 hour of your time to complete.

WHY IS THIS STUDY BEING DONE?

This study is being done to better understand the work-based activities and learning experiences of practitioners in multidisciplinary workgroups who use the open-source edX platform for designing MOOCs for Latin America and the Caribbean. Particularly, this study investigates the kinds of work-based learning that occur in connection to the design of edX MOOCs for Latin America and the Caribbean, seeking to identify the professional competencies and contextual conditions that are needed for these multidisciplinary practitioners to do an effective job.

This research will employ an exploratory case study methodology, whereby the principal investigator will engage participants with two different approaches - one active and one passive. Interviews, for example, will involve the active engagement of participants by the investigator, while observation, on the other hand, will be conducted passively during routine work-based activities and events. The investigator will also collect digital and non-digital evidence for document analysis and use a demographic survey for canvassing the entire population of practitioners working with edX MOOCs at the activity setting.

WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY?

If you decide to participate, you will be interviewed by the principal investigator. During the interview you will be asked to discuss your work-based activities and learning experiences as a practitioner in the multidisciplinary design of edX MOOCs for Latin America and the Caribbean. This interview will be audio-recorded. After the audio recording is written down (transcribed), the audio recording will be deleted.

If you do not wish to be audio-recorded, you will not be able to participate.

The interview will take approximately 1 hour. You will be given a pseudonym, or false name, in order to keep your identity confidential.

CONSENT FOR AUDIO RECORDING FOR INTERVIEW

Audio recording is part of this research study. You can choose whether to give permission to be recorded. If you decide that you don't wish to be recorded, you will not be able to participate in this research study.

_____ I give my consent to be audio recorded during the interview

Signature

_____ I **do not** consent to be audio recorded during the interview

Signature

You will have the option during the interview of contributing to this study's document analysis by referring the investigator to digital and nondigital resources of particular significance to the work that you do on the design of edX MOOCs for Latin America and the Caribbean. It is expected that these documents will include a combination of educational course elements, publicly available course listings and promotional materials, as well as institutional reports and assessments that will be accessed through the investigator's liaisons at the activity setting. Document analysis will thus pose no additional demands on your time or require additional commitments from you, if you decide to participate in this study.

Depending on your and the principal investigator's scheduling availability, you will also have the option of being observed during one or more work-based activities with an expected duration of 1 hour each. A target of five workgroup activities coinciding with each of the five phases of MOOC design developed by the activity setting will be selected for conducting observations. These five phases include: 1) Needs Assessment, 2) Instructional Design, 3) Production, 4) Implementation, and 5) Course Evaluation. The investigator will collect de-identified data on participants' work-based conducts and interactions during the observed sessions, which are expected to include variable participation and representation among the participants' multiple professional disciplines.

Observation will be conducted passively during normally occurring work operations and events. Thus, it will pose no additional demands on your time or require additional commitments from you other than what you would normally encounter as part of your regular workday. The expected duration of each observed activity is 1 hour. Your identity will be kept confidential by removing all personal identifiers from the observation form.

If you do not wish to be observed during your work-based activities, you will still be able to participate in the interview component of this study.

___ I consent to allow my conduct during work-based activities and events to be observed

Signature

___ I **do not** consent to allow my conduct during work-based activities and events to be observed _____

Signature

WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

This is a minimal risk study, which means the harms or discomforts that you may experience are not greater than you would ordinarily encounter in daily life while taking routine physical or psychological examinations or tests. However, there are some risks to consider. You might feel embarrassed to discuss problems that you experienced while doing your job. However, you do not have to answer any questions or divulge anything you don't want to talk about. You can stop participating in the study at any time without penalty. The principal investigator is taking precautions to keep your information confidential and prevent anyone from discovering or guessing your identity, such as using a pseudonym instead of your name on transcripts. All information will be kept on a password-protected computer and locked in a file drawer.

WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

There is no direct benefit to you for participating in this study. Participation may benefit the field of distributed professional education to better understand how to train professional practitioners in the multidisciplinary design of edX MOOCs for Latin America and the Caribbean.

WILL I BE PAID FOR BEING IN THIS STUDY?

You will not be paid to participate in this study.

WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS?

The study is over when you have completed the interview. However, you can leave the study at any time even if you haven't finished.

PROTECTION OF YOUR CONFIDENTIALITY

The investigator will keep all written materials locked in a file drawer. Any electronic or digital information including audio recordings will be stored on a computer that is password protected. What is on the audio recording will be written down and the audio recording will then be destroyed. There will be no record matching your real name with your pseudonym. Regulations require that research data be kept for at least three years.

HOW WILL THE RESULTS BE USED?

The results of this study will be published in journals and presented at academic conferences. Your name or any identifying **information about you will not be published**. This study is being conducted as part of the dissertation of the principal investigator.

WHO MAY VIEW MY PARTICIPATION IN THIS STUDY

___ I consent to allow written materials (de-identified documents and de-identified interview transcription) to be viewed at an educational setting or at a conference outside of Teachers College Columbia University _____

Signature

___ I **do not** consent to allow written materials (de-identified documents and de-identified interview transcription) to be viewed outside of Teachers College Columbia University _____

Signature

OPTIONAL CONSENT FOR FUTURE CONTACT

The investigator may wish to contact you in the future. Please initial the appropriate statements to indicate whether or not you give permission for future contact.

I give permission to be contacted in the future for research purposes:

Yes _____ No _____
Initial Initial

I give permission to be contacted in the future for information relating to this study:

Yes _____ No _____
Initial Initial

WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY?

If you have any questions about taking part in this research study, you should contact the principal investigator, Fabian Freire, at 973-429-3326 or at fdj2110@tc.columbia.edu. You can also contact the faculty advisor, Dr. Lyle Yorks, at 212-678-3820 or at yorks@tc.columbia.edu.

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email IRB@tc.edu. Or you can write to the IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY 1002. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

PARTICIPANT'S RIGHTS

- I have read and discussed the informed consent with the researcher. I have had ample opportunity to ask questions about the purposes, procedures, risks and benefits regarding this research study.
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty to future employment.
- The researcher may withdraw me from the research at his or her professional discretion.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the investigator will provide this information to me.
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- I should receive a copy of the Informed Consent document.

My signature means that I agree to participate in this study

Print name: _____

Date: _____

Signature: _____

Appendix H

Participant Informed Consent (Spanish)

Teachers College, Columbia University
525 West 120th Street
New York NY 10027
212 678 3000

Título del Protocolo: Entrevista con Participante para “Aprendizaje Laboral a través del Diseño Multidisciplinario de edX MOOCs para América Latina y el Caribe”

Investigador Principal: Fabian Freire, 973-429-3326, fdf2110@tc.columbia.edu

INTRODUCCION

Usted está invitado a participar en un estudio de investigación llamado “Aprendizaje Laboral a través del Diseño Multidisciplinario de edX MOOCs para América Latina y el Caribe.” Usted puede calificar para tomar parte en este estudio de investigación porque usted es mayor de 18 años y ha trabajado o está trabajando en el diseño de cursos abiertos masivos y en línea (MOOCs por sus siglas en inglés) para América Latina y el Caribe usando la plataforma abierta edX. La participación en este estudio incluye ser entrevistado por el investigador principal al igual que la opción de ser observado durante actividades laborales rutinarias y proveer referencias acerca de recursos digitales y no digitales para un análisis de documentos. Aproximadamente, veinte personas participarán en este estudio y el mismo tomará una hora de su tiempo en ser completado.

¿POR QUE SE ESTA REALIZANDO ESTE ESTUDIO?

Este estudio se está efectuado para entender mejor las actividades laborales y experiencias de aprendizaje de profesionales en grupos de trabajo multidisciplinarios quienes usan la plataforma abierta edX en el diseño de MOOCs para América Latina y el Caribe. Particularmente, este estudio investiga los tipos de aprendizaje laboral que ocurren en conexión al diseño de edX MOOCs para América Latina y el Caribe, buscando identificar las capacidades profesionales y las condiciones contextuales que son necesarias para que estos profesionales multidisciplinarios puedan efectuar un trabajo efectivo.

Esta investigación empleará una metodología exploradora en base a un caso de estudio, mediante la cual el investigador principal contactará a los participantes con dos estrategias distintas – una activa y la otra pasiva. Las entrevista, por ejemplo, requerirá el contacto activo del investigador con los participantes, mientras que por otra parte la observación será conducida pasivamente durante actividades y eventos laborales que ocurren rutinariamente. El investigador también recopilará evidencia digital y no digital para efectuar un análisis de documentos y usará una encuesta demográfica para escrutinar a toda la población de profesionales que trabajan con edX MOOCs en el centro de actividades.

¿QUE SE ME PEDIRA HACER SI ACEPTO TOMAR PARTE DE ESTE ESTUDIO?

Si decide participar, usted será entrevistado por el investigador principal. Durante la entrevista, a usted se le pedirá que discuta sobre sus actividades laborales y experiencias de aprendizaje como profesional en el diseño multidisciplinario de edX MOOCs para América Latina y el Caribe. Se realizarán grabaciones de audio de esta entrevista. Una vez que las grabaciones de audio hayan sido transcritas, éstas serán borradas.

Si usted no desea que se haga una grabación de audio de su entrevista, usted no podrá participar.

La entrevista durará aproximadamente una hora. A usted se le otorgará un pseudónimo, o nombre ficticio, con el fin de preservar la confidencialidad de su identidad.

CONSENTIMIENTO PARA GRABACION DE AUDIO DE ENTREVISTA

Este estudio de investigación incluye grabación de audio. Usted puede escoger si da o no permiso para ser grabado. Si usted decide que no desea ser grabado, usted no podrá participar en este estudio de investigación.

_____ Yo doy mi consentimiento para ser grabado durante la entrevista

Firma

_____ Yo **no doy** mi consentimiento para ser grabado durante la entrevista

Firma

Usted tendrá la opción durante la entrevista de contribuir al análisis de documentos de este estudio, refiriendo al investigador recursos digitales y no digitales que tengan particular importancia para el trabajo que usted hace sobre el diseño de edX MOOCs para América Latina y el Caribe. Se anticipa que estos documentos incluyan una combinación de elementos educacionales constitutivos de los cursos, listados de cursos y materiales promocionales disponibles públicamente, al igual que reportes y evaluaciones institucionales que serán obtenidas a través de los contactos del investigador en el centro de actividades. Por ende, el análisis de documentos no requerirá una mayor cantidad de su tiempo o demandará compromisos adicionales de su parte, si usted decide participar en este estudio.

Dependiendo de su disponibilidad y la del investigador principal, usted también tendrá la opción de participar de ser observado durante una o más actividades laborales con una duración anticipada de una hora cada una. total de cinco actividades que serán observadas por el investigador principal. Un objetivo de cinco actividades de trabajo en grupo coincidiendo con cada una de las cinco etapas de diseño de MOOCs desarrolladas por el centro de actividades serán elegidas para conducir observaciones. Estas cinco etapas incluyen: 1) Evaluación de Necesidades, 2) Diseño Instruccional, 3) Producción, 4) Implementación, y 5) Evaluación. El investigador recopilará datos no-identificantes sobre las actividades, conductas, e interacciones laborales de los participantes durante las

sesiones de observación. Se anticipa que estas sesiones incluyan una participación y representación variable entre las múltiples disciplinas profesionales de los participantes.

Las observaciones se conducirán pasivamente durante eventos y operaciones de trabajo que rutinarios. Por ende, su conducción no requerirá una mayor cantidad de su tiempo o demandará compromisos adicionales de su parte más allá de lo que usted encontraría como parte de un día de trabajo regular. La duración anticipada de cada actividad a ser observada es de una hora. La confidencialidad de su identidad será preservada mediante la remoción de toda información identificante de la forma de observaciones.

Si no desea ser observado durante sus actividades laborales, usted todavía puede participar del componente de entrevistas de este estudio.

___ Yo consiento a permitir que mi conducta durante eventos y actividades laborales sea observada _____

Firma

___ Yo **no** consiento a permitir que mi conducta durante eventos y actividades laborales sea observada _____

Firma

¿QUE POSIBLES RIESGOS O INCOMODIDADES PUEDO ESPERAR AL TOMAR PARTE EN ESTE ESTUDIO?

Este es un estudio de riesgo mínimo, lo que significa que los daños o incomodidades que usted podría experimentar no son mayores a los que usted encontraría ordinariamente en su vida diaria mientras toma exámenes o evaluaciones físicas o psicológicas rutinarios. Sin embargo, existen algunos riesgos por considerar. Usted se puede sentir avergonzado al discutir problemas que experimentó al hacer su trabajo. Sin embargo, no tiene que responder ninguna pregunta o divulgar nada sobre lo que usted no desee conversar. Usted puede detener su participación en este estudio en cualquier momento sin penalidad. El investigador tomará precauciones para mantener la confidencialidad de la información y prevenir que alguien descubra o suponga su identidad, tal como usar pseudónimos en lugar de nombres propios en las transcripciones. Toda la información será resguardada en una computadora con contraseña y en cajones de archivo bajo llave.

¿QUE POSIBLES BENEFICIOS PUEDO ESPERAR AL TOMAR PARTE EN ESTE ESTUDIO?

No existe beneficio directo para usted por participar en este estudio. Su participación puede beneficiar al campo de educación profesional en línea para entender cómo entrenar a practicantes en equipos multidisciplinarios profesionales de una mayor manera.

¿SERE REMUNERADO POR ESTAR EN ESTE ESTUDIO?

Usted no será remunerado por participar en este estudio?

¿CUANDO CONCLUYE EL ESTUDIO? ¿ME PUEDO RETIRAR DEL ESTUDIO ANTES DE QUE ESTE CONCLUYA?

El estudio termina cuando haya concluido la entrevista. Sin embargo, usted se puede retirar del estudio en cualquier momento incluso si usted no lo ha concluido.

PROTECCION DE SU CONFIDENCIALIDAD

El investigador mantendrá todos los materiales escritos en un archivo bajo llave. Toda información electrónica o digital incluyendo las grabaciones de audio serán almacenadas en una computadora con protección de contraseña. Lo que conste en las grabaciones de audio será transcrito y después las grabaciones serán destruidas. No existirán registros que relacionen su nombre real con su pseudónimo. Las regulaciones actuales requieren que los datos de la investigación sean preservados por lo menos tres años.

¿COMO SERAN USADOS LOS RESULTADOS?

Los resultados de este estudio pueden ser publicados en revistas de investigación y presentados en conferencias académicas. Su nombre o cualquier otra **información sobre usted** que lo pueda identificar **no será publicada**. Este estudio está siendo conducido como parte de la disertación del investigador principal.

¿QUIEN PUEDE VER MI PARTICIPACION EN ESTE ESTUDIO?

___ Yo consiento a permitir que materiales escritos (documentos no-identificantes y transcripciones de entrevistas no-identificantes) sean vistos en un entorno educacional o en una conferencia fuera de Teachers College Columbia University

Firma

___ Yo **no** consiento a permitir que materiales escritos (documentos no-identificantes y transcripciones de entrevistas no-identificantes) sean vistos fuera de Teachers College Columbia University _____

Firma

CONSENTIMIENTO OPCIONAL PARA CONTACTO FUTURO

El investigador puede querer contactarme en el futuro. Por favor ponga sus iniciales junto a la frase apropiada para indicar si o no otorga su permiso para ser contactado en el futuro.

Yo doy mi permiso para ser contactado en el futuro para propósitos de investigación:

Sí _____ No _____
Iniciales Iniciales

Yo doy mi permiso para ser contactado en el futuro por información relacionada a este estudio:

Sí _____ No _____
Iniciales Iniciales

¿QUIEN PUEDE RESPONDER MIS PREGUNTAS SOBRE ESTE ESTUDIO

Si tiene cualquier inquietud sobre tomar parte en este estudio de investigación, usted debe contactar al investigador principal, Fabián Freire, al 973-429-3326 o por correo electrónico a fdj2110@tc.columbia.edu. Usted también puede contactar al consultor académico, Dr. Lyle Yorks, al 212-678-3820 o por correo electrónico a yorks@tc.columbia.edu.

Si tiene preguntas o preocupaciones sobre sus derechos como un sujeto de investigación, usted debe contactar al Institutional Review Board (IRB) (el comité de ética de investigación humana) al 212-678-4105 o por correo electrónico al IRB@tc.edu. O usted puede escribir al IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY 1002. El IRB es el comité que supervisa la protección para investigación humana en Teachers College, Columbia University.

DERECHOS DEL PARTICIPANTE

- Yo he leído y discutido el informe de consentimiento con el investigador. Yo he tenido amplias oportunidades para hacer preguntas acerca de los propósitos, procedimientos, riesgos y beneficios relacionados a este estudio de investigación.
- Yo entiendo que mi participación es voluntaria. Yo puedo rehusarme a participar o rescindir mi participación en cualquier momento sin perjuicio de empleo futuro.
- El investigador puede retirarme de la investigación de acuerdo a su criterio profesional.
- Si, durante el curso del estudio, se vuelve disponible información significativa que se haya desarrollado recientemente y que pueda relacionarse con mi voluntad de continuar mi participación, el investigador me proveerá esta información.
- Cualquier información derivada del estudio de investigación que me identifique personalmente no será distribuida o revelada sin mi consentimiento separado, excepto de acuerdo lo disponga particularmente la ley.
- Yo debo recibir una copia del documento del Informe de Consentimiento.

Mi firma significa que yo accedo a participar en este estudio

Nombre impreso: _____

Fecha: _____

Firma: _____

Appendix I

Email Correspondence

Dear _____,

You are being invited to participate in this research study called “Work-based Learning through the Multidisciplinary Design of edX MOOCs for Latin America and the Caribbean.” You may qualify to take part in this research study because you are over 18 years old and have worked or are working on the design of massive open online courses (MOOCs) for Latin America and the Caribbean using the open-source edX platform. Participating in this study includes being interviewed by the principal investigator as well as the option of being observed during normally occurring work activities and providing references about digital and non-digital resources for document analysis. Approximately, twenty people will participate in this study and it will take 1 hour of your time to complete.

This study is being done to better understand the work-based activities and learning experiences of practitioners in multidisciplinary workgroups who use the open-source edX platform in the design of MOOCs for Latin America and the Caribbean. Particularly, this study investigates the kinds of work-based learning that occur in connection to the design of edX MOOCs for Latin America and the Caribbean, seeking to identify the professional competencies and contextual conditions that are needed for these multidisciplinary practitioners to do an effective job.

If you decide to participate, you will be interviewed by the principal investigator. During the interview you will be asked to discuss your work-based activities and learning experiences as a practitioner in the multidisciplinary design of edX MOOCs for Latin America and the Caribbean. You will also have the option of contributing to this study’s document analysis by referring the investigator to digital and nondigital resources of particular significance to the work that you do. Finally, you will have the option of being observed during one or more work-based activities selected from routine operations and events related to each of the five phases of MOOC design developed by the activity setting.

If you **do** fit these criteria and are interested in participating, please reply to this email and provide your name, phone number, and preferred e-mail address so that I can follow up with you with more details.

If you do not fit these criteria, but know someone who does, I would greatly appreciate your forwarding of this message to that person. My contact information is below.

Thank you very much!

Fabian Freire

Doctoral candidate in Adult Learning and Leadership
Teacher’s College, Columbia University
email: fdf2110@tc.columbia.edu | cell: [973.429.3326](tel:973.429.3326)

Appendix J

Email Correspondence (Spanish)

Estimado/a _____,

Usted está invitado a participar en un estudio de investigación llamado “Aprendizaje Laboral a través del Diseño Multidisciplinario de edX MOOCs para América Latina y el Caribe.” Usted puede calificar para tomar parte en este estudio de investigación porque usted es mayor de 18 años y ha trabajado o está trabajando en el diseño de cursos abiertos masivos y en línea (MOOCs por sus siglas en inglés) para América Latina y el Caribe usando la plataforma abierta edX. La participación en este estudio incluye ser entrevistado por el investigador principal al igual que la opción de ser observado durante actividades laborales rutinarias y proveer referencias acerca de recursos digitales y no digitales para un análisis de documentos. Aproximadamente, veinte personas participarán en este estudio y el mismo tomará 1 hora de su tiempo en ser completado.

Este estudio se realizará para entender mejor las actividades laborales y experiencias de aprendizaje de profesionales en grupos de trabajo multidisciplinarios quienes usan la plataforma abierta edX en el diseño de MOOCs para América Latina y el Caribe. Particularmente, este estudio investiga los tipos de aprendizaje laboral que ocurren en conexión al diseño de edX MOOCs para América Latina y el Caribe, buscando identificar las capacidades profesionales y condiciones contextuales que son necesarias para que estos profesionales multidisciplinarios puedan efectuar un trabajo efectivo.

Si decide participar, usted será entrevistado por el investigador principal. Durante la entrevista, a usted se le pedirá que discuta sobre sus actividades laborales y experiencias de aprendizaje como profesional en el diseño multidisciplinario de edX MOOCs para América Latina y el Caribe. Usted también tendrá la opción de contribuir con el análisis de documentos de este estudio, refiriendo al investigador recursos digitales y no digitales de particular importancia para su trabajo. Finalmente, usted tendrá la opción de ser observado durante una o más actividades laborales seleccionadas de los procesos y eventos rutinarios relacionados con cada una de las cinco etapas de diseño de MOOCs desarrolladas por el centro de actividades.

Si usted cumple con estos requisitos y está interesado en participar, por favor responda a este correo electrónico y provea su nombre, número de teléfono, y dirección de correo electrónico preferida para que yo pueda contactarle y otorgarle más detalles.

Si usted no cumple con estos requisitos, pero conoce a alguien que sí los cumple, yo le agradecería grandemente que envíe este mensaje a esa persona. Mi información de contacto está adjunta. ¡Muchas gracias!

Fabián Freire

Candidato doctoral en Educación Superior y Liderazgo
Teacher’s College, Columbia University
email: fdf2110@tc.columbia.edu | celular: [973.429.3326](tel:973.429.3326)