Chapter 3

Big Data HE Communities:
Could Twitter Support UK Universities Amid the COVID-19 Transition?

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ABSTRACT

This chapter intends to explore the use of the Twitter social media platform as a microblog to share COVID-19 prescribed knowledge through observing the Twitter accounts of the five most student-populated UK universities. The chapter provides valuable practical insight to UK universities practitioners, students, and concerned stakeholders on the use of Twitter microblogs to share or retrieve knowledge required to cope with the current COVID-19 transition. The chapter sheds light on the unique characteristics of knowledge shared by UK universities through Twitter in relation to the current COVID-19 pandemic. The chapter also highlights the unconventional use of Twitter by UK universities to share COVID-19 prescribed knowledge with their stakeholders.

1. INTRODUCTION

The current Covid-19 pandemic has transformed many sectors in our society. Among the sectors that have been radically affected is the education sector (Devinney & Dowling, 2020). Universities were forced to move entirely from classroom education to virtual education. Although many Universities have resorted to virtual education, other Universities have not been at the same level able to face the crisis in terms of preparedness and facilitate the creation of new or amendments. It is known in crises that the key to success is not only to implement the right strategy, but rather to implement a quick strategy (Elsubbaugh *et al.,* 2004) that responds to the requirements of the seemingly dramatic transition, this necessitates looking up to knowledge resilience.

Presently, academics work from their homes, presenting their lectures through different screens and different means of communication to large segments of students, carrying out their research, searching for funding opportunities for their research projects and marking students' assignments and submitting their reports. In addition to the mental burden, the emerging work environment raises questions such as how the relationship now between academics and their workplace looks like? How did academic discourse of knowledge regime changed? What is the future of knowledge infrastructures in universities in the next five years? As the Covid-19 pandemic highlights the stifling nature of our academic work, universities have been forced to reinterpret themselves, their priorities and knowledge infrastructures. Therefore, in our article, we shed light on the Use of Twitter by UK Universities to mark the new shape of knowledge regimes in academia implied by the Covid-19 pandemic.

2. THEORETICAL BACKGROUND

2.1. Managing Knowledge During the Covid-19 Pandemic

One of the prominent classifications of knowledge is the tacit-explicit (Becerra et al., 2008) where explicit knowledge is knowledge stored in physical storage such as books, computers, etc. and tacit knowledge is situational and stored in practices, routines, and feelings (Chuang et al., 2016). The rapid contemporary developments of technology allowed not only storing but communicating, interpreting and assimilating knowledge through *big data* analytics, virtual reality, augmented reality and robotics (Dragicevic et al., 2019). However, we still have to respond to ongoing calls for a better understanding of socio-materiality of knowledge in this digital medium. The conceptualisation of knowledge and technology may couple meaning and matter together (Nova & González, 2016; Orlikowski, 2007; Paananen, 2020). As during a pandemic, communication is critical for organisations to ensure people are reassured, informed, and engaged, communication can take different shapes and forms. In parallel, maintaining the knowledge continuity and restoring the knowledge accumulation would be essential (Shujahat et al., 2019) but failure factors may also hinder knowledge management initiatives (Larsson et al., 1998) as traditional bureaucratic barriers. Social media platforms may effectively help overcome these failure factors and enable communicating knowledge with subscribers to social media accounts where institutions tend to convey messages of various media and meaning to their stakeholder communities, and keep engaged with what the community thinks of and reacts to performance (Magnier-Watanabe et al., 2010).

The socio-materiality of communication is necessarily obvious in this current pandemic due to the radical shift of working patterns i.e. from workplace to home based (Ashcraft et al., 2009). Viewing knowledge as socio-material (Nova & González, 2016; Orlikowski, 2007; Paananen, 2020; Shotter, 2013) should therefore enable us to understand how Universities determine and enact knowledge artefacts to their stakeholders inside and outside of organisational boundaries. In view of the current Covid-19 pandemic developments, the prospective knowledge type that may be essential to Universities' stakeholders is likely to be featured as timely and rapidly dynamic, formalised and explicit as follows:

- Health and wellbeing knowledge in the form of Covid-19 preventative measures and equipment, mental health and personal wellbeing.
- Higher education teaching and assessment adapted processes such as virtual online teaching and assessment.

- Transitional management process to maintain operations and overcome Covid-19 associated difficulties.

In flexible working mode where people can work from anywhere in most institutions, social media allow subscribers to share knowledge that is less formal than organisational channels which Ammirato et al. (2019) and Döring and Witt (2019) argue to provide a platform for collaboration and engagement. However, in a study on software developers' giant discussion forum Stack Overflow, Squire (2015) shed some concerns on how social media is transforming knowledge and information communication. Squire (2015) argued that while knowledge workers found Stack Overflow more efficient in terms of time and quality, some found it restrictive in some of the ways it accepted questions. On a different line of inquiry, Durst and Zieba (2019) summarised risks that face knowledge workers due to social media such as fake and distorted information, fake social media accounts used to troll people, and the distrust atmosphere.

2.2. Knowledge Sharing in the Space of Social Media

Cyber developments such as *Web 2.0* and associated *internet of things* IOT have not only changed the way of social interaction but also resulted in accumulating *big data* and *cloud computing* to connote unprecedented amounts of data (Ali, 2019a; 2018). In relevance to knowledge management, these cyber developments evidently evolved into creating social networking systems to facilitate knowledge exchange (Le et al., 2014). Conventionally, the concept of *social capital* (Nahapiet & Ghoshal, 1998) has been linked to knowledge management and proved to allow knowledge acquisition through social interaction (Inkpen & Tsang, 2005). In essence and in relevance to online social interaction, the two metaphors of *communities of practice* (Kimble & Li, 2010) and *social networks* (Marin & Wellman, 2011) have been extrapolated to online interaction to denote largely the phenomenon of knowledge dispersion through online social networks. Online *communities of practice* are defined as *virtual communities of practice* in which people with common interests, goals or practices interact to share information and knowledge and engage in social interactions (Chiu et al., 2006). In conjunction, the initial research on *social networks* as facilitated through online social media platforms has indicated an efficient use in sharing tacit and explicit organisational knowledge (Wasko & Faraj, 2005).

Fundamentally, there has been an exponential increase of research on social media and knowledge management. For instance, Sundaresan and Zhang (2020) suggested that organisational engagement with social media positively determined how organisations accumulate, manage and transfer knowledge. Heavey *et al.* (2020) also viewed knowledge management in social media context as a social organising of knowledge where people socially learn and engage with others. Previously, Grace (2009) viewed social media as complementary to knowledge management rather than a space where knowledge is managed and argued that its feasibility, ease of access, traceability, and rich content allows for organisations to reap these advantages in the running of efficient knowledge management systems. *Social networking* through online social media may be deemed to be non-mandatory, despite the currently heavy reliance of organisations on it to communicate with their communities (Ammirato *et al.,* 2019; Heavey *et al.,* 2020; Mäntymäki & Riemer, 2016; Sarka & Ipsen, 2017). As a result, two knowledge regimes may appear where one is top-down enforced by organisational policies, strategies and routines, while the other is bottom-up, voluntary and unstructured (Qi & Chau, 2018).

The usefulness of social media seems to encourage organisational leaders to commit to their knowledge dissemination strategies in a less formal environment and as a result reaping the benefit to disseminate

real-time knowledge that does not afford formal channels to reach people (Qi & Chau, 2018; Sarka & Ipsen, 2017; Schlagwein & Hu, 2017). In a study of 20 organisations to examine how social media relates to organisational absorptive capacity, Schlagwein and Hu (2017) presented five different uses of social media that organisations resort to: (1) broadcast, (2) dialogue, (3) collaboration, (4) knowledge management and (5) sociability, however, they argued that some types such as dialogue support organisational absorptive capacity and positively improves performance while sociability does seem to have the same impact. In addition, the types of social media platforms varies considerably whereas the focus of this paper would be on Twitter as a microblog platform to share Covid-19 specific knowledge with UK universities' stakeholders. Microblogging platforms such as Twitter, allows institutions to bridge the space between their boundaries and online communities (Sarka & Ipsen, 2017) draws knowledge from subscribers on performance (Sigala, 2012).

2.3. UK Universities' Observed Twitter Interaction

The *netnographic* observation (Kozinets et al., 2014) of UK Universities' online platforms reveals unprecedented activities to disseminate knowledge focused around the current Covid-19 pandemic. The knowledge shared via UK Universities' websites or social media accounts is mainly formalised and explicit and range from Covid-19 research update, advice on health and wellbeing, adapted learning and assessment procedures to operational adaptive measures for staff. This stream of explicit knowledge seem to be directed ultimately towards all the Universities' stakeholders but more specifically staff and students.

UK Universities' Twitter accounts are also observed to undergo dynamic patterns of knowledge sharing in response to the Covid-19 developments of which drew our attention. In addition and as we aim to focus our *netnographic* concern on the Twitter platform, we justify this concern based on two justifications: firstly, social media platforms largely provide the opportunity to interact with the knowledge provider that otherwise not fundamentally available through conventional online mediums. *Secondly,* Twitter has been extensively used by academics and academic institutions to address students, employees and other concerned stakeholders and is observed to remain a useful method to share knowledge in relation to the current Covid-19 pandemic.

Our *netnographic* observation was focused on five UK Universities' Twitter accounts where the prime selection criterion was fundamentally based on the size of the University in terms of students' count. The justification of applying this criterion was determined by the conclusion that the large the students' count will implicate wider stakeholder base and more staff involved, an imminent need for a knowledge exchange, and more knowledge-based interaction with students and staff. In accordance, we have used the Tweetdeck application to observe the sampled Twitter accounts where these accounts consistently contained regular Tweets on Covid-19 related topics of which engaged followers (see Table 1). These curated Tweets mainly resembled formalised explicit knowledge on the Covid-19 pandemic ranging from updates on Covid-19 research to transitional Covid-19 educational and operational measures (see Appendix 1).

Table 1. UK Universities student count and Twitter accounts followers *Student numbers statistics compiled from Higher Education Statistics Agency

University	Student Numbers*	Account followers	Covid-19 Tweets' Content
University of London (Including University College London)	101,230 20,005	60,195 76,891	Existent
Open University	113,045	157,966	Existent
University of Manchester	26,855	66,813	Existent
University of Leeds	26,255	105,656	Existent
University of Birmingham	22,940	119,695	Existent

(HESA, 2020)

3. DISCUSSION

The UK's higher education HE sector is experiencing a dramatic phase of transition implied by the Covid-19 pandemic. The HE landscape has encountered a powerful force for change which will introduce new traditions, some of which are yet to be established, tested, publicised and adopted across the sector. Until progress is made by UK Universities in finding out what works best to cope with the current Covid-19 transition, the creation and sharing of knowledge will remain highly dynamic and critically important to maintain Universities' operations and update its varied stakeholders. However, the nature of knowledge in consideration may be mainly formalised, explicit and prescribed to cope with impact of the Covid-19 pandemic. In congruence with the above discussion we make the *proposition* that Twitter as a microblogging social media platform will be utilised extensively by UK Universities to share knowledge amid the Covid-19 pandemic. Not only because Twitter is already used by academics, research communities and universities but also due to its dynamic and interactive characteristics. This proposition conforms with the view of (Sarka & Ipsen, 2017) that emphasises the usefulness of Twitter in allowing institutions to communicate effectively with their associated online communities.

From another perspective, it could be anticipated due to the likely prolonged Covid-19 lockdown limiting conventional professional interaction that *virtual communities of purpose* (Chiu et al., 2006) will be actively created to share knowledge in the form of adaptive measures and experiences of coping with the Covid-19 transition. In the context of UK Universities' Twitter microblogs the creation of *virtual communities of purpose* may be driven by: (1) the need for knowledge in the form of prescribed Covid-19 adaptive measures to guide UK universities' students, staff and other stakeholders during this phase of major transition. There is also a possibility that UK Universities will utilise the Twitter microblog for cross-university knowledge sharing. (2) *knowledge workers* (Squire, 2015) who actively seek and share knowledge; some *knowledge workers,* as academic researchers, may resort to creating and interacting within *virtual communities of purpose* to explore these communities and share knowledge with its subscribers. In line with the aforementioned, we make another *proposition* in agreement with (Chiu et al., 2006) that *virtual communities of purpose* will actively interact via UK universities' Twitter microblogs. In essence, we encourage future research to explore the *virtual communities of purpose* within UK Universities' Twitter microblogs through a *netnographic* research strategy (Kozinets et al., 2014)to enable in-depth investigation of these communities.

4. CONCLUSION

In this paper, we sought to highlight the role that social media (e.g. Twitter) had played as a platform for real-time knowledge-sharing microblog for UK Universities in view of the current Covid-19 pandemic. From a wider perspective, we argue that our awareness of the importance of a University, not only as an educational platform, but also as a boundaryless knowledge ecosystem, stimulates us to think about how Twitter shapes and reshapes university discourse about student numbers and upcoming challenges in light of the current Covid-19 crisis. .

University leaders may foresee that the year 2020 marks a major transition in Universities operations and even real challenges for graduates who will find themselves searching for jobs in a new environment marked by the risk of collapse of many businesses. Twitter as a microblogging platform provides an opportunity in which Universities can share explicit knowledge to engage and inform students, staff and other stakeholders on Covid-19 transitional measures. In line with this argument and based on our observation of sampled UK Universities' twitter accounts, we make two propositions: (1) that Twitter as a microblogging social media platform will be utilised extensively by UK Universities to share knowledge amid the Covid-19 pandemic. (2) That *virtual communities of purpose* will actively interact via UK universities' Twitter microblogs in relevance to the Covid-19 transition.

Finally, this paper's contribution is twofold: *Frist,* as it is a conceptual paper, we hope to stimulate further empirical discussions to understand the changes that the UK HE has gone through during the current crisis. *Secondly,* Twitter as microblog provides an enormous knowledge platform, and for this we hope this paper will stimulate *netnographic* research to investigate in-depth the KS conduct within UK Universities' Twitter pages. For further reading regarding the application of big data systems, cloud systems and social platforms in higher education, refer to the work of industry 4.0 technologies such as IoT and Artificial Intelligence in higher education (Ali, 2021; Ali & Wood-Harper, 2020; Ali, 2019a; 2019b; Ali & Wood-Harper, 2018).

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APPENDIX

UK Universities' Curated Tweets

Figure 1. Curated Tweets Image 1
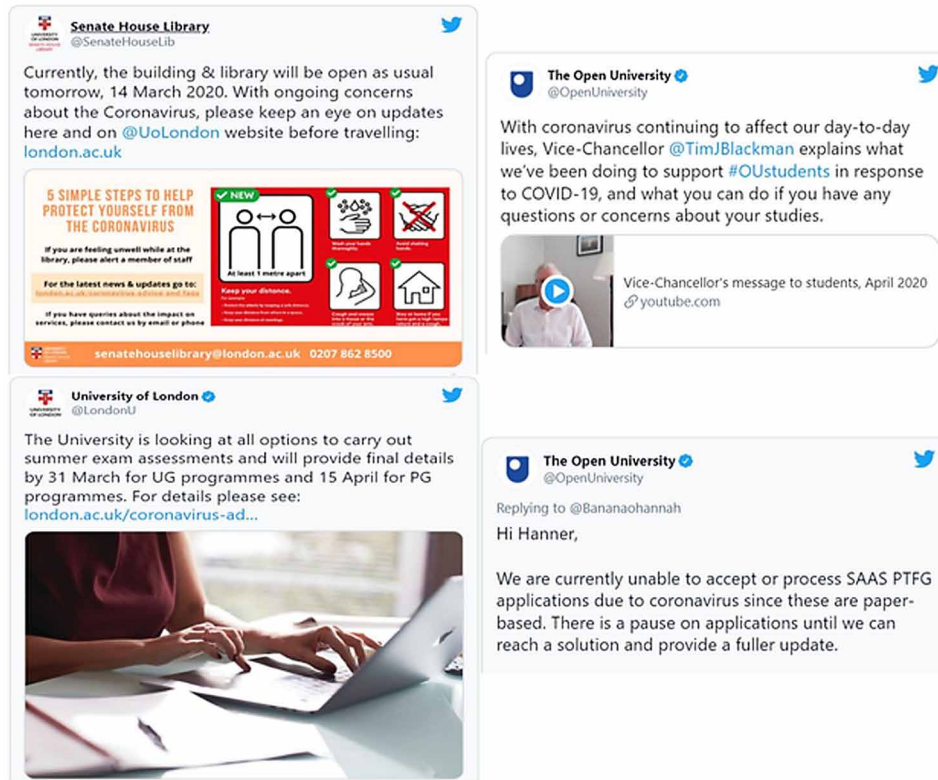
Big Data HE Communities

Figure 2. Curated Tweets Image 2

Figure 3. Curated Tweets Image 3