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An autoethnographic account of the use of Twitter for professional development by novice academic

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Abstract

This paper presents an exploratory autoethnographic study of my use of Twitter to support my professional development. It investigated three research questions that focus on my approach to using Twitter, experiences and challenges, and management strategies. Using reflective narrative and data from my Twitter archive, five themes were developed using thematic, lexical, and social network analysis. These themes are: 1) constructing a personal learning network, 2) managing an evolving space, 3) serendipitous learning and staying in touch, 4) spontaneous engagement and opportunistic collaboration and 5) adopting helpful behaviours. These results suggest my use of Twitter evolved over time into a personal and networked space that has positively impacted my development as a novice academic. This networked space offered continuous opportunities for learning, collaboration and engagement. Though several challenges were experienced, deliberate strategies mitigated these challenges. While this study found similarities between my experiences and those of others from the literature, it offers potentially unique strategic insights into the use of Twitter for effective professional development.

1. Introduction

The higher education work environment is undergoing rapid changes with greater scrutiny placed on teaching and research excellence (Hollywood et al., 2019). These changes are evidenced in modifications to managerial systems and quality assurance practices, and increased emphasis on accountability and performativity (Reaper, 2016). These changes are taking place in the context of fiscal constraints, increase students' diversity, opportunities and challenges of technology, demands for interdisciplinarity, and changing faculty demographics (Austin & Sorcinelli, 2013).

These changes have implications for higher education in general and in turn the professional development support provided to academics, especially those new to higher education (Behari-Leak, 2017). Concurrent with these rapid adjustments, limited opportunities for development and preparation of novice educators for the academy are often noted (Summers, 2017) though professional development and support are necessary elements for developing scholarly practices and career satisfaction in academia (Heffernan & Heffernan, 2019; Mathews, Lodge & Bosanquet, 2012). Further, it is acknowledged that novice academics share concerns about challenges they experience early in their career (Brown & Sorrell, 2017; Kiffer & Tchibozo, 2013; McDermid, Peters, Daly, & Jackson, 2016). Some of the needs identified by novice academics themselves include professional development opportunities to facilitate easy transition to academic life, research and publication and development of teaching skills, identity development, and purposefulness in service (Acker & Webber, 2017; Fitzmaurice, 2013; Matthews et al., 2012; Smith, 2017).

Social media has been adopted widely by academics for a wide range professional and career development objectives (Lupton, 2014; Malik, Heyman-Schrum & Johri, 2019; Singh 2020; van Noorden, 2014). This increase in uptake of social media by academics is viewed as one measure to help address some of the deficits and challenges existing in their work environment. Twitter in particular is viewed as a space that facilitates career development needs and provides opportunities that help address institutional constraints (Jordan, 2019). However, it is not yet clear how novice (early career) academics as a distinct category experience and use social media for professional development. This gap is even more pronounced for early career academics working in the developing country context.

As a novice academic working in a resource-constrained developing country higher education context, I have been

challenged to seek alternative approaches to develop my career. In this context social media, including Twitter have proven useful for me. In this study I explore my professional development experiences with Twitter from an autoethnographic perspective.

Autoethnography according to Adams, Jones and Ellis (2017) is a method that facilitates the study of personal experiences through reflexivity within wider cultural norms and expectations. I reveal and provide a rich story of Twitter as a space for professional development and provide useful insights from my experiences that may be of use to others.

The following research questions guide my study.

Overarching research question: What are my experiences using Twitter for Professional Development?

1. RQ1. How do I as a novice academic approach professional development using Twitter?
2. RQ2. What are the benefits I obtain when using Twitter for professional development?
3. RQ3. What are challenges I experience when using Twitter for professional development and how do I manage these challenges?

The literature review that follows outlines the current state of knowledge on novice academics and professional development in the context of social media in higher education and in particular Twitter.

2. Literature review

In keeping with the aims of this research and the research questions addressed, the literature review below is organised to reflect (1) approaches to professional development, (2) experiences (benefits and challenges), and (3) management of challenges experienced in the course of professional development. In this review I place particular emphases on professional development of novice academics, Personal Learning Networks (PLNs), the use of social media (i.e., Twitter).

2.1 Novice academics and professional development

Academics at the early stage of their career are variously referred to by names such as 'novice faculty members' (Kiffer & Tchibozo, 2013), 'early career academics' (Acker & Webber, 2017; Haddow & Hammerfelt, 2019; Matthews et al., 2012), and 'new academics' (Behari-Leak, 2017) or by PhD and employment status (Haddow & Hammerfelt, 2019).

Though much literature on this group focuses on academics fresh from PhD studies, Kiffer and Tchibozo, (2013) adopted the term ‘novice academics’ (p. 278) to include those academics without a PhD but with previous professional experience. Irrespective of the description used, professional development is identified as a core need for academics.

Like the variations in definitions related to early career / novice academics, a definition for professional development is not conclusive either and is often used interchangeably with professional learning (Oddone, 2019). Nevertheless, professional development activities aim to enhance the capacities of academics through a range of activities and strategies. Zou (2018), for instance identified four activities central to continuous professional development: (1) knowledge sharing and help-seeking; (2) problem-solving and skills/knowledge development; (3) mentoring, modelling, and sharing good principles and practices; and (4) an on-going journey that transforms learning and teaching. To support these and other related activities, various approaches have been adopted. They include faculty inquiry groups as communities of practice (Bond & Lockee, 2018); development of professional learning networks (Trust, Carpenter & Krutka, 2017); scholarship network participatory practices to enhance scholarship (Stewart, 2015). At the institutional level notable approaches include faculty institutes (Derting et al., 2016), teaching and learning seminars and course orientation programmes (Zheng, Bender & Nadershahi, 2017). In particular, collaborative activities among peers are highly valued by faculty (Ferman, 2002).

2.2 Academics use of social media

Social Networks are increasingly used by academics in higher education for a range of professional development activities. A group of international academics reported the following uses of social networks for professional development: connecting with others, creating networks, promoting openness and sharing, giving and receiving support, publicising, and the development of research (Lupton, 2014). However, the literature also highlights that academics have concerns using social media for professional development and other activities. These include issues related to privacy, the blurring of the boundary between the personal and the professional, and injudicious use (Jordan & Weller, 2018; Lupton, 2014). Further, tensions between the personal and professional and the issue of scholar’s identity and its development were highlighted by Veletsianos and Kimmons (2013).

2.3 Personal learning networks, Twitter and professional development

Personal Learning Networks (PLNs) refer to connections among people and resources for the purpose of enriching learning in online and offline spaces (Richardson & Mancabelli, 2011). PLNs are characterized by openness, reciprocity, and willingness to share information, and connections, collaborations, and engagements (Siemens, 2004). PLNs are formed based on learners’ organization of their connections to learning communities (Kop, 2008) and are initiated by learners (Oddone, 2019). Several studies from higher education users have pointed to Twitter’s use for developing PLNs (Hughes, 2018; Li, 2015; McPherson, Budge & Lemon, 2015; Stewart, 2016; Veletsianos, 2011).

Twitter (www.twitter.com) is a microblogging social networking site used for connecting and sharing. Among its several features, Twitter allows users to “follow” other users, “tweet” content (up to 280 characters), and reply to tweets of others, “retweet” content of others, “like” content, “direct message”, create “list” of users, tag content using a hashtag (#). See (Powers, 2013; Emke, 2019, p.44; Jefferis, 2016, p.26) for full list/description of features.

Twitter facilitates various forms of connections, collaborations and engagements including: social commentary, requesting information and offering suggestions (Veletsianos, 2011); conference engagement through backchannels (Greenhow, Li & Mai, 2019; Kimmons & Veletsianos, 2016; Li & Greenhow, 2015), participation in scholarly activities, discussions, public engagements (Lee, et al., 2017; Stewart, 2015, 2016); chatting and chat events (Carpenter, Kimmons, Short, Clements & Staples, 2019; Evans, 2017; Lee et al., 2017). Overall, Twitter is described as useful for academic networked learning (Quan-Haase, Martin & McCay-Peet, 2015).

Though PLNs are intentionally constructed, resulting social interactions can unintentionally lead participants to serendipitous learning. *Serendipitous learning* is learning that is neither planned by the learner or a teacher and which could result in connections between seemingly unrelated content and ideas (Buchem, 2011). *Informal learning* is learning that is principally self-directed through observing others, listening, asking questions, trial and errors, help-seeking, and conversing (Dabbagh & Kitsantas, 2012). Several studies have reported Twitter’s facilitation of serendipitous and informal learning in higher education. Twitter offered educators accessible and informal means for keeping up to date with developments in education practice (O’Keefe, 2018). Similarly, through its ease of use, portability, and

instant access, Twitter provided educators with high quality material (Tucker, 2019). From a practitioner's standpoint, McPherson et al. (2014) highlighted how Twitter can be informally used to create new ways of working by making your practice visible to others.

While the literature identifies many beneficial uses of Twitter, several challenges exist. For novice academics these include fear of misinterpretation, misrepresentation, and confrontation; intellectual property uncertainties; perceived low value of twitter activity; and negative speech which may impact future employment prospects (Ferguson & Wheat, 2015). Other academics indicated several additional issues including: the time to participate; skills and guidance required; and limited support (Hughes, 2018). Further, low confidence in open participation and capacity to participate along with perceived knowledge gap between self and others made participants feel hesitant to engage with strangers according to O'Keeffe (2018). Additionally, fear of the potentially damaging power of posting due to the inability to edit tweets, and the risk of abuse were also reported by O'Keeffe (2016, 2018). Stewart (2016) suggests the collapse of context - a situation where it is sometimes difficult to separate the personal from professional, poses a challenge to communication by increasing the risk of trolling and harassment. Veletsianos (2017) suggests that Twitter can reinforce egalitarian structures which may impact participation by lowering the diversity of users.

While it is noted that academics use Twitter for professional development in various ways (Malik et al., 2019) little is reported on how early career academics explore professional development on Twitter (Singh, 2020). It is important to better understand the experiences and challenges of novice academics as they pursue professional development as these experiences could inform the design of professional development programmes by academic developers. These experiences may also offer novice academics with insights and strategies to undertake professional development independently.

2.4 Theoretical Framework

Networked Learning theory (NLT) (Dirckinck-Holmfeld, 2016) is adopted as the theoretical lens through which this study is explored. Networked learning principles are used in two ways in this study: 1) as an analytical frame to make sense of my data and, 2) as a means for interpreting my findings. The following section outlines the principles of networked learning.

2.4.1 Networked Learning theory (NLT)

Networked learning is an approach to learning that has been influenced by the concept of open learning and focuses on the use of information and communication technologies to promote connections between learners, learning communities, and learning resources (Dirckinck-Holmfeld, 2016). The following eight core principles are central to networked learning: perceived value of learning to learners; shared responsibility of learning process; time to build relationships; situated and contextual nature of learning; collaboration; dialog and social interaction and the co-construction of knowledge, critical reflexivity, and the role of facilitator/ animator (Hodgson & McConnell, 2019, p45-46). Further, six pedagogic principles related to learning are identified by Hodgson, Dirckinck-Holmfeld and McConnell, (2012, p 8-9). These are: openness in the educational process; self-determined learning; a real purpose in the cooperative process; a supportive learning environment; collaborative assessment of learning; assessment and evaluation of the ongoing learning process.

3. Methodology

3.1 Autoethnography

This study uses autoethnography as the methodological approach to explore my experiences and tell the story of how I use Twitter to support career and professional development. My perspectives are to be understood in the context of an early career academic working in a developing country with resource challenges but where the expectations of excellence in teaching, research, and service are no less than those of better-resourced academic environments. I started my career as an assistant lecturer of computer science at the University of Guyana immediately after completing my undergraduate degree. As a novice academic new to a resource-constrained developing country higher education context, I was assigned responsibilities of teaching, with the expectation that engagements in research and service would naturally follow like it they do for more-seasoned and experienced academics. With no work experience and very minimal understanding of the requirements and expectations of an academic, I was challenged immediately to develop myself professionally if I were to survive and develop my academic self. Though frustrations and fear of failure were frequent experiences and persisted for several years, I was determined to explore alternative means to address the challenges I was experiencing.

In addition to pursuing a post graduate diploma in education to aid my teaching, and further studies at the master's level to improve my qualifications, I explored online social networks. Online social networks, which were very much at the infancy in the higher education context during these formative years of my academic career, provided me a space to explore professional development opportunities. In the beginning I used several social media platforms casually, but I was particularly drawn to Twitter because in the course of my casual engagements, I noticed academics from my domain (computer science) and from the wider education arena were using the platform to share information and interact with others. Looking on and learning from how other academics were using Twitter encouraged me to rethink my own strategy. I adjusted my own use of Twitter and it was from here on that Twitter became a more formal academic space for me.

At the time of thinking about this autoethnographic study I was reminded by Twitter that it is 10 years since I joined the platform and so it was a timely opportunity to reflect on my professional development use of Twitter. This autoethnographic study presented the opportunity to reveal my story of using Twitter as a space for personal and professional development.

Autoethnography is a qualitative method used to explore, describe, analyse personal lives and experiences (Adams, Jones, & Ellis, 2017). It allows for the exploration of intentions, motivations, emotions, and actions about the self (Adams, Jones, & Ellis, 2017) and to connect this experience of the self with cultural context (Ellis & Bochner, 2000).

Autoethnography is therefore an appropriate choice in this project as it allows me to explore my research problem through introspection and critical reflection. I draw on an “analytical-interpretive” approach to autoethnography (Anderson, 2006; Chang, 2016) to tell a story of my own developmental trajectory, experiences, challenges, and emotions but with the view of a broader higher education cultural context in mind. One of the characteristics of the analytic approach to autoethnography is its commitment to the development of ‘theoretical understandings of broader social phenomena’ (Anderson, 2006, p. 1). My autoethnography is aimed at developing theoretical insights from my own experiences but situated within a broader theoretical perspective of academic professional development.

3.2 Data collection and analysis

Data was collected using a triangulated approach from my personal Twitter archive and reflexive narrative.

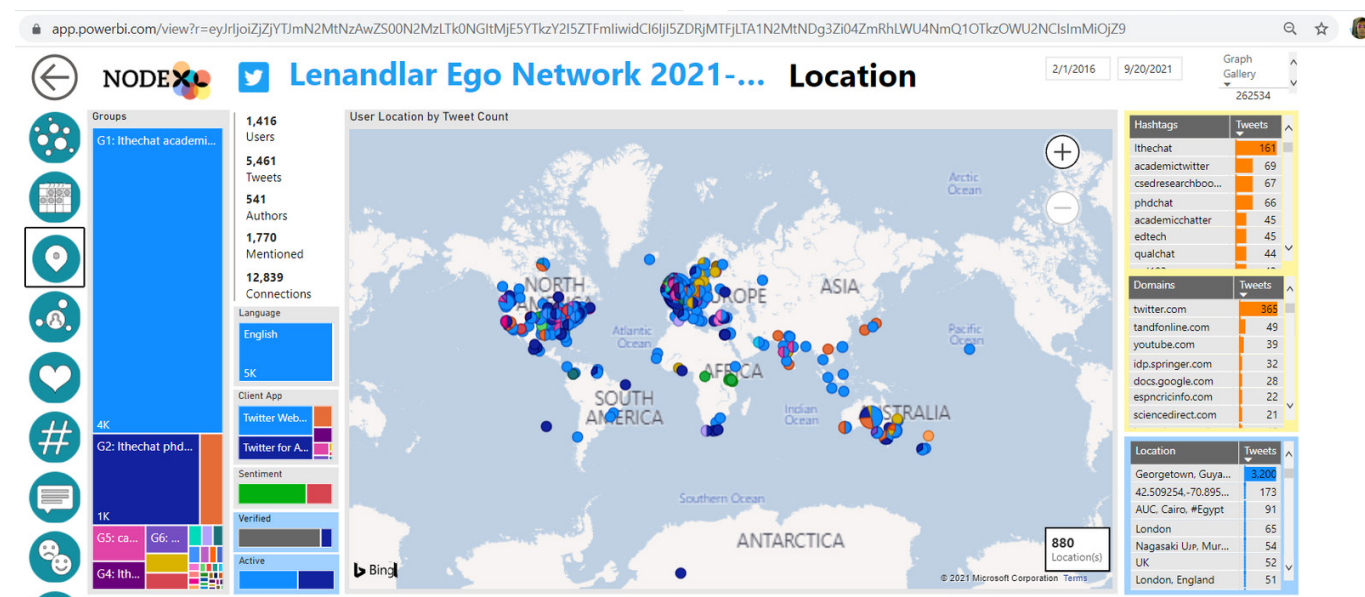
Twitter allows its users to download a personal archive of data as a single comma separate value (CSV) file of all tweets. My archive at the time of download for this contained 15,700 tweets spanning a period of approximately 10 years (2009 – 2019). This dataset contained all my personal tweets, my replies to the tweets of others, tweets retweeted and liked. I did use the content of the disaggregated categories for analysis in this study. The dataset was analysed as an aggregate of all activities. However, a numeric disaggregate between tweets and retweets (see Table 1). I used my Twitter archive to complement my reflective narratives by providing reminders of my activities and engagements. My Twitter archive allowed me to explore patterns of usage and observe trends of activities and engagements. These patterns and trends were observed from the results of the lexical analysis conducted on the aggregate dataset.

I wrote personal reflective narratives to document from memory my recollections, perceptions, judgements, and general reflection on my use of Twitter. These narratives were written before I explored and analysed my Twitter archive. Twelve self-interview questions (see Appendix A) guided my reflective writing. In total I wrote six pages of personal narrative of approximately 3660 words. After one round of reflective writing, I engaged my Twitter archive to crosscheck similarities and to identify important elements I might have missed in my reflection.

To be confident enough that my personal reflections captured my experiences in the broadest possible sense, I shared my personal narratives with a critical friend Sarah Honeychurch (@NomadWarMachine) who is familiar with my use of Twitter. Sarah provided feedback, made observations, asked questions, and offered suggestions for updating and reorganising my personal narratives. Further, to corroborate my personal narratives my Twitter archive was reviewed periodically for reminders of important engagements. In one instance my archive helped me correct parts of my narrative because my recollection of dates were inaccurate. This triangulation helped manage the challenge of reliance on memory and its potential effects on personal narratives as was identified by Chang (2016).

3.3 Data analysis

My Twitter archive comprises tweets from the year 2009 to 2019. My archive of Tweets was organised by year and analysed using Leximancer (<https://info.leximancer.com/>) for lexical analysis and NodeXL for Social Network Analysis (SNA) (Hansen, Shneiderman, & Smith, 2010). Lexical analysis was chosen as it proved a more efficient method for analysing large corpus of text datasets such my 15,700

Figure 1. Use of Power BI to generate Map

tweets. The Leximancer software facilitated content analysis and produced visual concept maps showing connections, patterns and themes (Smith & Humphreys, 2006). For the lexical analysis the dataset was organised by year and analysed similarly to facilitate comparative analysis and to identify usage patterns and trends. NodeXL generated network graphs and summaries of my Twitter data. NodeXL Pro Insights (<https://www.smrfoundation.org/nodexl/nodexl-pro-insights-2/>) Power BI (<https://powerbi.microsoft.com/en-us/>) report templated was used to generate a geographic network map to show the geographic reach of my professional learning network.

I used thematic analysis to make sense of both my personal narratives and my Twitter archive data. Thematic analysis is a “flexible data analysis technique” (Oddone, 2019, p.134) which can “potentially provide a rich and detailed, yet complex account of the data” (Braun & Clarke, 2006, p.87). Thematic analysis followed the six-phase approach proposed by Braun and Clarke (2006, p.78). These stages are: i) familiarizing yourself with your data, ii) generating initial codes, iii) searching for themes, iv) reviewing themes, v) defining and naming themes, and vi) producing the report.

I used an inductive line by line coding to generate initial codes from my personal narratives. I deliberately used an inductive approach to coding at this stage because I did not want the constructs of my theoretical framework to overly influence the initial coding process. To arrive at the final list of themes, I integrated the list of initial codes with the

results of the data analysis of my Twitter archive. This was done deductively using the constructs of my theoretical framework (networked learning). To improve the trustworthiness of my findings, I used a cross-checking process comparing my personal narratives with my actual usage data to verify that the factual aspects of my narratives matched my actual usage of Twitter as recorded in the archive.

3.4 Ethical considerations

Like all research approaches, ethics is an important consideration in autoethnography (Edwards, 2021). The concerns of relational ethics in particular are amplified for autoethnographers (Ellis, 2007) as their research often have direct implications for associated institutions, family and friends, social networks, communities, and students (Ellis, Adams & Bochner, 2011).

Four potential ethical issues needed to be addressed in this study. First of all, I am conscious that my writing directly identifies my place of employment. To address possible issues, I refrained from identifying as best as I can personal information that may have potential negative implications for my institution. The issues related to my institution as noted in this study are very much structural and not as a result of the direct actions of any process or action as far as I understood and experienced these issues. Secondly, at the time of the commencement of this study, I was moving on from my early novice academic career status to a mid-career position. Therefore, one of the challenges for me during the writing of my personal narrative was to remain true to my

early career, novice academic experiences and not to include present experiences in my reflection. To minimize the potential for inaccurate reflections, I relied on the actual usage data in my Twitter dataset to help me develop a consistent recollection of my experiences. A third consideration relates to data usage. In terms of using Twitter data, I was careful to use my personal data as much as I needed to and not to include personal data of others from my network in the study without their consent. I could not avoid this entirely as I used a small list of top members in my network in this paper, but that data was limited to their Twitter handle which is publicly available. Finally, the potential for difficult past experiences to surface from both my reflective narrative and from my Twitter archive was initially a challenge for me. However, the actual reflections allowed me to understand that part of my challenging experiences allowed me to develop as an academic. I was particularly happy that I took the steps I took to address these challenges and that the reflections was an important part of this process.

4. Results

In this autoethnography I set out to address three research questions:

1. How do I as a novice academic approach professional development using Twitter?
2. What are the benefits I obtain when using Twitter for professional development?
3. What are challenges I experience when using Twitter for professional development and how do I manage these challenges?

Five themes were developed from the analyses of my personal narratives and Twitter use data. These themes are presented below.

1. Constructing a Personal Learning Network (PLN)
2. Managing an Evolving Space
3. Serendipitous Learning and Staying in Touch
4. Spontaneous Engagement and Opportunistic Collaboration
5. Adopting helpful behaviours

These five themes are consistent with the literature on the professional development needs of academics and the approaches adopted on social media towards meeting these needs. Further, these themes are connected to the principles of networked learning. Themes 1 and 2 relates to self-determined learning, shared responsibility, and time (needed to

develop the network); theme 3 connects with the situated and contextual nature of learning; theme 4 directly maps to the principle of collaboration, while theme 5 is an outcome related to the principle of assessment and evaluation of the ongoing learning outcomes. These five themes are presented in the following sections.

4.1 Constructing a Personal Learning Network (PLN)

The first and most strikingly obvious theme developed from my data analysis shows that I used Twitter to create and maintain a personal learning network. This theme encapsulates my approach to Twitter and is described below in terms of its development, structure, organisation, and usage.

4.1.1 Personal profile and PLN structure

My PLN is my personal construction of a space on Twitter comprising members I follow, tweets created, liked, retweeted, and the lists for organising my network. Figure 2 is a visual display of my Twitter profile.

Membership is critical to building my PLN. Presently I follow 1,563 members and followed by 1,282. I have approximately 15,800 (15.8k) tweets and retweets and 8,147 tweets “liked”. I have 28 lists.

The following ego network graph presents a snapshot of my Twitter network structure using the most recent 3200 tweets (approximately last two years of engagement).

My ego network (Arnaboldi, Conti, Passarella, & Pezzoni, 2013) is a graph that shows all the nodes I been socially engaged with on Twitter and formation of smaller networks such as *ethicalcs*, *csforall*, *lthechat*, *socmedhe18*, *sigcse2018*, *sigcse2019*, *engagemooc*, *clmooc*, *oer18*, *rhizo15*, *Rhizo15* (*#rhizo15* - Rhizomatic Learning: A Practical View) was a 6-weeks connectivist massive open online learning (MOOC) developed and facilitated by Dave Cormier (Bozkurt et al., 2016). My top followers and hashtags are presented in Figure 4.

Several of my top followers are prominent member of my PLN while some are co-authors. Several of the hashtags are chat groups while the *#sigcse2018* was an active conference backchannel.

Figure 5 indicates that many members of my PLN reside outside of country of residence (Guyana). However, this graph is generated from members who provide geolocation data in Twitter.

Figure 2. Twitter Profile: @lenandlar



Figure 3. My Twitter Ego Network

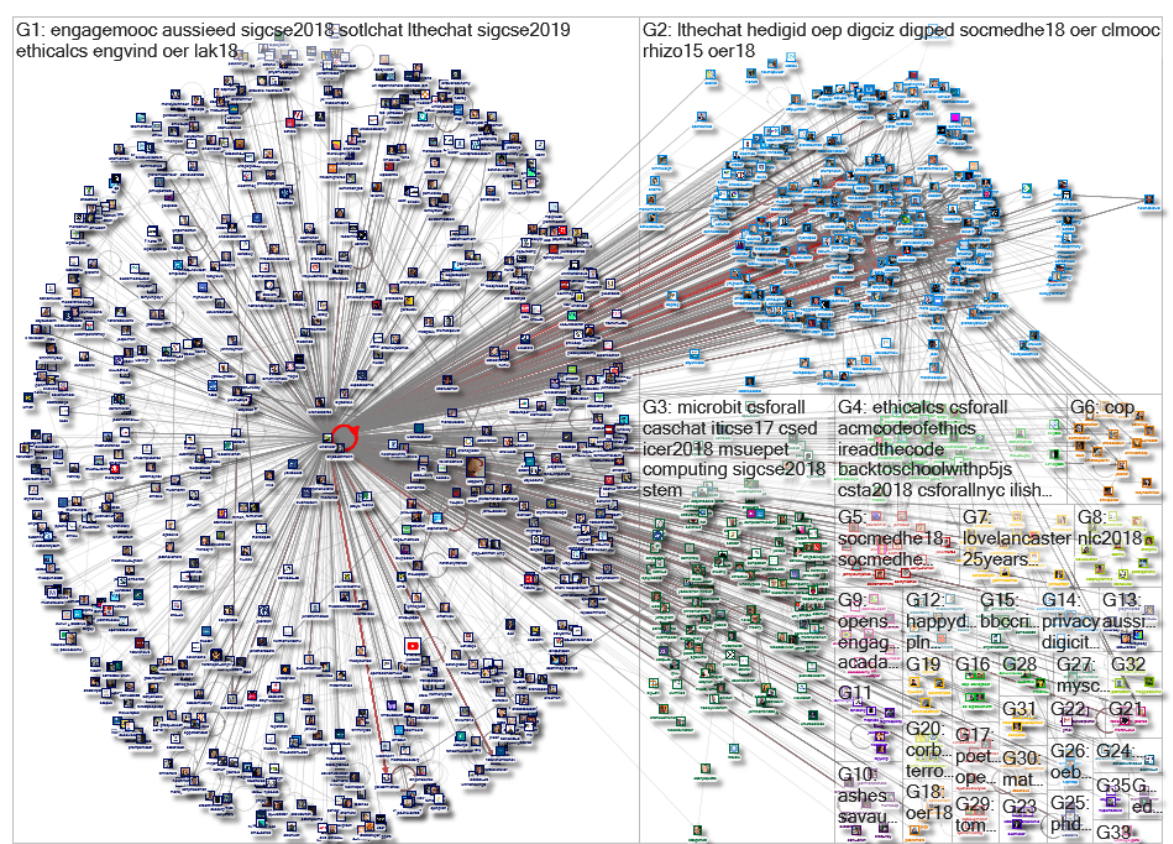


Figure 4. Top Followers and Hashtags

Uploaded on: April 26, 2019

Short Description: Lenandlar via NodeXL <http://bit.ly/2VrMU3b>
 @lenandlar
 @suzankoseoglu
 @bali_maha
 @ed_saber
 @crumphelen
 @nomadwarmachine
 @arasbozkurt
 @davidgbeer
 @whitneykilgore
 @scottturneruon

Top hashtags:

#lthechat
 #aussieed
 #engagemoooc
 #ethicalcs
 #hedigid
 #oep
 #digciz
 #sigcse2018

Most of the members I follow are located in North America and Europe.

4.1.2 Lists

Twitter lists allow users to “filter tweets” (Emke, 2019, p.45) and organise them as a named group. A sample of my most influential lists are shown in Figure 6.

These lists relate research, teaching and general interests. My largest list is computer science education (92 members, approximately 6% of all followed). Education and digital education lists are the second largest and accounts for approximately 4.5% followed. In total these three lists account for approximately 10% of my PLN. Some lists relate to general interest such as sociology, philosophy, and ethics.

4.1.3 Tweets/Retweets (RTs)

Table 1 shows my tweets and retweets disaggregated by year.

Figure 5. Map showing members followed

Figure 6. Sample List

Internet/Media 32 Members		STS 15 Members
Philosophy Favorite Philosophers to read 26 Members		Education 30 Members
Openness OA OEP OER OSS 10 Members		Digital Education 38 Members
Internet Research People, Groups, Unis, etc 12 Members		Sociology Favorite Sociology People 17 Members
ICT Research ICT4D etc... 8 Members		Internet/Media 32 Members
CS Education Computer Science Ed. + People 92 Members		Philosophy Favorite Philosophers to read 26 Members

Table 1. Disaggregation of tweets/retweets

Year	Total: Tweets/Retweets	Tweets	Retweets	Ratio Tweets/Retweets
2009	144	140	4	3%
2010	4217	4016	201	5%
2011	1212	1057	155	15%
2012	1557	1226	331	27%
2013	1012	545	467	86%
2014	2221	1820	401	22%
2015	992	871	121	14%
2016	1071	903	168	19%
2017	930	769	161	21%
2018	1979	1557	422	27%
2019	365	220	145	66%
Total	15700	13124	2576	

On average I tweet 3-5 times per day on average. Retweeting accounts for approximately 15%-20% (2576) of all (15,700) of my tweets.

4.2 Managing an Evolving Space

The second theme developed from data analysis relates to my management of Twitter and the changing nature of my engagement. Several sub-themes relate to managing my PLN; changing patterns of membership; and patterns of tweeting/retweeting.

4.2.1 Managing PLN

How do I go about building and maintaining my PLN from among the many users of Twitter? Perceived influential membership is a key characteristic that influences who I follow. I'm guided by my professional interests and follow those who I perceive can contribute to my development such as thought leaders, researchers, advocates for teaching, and public intellectuals. This is reflected in the following excerpt from my personal narrative.

Influential members of my network are those who I come to believe as thought leaders in their field. This could be in research, teaching or just as a public intellectual. They may be leading researchers with a strong publication and academic background. They may have a strong following and be seen as influential. It is not always possible to know at the outset who's influential, but I try to learn a bit about someone by checking their profile and timeline and so on. But largely influence is determined thru the passage of time in many cases. Sometimes someone I follow may not yet have as much influence but can develop this over time. I think of influencers as those who can shape and question my views, point me to important elements – people, papers, news, and general happenings.

4.2.2 Shifting patterns of engagement/network structure

In my first four years on Twitter, I followed sports personalities, celebrities and media personnel. I also followed several individuals randomly including personal friends and acquaintances.

The Graphs in Figure 7 is a snapshot of two points of my early years on Twitter.

Themes that appears casual (*lol*, *bat*, *dem*) and those related to sports (*cricket*, *west indies*, *bumblecricket*) are

noticeable. Also, the most dominant nodes in my network were related to cricket. By 2012 the *edchat* community was prominent along with themes such as *work* and *read*, indicating a shift away from casual tweeting. My network was also much larger by 2012.

By 2013 my network structure started shifting and I was beginning to identify with academic Twitter by engaging the educational technology, computer science education and general education community.

Figure 8 is a snapshot of my network structure and lexical analysis of tweets (2013-2014).

Themes such as *online*, *share*, *social* and *etmchat* indicated a shift in usage from casual to professional. By 2014 casual tweets had almost disappeared. Also, by 2014 several members from the educational technology community were in my network. The lexical analysis shows conversations related to my professional interest (*edchat*, *etmchat*, *work*, *online*). Retweeting (RT) was the dominant theme. The theme *thanks*, shown in both graphs, represents expression of appreciation to my Twitter network.

The 2014-2016 was very rich with professional development activities. The Rhizomatic Connective Massive Open Online Courses (CMOOCs) of 2014 and 2015 (<http://davecormier.com/edblog/2016/04/13/rhizo14-the-mooc-that-community-built/> and <http://davecormier.com/edblog/2015/04/10/a-practical-guide-to-rhizo15/>) were planned and executed. Figure 9 is snapshot of my network structure and lexical analysis of tweets (2015-2016).

My network at this point as largely comprised of influential members. Tweets were mainly related to Rhizo15 activities (nodes *rhizo15*, *Rhizo 15 Blog Posts*). During this period, I started following members from the computer science education community (nodes *mark*, *miles*). Retweeting (RT) was still dominant activity. The theme *thanks* also became a prominent node.

By 2017-2018 my PLN was dominated largely by my professional and developmental interests. Figure 10 is a snapshot of my network structure and lexical analysis of tweets (2017-2018) period.

The lexical analysis shows keywords related to my professional development (“read”, “work”, “learning”, “learner”, “open”). Retweeting (RT) continued to be a popular activity.

2009

2012

Theme Hits

Theme	Hits
lol	21
westindies	18
bat	10
Bumblecricket	7
wicricnews	6
mediaimran	6
day	5
RT	4
cricket	4
tweet	3
im	3

Theme Hits

Theme	Hits
RT	343
cricket	157
edchat	124
raggamuffs	91
lol	86
thanks	66
best	32
cricketaakash	31
need	20
interesting	19
amp	16
take	13

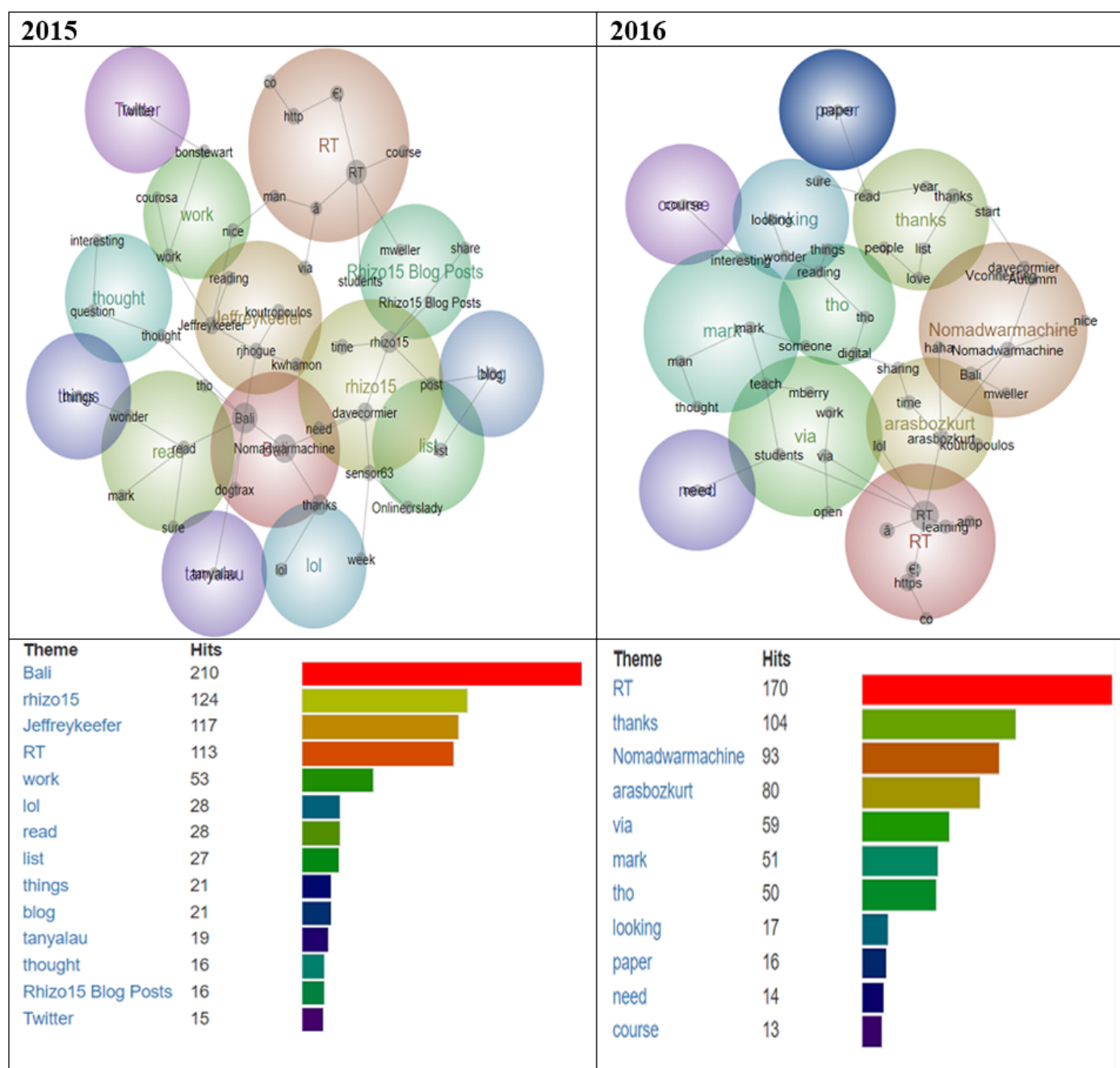
2013

Theme	Hits
RT	343
cricket	157
edchat	124
raggamuffs	91
lol	86
thanks	66
best	32
cricketaakash	31
need	20
interesting	19
amp	16
take	13

2014

Theme	Hits
RT	332
via	112
http	83
thanks	79
etmchat	75
share	74
work	67
online	60
lacigf6	36
social	32
Cnsume	20
access	16

Figure 9. Graph structure of members and lexical analysis of tweets (2015-2016)





4.3 Serendipitous learning and staying in touch

While the first two themes are related to my personal actions in creating and managing a PLN, this third theme relates to the opportunities for learning on Twitter.

My day usually starts with a quick perusal of my timeline. I look for interesting bits of information, events, activities, papers, and articles. This pattern of scanning continues throughout the day depending on my schedule.

My day usually starts with a quick check on who's saying what. I scroll through my timeline looking for interesting bits of information in general. I check for significant bits and pieces of events, activities, papers, articles, and such things. I also look out to see who's sharing what. I am generally not too quick to reply, respond, or generally engage.

I describe myself mostly as an active lurker - someone who consumes content silently in general, this could include reading and thinking about something without visibly responding in this sense. This quick scan gives me a good sense of what might be the tone or theme of the day or what might be interesting topics presently under discussion. I think this approach works really well for me.

My Twitter PLN provides other opportunities for learning beyond day-to-day routines. For example, the Rhizo 14/15 CMOOCs run largely on Twitter provided excellent opportunities for me to learn and become familiar with developments around learning technologies. They provided a continuous stream of activities including chats, informal conversations, plans for research projects and so on.

The rhizo community was a critical link to influential people and content in the learning technology space It was like my formal induction to the educational technology space...

These CMOOCs provided further opportunities for collaboration. I worked on several projects with members of the rhizo community related to Rhizo14/15. The network graphs of 2014 and 2015 (Figure 8, Figure 9) show themes "rhizo14" and "rhizo15" indicating active engagement.

The computer science education community provided an induction to researchers, practitioners and teachers in computing education. The network graph of 2018 (Figure 10) depicts the learning opportunities presented by this community as indicated by the theme "learning" connected by the lines leading from "computing" to "research".

My learning is not limited to professional interests but are also personal. To this end I follow several philosophers and sociologists because their work is of personal interests.

4.4 Spontaneous engagement and opportunistic collaboration

This fourth theme relates to interaction with my network and the opportunities arising from engagement with its member. Spontaneous interaction with members in my PLN is an ongoing process that sometimes takes the form of chat sessions and random conversations. A spontaneous engagement for an upcoming event such as a live chat, a webinar, or a conference with a back-channel hashtag might be triggered by someone in my network for which I will make a quick mental note and commitment. Sometimes I cannot engage in activities that are of interest to me because of other offline commitments, however I do when I can. I do not feel any pressure or any sense of loss if I missed something. I know that there's likely to be a trail to follow. For example, I revisit hashtags for useful bits and pieces.

Brief conversations occasionally inspired collaborations. I worked on several projects that were conceptualized through connecting on Twitter resulting in several research papers including: Singh (2015), Bali et al. (2016), Honeychurch, Bozkurt, Singh and Koutropoulos (2017), Hogue et al. (2018), Bozkurt, Koseoglu and Singh (2019). Several of my co-authors were novice academics working on their PhDs or had just finished. Some may have now been thinking about their PhDs.

On another occasion a chance encounter resulted in the development of a project around computer science education in my country. This project 'advancing computer science education in Guyana' (<https://suesentance.net/2018/03/26/computing-education-in-guyana/>) started with a tweet exchange Computing Educator Sue Sentence from England.

4.5 Adopting helpful behaviours

This fifth theme outlines challenges experienced, and strategies used to manage these challenges. Sub-themes related to commitment of time, information overload, and decisions around informal engagement form the core of this theme.

My early encounter with Twitter was problematic in several ways and this motivated my choice to minimize informal engagement. The narrative below describes one painful encounter.

I recall responding to someone on the Duckworth/Lewis method used in cricket with a disagreement that resulted in a back and forth argument over many tweets and lasting several days ...then things turned sour, abuse resulted, I felt like I have been exposed....

That experience forced me to engage more selectively. I rarely follow friends or acquaintances and I no longer follow celebrities and other who I perceive to not be of value to my PLN.

Information overload and commitment of time are two additional challenges for me on Twitter. Information overload is not always avoidable as it depends on the activity of members. I use lists and hashtags to filter content.

The theme *time* shows up on several of my network graphs (Figure 8, 2015/2016, Figure 10, 2017) indicating issues relevant to time use and its management. To better manage time, I adopted a very deliberate approach to engaging others. Selective following and deliberate engagement help time and information overload management. Additionally, I revisit my lists to unfollow members who may not be perceived as valuable to my network. Managing different time zones is also important as the following excerpt suggests.

One has to do with the different time zones many on my twitter share. I am usually 4-6 hours behind those living in Europe and as such by the time I am awake there has

been a flurry of tweets already from those I follow from that time zone.

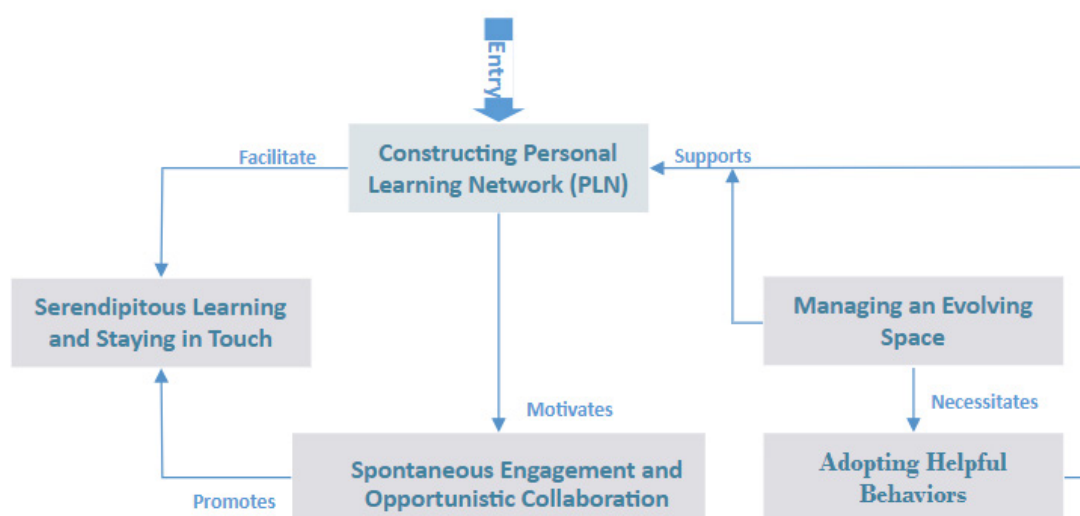
Managing my schedule around different time zones was especially critical for me if I wanted to engage with activities across those time zones.

5. Discussion

This study explored my experiences and use of Twitter as a space for supporting professional development using autoethnography. In response to the three (3) specific research questions, five themes were developed using thematic, lexical, and social network analysis. These themes show that I used Twitter to construct a personal learning network which facilitated serendipitous learning and connectivity which in turn fostered collaboration. This personal learning network also provided me a medium to keep in touch with my developments in my domains of interests. Significantly, the results show how I deliberately deployed strategies to shape the structure of my personal learning network. The model (Figure 11) shows the relationship among the five themes.

What are my experiences as I pursue professional development using Twitter? The following sections offer a discussion of my overall experiences using Twitter for Professional Development. This discussion is organised by research question.

Figure 11. Model of Themes and their relationship



Model Showing Relationship Among Themes

5.1 RQ1. How do I as a novice academic approach professional development using Twitter?

The study showed that creating a personal learning network was central to my professional development on Twitter. Several researchers previously reported similar findings - that educators use Twitter as a personal learning network to support their professional development (Oddone, 2019; Trust et al., 2017; Trust, Carpenter & Krutka, 2018; Tucker, 2019). However, unlike previous studies, this study revealed a detailed approach to constructing and managing a personal learning network. My network structure evolved over time from a casual and informal space to a very focused professional development environment. An essential element of my personal learning network is that it comprises influential members of the academic community related to my professional and personal interests. This method of networking on social media through association with influential others was observed by Donelan (2015). This deliberate approach to the construction of my personal learning network looked at through the lens of networked learning theory, aligns with three principles of networked learning: self-directed learning, shared responsibility, and time (McConnell, Hodgson & Dirckinck-Holmfeld (2012, p 8-9). My personal learning network developed over time which allowed for relationships to become solidified and reciprocated through shared experiences which in created opportunities for collaborative projects and shared informal learning experiences.

5.2 RQ2. What are the benefits I obtain when using Twitter for professional development?

My personal learning network of influential members from beyond my work and geographic environment afforded me learning opportunities that are not normally accessible to me. For example, I am unable to physically attend conferences because of resource constraints but I can experience conference activities via backchannels on Twitter (Greenhow, Li & Mai, 2019; Kimmons & Veletsianos, 2016; Li & Greenhow, 2015).

Networked learning theory places high value on the principles of relationships, collaboration and dialog and social interaction (Hodgson & McConnell, 2019, p.45-46). Collaboration with others is perceived by educators in higher education as an important element of professional and academic development (MacPhail et al., 2018; Shagrir, 2017). Novice academics in particular have expressed the need for collaboration (Acker & Webber, 2017; O'Keeffe, 2016) In this study, collaboration emerged as one of the central benefits arising from my use of Twitter. Collaboration with others from my network has helped me develop my research profile

through publication and presentation of research papers which has helped me improve my capacity for research through the development of personal capabilities and autonomy (Deci & Ryan, 2000) while increasing my chances of external recognition, rewards and positive assessment (Deci & Ryan, 2012) and simultaneously addressing the emerging challenges of productivity, metrics and identity faced by young academics (Haddow & Hammarfelt, 2019).

McConnell, Hodgson, and Dirckinck-Holmfeld (2012) sees openness and the support for ongoing learning as central to networked learning. The openness of Twitter and my personal learning network provided persistent access to wide range of learning resources and activities which facilitated facilitating serendipitous and informal learning (Buchem, 2011; Kop, 2012; McPherson et al., 2015; O'Keeffe, 2018; Stewart, 2015, 2016; Tucker, 2019). Trust et al. (2017) describes this approach to professional development as 'moving beyond silos' (p.1) and found that it supports "anytime, anywhere availability of expansive PLNs" (p.1), with the "capacity to respond to educators' diverse interests and needs" (p.1) that fosters new learning experiences. This continuous support for learning was critical to my own development of competence (Ryan & Deci, 2000) as it allowed me to learn about issues and ideas from different contexts that I adopted to suit my local needs.

5.3 RQ3. What are challenges I experience when using Twitter for professional development and how do I manage these challenges?

Using Twitter posed several challenges similar to those reported in previous studies. These include: confrontation and risk of abuse (Ferguson & Wheat, 2015; O'Keeffe, 2018), time to participate (Hughes, 2018), poor understanding of context (Stewart, 2016), and low confidence (O'Keeffe, 2018). To address these challenges, I adopted deliberate strategies to reduce negative outcomes. These include a reduction in the informal use of Twitter in order to minimise the threat of abuse and confrontation reported by Ferguson and Wheat (2015). In addition, I spent more time lurking and being a legitimate peripheral participant (Lave & Wenger, 2001), which is a positive and active engagement strategy on Twitter (Honeychurch, Bozkurt, Singh & Koutropoulos, 2017). Further, my strategy to reduce informal use of Twitter helped with the reduction of possible tensions that may arise when the personal is not separated from the professional (Stewart, 2016; Veletsianos, 2013). To manage my time efficiently I engaged selectively by adding occasional responses when I had something substantial to contribute or highlighted and retweeted content, I felt may be useful to my PLN.

Selective posting as a deliberate strategy helped me to minimize the potential risk of abuse that may occur due to the permanence of tweets as reported by O’Keeffe (2016, 2018). Stewart (2016) found that the sharing of content was a common practice among scholars on Twitter and it helped to ‘build public identities’ (p.69). Simultaneously the sharing of content is a tangible demonstration of appreciation for the benefits received by academics on Twitter. This practice helps academics “cultivate publics” (p.72) which may further support the creation of value and opportunity for academics through network engagements (Stewart, 2016). Further, the adoption of ‘helpful behaviours’ was a noted strategy used by teachers to facilitate their development of e-learning capacity (Flavell, Harris, Price, Logan, & Peterson, 2019). The adoption of helpful behaviours was an integral part of my networked learning strategy and reflected a deliberate process of the ‘evaluation of the ongoing learning process’ (McConnell, Hodgson, & Dirckinck-Holmfeld (2012).

5.4 Summary of my experiences

As a novice academic the opportunity to network with academic others in my domain of interest is central to my developmental needs and perceived relatedness to satisfy my desire of feeling connected and associated to others. Twitter enabled me to create a “hybrid space” (Trede, Markauskaite, McEwen & Macfarlane, 2019). This hybrid space is one where different “ways of knowing, doing and relating in and through practice are intertwined and enmeshed” (Trede et al., 2019, p.19). This space has set me on path to developing “epistemic fluency” (Markauskaite & Goodyear, 2019, p.1) by providing different opportunities for learning and knowing about the world and my profession. These flexible opportunities for learning and engaging in an environment like Twitter are useful for professional development because “professional knowledge and skills extend beyond the individual human to their physical, technological and social environment” (Trede et al., 2019) and “learning to be a professional means learning to extend and entwine one’s knowledge and skills with ‘intelligence’ that is embedded and embodied in a distributed technology–human environment” (Trede et al., 2019, p.14). However, these opportunities for professional development are not without related challenges.

6. Conclusion

This autoethnographic study is one of the first offer a detailed account of Twitter’s use from the point of view of an individual academic. The findings from personal reflective narratives, social network and lexical analysis suggest that

my personal learning network supported my professional development by affording opportunities for learning through networking with others aided by the use of deliberate strategies. Ito et al. (2009) genre of participation would suggest I engaged less in casual activities related to “hanging out” and “messaging around”, and more with academic and professional pursuits or “geeking out”. However, it should be noted that this pattern of usage developed over time as I initially started Twitter for personal entertainment and got used to the habits of using it before purposely shifting to using it more professionally. This pattern of change in use over time and transition from informal use to more professional undertakings is affirmed by findings from Veletsianos, Johnson and Belikov (2019). Overall, this study demonstrated how the need for professional development motivated me to seek out opportunities using Twitter and that this professional development journey has taken several years which I believe is due to persistence and an open mind to learning (Bezuidenhout, Ratti, Warne & Beeler, 2019).

This paper’s potential contribution to scholarship and practice must be taken with care when generalizing its findings. As an autoethnographic study it is not intended to provide generalizable outcomes because relied on a single dataset gathered from memory, personal experiences, and the constraints of an externally managed platform which may raise questions about data quality. Further, this study is situated in the context of a novice academic with particular needs and challenges in a developing world university and therefore its findings should be interpreted with this context in mind. However, one observation from this study that may have external implication for practice relates to the emphasis of a deliberate strategies to manage Twitter to maximise professional development potential. This managed approach could help academics address some of the challenges they wrestle with as they negotiate “a multitude of personal, professional, sociocultural and sociopolitical factors” (Veletsianos, Johnson & Belikov, 2019) in their day-to-day Twitter use. And finally, the networked learning principles proved a useful lens to explore the use of Twitter for professional development. The principles were sufficiently abstract to capture the range of my experiences yet specific enough to offer theoretical accounts of them.

6.1 Future work

This study is one attempt at understanding in detail how Twitter is used for professional development by a novice academic. It noted differences of usage in the literature between groups such as PhD students and professors but also highlighted a paucity of research addressing novice

academics. Future studies could investigate novice academics as a group to generate more nuanced understandings of their use of Twitter

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Appendix A: Questions that guided my narrative writing

1. What is my general usage pattern of Twitter? – **RQ1**
2. What kinds of activities am I engaged in on Twitter? – **RQ1**
3. How has my usage patterns and attitude to twitter changed over time? – **RQ1**
4. What are the things of value I do to contribute and enhance the value of my network? – **RQ1**
5. How do I go about building my network? – **RQ1**
6. What are the things that will draw me to engagement and away from just being a lurking? – **RQ2**
7. What do I consider successful twitter experiences? What do I find most valuable? – **RQ2**
8. What do I consider challenges and difficult twitter experiences? – **RQ2**
9. How do I perceive my own contribution to twitter? – **RQ2**
10. What strategies do I use to overcome challenges and difficult experiences? – **RQ3**
11. Who do I follow and engage and what prompts and motivates me to engage, follow? – **RQ3**
12. How has my views of twitter changed? – **RQ2**