

Building capabilities: Using MOOCs to make transitions in work

Janet Small, Andrew Deacon , Sukaina Walji , Tasneem Jaffer  & Jeff Jawitz 
University of Cape Town (South Africa)

Janet.small@uct.ac.za, Andrew.Deacon@uct.ac.za, Sukaina.Walji@uct.ac.za,
Tasneem.Jaffer@uct.ac.za & Jeff.Jawitz@uct.ac.za

Abstract

Our research explores the experience of adults looking for flexible online learning opportunities that intersect with university study. We interviewed 58 people living in 14 African countries who have taken a Massive Open Online Course (MOOC) developed by the University of Cape Town. The interview data reveals diverse uses of MOOCs in workplace contexts. While only two of those we interviewed articulated a goal of making a career change, there were many more taking a MOOC for some form of self-development within their current profession. There were also cases where people had not yet identified a new career, but believed the knowledge and skills would support future transitions. Our intentions for exploring the expectations of MOOC takers regionally is to improve our understanding of how universities, following open practices, could support the educational aspirations of this audience through the provision of flexible online learning opportunities.

Keywords: MOOCs, Africa, transitions in work, pathways, open online learning, capability theory

Introduction

We interviewed people who completed a Massive Open Online Course (MOOC) from the University of Cape Town (UCT) to explore how adults use open online education to assist them in responding to unpredictable career paths and unstable employment prospects (Castells, 2013). There is much reflection in higher education about how universities could be more responsive to people in work who cannot practically undertake postgraduate studies. Change and instability in world economies, which includes the impact of new technologies in the workplace and thinking around ‘the fourth industrial revolution’, arguably reflects a different employment landscape from that which graduates might have imagined (Penprase, 2018; World Economic Forum, 2016). Broadly, new skills, emerging technologies, role redundancy and competition have resulted in an expectation of continuous self-improvement during the working life of most adults. Working people feel they cannot rely on following traditional career pathways, and are required to improve their capacities and extend their knowledge throughout their careers (Hirschi, 2018); whether seeking opportunities for promotion or responding to changes. However, many working people find it challenging to practically undertake further studies. Universities have responded in a variety of ways, including offering open online courses. Here we focus on how people taking MOOCs have articulated these issues from their perspective.

Higher education narratives increasingly identify the importance of universities understanding and supporting transitioning pathways - in and out of learning and work - helping to improve the career readiness of graduates as well as offering opportunities for working adults in ongoing professional development. Castells (2017) argues that the key challenge for education is to offer people the ability to develop the ‘self-programmable ability’ (ibid, 62) to continuously acquire new skills, and to offer this education online to allow for flexible lifelong learning. Promisingly MOOCs, with their open enrolment in particular, seem like a possible vehicle for educational aspirations which may otherwise not be realisable through traditional higher education qualifications. Globally the literature has

identified upwardly mobile professionals as one of the most consistent consumer categories taking MOOCs for career progression (Zhenghao et al., 2015). For people living in developing countries, there are potentially even greater risks of obsolescence given the mobility of the global workforce and technology barriers (Garrido et al., 2016). The motivations for engaging in voluntary learning through MOOCs shows the strong drive for self-investment required in the new knowledge economy of the twenty-first century (Castells, 2013; Rizvi & Lingard, 2006).

Sub-Saharan Africa has the lowest participation in higher education globally and there are fewer highly rated institutions to meet the educational demand (Darvas, Gao, Shen & Bawany, 2017). One of the realities for students is that there is less choice to study locally and that there are high costs associated with studying elsewhere. We speculate that this regional context might inform the perceived value of MOOCs, especially those who were actively seeking low cost, low risk, flexible opportunities for professional development. Sometimes people may be purposefully acquiring new skills or knowledge towards a defined goal, while at other times, they may be investing or saving up skills and knowledge for future unknown purposes. Exploring the expectations of MOOC takers living in sub-Saharan African countries can help improve our understanding of how universities could support the educational aspirations of this regional audience through the provision of flexible online learning opportunities.

Our interest is understanding the needs of adults looking for flexible online learning opportunities that may intersect with university study. Our research project, “Perspectives from African MOOC takers: understanding transitions in and out of learning and work”, explores how people spoke about their experiences have taken MOOCs developed by UCT. This small qualitative research project seeks to contribute to improving the capacity of the institution to support postgraduate students in work and learning transitioning pathways (CHED, 2018).

We first briefly consider the roles of MOOCs within a higher education landscape before introducing the research question which is to understand which transitions MOOC takers are making.

Higher education landscape

Digital technologies promise to enable the development of new, more flexible course formats and allow for experimentation with modes of delivery. This has led to the exploration of an increasingly more diverse landscape of higher education provision. The representation in Figure 1 is of this landscape from a university’s perspective that expands the traditional course formats in the top left corner to others that are more flexible and less formal. Here provision is divided along three bands, namely, ‘formal’, ‘semi-formal’ and ‘non-formal’ (Czerniewicz, Deacon, Small, & Walj, 2014; Walji, Deacon, Small, & Czerniewicz, 2016). While some universities are starting to make use of MOOCs as part of mainstream credit-bearing courses, our institution has positioned MOOCs primarily as outward-facing semi-formal and non-formal offerings as illustrated in Figure 1. Given the large diverse enrolments and global access, MOOCs have been increasingly the subject of research (De Rosa, 2018; Fischer, 2014), but only a few studies have looked specifically at the experiences of MOOC takers living in Africa (Rambe & Moeti, 2017; Garrido et al., 2016).

Whereas students who register for degrees would have the explicit intention of completing a course for credit and could be described as ‘committed learners’, people engaging in MOOCs are better described as ‘volunteer learners’. These ‘volunteer learners’ may simply want to become more aware of new fields, develop certain skills, broaden knowledge or explore interdisciplinary opportunities. Their preference may be to learn for free or at low cost and without any consequences for not completing. This audience often includes people who may be on the margins of an intended career

and not yet fully recognised professionally, and others may want to enrol at a university in the future, although most have some academic or work background (Glass, Shiokawa-Baklan & Saltarelli, 2016).

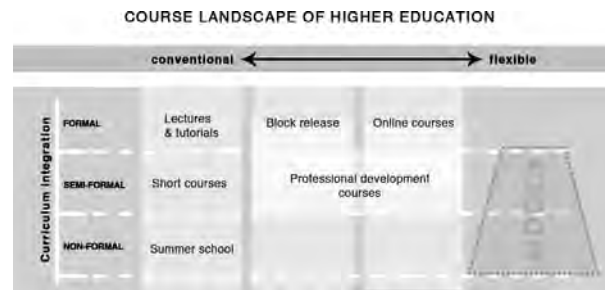


Figure 1: The landscape of higher education course provision.

The MOOC Takers Research Project was initiated in 2017, extending over three years. A goal is to assess the broader value of MOOCs for people in the African region making transitions in their lives. Our initial analysis of the interviews was to characterise the perceived value of taking a MOOC in relation to transitions, where “transitions describe when people move between work and learning, between different disciplines of knowledge and between different levels of learning” (Walji, Deacon, Jawitz, Small, & Jaffer, 2018). We are specifically interested in what ways MOOCs are being used as opportunities for transitions in work for these learners. This contrasts with other MOOC related research which aims to ascertain how or what people learn (Veletsianos, Collier & Schneider, 2015), categorises original motivations and intentions (Maya-Jariego, Holgado, González-Tinoco, Castaño-Muñoz, & Punie, 2019) or which focuses on why people do not complete a course (Onah, Sinclair & Boyatt, 2014). Additionally, we wish to understand the expectations for open online courses offered by universities and the difficulties experienced with this type of learning in relation to widely held understandings around the needs of working people. The main question for this paper is: ‘in what ways do the African MOOC takers we interviewed use open online courses to support career transitions?’

Literature Review

There is a diverse literature investigating how people are seeking to make use of MOOCs to support change. An early focus involved speculation around how the MOOC phenomenon might help disrupt higher education (Yuan & Powell, 2013) and now increasingly there is a questioning of the more grandiose claims about the way MOOCs can meaningfully respond to persistent developmental challenges of the Global South (Adam, 2019; Czerniewicz et al., 2014). Underlying this are deeper concerns about the extent to which MOOCs are seen to continue to reproduce a neo-colonial approach to educational delivery (Adam, 2019) and reinforce academic elitism (Rambe & Moeti, 2017). Empirical evidence shows MOOCs overall tend to attract a particular type of participant who already possesses some level of education and who is using MOOCs to further personal or career goals (Steffens, 2015). This and other evidence suggests that while many MOOCs are open and free they appear limited in how they are achieving wider change. While this would support the broader critique of MOOCs, others pragmatically argue that for certain groups, MOOCs are being valued as learning opportunities. This has especially been seen among working people (Steffens, 2015) and those who are otherwise ‘educationally underserved’ which included a category of people defined

as those who would normally not be able to access such course content from elsewhere (Schmid, Manturuk, Simpkins, Goldwasser, & Whitfield, 2015). Universities have claimed a role here, even if this is comparatively limited and exploratory, given the larger societal challenges. This then has raised further questions in the literature about what has become valued and how might universities respond differently in the future.

While there is a growing body of research on learner motivation (Maya-Jariego et al., 2019; Watted & Barak, 2018; Glass et al., 2016; Howarth, D'Alessandro, Johnson, & White, 2016; Zhenghao et al., 2015), there is comparatively little research about what value they find (e.g., Garrido et al., 2016). In part this is hard to research since data would need to be collected some time after people had completed their MOOC studies. Research associating MOOCs and transitions thus has tended to focus on how universities respond to perceived needs of people in transitions in relation to market or industry-wide pressures (e.g., Clow, 2013; Howarth et al., 2016). When exploring the motivations of MOOC completers, Watted & Barak (2018) found three themes: 'personal', 'educational' and 'career' and they further explored granular categories among these themes which is useful for informing how MOOCs may be valued. A limitation of this research is that in looking at "preliminary motivations of MOOC completers according to their expected benefits", their findings reveal potential rather than actual benefits (Watted & Barak, 2018).

The university transitions literature predominantly focuses on school leaving youth entering higher education (Coertjens, Brahm, Trautwein, & Lindblom-Ylänne, 2017; Gale & Parker 2014; O'Shea, 2014; Holmegaard, Madsen & Ulriksen, 2016; Grosemans & Kyndt, 2017) and those leaving university and entering work (Case, Marshall, McKenna, & Mogashana, 2018; Allen & Van der Velden, 2007). Since the contexts can be so diverse, there is understandably far less of a focus on the pathways involving people moving between careers, between work and learning, between different disciplines of knowledge and between different levels of learning. Such transitions are broadly described as life-course changes, turning points and branching points (Rönkä, Oravala & Pulkkinen, 2003) and focus on identifying events or opportunities that can result in people reassessing priorities or envisaging new options leading to life changes or seeking new career goals.

Literature from marketing and technology adoption has also been used to describe both MOOCs models and learners' uptake. Clow (2013) and Howarth et al. (2016) use the metaphor of a funnel to illustrate the striking reduction in participation in MOOCs over time that much research has sought to explain. The dropoff in participation broadly reflects the commonly observed behavior of the MOOC mode (De Rosa, 2018; Eriksson, Adawi, & Stöhr, 2017). There have been several studies trying to understand who is most likely to persist in a MOOC. Maya-Jareigo et al. (2019) looked at a range of user behaviour profiles and motivations and found that those who were motivated to take the MOOC for work or as part of career development were one of the user groups more likely to succeed.

Like the Maya-Jareigo and colleagues' study (2019), we argue that focussing on why learners drop out is only one part of the story and it tells us little about the diversity of learning purposes or the range of intentions. Our research probes how course completers are motivated to continue and make use of the opportunities for open learning to 'reach valuable states of being' (Walker & Unterhalter, 2007).

Capability and the demands of the network society

In this paper, we show how individuals we interviewed are actively responding to the opportunities and challenges they face to create their desired life. We draw on concepts from Sen's capability theory (2005) to understand how individuals use education to pursue their aspirations (Walker,

2005; Rajapakse, 2016; Saito, 2003) and reference Castells' Network Society (2013) which places demands on skilled workers to continuously renew and adapt to changing demands of the workplace (Muller, Cloete, & Schalkwyk, 2017).

The core ideas from Sen's approach we draw on include the concepts of 'functioning' and 'capabilities'. Here functioning describes an individual's outcome or performance, while capabilities refer to the opportunities people have to enact this functioning and thus "having the freedom to choose a life they have reason to value" (Walker, 2005, p. 104). This conception shifts from seeing education as a human capital model of skills development for employment to a richer, inclusive view of human development for the benefit of individuals and society. Sen's understanding of human agency is centred around the 'capability' or freedom to achieve the kind of life that is valued (ibid, 2005). For the MOOC model of education, the capability approach offers another way of considering how individuals become agents to advance their wellbeing, and to bring benefit to the society. This is not to deny inequality of opportunity between individuals or regions, but rather to suggest the provision of open education opportunities through MOOCs offers a different enabling environment which can increase individuals' capabilities (Walker & Unterhalter, 2007). The capabilities approach emphasises the material and nonmaterial aspects of people's lives which will influence their ability to experience that freedom to choose. The MOOC takers we interviewed described material challenges such as costs of data, access to connectivity and personal circumstances which may be different from the challenges of people living in highly developed countries. Yet despite these challenges, the individuals we interviewed were able to persist in completing the courses because they perceived personal value.

When looking at education aimed at professionals, the focus tends to be on ways of providing in-demand new skills to remain competitive (Hirschi, 2018). Castells' analysis of the ICT-enhanced workplace identifies the need for workers' continuous upskilling, as well as developing individual attributes of self-reliance and independence. Castells (Muller et al., 2017) comments on the increasing polarisation in the globalised economy where, to a growing extent, high value employment is only available to a small group of highly skilled, educated information workers. Africa is cast as one of the marginalised, structurally excluded parts of the global economy. Those interviewed did not speak directly to these experiences of work. A likely explanation is that since many of the individuals were graduates they demonstrated 'networker' behaviour intent on building their capacity to respond to the changing work environment (Muller et al., 2017). But in addition, the language used by many of the MOOC takers expressed strong socially responsive sentiments. One of the courses, the *Becoming a Changemaker* MOOC, discussed later, provides a bias towards people seeking more socially meaningful engagements, but even with other course topics, such as a medical statistics MOOC there are doctors and scientists striving for social goals as well as career advancement.

Interviews with working MOOC takers

For this study we interviewed those who had completed a MOOC created by UCT and were living in an African country. While MOOC completers represent a small proportion of those who had enrolled, we deliberately selected those people who had been able to complete a course and thus were best able to inform the research question. This purposive sampling strategy involved first identifying completers through the MOOC platform and then sending invitations to those meeting the selection criteria to be interviewed via email. This sampling approach led to 58 semi-structured interviews being completed in 2018. Most of these interviews were conducted telephonically, lasting between fifteen and thirty minutes. Each audio recording was transcribed and coded using NVivo for broad themes we had identified from the literature. Each interview started with asking learners who they

were, what they did, and their challenges when taking the MOOC. We included questions about what value they saw for their work or future studies. One of our interests, being a South African university, was to understand the needs of potential students in the region.

There was an even gender balance and a total of 14 African countries represented, eight of these within the southern African region. Given our interviewees were sourced from MOOCs created by a South African university, as expected the majority of interviews (68%) were with people currently living in South Africa. The largest single group, representing 37% of the total, were employed and in the age range from 25 to 44. Of the 58 participants, 41 were involved some form of work transition, and these 41 interviews form the basis of the data analysed for this paper. A high proportion of the interviewees also had university qualifications. It was interesting that these demographics roughly mirror overall enrolment patterns for MOOCs globally (Glass et al., 2016).

While eight of UCT's MOOCs were mentioned in the interviews, 39 of the 58 interviewees had taken one of three courses. These three courses have been running longest and deal with topics which appeal to a range of interests. As with the other UCT MOOCs, the course content was chosen by the academics and was not specifically commissioned or institutionally identified as in-demand skills for the continent. To illustrate the issues, in our discussion for this paper, we have selected eight individual interviews (see Table 1) to represent some common themes we identified across all 41 of the interviews which we categorised as relating to work transitions.

All the courses discussed here are hosted on Coursera, an international MOOC platform with whom UCT has partnered. Building on earlier work done identifying transitions (Walji et al., 2018), we have suggested three categories of transitions related to career domains:

- Individuals taking a MOOC with a clearly articulated goal of making a career change ('Work-to-work').
- Those taking a MOOC for general improvement within their current profession ('Work-in-work').
- Involving an investment where people had not yet identified a new career but articulated a future possible need to make a change ('Work banking').

Table 1: List of interviewees

Pseudonym	Country	Age	Work transition category	MOOC
Sadhvi	Mauritius	25-34	Work-to-work	Becoming a Changemaker
Ronda	South Africa	35-44	Work-to-work	Becoming a Changemaker
Charlotte	South Africa	35-44	Work-in-work	Becoming a Changemaker
Tshepo	Lesotho	35-44	Work-in-work	Understanding Clinical Research
Vanda	South Africa	35-44	Work-in-work	Understanding Clinical Research
Lemba	South Africa	35-44	Work-in-work	Climate Change Mitigation
Ama	Ghana	25-34	Work-in-work	Understanding Clinical Research
Lucy	Botswana	45-54	Work banking	Understanding Clinical Research

(Note: Interview participants' actual names have been changed to pseudonyms)

In the discussion below we look at the three transitions we identified, but the main focus will be to analytically unpack the most prevalent category - the 'work-in-work' transition category.

Making work-to-work transitions

The MOOC platforms' marketing campaigns typically use the conception of a career transition. Examples from Coursera's website include "we'll help you master the skills employers are looking for" and "anyone, anywhere can transform their life" (Coursera mission statement). The intention is likely to inspire and motivate (or 'sell') MOOCs as providing a potentially transformative or life changing experience. The platforms create archetypes of potential learners to target for MOOC enrolments, and the 'career builders' (Coursera: <https://about.coursera.org>) or 'advancers' (FutureLearn: <https://www.futurelearn.com/about-futurelearn>) are identified as the most lucrative market since these people are the most likely to pay for a certificate.

Those people who start a new career after taking a MOOC, whether it is entering a new workplace or career or changing fields within a career, are associated with the work-to-work transition. Since this is seen as a very positive outcome such a transition is often given prominence in marketing material of MOOC platforms. This type of transition may be associated with the changing demands of the contemporary workplace (e.g. Grosemans & Kyndt, 2017) and suggests the existence of an educational market for new and 'just-in-time' learning and it is unsurprising that this is the profile that the MOOC platforms are targeting. The drive to continually adapt and 'reinvent' oneself professionally is a global workplace trend that the MOOC takers living in Africa also experience. In our study however, only a few individuals described making an actual career change, which is unsurprising given the UCT MOOC topics are not directly concerned with preparing for new careers. We identified only two people from the career related interviews as explicitly linking an active career change to taking a UCT MOOC.

Sadhvi, from Mauritius with a degree in chemistry, identified her career change most explicitly. She described her experience:

I started working in a lab and I realised that I didn't really like it. So I decided to have a career change and that's when I started following MOOCs.

She completed the Becoming a Changemaker course that encourages entrepreneurial thinking while looking for a new career. She explains that even though it was a short programme, it helped her gain confidence in a new field:

it was a key factor in the turning of my career... doing these courses and acquiring these new skills and exploring these new fields that I hadn't previously studied, because I did come from a very technical background.

Sadhvi also spoke about signaling her new interests and ability to make changes.

For me to be able to put that [*MOOC certificate*] on my CV, because I was changing careers and I did need something tangible to show to potential employers.

Seen through a capability approach lens (Sen, 2005), *Sadhvi* expressed her motivation for changing careers to create more meaningful work experiences that she can have "reason to value" (Walker, 2005):

Yes, so when I decided to have the career change, I asked myself, well, what is it that really ... motivates me and what is [it] that I'm really passionate about? And I realised that it was contributing to some sort of development in order ... you know, and not to have just existed. To leave the place, to leave the planet Earth in a better state than I found it, in some sense, like it is to make an impact. And I started Googling things to do and I also had the idea of doing online courses.

The premise of the *Becoming a Changemaker* course is to offer tools ‘for everyone who wants to make a difference’ and particularly attracts people like Sadhvi who are seeking the ‘real opportunity’ to accomplish what they value (Walker, 2015). In Sadhvi’s case the capability became active functioning in the new career.

Ronda, a 35-44 year old working woman from Kenya, was currently enrolled in a formal degree programme at a university in South Africa and also took the *Becoming a changemaker* MOOC. The MOOC did not relate to her current career or current studies, but she expressed a longing to make fundamental changes to her current life and work trajectory:

I have a passion, yes, I have a goal, I am not just taking MOOCs for the sake of them. I have a goal, and my goal is to maybe launch my social venture.

She gives expression to Sen’s idea of the importance of education giving people the freedom to choose the life they want (Walker, 2015):

So yes... to be very honest, after I leave this place, I think I am equipped, and if I choose to quit my job, I won’t have to struggle where I should begin.

At the time of the interview, Ronda was studying as part of her professional development, and she expressed an end goal of being able to realise her ‘passion’ to launch a social venture as well as various interim options such as enrolling for postgraduate studies or quitting her current job.

The discourse of these individuals shows their strong personal motivation and agency in making different choices about their lives (Walker, 2005, describing Sen). Many of the interviews were talking about their purpose or goals in life; for example, Ronda saying “I have a passion, yes, I have a goal” which may be linked to their career, but often not only for extrinsic professional rewards. The type of flexible, low stakes, self-directed learning offered by MOOCs gives individuals an accessible way to make concrete steps towards achieving ‘valuable functionings’ (Sen, 2005; Walker, 2015).

We are not suggesting a causal relation between taking a short MOOC and these people making major career-related changes. Rather what appears noteworthy is that they spoke specifically about how motivational taking the MOOC was in this period of change. This suggests that these courses were supporting individuals make a transition in some way that may not be available to them from elsewhere. While many factors would influence someone’s ability to enact a radical re-invention of their professional identity, such as Sadhvi moving from being employed as a lab-based chemist to getting a job as a social entrepreneur, taking the MOOC to acquire skills, become familiar with a new discourse and build personal self-confidence speaks to a high degree of personal agency (Unterhalter, Vaughan, & Walker, 2007). We argue MOOCs appear to offer highly motivated individuals opportunities to support their impetus to take a new direction. Further, in the African context, we suggest that MOOCs provide a useful resource for those who want to explore making changes to their lives, but are not currently well positioned to bring about the change they want. The flexibility of the online format, manageable workload, low cost and lack of barriers to entry have particular appeal to professionals who may be restricted by location (distance from formal educational institutions) or time (being fully employed) thus representing a form of marginalisation. In adult learners and professional development literature (Field, 2012), it is almost always necessary for people to maintain current commitments while seeking alternative futures. Indeed, interviewees spoke about MOOCs in general and how they saw this model of learning as offering something different from other traditional learning opportunities.

In the developed world and more resource-rich environments, there may be a range of resources for this ‘exploring new options’ phase of life - through professional networks, public events and talks, semi-formal professional development seminars and workshops, as well as a wide choice of

formal and part time formal study options. For our participants and other 'educationally underserved' constituencies (Schmid et al., 2015), there were fewer opportunities. People living in rural areas, small towns or more marginal cities are unlikely to have access to this range of inputs for exploring making career or life changes. Despite the recognised limitations of MOOCs, they are offering some adult professional learners greater freedom to choose and opportunities to build 'valuable functioning' which allows people to 'accomplish what they value' (Walker, 2015).

Work-in-work transition

By far the largest group of people interviewed were classified as focused on 'work-in-work' transitions. In these cases, the individuals were employed and took the MOOC to address specific needs they faced in their everyday work. For the 'work-in-work' transition four sub-categories emerged allowing us to unpack the range of self-directed career development expressed in the interviews.

We identified two broad trajectories of change within the work-in-work category. The first describes those pursuing the development of vertical knowledge or experience which relates to domain knowledge whereby someone engages in in-depth learning or has increasing mastery of a skill. Interviewees expressed this as ranging from **refreshing** prior learning to improving their current practices through **deepening** their knowledge, skills or capacities. The second trajectory emerged from identifying people who were pursuing horizontal knowledge or growth or attempting to progress by choosing to learn something new or through expanding their knowledge. Illustrative practices in this trajectory included people **equipping** themselves to perform a new function or **shifting** into a new responsibility. While no person is strictly a vertical or horizontal learner, the interviews suggested some emphasis on either a horizontal or vertical trajectory in their expressed motivation for doing the course. Figure 2 illustrates these four sub-constructs in a horizontal and vertical plane.

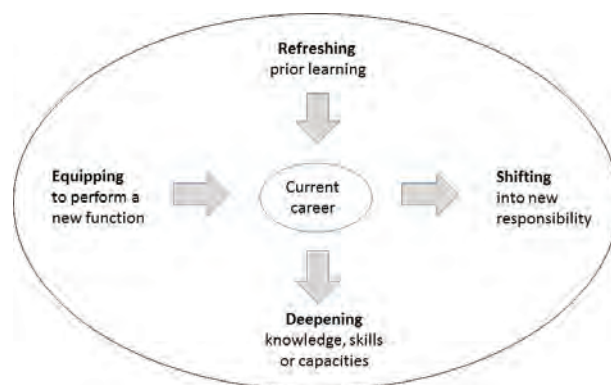


Figure 2: Vertical and horizontal shifts in professional development.

Equipping

Charlotte worked in community health for many years and was recently employed as a lecturer at a university and started her PhD studies. Soon after making this career change she took the *Becoming a Changemaker* course as it resonated with her interest in community projects:

I found the course, just all about how to implement projects or do things where you don't have a lot of resources and just try to find different ways of doing. ... I work in situations and contexts with students [with whom I] can also share some of those principles in terms of community nutrition and health projects.

While the topics in the Becoming a Changemaker course were not new to her, she valued the examples, methods and resources relating to a resource constrained environment which equipped her for improving and expanding her practice.

Deepening

The UCT MOOCs described here were not explicitly conceived to address workplace skills; rather they are broader introductions sharing perspectives from experts in the field. Our interviews are with those who had found some value in these perspectives in their workplace context, likely building upon their own academic qualifications. The category of those seeking to deepen their understanding thus might include someone working as a doctor whose training had an introduction to statistical methods but they now needed to go more in depth as they become more interested in medical research. In the diagram this is represented as a vertical shift as those interviewed are not discussing changing career but rather informing or deepening what they do currently.

Tshepo, from Lesotho, is in full time employment as a data analyst in the health sector. He completed the Understanding Clinical Research MOOC, obtained the certificate and displayed it on his social media profile. His motivation for taking the MOOC was professional development and to help him better apply his skills in the professional domain he finds himself:

[M]y concentration on MOOCs would have been more on data science but I work in a clinical environment, I work with TB and HIV data. So, considering that my background is more on computing, I wanted something that could bridge the gap between my background and what I currently do. So I wanted to have a better understanding of the clinical scenario as far as data analysis and research is concerned. So, I thought the course is befitting.

Tshepo emphasised his need to keep abreast of new skills and developments in the professional sectors:

So I take massive online courses just as a way to bridge any knowledge gaps I may have and put myself in a competitive position in as far as new tools count.

Interestingly Tshepo used the language of the job market, demonstrates awareness of the likelihood of change and the importance of self-investment to remain competitive:

Also, I believe the courses may be very useful with new job openings, should I want to move jobs.

Refreshing

This category is, like deepening, on the vertical trajectory of a transition whereby the learning experience enables revising or refreshing of previous or current knowledge or learning.

Vanda works as a medical assistant for a large international medical NGO in South Africa and is registered for an online Masters degree. She took the MOOC, Understanding Clinical Research because her job involves doing some research and she felt she needed to 'brush-up' her skills. In an earlier degree she had studied medical statistics but has not applied that knowledge:

...because of my job we have to do some research and ... I have not done much on research for so long. ... So, I wanted to attain those skills as well as to remind myself of which strategical tests should I be doing ... So, I needed to enhance my career, the knowledge in my career as well as to develop myself.

Vanda was one of several people interviewed who talked about why getting a certificate for a MOOC was worthwhile, even when this lacks formal credit value. She articulates that completing a MOOC can signal qualities such as working independently, self-motivation, time management and persistence which are valued in corporate environments, and represent the ideal self-programmable worker of the new economy (Muller et al., 2017). The extra effort of completing a MOOC (when the majority of participants do not) is usually linked to someone's vision for their future career, even if the exact goal is not yet clearly held. Vanda believes success in the MOOC (independent of the domain area skills) showcases her functionings:

I felt it was important to study online, it's very difficult because you have to manage your time as well as nobody is supervising you. For example, I was not supervised but it shows that someone has commitment to complete the task without being supervised. So, it's also showing that someone is self-motivated.... But if you are able to take an initiative to say that I want to acquire knowledge, to acquire a skill on this. That is the reason that I will put it on my CV... It may be that I'm saying that.

The Climate Change Mitigation course attracted several professionals who saw the importance of acquiring knowledge and discourse on an urgent issue which was impacting on their work contexts. Given the rise in awareness about climate change, many professionals working in technical fields expressed the need to 'refresh' their knowledge or gain familiarity with the concepts in order to have conversations around this topic. *Lemba* is a South African mining engineer who had moved into consulting and took Climate Change Mitigation to refresh his knowledge on climate change impacts. He also did the course in preparation for enrolling for a formal masters in environmental management:

I took it for a refresher course of what I already know about mining and environment and health and safety. And then the issue of climate change, of which mining contributes a really significant impact to greenhouse gasses. So, I just needed to know what is happening, fresh in the industry and for those that are specializing in the climate change.

Shifting

Some people were considering making shifts in their career and had taken MOOCs as a way to explore these possibilities. These include someone who through developing additional skills imagines a different role and eventually career. An example might be a doctor working in a clinic who would want to be involved in clinical research, even if this were a small part of their responsibilities initially. In Figure 2 this is represented as a horizontal move as there is a possibility of change over time in their career.

Ama, a Ghanaian medical doctor, also took Understanding Clinical Research because of his interest in developing the research aspect of his profession:

I also have a career mission of going into clinical research work. You know so I can both help my career progression and can also help my client.

He paid for a certificate because he believes the evidence of taking the MOOC might improve his future competitiveness for work opportunities:

... if there's a future career opening and you want to let them know that you have taken this course and you have that understanding or the requirement of the field that you have to take this. I believe that it can prove very beneficial in confirming that really, you've taken the course...

Viewed through the capability approach lens, equipping, deepening, refreshing and shifting are work-in-work transitions that can be construed as the development of capabilities that for particular contexts are turning into functionings.

Work banking

Our analysis found some people taking MOOCs for an undetermined future use rather than for immediate application. They are committed to learning the skills, completing the course and purchasing the certificate because they believed the course would enhance their future career opportunities. MOOCs attracts this kind of 'investment' behaviour because of the low barrier to entry and the lack of consequences for dropping-out.

Lucy working in Botswana had taken many MOOCs and had purchased a certificate for Understanding Clinical Research which she intended to add to her CV, reasoning:

I think it's for people to see that ... you're quite active and you are proactive in trying to continually upgrade and stay on top of things and stay on top of advancements in the field and relevant fields that I am in.

While *Lucy* was fully employed, she clearly expressed her consciousness of the need to keep updating her skills for future employability. We conceptualised this work banking as a transition akin to self-investment; using a capability approach this can be considered the acquiring of a capability which is yet to be converted to a functioning (Walker, 2015).

Conclusion

Our research focused on how working people saw themselves using MOOCs to make transitions in the workplace. These lived workplace learning experiences are often invisible to those within universities creating the courses even as they seek to engage people accessing open learning opportunities. We conceptualised transitions broadly to include those changes which occur as people take action to move within and between work roles and careers. The 41 interviews included people in a diverse range of work contexts. Through their motivation and intentions, these MOOC takers appear to be reflecting many of the wider expectations for constantly 're-programming skills' (Castells, 2017) while working, which we argued are a feature of the changing economic and technological context. This diversity can make it difficult for institutions to create courses and pathways that respond to the needs of people who want to make transitions in work.

Our context is arguably narrowly looking at a small group of highly motivated learners, a specific portfolio of MOOCs and a continental region in which the value of accessible online learning opportunities is contested. Yet what emerged are learning needs that are likely otherwise poorly served by higher education. Understanding how people value MOOCs can provide insights about expectations of universities in supporting the development of people's personal and professional capabilities. We have proposed a tentative framework for understanding the nature of work transitions people are describing when they relate their purpose in taking MOOCs, which helps to illuminate our original question about the use of MOOCs to support transitions. The development of capability to take action to create personal value is evident in many of the interview discourses - the MOOC takers articulate the agential capacity to acquire functionings. While our study cannot be considered representative of the African context due to the relatively small dataset, there is evidence of value gained from learning in MOOCs expressed by the individuals who responded to the interviews. We believe that MOOCs can offer value, particularly by underserved constituencies, "not to replace formal

education but to supplement existing formal educational or professional development programs” (Schmid et al., 2015, p. 127). Given the limitations of formal education provision, particularly in under-resourced regions, we hope there will be further research into ways for universities to use open education to build the opportunities for the development of individual and societal capacities.

Despite a considerable number of barriers (which we do not discuss in this paper), the successful MOOC takers were active about deploying the opportunities in open online learning to construct their desired current and future work environments. How to apply this understanding to better provide for working people through the creation of more flexible and enabling online education will need further investigation, but there were clearly expressed needs. As Tshepo elaborated:

For me they [online degrees] are the future... But for us who are fully employed, you wouldn't have time to go to school every day, but with the MOOCs, you are able to sit at your place and learn and acquire new skills. So they have been of great importance.

And to give him the last word, Lemba asserted that ‘online is actually for those that are really ready to succeed in life’.

Acknowledgements

This research was funded by the CHED Faculty Research Committee. We wish to thank Nchangwi Munung who conducted most of the interviews that were used in this research and Soraya Lester who continued in this role.

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