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Exploring the role of a Google Group in enabling lesson resource sharing in a South African geography teachers' professional learning community

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Abstract

This article presents the findings of the initial phase of an ongoing exploratory study that responds to a national imperative, to create teacher-initiated professional learning communities (PLCs), to improve the professionalism and capabilities of South African teachers. The overarching goal of the study is to understand how an emergent PLC in the form of an online Google Group for South African geography educators may enhance geography education and teacher professional development. The contributions made to the Southern African Geography Teachers Network Google Group over a six-month period were analysed and categorized according to themes and topics in the Grade 10, 11 and 12 Curriculum and Assessment Policy Statement (CAPS) curriculum. The findings, in shedding as they do, light on the curriculum sections receiving the most and least contributions, raise more questions than they provide answers. Areas requiring further research are identified. Our main contention is that the emergent PLC enabled through the Google Group offers exciting possibilities for teacher professional learning. As a bottom-up, online, easily accessible initiative, unrestricted by time or place constraints and with a growing membership, it may play an important role in enhancing the quality of teaching and learning in South African school geography.

Keywords: school geography, Google Groups, online virtual social networks, professional learning community, teacher support, teaching and learning resources, Southern African Geography Teachers Network.

Introduction

In 2009, the Southern African Geography Teachers Network, the first of its kind in geography education in South Africa, was created by a group of geography teachers for the purpose of sharing links to useful websites, documents, digital resources and making announcements. By February 2017, there were 974 members in this dynamic and expanding group. Online platforms, including, for example, Google Groups, made possible by digital and networked technologies, together with teacher associations and unions, have an important role to play in strengthening school geography and supporting teacher professional development. This article explores the role of the Southern African Geography Teachers Network, a bottom-up, teacher-driven initiative, in enabling a teacher professional learning community (PLC) in which teaching and learning may be enhanced through the sharing of information, resources and good practices (Wilmot, 2016). This is particularly important in South Africa where systemic underperformance is an overarching problem that is exacerbated by

> the quality of schooling is inequitably distributed, with the poorer 80% of the population generally receiving schooling of significantly inferior quality to that enjoyed by the most affluent 20%. The majority of South African children – from homes of the working class or unemployed and frequently child headed households- attend township or rural schools…
>
> On the other hand, children located in the rapidly deracialising middle class, attend schools (most in urban centres) formerly reserved for minority race groups, which generally produce educational achievement that is closer to the standards achieved in developed countries (NEEDU, 2015: 2).

School geography, the fifth most popular subject in the final three years of secondary schooling, is characterised by "unevenness and huge disparities in: the level at which learners are performing in relation to national curriculum standards; the teaching and learning methods used in classrooms; resources and learning support materials; teacher knowledge, and teacher resourcefulness" (Wilmot, 2016: 11). From our experience as teacher educators, we are aware of low teacher morale and confidence in many schools, particularly those catering for the poor. The persistent low learning outcomes in the national senior certificate provides evidence that suggests that quality geography education remains an elusive ideal for the majority of South African learners.

We acknowledge that many factors are contributing to and sustaining the poor quality of teaching and learning. However, a theme running through international and national literature is that the single most important factor influencing the quality of education is the quality of teachers (Organisation for Economic Cooperation and Development, 2013; NEEDU, 2015, Spaull, 2013a, 2013b; 2015; Centre for Development and Enterprise (CDE), 2017). Improving teacher capacity and professionalism is a strategic priority of the national Departments of Higher Education and Basic Education and it is being addressed in policy and action plans (DHET and DBE, 2011; DBE, 2015). The CAPS curriculum provides structured support for teachers telling them what topics to cover each week, how long to spend on a topic, with suggestions about how to teach and assess learning. The quality of teachers and teaching is addressed in the Integrated Strategic Planning Framework for Teacher Education and Development in South Africa, 20112025 [ISPFTED] which the DHET and DBE launched in 2011 (South Africa. DBE & DHET, 2011:1), and the Action Plan to

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2019: Towards the Realization of Schooling 2030 (DBE, 2015). The plan includes the introduction of a points-driven continuous teacher professional development model (CTPD) and a professional certificate which all teachers need to renew periodically. The plan also prioritizes the establishment of professional learning communities. This is discussed in the next section.

Professional Learning Communities

The international and national literature affirms the important role teacher professional learning communities play in enabling and supporting teacher professional development (Prawat, 1996; Wenger, 1998; Graven, 2004; Wilmot, 2009; Brodie, 2013; Chauraya, 2013; DBE, 2015). According to the DBE, professional learning communities are "groups of teachers formed by teachers themselves for the purpose of professional development" (DBE, 2015: 35). By its own admission, the DBE acknowledges that while these "…have yet to take off across a wide range of schools", mathematics education is leading the way in this regard (ibid.: 35). There is a view that for professional learning communities to be effective, they need to address the expressed needs of teachers, and not only their needs as discerned by school authorities (Duncan-Howell, 2010: 325). As a bottom-up, teacher-driven initiative that responds to the needs of teachers at the chalkface, the Southern African Geography Teachers Network Google Group may be viewed as an emergent professional learning community. Membership and participation are voluntary, with teachers communicating, sharing ideas and resources and good practices and seeking assistance to issues and problems they encounter. As a network of like-minded professionals intent on supporting, gaining insights and learning from their peers, this online emergent professional learning community has enormous potential for strengthening geography teaching and learning in schools.

The findings of research on how geography and history teachers made sense of and implemented curriculum policy and the model of teacher professional development which enabled them to become effective change agents, revealed a social learning and collaborative learning process (Wilmot, 2009). Teacher learning took place in a group situation similar to the sort that Prawat refers to as "a learning community" (1996: 107). According to Prawat collegiality involves honouring each teacher's contribution to the group and their connectedness to the community, and is developed out of commitment rather than control (1996: 108).

The authors concur with Wilmot and Dube (2015) who argue for PLCs or 'communities of practice' (CoP) providing a safe space in which teachers from schools of varying levels of functionality may collaborate and learn from one another. Research on a community of practice consisting of in-service mathematics teachers found that teacher morale and confidence was developed through the social learning process. The efficacy of a community of practice in enabling mathematics teachers' professional development was a finding of Chauraya's research (2013). The extent to which the Southern African Geography Teachers Network Google Group, as an emergent online professional learning community, may facilitate a more collaborative and collegial culture amongst geography teachers and build teacher confidence, needs to be researched.

Social learning in communities of practice is premised on there being opportunities for teachers to communicate with a group of peers (Wenger, 2002). For logistical and financial reasons, it is not always possible to communicate face to face. Online PLCs are

an efficient alternative. In England, Networked Learning Communities were established in 2002 for teacher educators, the ultimate goal being to enhance learning opportunities for learners (Katz & Earl, 2010). The Southern African Geography Teachers Network Google Group is the first online PLC to be established for geography teachers in South Africa. It is similar to an informal PLC described by Cranefield Pak Yoong (2009) in that participation is voluntary and personalised by the members who share and receive information according to their own pace and needs. Decisions on the content of the professional learning are guided by broad goals, usually set up by the communities' founding members and moderators who themselves are often veteran teachers. Informal PLCs are seen as reflecting a shift from the traditional unidirectional construction of knowledge and information to more interactive, user-friendly knowledge production and sharing (ibid.).

Analysis of the contributions made to the Southern African Geography Teachers Network Google Group

As part of our ongoing exploratory research on the emergent PLC created by the Southern African Geography Teachers Network Google Group, we counted and analysed the contributions posted by members for a six-month period, July to December 2016. A total of 444 posts were made during this period. These were sorted and posts advertising vacant teaching posts or requests for employment, and advertisements for services or goods for sale were set aside. The remainder (187 posts) were analysed and categorised according to themes and topics in the South African Curriculum and Assessment Policy Statement (CAPS) for Geography in the Further Education and Training (FET) phase of schooling (Grades 10 to 12) (DBE, 2011).

The Geography FET CAPS curriculum allocates four hours per week to the teaching of geography in Grade 10, 11 and 12 (ages 15-18). Important topics include: the Atmosphere; Geomorphology and Geology; Population; Water resources; Development; Resources and Sustainability; Settlement; Economic Geography, and Geographical Skills and Techniques (DBE, 2011).

According to the National Senior Certificate results of 2016, learner performance in all the above-mentioned sections is an ongoing concern. Learners' average marks per question (in a random sample of 100 learners per province expressed as a percentage) varied from 44% to 46% for the Atmosphere (Climate and Weather) and Geomorphology, to 45% to 57% for Rural and Urban Settlements and Economic Activities (DBE, 2016). Table 1 shows the number and percentage of posts in each category respectively and Figure 1 illustrates the percentage distribution.

Almost all of the posts contained links to online resources on the internet, sometimes accompanied by a statement to the effect of: "this is useful for….", and then naming some aspect of the curriculum. The number of contributions in descending order were as follows: the Atmosphere (55), followed by Geomorphology in second position (23), then Water Resources and Economic Geography equally in third position (19). Development, and Resources and Sustainability came next with 17 posts each, followed by Geographic Skills and GIS (15), then Settlement (12) and finally Population (10).

The high number of contributions on the Atmosphere topic is interesting and should be probed. To what extent could this be indicative of the need for additional teaching and learning resources, and strengthening teachers' discipline (content) and pedagogical content knowledge (how to

teach) the atmosphere and climatology more broadly? What, if anything, could it be telling us about teacher discomfort and confidence when teaching about the 'wicked' and contested problem of climate change? To what extent is the high number of posts due to the availability of content on topical issues? Similarly, it would be interesting to find out more about why Geographic Skills and GIS are relatively under-represented when the curriculum specifies that they should be integrated into all topics and practised throughout Southern African Geography Teachers Network Google Group Grade 10, 11 and 12.

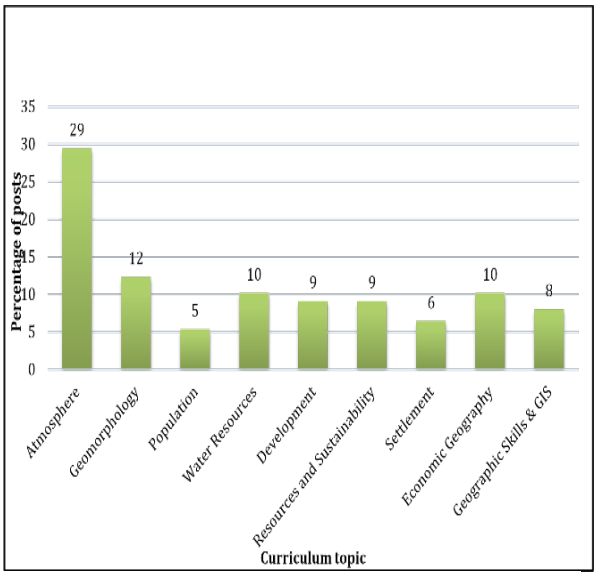

Figure 1: Percentage of posts to the Southern African Geography Teachers Network Google Group for the period July to December 2016

Despite the assertion that additional benefits of online communities include help with assessment, hints or techniques for the classroom, the sharing of lesson ideas, support being offered for classroom problems, and discussing changes in the classroom (Duncan-Howell, 2010), the number of posts that fitted these categories was low. This needs to be investigated by interacting with the members of the group through a survey or interviews. It also raises questions about enhancing the role of moderators in selecting content and steering the group in a particular direction.

Given that the goal of our research was exploratory, we have provided insights that are useful but limited. We have analysed the contributions made to the Southern African Geography Teachers Network google group in a six month period. Our findings have raised questions rather than providing answers. A key question that we need to investigate is: how does one assess the value and benefit of the postings and social network? Who is benefitting and how are they benefitting from this emergent professional learning community?

Table 1: Categorisation of posts on the Southern African Geography Teachers Network Google Group from July to December 2016 according to CAPS curriculum topics

CURRICULUM TOPIC	TOTAL POSTS	%
Atmosphere	55	29
Geomorphology	23	12
Population	10	5
Water Resources	19	10
Development	17	9
Resources and Sustainability	17	9
Settlement	12	6
Economic Geography	19	10
Geographic Skills and GIS	15	8
Total	**187**	**100**

The benefits and challenges of the emergent professional learning community

Judging the value and benefits of the PLC enabled by the Google Group has been a challenge that we have not been able to

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address in this initial and ongoing exploratory research. It requires engagement with the group members including those who contribute and those who do not, and followers (especially teachers) to elicit their views on how they think they are benefitting from the online group in terms of professional competence (discipline content, curriculum and pedagogical content knowledge) and affective-motivational characteristics (motivation, beliefs about teaching, identity and confidence) (Blömeke & Delaney, 2012). We also need to explore the extent to which the Google Group may be helping to reduce feelings of disconnectedness, isolation and aloneness, which PLCs are seen to do (Duncan Howell, 2010).

Informal online PLCs offer an alternative to the exclusivity of formal professionalised preservice and in-service teacher development (Sui, Goodchild, & Elwood, 2013). An online PLC is not constrained by time. This flexibility is an advantage because it enables members to work at their own pace between periods of high and low school activity over longer periods of time (Duncan-Howell, 2010, p. 326). Teachers may find this appealing because it allows them to juggle their work and personal commitments. Secondly, teachers may also be largely inactive contributors, but active followers. It is left up to the teachers to make their own meaning of the contributions. Booth asserts that online learning communities are not just databases of resources – they are groups of people who come together in an online space to learn, interact, build relationships and develop a sense of belonging and mutual commitment (2013, p.4). The knowledge or resource is shared because it is seen as being useful to recipients. A professional learning community is held together by a common cause and the need to produce and share knowledge aimed at solving specific issues because it knows and understands the needs of its practitioner members (Wenger, 2002).

Thirdly, an online PLC enables a smooth and free flow of ideas over space and time. Social network sites are increasingly influential in education (Ranieri, Manca, & Fini, 2012). We concur with Booth (2012) who argues that effective educators need access to content, resources, data, information, and the expertise of peers, all of which an online professional network of learning community can provide. The Mobile Africa 2015 study, which surveyed five of Africa's major mobile phone markets, namely South Africa, Nigeria, Kenya, Ghana and Uganda, found that Internet browsing via phones now stands at 40 per cent across these markets. South Africa leads in-app downloads (GSMA 2015). From our experience as teacher educators, we are aware of an upward trend in the number of teachers accessing the internet via mobile phones. The increasing use of mobile phones, tablets and other electronic devices has improved access and connectivity to the internet for teachers in rural as well as urban schooling contexts. This is significant in South Africa where the schooling system is characterised by huge inequality.

In 2016, there were 12,9 million learners in ordinary schools. 12,3 million (95%) were enrolled in 23 719 public schools, taught by 381 394 educators. In the same year, 590 352 were enrolled in 1 855 independent schools, taught by 37 219 educators (DBE, 2016). The extent to which the Southern African Geography Teachers Network Google Group attracts members from diverse schooling contexts should be explored. The school terms of some independent schools differ from those of public schools as does the organisation and sequencing of curriculum coverage. The relevance and usefulness of posts for teachers need to be explored as do ways of archiving resources online.

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For an online PLC to flourish, reliable internet access and connectivity is needed. Irregular and unreliable connectivity militates against active and regular participation. The need to provide teachers with greater access to and develop their capacity for using digital resources is a strategic priority of the DBE (2015). The DBE acknowledges that the process has not been without problems and is committed to resolving these. The draft Master Teacher Development Plan (DBE, 2017: 7) describes how a Professional Development Framework for Digital Learning will be rolled out to improve teacher capacity to integrate ICT into teaching and learning. These state-driven initiatives will improve connectivity and access for teachers in the majority of South African schools. This augurs well for expanding the membership and enhancing the levels of participation for the Southern African Geography Teachers Network Google Group.

An increase in the availability of resources that can be shared online raises the issue of quality in terms of the trustworthiness, accuracy and credibility of the content of posts and moderation decisions. Booth identifies another challenge, namely how to foster and sustain knowledge sharing to ensure that an online community will thrive (2012: 2). Moderator time constraints, commitment to other work responsibilities, and even fatigue may undermine the effectiveness of the community (ibid.). The extent to which these and other challenges are being encountered and how they are being addressed by the Southern African Geography Teachers Network Google Group is another future research opportunity.

As the world becomes more digitally connected, the power of online PLCs can be leveraged to grow staff professionally and improve the education of their students, whilst still providing a 'safe space' where "through deliberative and supportive conversations the teachers can critically reflect and challenge one another…" (Feldman & Fataar, 2014: 1537). While online PLCs have great potential to provide ongoing professional development for teachers, Brodie (2013) argues for learning to be professional and based on data from teachers' own classrooms. Additionally, an important component is facilitators who have appropriate skills and knowledge to design and implement activities for teachers and manage the process. Participation in these communities should be with the intention of accelerating, deepening and adding value to education (Norrish et al., 2013: 8). Many veteran teachers know instinctively what is required for good teaching in the classroom. By interacting in an online PLC, novice teachers can benefit from the experience and support of older teachers, and conversely, older teachers can also learn from the enthusiasm of new teachers in these networks.

Conclusion

This article presents the findings of the initial phase of an ongoing exploratory study. The larger project responds to a national imperative to create teacher-initiated professional development activities, in particular professional learning communities. The overarching goal of the study is to understand how an emergent PLC in the form of an online google group for South African geography educators may enhance school geography and teacher professional development. This article has described an online initiative that is aligned with the PLCs advocated by policy. It has analysed the contributions made to the Google Group over a six month period. This has shed light on the curriculum sections receiving the most and least contributions. The exploratory research has raised more questions than it has provided answers and

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has pointed to further research agendas. Our main contention is that the emergent PLC enabled through the Google Group offers exciting possibilities for teacher professional learning. As a bottom-up, online, easily accessible initiative, unrestricted by time or place constraints and with a growing membership, it could play an important role in enhancing the quality of teaching and learning in South African school geography.

Postscript

Within months of writing this article, in late December 2019, reports emerged of a novel coronavirus outbreak in Wuhan, China. Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) was confirmed as the causative agent of Coronavirus Disease 2019 or COVID-19, a disease that spread rapidly and took the world by storm. On 11 March 2020, the World Health Organisation declared COVID-19 a pandemic. On 28 March, a few weeks after the first case of COVID-19 was reported, South Africa went into a total lockdown. Little did we realise then how much our worlds would change.

This postscript discusses the impact of COVID-19 on the geography teachers' Google Group, which we argued was enabling the emergence of a Professional Learning Community (PLC). We analyse the content of the posts on the Google Group and the volume of posts during the period of COVID-19 emergence and escalation in the first half of 2020.

Schools were closed from 26 March until 8 June when a phased approach to the return of learners to school began with Grade 7 and 12 returning on 8 June; Grades R, 6 and 11 on 6 July and the remaining Grades in August. It was a period of ongoing disruptions to teaching and learning with schools reopening and closing due to infrastructure (inadequate provision of water and sanitation) and the inability of schools to comply with COVID-19 protocols. It was exacerbated by some 10 000 of the 400 000 state-employed teachers applying for co-morbidity concessions and being given permission to work from home (Motshekga, 2020).

A shift to remote and online teaching and learning was rap.0id and abrupt with many challenges. These were exacerbated by South Africa's unequal societal and schooling system. Despite the DBE's rollout of laptops to teachers, not all teachers have received laptops and teacher capacity for using digital resources is uneven. The pandemic, more than anything before, has illuminated the digital divide that exists in South Africa. No-fee paying public schools (quintile 1, 2 and 3 schools) catering for children from vulnerable and disadvantaged communities have been the most affected by a lack of access to technological resources (laptops, smartphones) and internet connectivity, and support and skills capacitation. Similar challenges, albeit to a lesser extent, were faced in fee-paying schools. A teacher and parent (who did not wish to be named) with children in a well-resourced public school explained that the school relied heavily on WhatsApp as the main form of communication with learners and parents. The school has internet access and managed to allocate login details for each learner to Google Classrooms. This space was going to be used for live lessons and interactions, as well as posting assignments and the grading thereof. This, however, never materialized due to learners neither having access to the internet, nor access to ICT devices at home.

The Department of Basic Education implemented several interventions to mitigate disruptions to learning caused by the pandemic. Different platforms including radio, television and zero-rated online sites that provided access without data costs were used to provide access to content and

learning support materials. Despite these efforts, COVID-19 illuminated the digital divide in South African schools and the need for a faster roll-out of ICTs and teacher capacity development (Motshekga, 2020). From our experience with rural student teachers and teachers enrolled in teacher education programmes at our institutions, we are acutely aware of their sense of feeling overwhelmed, fear and frustration associated with poor connectivity because of their geographical location.

The unprecedented need to shift rapidly to remote and online teaching and learning due to COVID-19 prevention strategies prompted us to look at how this impacted the emergent PLC which we argued the geography teachers' Google Group was enabling. To what extent and for what purposes did the emergent PLC use the Google Group during the initial stages of the 2020 lockdown? How did the pandemic affect the level of participation in the Google Group? We made the assumptions that (1) the level of participation in the google group would be higher than in a similar pre-COVID period and (2) the posts would be focused on requesting support with remote and online teaching and learning and assessment, and sharing innovative practices.

To address these questions, we analysed the number of posts on the Google Group during the thirty-five-day period from 26 March to 1 May. This period coincided with the COVID-19 prevention lockdown period which extended from 26 March to 1 May in 2020. We examined the same period in the four preceding years (2017 being the inception year of the Google Group). The findings are summarised in Table 2.

The data shows that the number of posts increased during the lockdown when compared to the previous two years. It suggests a renewed interest in the Google Group and one may infer that this may have been sparked by the anxiety of shifting teaching and learning to remote and online modalities.

Table 2: Number of posts for the 26 March to 30 April period 2017 – 2020

Year	Number of posts 26 March to 30 April
2017	41
2018	26
2019	26
2020	36

Thirteen of the 36 posts were related to remote and online teaching, eight of which were related to geography content knowledge about the pandemic and five to online pedagogy.

During the following three months (May, June and July), the number of posts was: 24, 29 and 22 respectively. Of these seven, six and three were linked to the pandemic.

While there is some evidence that the pandemic stimulated participation on the Google Group, the level of participation was less than what we had assumed. Furthermore, the sharing of innovative ideas and practices for remote and online learning was less than we had expected.

We have provided a glimpse of what happened on the Google Group during the thirty-five-day lockdown in 2020. There is evidence of the Google Group being used to support its users, however, we contend that data gathered over a longer period needs to be analysed before any conclusions are drawn about the efficacy of the Google Group in enabling and strengthening the emergent PLC in a time of crisis.

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Open data

The corresponding author may be contacted to request data used in this research.

Ethics

Data for this research paper was collected from the Southern African Geography Teachers Network Google Group. The posts which were contributed were analysed anonymously - no contributors or institutions were identified hence no ethical clearance was required by the institution.

Conflict of interest declaration

The authors have no conflict of interest to declare.

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