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# Employee learning and development in virtual HRD: focusing on MOOCs in the workplace

Sunyoung Park, Shinhee Jeong and Boreum Ju

## Abstract

**Purpose** – The purpose of this paper is to explore the potential of using massive open online courses (MOOCs) for employee learning and development in organizational settings by reviewing the literature and examining several cases from a virtual human resource development (HRD) perspective.

**Design/methodology/approach** – To collect information on MOOCs in the workplace, the authors reviewed peer- and non-peer-reviewed articles, book chapters, books, white papers, corporate websites and blogs, and business magazines published between 2008 and 2018.

**Findings** – A total of 18 cases were summarized to present the use of MOOCs in organizational settings for training and development, organizational development, career development, and professional development. For a more in-depth review, three cases were selected and the details were introduced in terms of context, process/progress, and outcomes: McAfee, Rabobank, and Library and Information Science.

**Practical implications** – When organizations decide to use MOOCs for their employee development and learning, practitioners could also establish the selection criteria of MOOCs for specific purposes based on their organizational contexts by assessing the effectiveness of existing MOOC programs.

**Originality/value** – This study highlights the use of MOOCs in organizations to examine their potential as a support tool for virtual HRD to facilitate employee learning and development in the workplace.

**Keywords** Employee learning and development, Massive open online courses (MOOCs), Virtual HRD

**Paper type** Conceptual paper

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Since technology has become a prevalent influence in every field, in society, and in everyday lives, scholars in human resource development (HRD) have discussed the effects and roles of technology in the field (Githens *et al.*, 2008; Li, 2016; Russ-Eft *et al.*, 2014). In particular, virtual HRD has garnered attention from scholars in the field since it has helped solve individual and organizational issues by incorporating technology into HRD functions (Bennett, 2009). For instance, 17 articles regarding virtual HRD were published in *Advances in Developing Human Resources* in 2010 and 2014. In a keyword network analysis of articles published in the four HRD journals from 2006 to 2015, virtual HRD was one of 27 major keywords in HRD research (Chae *et al.*, 2017). Some of these articles have introduced the benefits of virtual environments to enhance organizational learning and advance research through practice in HRD (Li *et al.*, 2011; Short, 2013).

Learning mediated by technology is a critical dimension of using technology in the workplace from an HRD standpoint (Benson *et al.*, 2002) considering that learning and development are core components of the features and functions of HRD (McGuire and Cseh, 2006; McLagan, 1989). In the same vein, virtual HRD emphasizes utilizing technologically integrative environments to enhance learning capacity and opportunities to solve problems and issues at the individual, group, and organizational levels in the whole organization (Bennett, 2009; McWhorter, 2010). In addition, virtual HRD strongly facilitates informal learning because we can amass infinite shared information and communication through technology (Bennett and McWhorter, 2014). An emerging source of virtual information is massive open online courses (MOOCs) that are offered for free to anyone who wishes to enroll.

Since the fundamental aspect of virtual HRD is learning and social interaction within a technologically mediated environment (Bennett, 2006), MOOCs can be a tool to implement virtual HRD to support employee learning in organizational settings. The strongest advantage of MOOCs is that they provide high-quality education to a larger group of participants through the internet and other technologies, and learning is not restricted to a particular time and place (Shapiro *et al.*, 2017). Since MOOCs were introduced in 2008 (Downes, 2008), scholars have discussed the benefits and potential uses of MOOCs in education, specifically from higher education and lifelong learning perspectives (e.g. Andreatos, 2015; Evans *et al.*, 2016; Sandeen, 2013).

Although studies have reported various benefits and potential uses of MOOCs, most studies have primarily focused only on higher education (e.g. Andreatos, 2015; Evans *et al.*, 2016; Sandeen, 2013; Shapiro *et al.*, 2017). Few studies have empirically examined the influence of MOOCs in organizational settings. Although several scholars have discussed using MOOCs in corporate training and workplace learning (Dodson *et al.*, 2015; Egloffstein and Iffenthaler, 2017; Savino, 2014), the discussion has not included diverse cases on how to use MOOCs in organizations by reflecting on HRD perspectives. More specifically, more research is needed to examine how MOOCs affect employee learning and development in the workplace because learning and development act as a strategic intervention to solve performance problems and improve performance at the individual and organizational levels in HRD (Ruona, 2001).

In this paper, we attempt to focus on MOOCs in organizations to determine their potential as a support tool for virtual HRD to facilitate employee learning and development in the workplace. This study encourages organizations and practitioners to take a more proactive and supportive role in using MOOCs in organizations based on their purposes and contexts. In addition, this study is intended to stimulate scholars to conduct further research on MOOCs to enhance employee learning and development in organizational settings. Therefore, the purpose of this study is to explore the potential uses of MOOCs for employee learning and development in organizational settings by reviewing the current literature and examining various cases from a virtual HRD perspective. The research questions guiding the study are:

*RQ1.* What do virtual HRD studies reveal about employee learning in the workplace?

*RQ2.* What research has been conducted on MOOCs in organizational contexts?

*RQ3.* How have MOOCs been used for employee learning and development?

This study starts with a review of the concept of virtual HRD and an understanding of employee learning from a virtual HRD perspective. In addition, we describe the features of MOOCs and the state of research on MOOCs in the workplace. We introduce diverse cases where MOOCs have been used in organizational settings and then do an in-depth review of three cases in terms of context, process/progress, and outcomes. Finally, we discuss the uses and potential uses of MOOCs in organizations, offer implications for research and practice, and suggest recommendations for future research.

## Methods

We searched multiple databases for previous studies related to our scope including Google Scholar, Academic Search Complete, and Business Source Complete. We searched using the following key terms and mixed terms within the title or keywords: “virtual HRD,” “massive open online courses,” “MOOCs,” “case study,” “workplace learning,” “corporate training,” “technology,” and “e-learning.” To discover cases of MOOCs that have been used in the workplace, we also conducted a general search through Google with the same keywords and terms.

Based on the findings from the databases, we selected and reviewed studies and documents on virtual HRD and MOOCs related to our study with the following inclusion criteria: peer-reviewed scholarly articles; studies grounded in comprehensive literature reviews or empirical research on learning in virtual HRD and MOOCs; studies, cases, news articles, magazines, technical reports, white papers, and blog records that focused on MOOCs in organizational settings; and studies and cases published between 2008 and 2017 because the term MOOCs was introduced in 2008 (Downes, 2008). As a result, we identified and reviewed 38 studies and 18 case articles for our final review.

## Employee learning in virtual HRD

Technology is deeply embedded in our daily lives. Rapid technological advancements have transformed our lives within just the last few decades, including our personal and professional lives as well as the workplace environment. Instead of traditional, face-to-face interactions, it is commonplace to see people engage in global communication, connections, and collaboration with each other because of technology-enabled, virtual environments (Yelon, 2006). In addition, internet use at work has expanded from simple e-mails to being an important tool for problem-solving to complete one's job tasks (Horrigan and Rainie, 2002). These changes will accelerate even more as the millennial generation, characterized as tech-savvy, enters the workforce.

Responding to these paradigm shifts driven by technology in the workplace, the field of HRD has put substantial effort into reshaping and expanding its boundaries and horizons, and has looked for ways to facilitate and maximize development and learning opportunities within a technology-mediated environment (McWhorter, 2010). Thus, a new construct, virtual HRD, has emerged to conceptualize this phenomenon and open an area of inquiry (Bennett and McWhorter, 2014).

One of the most frequently used definitions of virtual HRD is a "media-rich and culturally relevant web environment that strategically improves expertise, performance, innovation, and community-building through formal and informal learning" (Bennett, 2009, p. 364). Her definition was derived from an empirical study (Bennett, 2006) that examined how organizational culture and change are embedded in a corporation's intranet where considerable knowledge is created and distributed. McWhorter (2011) stated that virtual HRD refers to "the process of utilizing technologically integrative environments for increasing learning capacity and optimizing individual, group, community, work process, and organizational system performance" (p. 3). Taken together, virtual HRD spotlights the virtual environment in which HRD processes operate, with an aim to create strategic, systematic synergy for workplace learning, performance enhancement, and organizational development and change (Benson *et al.*, 2002; Yoon and Lim, 2010). Furthermore, studies have emphasized that virtual HRD should be incorporated as a subset of larger virtual human resource (HR) systems that are strategically interconnected and integrated with virtual HRM to promote a healthy ecology (Bennett and Bierema, 2010).

The definitions of virtual HRD reveal that learning and social interaction within a virtual environment are positioned as the fundamental aspect of virtual HRD, and the scope is not limited to individual learning but also includes collective, organizational learning (Bennett, 2006). Virtual HRD supports both formal and informal learning activities. To maximize the effectiveness of competence and knowledge development, both informal learning and formal learning activities are often considered when designing learning opportunities in the workplace (Svensson *et al.*, 2004). Not surprisingly, workplace learning is increasingly becoming an internet-based activity (Benson *et al.*, 2002).

A web-based learning environment has unique challenges and capabilities in both formal and informal learning in the workplace. First, instructional design (e.g. the ADDIE model) should be considered to accommodate web-based learning (Lee *et al.*, 2002). For example, at the analysis stage, a technology analysis should be added, such as an assessment of learners' skills with web-based tools and technologies. At the design and development stages, learning objectives should be aligned and trainers should consider the interface design, determine the courseware, and use proper tools to develop learner-friendly content in various formats, such as graphics, texts, and audio presentations. Second, new roles and competencies are required of trainers. In this new environment, trainers are expected to become electronic facilitators throughout the learning process who have a wide range of expertise using technology, technology management, media production, and graphic design. Yoon and Lim (2010) also argued that IT enabled virtual learning has shifted the fundamental role of HRD professionals from "experts of learning and development to work solution partners leading the creation of a smart organization" (p. 716).

The third capability is that the power of internet-based technologies has greatly widened employees' opportunities for informal learning (Dennen and Wang, 2002). Informal learning is highly

embedded in everyday working activities and social interactions (Marsick, 2009). The relevant activities include asking questions, searching the internet, scanning professional magazines and journals, asking for feedback, and observing others (Clarke, 2004; Lohman, 2006). Web-based tools (e.g. social networking sites, bulletin boards) enable workers to be connected to others who might have solutions for their work-related problems and to exchange information and knowledge, often regardless of distance and time. Various IT tools have also been developed to facilitate multiple forms of informal learning such as virtual mentoring and virtual community of practice. In this sense, virtual HRD is likely to be more aligned with informal learning than formal learning because of the vast amount of available information and communication through technology (Bennett and McWhorter, 2014). The full potential of the internet to support informal learning is yet to be realized (Benson *et al.*, 2002).

## MOOCs

MOOCs, coined in 2008 by Dave Cormier and Bryan Alexander (Parr, 2013), are online courses that are free or low cost and open to all (Beigi *et al.*, 2015; Egloffstein and Ifenthaler, 2017). The first MOOC (Connectivism and Connective Knowledge) was provided by Stephen Downes and George Siemens through the University of Manitoba, Canada (Marques, 2013).

MOOCs take advantage of computer technology to educate masses of students conveniently and efficiently (Fischer, 2014). They typically include videos, written text, homework, and quizzes; MOOCs also provide a forum in which instructors and students can actively interact (Andreatos, 2015). The original MOOCs were available without charge or prerequisites, enabling lifelong education (Sandeem, 2013). This novel educational framework has benefited students by accelerating their college education and lowering the cost (Radford *et al.*, 2015), so their popularity has spread quickly around the world (Beigi *et al.*, 2015).

As greater consideration has been given to the role MOOCs in the corporate world (Dodson *et al.*, 2015), MOOC providers have sought more information about the potential market (Radford *et al.*, 2014). HR professionals have suggested that MOOCs can provide the means to meet diverse organizational needs in a variety of formats that are pertinent and cost-effective (Egloffstein and Ifenthaler, 2017). Free (or low cost) training solutions are attractive (Andreatos, 2015), particularly for small and medium enterprises with limited budgets. Thus, managers and HR specialists are increasingly using MOOCs for professional development (PD).

Enterprises adopt MOOCs to provide their employees with the most valuable skills for their jobs (Andreatos, 2015) through creative, interactive formats that can make PD more efficient (Savino, 2014). Karnouskos and Holmlund (2014) revealed that MOOCs in the workplace can have a positive impact on job competency and innovation. Radford *et al.* (2014) found that although only 31 percent of the surveyed employers had heard of MOOCs, once they understood what they were, they had a positive attitude toward job candidates who had taken a MOOC.

## Cases: MOOCs in the workplace

In this section, we introduce MOOC cases in organization settings. A total of 18 cases were summarized including the company name, country, industry, the purpose of using MOOCs, and the HRD areas based on the purpose of using MOOCs in each organization (see Table I). The HRD areas were categorized into training and development (T&D), organization development (OD), career development (CD), and PD. The 18 cases could also be divided into T&D (10 cases), OD (3 cases), CD (8 cases), and PD (8 cases). In terms of the location of headquarters, nine companies are in the USA and three are in Germany. Regarding industry, eight companies are in technology-related fields and four are in finance.

For a more in-depth review, three cases were selected and the details were introduced in terms of context, process/progress, and outcomes: McAfee, Rabobank, and Library and Information Science (LIS).

**Table 1** Case summary: MOOCs used in organizational settings

Case	Company	Country	Industry	The purpose of using MOOCs	HRD areas	Author (year)
1	Adidas	German	Sportswear	To help leaders become actively involved in diverse learning activities	PD, CD	Meister (2014)
2	Axis Bank	India	Finance	To manage talent as part of a performance management system	T&D, OD	Anand (2016)
3	Bank of America	USA	Finance	To provide customers and prospects with financial literacy lessons	PD, CD	Bersin (2013)
4	Deutsche Telekom	German	IT	To offer social learning and collaborative development	T&D	Deutsche Telekom (2018)
5	Google	USA	IT	To train employees/public in skills they perceive to be in high demand	PD, CD	Chapple (2013)
6	JLT	UK	Finance	To develop employees' skills	T&D	McGuire (2013)
7	L'Oréal	France	Cosmetics	To create a learning community; develop job skills; and advance their careers for managers	T&D, CD	Badia (2015)
8	McAfee	USA	IT	To train newly hired employees for sales	T&D	Meister (2013)
9	Microsoft	USA	IT	To train the salesforce in a minimum amount of time	T&D, OD	Fourage (2015)
10	Rabobank	The Netherlands	Finance	To assist customers and build a strong relationship with them	T&D, OD	Willemssen
11	Telus	Canada	IT	To train employees	T&D	Nielson (2013)
12	Tenaris	Luxembourg	Manufacture	To train employees effectively and efficiently	T&D	Franceschin (2016)
13	Yahoo	USA	IT	To develop employees' technology skills	PD	Meister (2013)
14	1-800-Flowers	USA	Flower	To expand the network of independent florists	PD, CD	Bersin (2013)
15	Aquent Gymnasium	USA	Staffing	To reduce gaps for creative-industry specialists	PD, CD	Grant (2014)
16	Library and Information Science	USA	Information science	To adopt and explore technology in learning environments	PD, CD	Stephens (2013)
17	The Muse	USA	Job search	To provide job seekers with skill-related training and development	PD, CD	Nielson (2014)
18	SAP	German	Software	To teach mobile and data technologies	T&D	Chung (2014)

**Notes:** T&D, training and development; OD, organization development; CD, career development; PD, professional development. Cases 14-18 are related to the whole industry not a specific organization

### Case A: McAfee

**Context.** McAfee is a computer security firm established in 1989 in the USA and headquartered in Santa Clara, CA. In August of 2010, the computer-chip giant Intel bought McAfee for \$7.7 billion to address computer security problems and to increase its profits (Kingsley-Hughes, 2010). There was an immediate need for McAfee to train employees regarding the merger. However, on-board training typically has inherent problems. First, a "sales training course" takes over 120 hours, including 40 hours pre-work, 5 days on-site training, and post-work, which is done at home. Second, many new employees drop out before completing the training. Third, on-boarding training is not a good fit for all new hires, since they learn at different speeds (Baines, 2015; Nielson, 2015). To solve these training problems, McAfee initiated MOOCs.

**Process/progress.** McAfee launched an entry-employee training MOOC named "Flipping the Classroom," which represented a concept shift from instructor-focused training to learning-focused training. As the name implies, much of the learning is not in lecture-based classes, but done through discussion and exploring course resources. The employees dove into the course materials, and then reviewed it with other workers and the instructor. This allowed them to study the course texts on their own time and then bring questions to discussions and activities held during on-site training times (Meister, 2013).

**Outcomes.** There were two key benefits for McAfee from the MOOC-based on-boarding training. First, this training program reduced McAfee's training time compared to its previous format, and it fit the employees' own schedules better. Second, MOOC-based training resulted in more lucrative sales, contributing an additional \$500,000 each year to McAfee's bottom line (Baines, 2015; Meister, 2013).

### **Case B: Rabobank**

*Context.* Rabobank, headquartered in Utrecht, is the second largest multinational bank in the Netherlands. The company explored how to provide a differentiated, unique experience and service to their customers, especially for entrepreneurs and business owners. Although the company had accumulated broad knowledge and expertise with a worldwide network that can support entrepreneurs who wish to do business internationally, it was not the first priority for the point of contact for entrepreneurs who needed help.

*Process/progress.* Rabobank teamed up with GITP, a HR development consulting firm, and developed the Masterclass on International Business using the MOOC platform. The course was designed to inspire and support entrepreneurs with international ambitions and give practical guidance for them to be successful abroad. It dealt with topics such as local settlement, market entry, market exploration, and culture. Each module was assigned to an e-coach who guided and helped the participants with video messages. The course was organized in such a way that entrepreneurs could interact and learn from each other, and share tips and experiences of co-entrepreneurs and network partners. The participants also had opportunities to select peers who were active in a specific country or sector.

*Outcomes.* A total of 2,700 participants gave the course an 8 out of 10 rating for satisfaction. Using the MOOC as a content marketing tool, Rabobank was able to show that the company had an extensive and wide range of information and knowledge in international business with highly qualified, experienced experts. The MOOC also enabled the company to establish strong, improved contacts and relationships with the entrepreneurs and attract new customers (Willemsen, 2018a, b).

### **Case C: LIS**

*Context.* Stephens (2013) introduced the use of MOOCs for PD in the field of LIS. In the LIS field, professionals explore and adopt rapidly developing technology in learning environments and take the initiative to stay abreast of technological developments, often by attending workshops and conferences. Because of this characteristic, a MOOC was launched to explore the technology usage and behavior of LIS professionals.

*Process/progress.* In September 2013, Michael Stephen and Kyle Johns offered the Hyperlinked Library MOOC Pilot (#hyperlibMOOC), which was a “sandbox” for LIS professionals to design and teach MOOCs. The concept had emerged in the Summer of 2013 from Stephen’s online graduate course, “The Hyperlinked Library,” at San Jose State University’s School of LIS. That Fall, around 400 LIS professionals had the opportunity to experience the new MOOC as a non-credit and free course, which included presentations and assignments. Participants took on one of three roles: learner, connector, or collaborator. Learners actively learned and participated in the class activities. Connectors facilitated the learners in their work. Some collaborators helped the learners, while others were troubleshooters. “Badges” were awarded to encourage completion of the course.

*Outcomes.* The results from the pilot course gave the perception that non-credit, free MOOCs were promising in terms of enhancing PD. Despite these positive results, there is a need for further evaluation of the use of MOOCs in corporate settings and of participant feedback.

## **Discussion**

This study attempted to explore the potential and benefits of MOOCs for employee learning and development in organizational settings by closely examining 18 cases that have used MOOCs to train their employees. These cases revealed that MOOCs can be used for multiple purposes in organizations, including T&D, OD, CD, and PD. In particular, three companies created desirable outcomes (e.g. enhancing employees’ satisfaction, improving job performance and business outcomes, or reducing training costs) after adopting MOOCs.

Given the success of MOOCs in educational settings, the uses and potential of MOOCs have been discussed extensively for T&D purposes in corporate settings (Beigi *et al.*, 2015). As shown

in this case study, several large companies have enjoyed the benefits of MOOCs in T&D-related fields because of the ability of MOOCs to reach out to a large number of employees around the world. This capability was previously unavailable, but MOOCs have allowed employees to access cost-effective, world-class education (Billsberry, 2013).

Our study also revealed that the opportunities of MOOCs are not limited to only T&D, but also include other important arenas of HRD such as OD and CD. For example, Microsoft utilized MOOCs to facilitate transformative organizational changes when the CEO initiated innovations for its corporate business models and strategies. Axis Bank took advantage of MOOCs to overcome employee retention challenges and for talent management. Rabobank was also able to disseminate corporate knowledge and expertise to the public and build a strong relationship with their customers through MOOCs. In addition, Aquent Gymnasium, a global staffing company, showed how MOOCs can help job seekers benefit from CD by increasing their creative and digital skills. Through the Aquent Gymnasium service, applicants, especially applicants for junior-level positions, who completed the MOOC could create professional and elaborate resumes. Virtual learning and technologies have also increased the possibility of improving organizational effectiveness since they allow employees to share and access knowledge and others' expertise (Yoon and Lim, 2010).

More importantly, our case study is imperative for understanding the ecological perspective that can lead to a successful experience of introducing MOOCs into the organization. In other words, corporations should pay attention to the interconnection of MOOCs with their current organizational systems to generate dynamic harmony and synergy to help them work together (Bennett and Bierema, 2010). Yoon and Lim (2010) also emphasized that to maximize the benefits of virtual learning and technologies, they should be strategically integrated with the organizational systems, considering organizational competency and talent, maturity, and technology adoption plans. For example, Axis Bank aligned its use of MOOCs with the corporate talent management system and performance management system. Tenaris recognized that just providing formal training programs was not enough to develop the workforce and redefine its training model to create strong bonds with HR processes (Urman, 2017). Fourrage (2015) also reported that the secret of success of corporate MOOCs at Microsoft was sophisticated design and alignment of MOOCs with the corporate context and business plans, which enhanced employees' motivation and engagement.

### *Implications for research and practices*

This study highlights the use of MOOCs in organizations to examine their potential as a support tool for virtual HRD to facilitate employee learning and development in the workplace. By examining multiple cases related to the use of MOOCs in organizational settings, this study reveals that MOOCs can be an intervention that enhance employee learning and solve performance issues related to T&D, OD, and CD.

In addition, this study introduces 18 MOOC cases in the workplace and analyzes three cases in depth from an HRD standpoint. Since Beigi *et al.* (2015) introduced the potential of MOOCs to HRD academia in *Human Resource Development International*, there has been little scholarly research on MOOCs in HRD publications. By enriching the literature on MOOCs, this study can play an initial role in highlighting the need for HRD scholars and researchers to explore diverse aspects of MOOCs in HRD, particularly aspects related to virtual and technology-based environments.

From the review and findings of this study, HRD practitioners could collaborate with organizations and supervisors to prepare for greater use of MOOCs to improve employee motivation and attitudes toward T&D. By garnering support and useful sources related to using MOOCs, the practitioners could provide more developmental opportunities that meet employees' needs and expectations. In addition, the practitioners could provide best cases and examples of MOOCs for employees to demonstrate how MOOCs can be effectively applied to improve their knowledge and skills.

When organizations decide to use existing MOOCs for their employee development and learning (rather than establishing and creating new MOOCs), practitioners could establish selection criteria



for MOOCs to assess the effectiveness of existing MOOC programs for specific purposes based on their own organizational context. By conducting a comprehensive review of MOOC courses, packages, and options, practitioners can see the benefits and challenges of specific MOOC options, and compare them to determine the most appropriate MOOC options to meet employees' needs. Even if organizations create new MOOCs for their employees, reviewing and evaluating existing MOOCs could provide practitioners with useful information on the features and challenges of using MOOCs before designing and developing their own MOOCs. Practitioners can also create integrated learning programs by combining the current development programs and best MOOC packages.

Finally, practitioners could expand the roles and functions of MOOCs to facilitate the organization's development by connecting organizational goals and strategies with MOOCs. Based on the organizational context, practitioners can use MOOCs as one intervention to address issues and solve problems in the organization. Organizations can also use MOOCs to improve their brand image, enhance customer service, and establish collaboration with partners in other sectors and industries. For instance, organizations could develop MOOC programs in partnership with public governments to provide educational opportunities and learning resources for disadvantaged and minority groups in terms of corporate social responsibility.

### *Limitations and recommendations for future research*

There are several limitations in this study. Above all, we focused on cases written in English that were related to using MOOCs in organizational contexts. When we examined the cases, we relied on information that was open to the public but we were unable to interview employees or interested parties in each organization to obtain opinions about using MOOCs from an insider's standpoint. For these reasons, among the 18 cases, we chose to present the three representative cases that provided greater details about the context, process, and outcomes. In addition, we categorized the use of MOOCs in organizations into T&D, OD, CD, and PD from an HRD perspective, which means that other purposes of using MOOCs might not have been discussed such as building leadership pipelines, brand marketing, collaboration, and innovation within or across organizations.

In future studies, MOOC cases could be explored beyond an organizational level for learning and development. For instance, the International Monetary Fund has provided its training programs to member country officials through MOOCs. The Indian and Korean Governments have encouraged universities to incorporate the use of MOOCs to connect their higher education systems with national workforce development. Further studies should include a variety of purposes for using MOOCs in organizations such as corporate social responsibility, and collaboration between industries, and between universities and corporations. By comparing cases on MOOC user groups within the same affiliation in different countries and cultural contexts, future studies could explore how cultural differences affect employees' perceptions of the use of MOOCs in organizations. Additionally, models and frameworks for using MOOCs in corporate settings could be examined through in-depth analysis of more diverse cases, interviews, and surveys of MOOCs in organizations.

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