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## Enhancing the effectiveness of teacher learning communities through WhatsApp group-chat technology: Accounting teachers' voices

Sylvester E. Odoro , Jabulisile C. Ngwenya  and Thamsanqa Thulani Bhengu 

School of Education, College of Humanities, University of KwaZulu-Natal, Pinetown, South Africa  
ngwenyaj@ukzn.ac.za

Engagements in teacher learning communities (TLCs) in South African school settings have been predominantly face-to-face. However, with the onset of the COVID-19 pandemic, some rural teachers began resorting more to collaboration that prioritises the use of 21st-century communication technology. In this article we report the findings of a qualitative case study, located within an interpretive paradigm in which we explored how a group of rural accounting teachers harnessed WhatsApp messaging technology to enhance the effectiveness of TLCs. The study was underpinned by both the community of practice theory and the generative theory of rurality. Data were sourced through semi-structured individual telephonic and WhatsApp-based focus-group discussions from 15 purposively and conveniently sampled participants. Thematic analysis of the data revealed the teachers' ability to engage in an undisrupted collaboration in times of crisis and an improved culture of sharing and support for effective teaching and learning. The results reveal the existence of inadequate communication infrastructure in the study context, which compromised the effective implementation of TLCs. These findings also highlight the need to prioritise providing communication infrastructure to assist rural teachers in taking full advantage of modern communication technologies for collaboration in virtual space.

**Keywords:** accounting teachers; community of practice; rural context; teacher learning communities; teacher professional learning; WhatsApp-based group chat

### Introduction

As the South African basic education system continues to be rationalised to mitigate the impact of the segregated education system produced by apartheid, the formation of teacher learning communities (TLCs) has become an essential component of the schooling system (Trust & Horrocks, 2017). In this study we use the term "teacher learning communities" (TLC) to refer to teachers as professionals within a learning community. Given that "professional learning communities" (PLCs) is a widely used term in the literature, we use these two terms interchangeably. PLCs have been credited with enhancing teaching and learning opportunities for both teachers and learners (Hairon & Tan, 2017; Trust & Horrocks, 2017). This is so because PLCs promote an environment of collaborative learning among teachers (Hairon & Tan, 2017). However, rural contexts in South Africa present difficulties in terms of communication as schools are usually located far apart and infrastructure is lacking (Motshekga, 2020). The advent of the coronavirus disease (COVID-19) pandemic in South Africa in 2020 forced many organisations, including schools, to reimagine ways of conducting business and introducing innovative new ones (Dube, 2020; Kwatubana & Molaodi, 2021). Improving the work of PLCs in rural contexts could not be left behind in this regard. Therefore, as much as these learning communities have been predominantly occurring through face-to-face engagements, it is argued that teacher accessibility to the internet has created opportunities for teachers to modernise their face-to-face community engagements in the virtual realm (Trust & Horrocks, 2017). This enables teachers to connect with colleagues in different locations at any time in pursuit of an enhanced teaching practice that improves classroom outcomes. Given that teachers in remote areas battle to participate fully in face-to-face learning community engagements, teacher engagement in the virtual realm appears to have become an additional avenue through which rural teachers can conveniently engage with others on a common platform (Maher & Prescott, 2017).

In this article we tackle one aspect that emerged in the analysis of the data of a bigger study that sought to understand how accounting professional learning teachers operated within the context of rurality in the KwaZulu-Natal province, South Africa. While the study was conceptualised and designed before the outbreak of COVID-19 in South Africa, fieldwork started at the height of the pandemic. With the onset of the COVID-19 pandemic, which had a negative effect on traditional face-to-face TLCs in South Africa, rural accounting teachers had to rely largely on WhatsApp group-chat technology to regularly congregate virtually for the purpose of teacher collaborative engagement. Virtual platforms such as Zoom, Microsoft Teams, WhatsApp and others assisted in two ways. Firstly, COVID-19 regulations prohibited face-to-face meetings and these platforms became the only alternative means for teachers to communicate, facilitate classes and hold meetings (Yu & Chao, 2023). Secondly, many schools in rural communities had already faced communication challenges posed by distance, transport availability and related costs. Therefore, although this technology was known to be helpful, little is known in terms of its contribution to effective teacher collaboration for rural teachers, particularly in the context of rural South Africa. The question that guided the research is: How do rural accounting teachers harness WhatsApp group-chat technology to enhance the effectiveness of TLC programmes?

### Statement of the Problem

We have indicated that this study predated COVID-19 and that the challenges that rural communities and rural schools faced were exacerbated by the advent of this pandemic (De Falco, 2020; Dube, 2020). Scholarship in South Africa (Balfour, Mitchell & Moletsane, 2008; Hlalele, 2012; Maniram, 2023) regarding conditions in rural communities suggests a lack of many amenities and infrastructure, including electricity supply and communication networks. The sparse population in rural areas makes communicating and engaging in collaborative learning even more difficult. Accounting TLCs theoretically face these challenges. Therefore, this article contributes in terms of eliciting insights into how accounting teachers managed, through WhatsApp communication, to keep collaboration alive and effective while facing contextual factors posed by rural conditions and COVID-19 simultaneously.

In the next section we provide a review of the literature on TLCs, rurality and TLCs, as well as the virtual space learning environment. The theoretical framework discussion, methodology, presentation of findings and discussion of findings follow, closing with a conclusion.

### Teachers' Learning Communities

Various scholars across the globe in the field of teacher education and development have associated TLCs with teacher capacity-building and positive learners' achievement that contribute to school improvement (Bantwini, 2019; Chen & Neo, 2019; Darling-Hammond, 2017; Maher & Prescott, 2017; Postholm, 2012; Steyn, 2013). In this respect, the view of these scholars is that TLC programmes involve a clustering of teachers, a teacher network, cooperative learning and teacher collaboration. It is argued that in such engagements, a group of teachers work together to collaboratively and critically reflect on or inquire into their own practice with the focus on enhancing learning for positive learner achievement (Philpott & Oates, 2017; Rahman, 2020; Skerrett, 2010). In this regard, TLC initiatives are seen as teacher-led and aimed at scaling up school improvement through lateral capacity-building among teachers (Zulu & Mukeredzi, 2021).

Through lateral capacity-building, teachers from different schools can connect with one another and exchange ideas and practices that advance their teaching practice and learning outcomes (Mansfield & Thompson, 2017). From a general education point of view, the act of teachers connecting through TLCs does not only contribute to their professional development, but also to the smooth implementation of reforms in the school curriculum (Bantwini, 2019). In the context of the teaching and learning of accounting, some scholars

have also contributed to the debate on the importance of TLC programmes (Mansfield & Thompson, 2017; Stephenson, 2017; Zulu & Mukeredzi, 2021). With accounting being regarded as the lingua franca of business, the curriculum continues to undergo reforms in compliance with the dictates of the global business community (Mansfield & Thompson, 2017). These reforms present difficulties about the content of the subject and how it is taught (Buckhaults & Fisher, 2011). It is within this context that the notion of teacher networks or collaborations that empower accounting teachers to effectively manage the teaching and learning of the accounting curriculum becomes essential. Some accounting academics share a view that when teachers connect with one another through TLCs, opportunities are created for the communal sharing of ideas and experiences that capacitate teachers in discovering, creating and negotiating new meaning and experiences (Lucas, 2011; Stephenson, 2017). This not only improves the classroom practice of accounting teachers but also enables accounting learners to perform better (Stephenson, 2017). In developed economies like Australia, New Zealand and the United States of America (USA), members of the accountancy fraternity recognise learning communities, teacher networks and teacher collaboration as platforms for developing accounting teachers' professional skills and competence (Lucas, 2011; Stephenson, 2017).

In the context of South Africa, reforms in the school curriculum, including that of the accounting curriculum, have led to the implementation of the policy, the Integrated Strategic Planning Framework for Teacher Education and Development in South Africa (ISPFTED) (Department of Basic Education [DBE], Republic of South Africa [RSA], 2015). This policy emphasises the need to expand teacher education and development opportunities by establishing TLCs to improve the quality of teaching and learning in South Africa. In much of the broad education literature, and literature on accounting education in particular, scholars express the view that through teacher participation in learning communities, teacher quality is nurtured for effective teaching and learning, which ultimately results in improved learning outcomes (Baloche & Brody, 2017; Bantwini, 2019; Mansfield & Thompson, 2017; Schleicher, 2018).

In a nutshell, one of the benefits of TLCs is the continuing development of the knowledge of teachers who drive the task of teaching (Organisation for Economic Co-operation & Development [OECD], 2009; Schleicher, 2018). Improved teacher knowledge helps induce teacher transformation, which subsequently leads to a positive shift in teacher practice in the classroom (Mansfield & Thompson, 2017; Steyn, 2013; Tam, 2015). In addition, teacher participation in learning

communities contributes to their understanding of ongoing reform programmes in education as they can work in collaborative cultures that enable the critical and creative thinking and problem-solving skills required by reforms in education (Baloche & Brody, 2017; Hargreaves & Fullan, 2012). Furthermore, the act of teachers connecting in learning communities is known to build leadership traits in teachers since the activities of TLCs tend to bind members of the school community together as they seek additional challenges and growth opportunities (Cosenza, 2015; Tam, 2015). In the South African context, it is argued that nurturing leadership traits among teachers contributes to them developing coping and adaptation mechanisms during a period of change in deprived contexts (Bhengu & Myende, 2016). This assertion demonstrates how rural accounting teachers involved in TLC programmes are likely to possess leadership traits that could facilitate the effective teaching and learning of their subject. Teachers' ability to contribute to school improvement strategies has also been associated with their participation in learning community engagements.

#### *Rurality and teachers' learning communities*

In South Africa, a context deemed to be rural is largely shrouded in negativity associated with social ills such as poverty, deprivation, being under-resourced, a slow pace of growth, as well as a lack of clean water supply and internet connectivity (Bhengu & Svosve, 2019; Myende & Chikoko, 2014). Research shows that schools in rural communities of South Africa grapple with limited teaching and learning resources, a shortage of qualified teachers, poor infrastructure and the legacy of apartheid (De Jager, Coetzee, Maulana, Helms-Lorenz & Van de Grift, 2017; Du Plessis & Mestry, 2019). This characterisation of rurality in South Africa is not very different from what has been noted elsewhere in developing economies. In other African economies like Ghana and Zambia, rural communities are also noted to be communities to which it is difficult to attract qualified teachers and where a resource gap exists between such communities and their urban counterparts, a phenomenon that compromises effective teaching and learning (Burger, 2011). Similarly, in developing economies like China, inequality in educational opportunities has been noted due to the gap that exists in the provision of physical and human resources between urban and rural communities (Liu & Hallinger, 2018; Stelmach, 2011; Tan, 2012). Some of the conditions expressed above also exist in developed countries. For example, in Australia and the USA, rural or remote communities are mostly isolated or disconnected due to distance and are sometimes subjected to a below-average share of highly trained teachers (McCluskey, Sim & Johnson,

2011; Mukeredzi, 2013; Schafft, 2016). The above scenarios illustrate the depth of the challenges confronting schools in rural communities, particularly in developing economies like South Africa.

Having described rural areas as we have, we should also highlight certain positive aspects: some scholars argue that rurality presents an opportunity for teachers, including accounting teachers, who share similar experiences and problems with networking with one another for effective teaching and learning (Azano, Brenner, Downey, Eppley & Schulte, 2021). While the situation described above depicts a situation in the USA, a developed country, similar views are expressed about South Africa (see, Balfour et al., 2008; Hlalele, 2012). The above assertion can perhaps be aligned with the notion that rural communities are known to possess strong social structures and a socio-cultural environment where togetherness and the value of community are cherished (Schafft, 2016). It is within this understanding that teachers in rural communities with diverse challenges stand to benefit if they collaborate and connect with one another as a community of practice to share their experiences. The literature underscores what constitutes TLCs and the challenging conditions of rurality to justify the need for rural teacher participation in learning community engagements. Therefore, the challenging conditions in rural communities suggest that there can be or should be another way that can be used to enhance accounting teacher collaboration and communication. This discussion lends itself to exploring the feasibility of virtual learning as a viable alternative.

#### *The virtual space learning environment*

Traditionally, teachers connect with one another in learning communities through face-to-face meetings. However, recently, scholars have increasingly been looking into teachers' ability to engage, collaborate or network through technology (Hilli, 2020). Academics describe this as an extension of the classroom situation through teacher networking or collaboration (Annetta, Folta & Klesath, 2010; Hilli, 2020). These scholars argue that teachers are now able to interact, communicate, connect or collaborate in a digital learning environment. In learning environments in virtual space, teachers rely on using computer-based technologies such as video conferencing and social media to connect with other teachers (Annetta et al., 2010). Studies from countries such as the United Kingdom (UK), Finland, China and Australia have documented the use of video conferencing, professional learning based on Twitter (now X) as well as WeChat as a means of sharing educational information that advances teaching and learning (Goodyear, Parker & Casey,

2019; Hilli, 2020; Maher & Prescott, 2017; Qi & Wang, 2018).

Even though one would assume that the culture of connecting with one another through technology would be common among urban teachers, research shows that rural or remote teachers are also tapping into this area of teacher collaboration. In Australia and Finland, video conferencing and other forms of technology are being used by teachers in rural communities to connect with one another. In this way they participate in learning communities and share teaching experiences through modern communication technologies (Hilli, 2020; Maher & Prescott, 2017). Similarly, in the developing economy of Zambia, there has been a refinement of learning community initiatives in the form of integrated use of mobile devices, digital open education resources and interactive pedagogy as a means of bringing teachers in both urban and rural environments together to share best teaching practices (Hennessy, Haßler & Hofmann, 2015). This means that urban and rural-based teachers may no longer be compelled to congregate physically at a chosen venue to engage in professional learning activities. In this article we explore how rural accounting teachers who participated in this study used modern communication technologies to advance their teaching practice.

#### Theoretical Framework

This article draws on two theories: the generative theory of rurality (Balfour et al., 2008) and the community of practice (CoP) theory (Lave & Wenger, 1991; Wenger, 1998) as a theoretical framework to analyse and understand the practices of teachers connecting with one another in learning communities.

##### *The generative theory of rurality*

Balfour et al. (2008) theorise that challenges that confront rural communities in relation to teacher education and curriculum implementation require the vigorous participation or activism of rural people, including teachers. In other words, what the generative theory of rurality emphasises is the ability of people in rural communities, including teachers, to act as agents in transforming their own environment using the available resources. Contributing to this discussion, Du Plessis and Mestry (2019) argue that rurality involves more than the common negative perception that labels a rural context and its people as passive, ignorant or always needing help. However, we argue that a rural area should also be seen as a context capable of changing behaviour. According to Du Plessis and Mestry (2019), this attribute enables teachers in rural communities to embark on collaborative ventures that advance improved teaching practice

and learning outcomes. The appropriateness of applying this theory in this article is demonstrated in rural collaborative engagements in learning community programmes aimed at finding effective ways of improving teaching and learning of accounting.

##### *The community of practice theory*

Proponents of the CoP theory assert that professionals' engagement in social practice or relationship is the fundamental process by which people or teachers learn (Lave & Wenger, 1991). A CoP is further described as a group of professionals or teachers who learn together and support one another towards a shared concern or passion with the aim of doing it better as they engage on a regular basis (Lave & Wenger, 1991; Wenger, 1998). As professionals connect, engage or collaborate, an opportunity is created to share work-related experiences, practices which enable novice professionals to learn from experienced ones and in the process, bridge the knowledge gap that often exists among professionals. This collaboration among professionals can either take place through face-to-face engagement or through what has been described as virtual communities of practice, where participants build networks through technologies like video conferencing and other online engagements that go beyond face-to-face contacts (Goodyear et al., 2019; Hilli, 2020; Maher & Prescott, 2017).

The CoP theory is premised on four interrelated dimensions, namely practice, community, meaning and identity (Farnsworth, Kleantous & Wenger-Trayner, 2016). According to Wenger (1998), practice is about humans' engagement in activities that contribute to their physical survival or collective engagements in professional activities that enable people do what they do better (Wenger, 1998). "Community" as a concept is associated with humans' attachment to a family unit that has its own practices, belief systems, routines and histories. This also applies to a group of workers such as teachers who organise their lives with their immediate colleagues for engagement in collaborative ventures to enable them to get their jobs done. Within the context of practice and community is the notion of mutual engagement, which revolves around collective engagements that focus on doing things together through building a working relationship or connecting participants (Wenger, 1998). Furthermore, people work together towards a shared objective (joint enterprise) and in the process create a pool of resources (shared repertoire) that members of the community can tap into. Through people's constant engagements (practice) a community emerges and through

learning in a community people can become who they want to be (create meaning). The tail end of the above process is the acquisition of experiences that enable members of a community to express who they are (identity). Notwithstanding the positive aspect of the CoP theory, such as accelerating professional development, some scholars associate it with time demand constraints. In this respect, it is argued that limitedness of time in engaging in CoP activities can impact its effectiveness to a certain extent (Webber, 2016).

### Methodology

In this study we employed a qualitative research approach, underpinned by an interpretive paradigm which enabled us to explore and gain an in-depth understanding of the phenomenon through the meanings that people assign to it based on their subjective experiences within the study context (Bryman, 2012; Creswell, 2014; Merriam & Tisdell, 2016). In view of this, data were extracted from a qualitative case study of 15 Grade 12 rural accounting teachers who were sampled using both purposive and convenience sampling techniques. Purposive sampling entails the researcher selecting individuals who are knowledgeable and informed about the phenomenon (Gentles, Charles, Ploeg & McKibbin, 2015). Cohen, Manion and Morrison (2018) describe purposive sampling as characterised by the researcher handpicking cases to be included in the sample based on the judgement of their typicality or possession of particular characteristic(s) being sought. In the context of this study, purposive sampling was used to identify those schools where accounting was offered at Grade 12 level – a total of 86 schools in the iLembe district. Then convenience sampling was used to identify schools that were easily accessible. In convenience sampling, the researcher targets a research population based on criteria such as geographical proximity, easy accessibility, availability at given times and a willingness to participate in the study (Etikan, Musa & Alkassin, 2016). Our view was that 15 schools should be sufficient and one Grade 12 accounting teacher would be recruited from each school with the principal's assistance. Given the great distance between the rural communities and schools, we thought that schools that were closer to one another could be used as a cluster from which a focus group of five accounting teachers could be formed.

Yin (2018:16) describes a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context.” Given that our study was conducted at a time when the COVID-19 pandemic was at its peak, we employed telephonic, semi-structured interviews as the main source of generating the needed qualitative data. One question posed to the

accounting teachers was about how they shared information as a TLC in the context of rurality. Semi-structured interviews were followed by three WhatsApp-based focus-group discussions (FGDs). As indicated previously, the 15 accounting teachers were individually interviewed telephonically, after which they were put into three different groups for the purpose of the WhatsApp-based FGDs. The constitution of these FGDs was based on the schools' proximity to one another.

The data obtained from the semi-structured interviews and FGDs were analysed using thematic analysis (Braun & Clarke, 2006). During the interviews and FGDs our conversations were recorded on Zoom; permission to do this was solicited from the participants as advised by various scholars (Bless, Higson-Smith & Sithole, 2013; Cohen et al., 2018; Greeff, 2011; Okeke & Van Wyk, 2015). Digitally recorded interviews and FGDs (using Zoom or Teams inbuilt software) were then transcribed into a Microsoft Word format before analysis could start. Thematic analysis was used, and that process started with the transcripts being read repeatedly in order to get acquainted with the content of the transcribed data (Braun & Clarke, 2006). Various themes were developed through the process of open coding and categories were established, reviewed and clustered into specific themes. The findings were presented according to the various themes that emerged from the analysis. The participants were requested to verify that the transcribed data represented what had been said in the interviews, serving as member checking and adding to credibility and trustworthiness (Merriam & Tisdell, 2016).

We conformed to the strict ethical procedures prescribed by the Human and Social Sciences Research Ethics Committee of the university at which we were based. Gatekeeper permission was sought and received from the provincial DBE. All participants were informed about the nature of their involvement in the study and assured of confidentiality, anonymity and voluntary participation. The informed consent forms were distributed electronically, when we started the Zoom conversations, we emphasised issues of voluntary participation, confidentiality and anonymity. For instance, names used in this article are pseudonyms. All ethical protocols were adhered to throughout the duration of the study.

### Findings of the Study

With this study we aimed to explore and gain an in-depth understanding of how rural accounting teachers harnessed technology to enhance the effectiveness of TLCs or teacher collaboration. Analysis of the conversations with rural accounting teachers through telephonic, semi-structured interviews and WhatsApp-based FGDs revealed three broad themes: (a) undisrupted teacher

collaboration in times of crisis; (b) an improved culture of sharing and support for effective teaching and learning; and (c) inadequate communication infrastructure. These are discussed below.

#### Undisrupted Teacher Collaboration in Times of Crisis

In both the semi-structured and the WhatsApp-based focused group interviews, it emerged that the participants were able to navigate the challenges presented by the COVID-19 pandemic. In this regard, even though the participants could not engage in their usual face-to-face collaboration, they improvised by connecting with one another through the WhatsApp-based messaging technology. One participant suggested that the teachers' awareness of changes in technology has become an encouraging factor for them to have uninterrupted collaboration:

*Since the world is moving to the fourth industrial revolution, we have also been making use of social media to collaborate. For example, through WhatsApp messaging technology, we make use of chat groups so that we are able to connect with one another for the purpose of collaboration. (Mr Mthethwa from KwaMthethwa Secondary School)*

A participant from another school shared similar views, highlighting that, through WhatsApp messaging technology, they were able to share educational information that advanced their teaching practice: *“Our WhatsApp groups enable other teachers [to] ask any questions of concern and sometimes if I also know the answer to a question, I can support others”* (Mrs Gamede from St Mary's Secondary School).

During the WhatsApp-based FGDs, the collective view of the participants confirmed how the WhatsApp messaging application has brought teachers together on a common platform, enabling uninterrupted teacher collaboration at the peak of the COVID-19 pandemic. One of the groups described how WhatsApp technology and other communication technologies were likely to become a new norm for teacher collaboration.

*The WhatsApp technology, Microsoft Teams and Zoom are soon to be the new norm of virtual teaching and learning. These technologies bridge the gap between a teacher and other colleagues. The technologies have even become more relevant given the challenges posed by the COVID-19 pandemic. (Member of Focus Group 3)*

The above and many similar views articulated by the participants in the semi-structured interviews and the FGDs indicate that the participants could connect and collaborate during the peak of the COVID-19 global pandemic. The second theme suggests that WhatsApp chat groups helped improve the culture of sharing and support for effective teaching and learning. This is discussed below.

#### An Improved Culture of Sharing and Support for Effective Teaching and Learning

The dominant view that emerged from the individual interviews is that the participants witnessed an improved culture of sharing and support. This is in addition to an uninterrupted teacher collaboration experienced during times of crisis. One participant shared as follows: *“I have been part of online engagements where we as teachers make use of the WhatsApp messaging technology to support and share information relating to our practice”* (Ms Dlamini, from the Christian Academy).

Similarly, another common view articulated by the participants during the WhatsApp-based FGDs suggests an improved culture of sharing and support among rural accounting teachers. Participants in Focus Group 1 highlighted how WhatsApp technology had become useful in sharing information that facilitated teaching and learning, in particular during the COVID-19 crisis. A member of the group expressed the following view: *“In the rural context, WhatsApp has become an excellent medium for information sharing among teachers. The Department of Basic Education officials also use this medium to quickly share important information that supports the teaching and learning of accounting”* (Member of Focus Group 1).

The above view further reveals how supportive WhatsApp technology, in particular, had become in facilitating learning community programmes or teaching and learning in a rural context during the challenging times of the COVID-19 pandemic. Participants in Focus Group 2 said that they had been capacitated in terms of the methodology of teaching accounting through WhatsApp technology: *“The WhatsApp technology has been useful for information sharing particularly on methodologies applied in teaching each topic in accounting”* (Member of Focus Group 2).

The participants in Focus Group 3 shared a view that suggests that, in addition to WhatsApp technology, they were getting support from communication technologies such as Microsoft Teams. This view confirms how supportive technology has become in the study context during trying times like the COVID-19 pandemic: *“Most teachers also seem to be successful in making use of Microsoft Teams to connect with other colleagues for the purpose of teacher collaboration”* (Member of Focus Group 3).

The above findings highlight the fact that the participants could easily connect or collaborate in learning communities and also witnessed an improved culture of sharing and support. Nevertheless, the data also reveals the need for an improvement in communication infrastructure to facilitate TLCs so that teachers can take advantage

of the benefits of modern communication technology as they connect with one another. This finding is discussed below.

#### Inadequate Communication Infrastructure

The third theme shares negative sentiments about the challenges encountered by the participants in their efforts to use WhatsApp group chats. The FGDs on the participants' lived experience of their reliance on communication technology indicated that although they had spoken favourably about the efficacy of WhatsApp messaging technology, they simultaneously had some concerns that they felt ought to be addressed. Access to Wi-Fi dominated the discourse about the inadequacy of communication infrastructure. One focus group member had the following to say:

*Despite the benefits derived from the use of technology, particularly WhatsApp messaging technology, there are still challenges with regard to collaborating using this medium. Some teachers in rural schools do not have access to Wi-Fi, and data is also costly.* (Member of Focus Group 1)

Like the above view, the participants in the second FGD articulated a position that using technology in a rural context for teacher networking or learning community engagements had become a permanent feature globally and locally. The participants also decried the challenges presented by poor network connectivity and the unavailability of data. One focus-group member said:

*The WhatsApp messaging technology brings rural teachers to a common platform for collaboration that advances effective teaching and learning of accounting. However, it may not be effectively used in deep rural areas as network and data availability present a challenge.* (Member of Focus Group 2)

In addition, during the FGDs with the third group of teachers, it emerged that even though the use of WhatsApp messaging and other communication technologies was being viewed as a new norm for rural teachers to connect or engage with one another, some challenges were anticipated. One of the participants in the focus group highlighted contextual factors that are typical of rural areas in South Africa, such as poor connectivity and network infrastructure in schools and communities:

*The challenge we face as rural teachers is that there is an unreliable or poor network in most rural schools, which makes it difficult to collaborate at all times. We still hope our schools, in due course, may be provided with Wi-Fi and proper internet connectivity so that teachers can utilise laptops to attend meetings online.* (Member of Focus Group 3)

The findings of the study demonstrate that rural accounting teachers stand to gain in terms of improving their teaching practice and learning outcomes if they take advantage of the tremendous technological advancements as they build communities of learning. The findings further

highlight the importance of having stakeholders who provide the required resources and who support the collaborative efforts of teachers in challenging contexts.

#### Discussion of Findings

Even though the COVID-19 pandemic was a threat to school functionality and compromised teacher face-to-face collaboration to a large extent, the findings of our study reveal that through the WhatsApp group-chat technology, the participating rural accounting teachers managed to participate in uninterrupted teacher collaboration. Research shows that in developed economies such as the UK, Finland and Australia, advanced communication technologies like video conferencing and X-based professional learning, which have a larger audience, are frequently used for teacher collaboration (Hilli, 2020; Maher & Prescott, 2017). What appears to be unique in this study is the participants' ability to rely on a technology (WhatsApp group chat) that is not sophisticated enough to congregate on a common platform for the purpose of engaging in learning communities. What the study reveals is also consistent with the theoretical assumption that challenges that confront rural communities regarding teacher education and curriculum implementation require the vigorous participation or activism of rural people, including teachers (Balfour et al., 2008). In this respect, the participants were seen to resort to improvisation by using their own resources (cell phones) to congregate via WhatsApp group chat in times of adversity.

A further revelation of this study is that not only did the participants manage to engage in uninterrupted learning communities, but they also witnessed an improved culture of sharing and support for effective teaching and learning at a time when their collaborative efforts seemed to be threatened. Some educational scholars have noted that rurality presents an opportunity for teachers, including accounting teachers, to share similar experiences and problems in networking with one another for effective teaching and learning (Azano et al., 2021). Furthermore, the finding is consistent with the contribution that Balfour et al. (2008) made to the generative theory of rurality when they argued that rurality equalled more than our common perception, which labels a rural context and its people as passive, ignorant or always needing help. Rather, the scholars posit that the rural context can also be seen as being capable of changing behaviour and that rural people can embark on collaborative ventures that advance teaching practice and learning outcomes. The energy and innovative skills exhibited by the rural accounting teachers to mitigate the impact of the COVID-19 pandemic on their professional learning

activities did indeed prove that they were capable of effecting changes in their own environment.

The above findings demonstrate the significant impact of communication technology on TLCs, with particular reference to teachers in challenging contexts in times of adversity, like the COVID-19 pandemic. Given the benefits that WhatsApp technology offered rural accounting teachers, some of the participants described the idea of tapping into technology in general for teacher collaboration as *“soon to be the new norm for collaboration in a rural context.”* Notwithstanding the positive findings, the study also highlights inadequate communication infrastructure, such as a shortage of Wi-Fi and data availability in some rural schools, which compromises the effective implementation of learning community programmes when using technology. This finding can also be aligned with the notion that South African rural communities are mostly characterised by social ills that include but are not limited to poverty (Von Fintel, Zoch & Van der Berg, 2017), deprivation, being under-resourced and with a slow pace of growth as well as a lack of modernity (Bhengu & Svosve, 2019; Myende & Chikoko, 2014). Even though rural communities in developed contexts might be better off in terms of the availability of resources compared to their counterparts in developing economies, research shows that inequalities in these communities are also of major concern to governments (Dube, 2020; Mukeredzi, 2013; Schafft, 2016). This no doubt presents a challenge when rural teachers engage with learning communities using technology.

### Conclusion

With this article we sought to explore and understand the lived experiences of rural accounting teachers as they harnessed technology through WhatsApp group chats to engage in TLCs to advance the teaching and learning of their subject. While the DBE traditionally prioritised face-to-face teacher collaboration over online or virtual forms of teacher collaboration, current evidence highlights the efficacies of teacher engagement through technology, even for teachers in rural communities. Many rural accounting teachers do not have access to advanced communication technologies such as Microsoft Teams, Google Classroom, X-based professional learning or Zoom, which can reach larger audiences. However, it is noted that these teachers are adaptable and effectively use the limited resources at their disposal (WhatsApp group chat) to ensure that in times of adversity, learning community engagements do not come to a halt. This indicates the teachers' readiness to take advantage of contemporary technological advancement to augment their practices for better

outcomes. To ensure that rural accounting teachers take full advantage of what technology can offer in facilitating learning communities, we once again argue that educational stakeholders have a responsibility to provide the necessary resources that enable rural accounting teachers to connect with one another. We may add that this study could not establish the role played by other TLCs as the three FGDs drawn from the 15 schools constituted their own TLCs and the benefits of this community are evident.

Although the findings of the study provide important insights in terms of the possibilities that are available for accounting teachers' collaboration in a rural context, they are limited in that we only report on the experiences of 15 accounting teachers in one district. Given that the sample is not representative of the total population of schools in South Africa, it is not possible to generalise the findings. The teachers who participated in this study taught in rural schools, which raises the question of what the results would have been if the study had been conducted in well-resourced schools within an urban setting. The study highlights the benefits of teacher engagements through technology in rural communities. However, rural accounting teachers do not have access to advanced communication technology that can reach larger audiences. The findings of the study suggest that there is a need to provide an enabling environment that facilitates ongoing teacher professional learning and professional growth in the field of accounting.

In this study we focused on how a group of rural accounting teachers harnessed WhatsApp messaging technology to enhance the effectiveness of TLCs. It is likely that the inclusion of other social media platforms could lead to different findings and conclusions. Consequently, there is room for further research on how other social media platforms, such as Facebook and Instagram, could be used by rural accounting teachers to support teacher collaboration. Subsequent research on teacher engagements through technology could also involve more rural accounting teachers, thus using a quantitative approach. Other scholars could focus on accounting teachers who are practising in both urban and rural contexts. The potential of rural accounting teachers tapping into modern communication technology to transform the teaching and learning of accounting is also worthy of further investigation. The outcome of such an investigation could encourage educational stakeholders to provide the needed resources that can facilitate accounting teachers' collaborative engagements in the virtual space.

### Authors' Contributions

SEO generated data. All three authors conducted qualitative data analysis. SEO wrote the



manuscript. JCN and TTB reviewed the final draft of the manuscript.

### Notes

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- ii. Published under a Creative Commons Attribution Licence.
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