A community of practice can be a social infrastructure: the case of DigiCoP

Kristien Andrianatos
North-West University
Kristien.Andrianatos@nwu.ac.za

Abstract

A community of practice (CoP) is a self-managed group of people who connect to learn from each other with the aim of improving a practice. The benefits of a CoP for learning have been well-documented. A CoP in higher education is generally viewed as an optional support group. This paper argues that a CoP can be viewed as a social infrastructure, especially within digital humanities in South Africa, as the field is relatively underdeveloped in this context. Viewing a CoP as a social infrastructure, highlights the broader significance and necessity of a CoP in the digital humanities (DH) context. Such a community can provide a structure that enables collaboration and sustainable growth as members use each other's experiences as learning resources. The argument is based on the CoP work of Lave and Wenger (1991), and the notion of people as infrastructure of Simone (2004; 2013). ESCALATOR and a brief history of DigiCoP is included as examples of such a social infrastructure. The paper concludes with a reflection on considerations and challenges from a convenor's perspective.

Keywords

community of practice, people as infrastructure, social infrastructure, higher education

1 Introduction

DigiCoP is a community of practice (CoP) dedicated to innovative teaching and learning with digital tools, situated within the Centre for Digital Humanities (CDH) at the North-West University in South Africa. The concept of a CoP is well-known, and many researchers have documented its benefits for faculty members in higher education, such as overcoming institutional isolation, the acquisition of knowledge, improved learning and teaching, and innovation and promotion of new practices (Bicchi, 2023; Reaburn & McDonald, 2017; Smith et al., 2017).

In the South African Digital Humanities (DH) context, the South African Centre for Digital Language Resources (SADiLaR) regards CoPs as important for human capacity development in the DH field. The ESCALATOR programme is a strategic initiative aimed at building communities of practice that bridge humanities research and computational approaches to foster innovation and interdisciplinary collaboration (SADiLaR, 2025; Van der Walt & Mabaso, 2025). The focus is on addressing research needs, specifically digital skills development, community building, infrastructure access (i.e., cloud computing resources, software tools, and data repositories), and research support. While the aim of the ESCALATOR programme is to build human capacity across disciplines and institutions, with a focus on research, DigiCoP is a CoP within a single institution with a focus on innovative teaching and learning using digital tools.

In this paper, I argue that a CoP in the field of digital humanities can be viewed as social infrastructure, and that it should be as significant as conventional digital infrastructures such as servers, networks and computer hardware. Firstly, I explain this viewpoint. Thereafter, I provide a brief history of DigiCoP and use it as an example of social infrastructure. I conclude this paper by reflecting on CoP challenges and considerations that emerged from my experience.

This work is licensed under CC BY SA 4.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-sa/4.0/deed.en
The copyright remains with the authors.

2 Why a community of practice can be viewed as a social infrastructure

The concept of a CoP originated in the publication of Lave and Wenger (1991), in which they argue that learning does not happen when information is received, but it is constructed when individuals participate with others in a shared practice. Wenger et al. (2011, p. 9) define a CoP as a "learning partnership among people who find it useful to learn from and with each other about a particular domain. They use each other's experience of practice as a learning resource." There are three defining characteristics of communities of practice, namely domain, community and practice (Rettler-Pagel, 2023). The domain refers to the community's shared interest that sets it apart from other groups. The shared domain is the driving force as the members are interested to engage with each other to broaden their knowledge and skill regarding the domain. This engagement among members in an environment of trust acts as a catalyst for more engagement and commitment among the community members (Rettler-Pagel, 2023; Mercieca, 2017; Wenger et al., 2011). The community comprises the members who create the "social fabric for enabling creative learning" and they sustain the learning opportunity (Rettler-Pagel 2023, p. 5). Mercieca (2017) states that community is essentially about relationships in the CoP. The practice of a CoP refers to "shared practice" that is developed as a result of collective learning (Wenger et al., 2011). As practitioners, the members create shared resources that they use in their own practice. These resources can be ideas, artifacts, strategies, experiences and tools (Rettler-Pagel, 2023; Mercieca, 2017). A strong practice can lead to observable output, termed by Wenger (1998) reification.

In a critical review of the use of Wenger's CoP theoretical framework on online and blended learning research, Smith et al. (2017) identify important concepts that underpin the three characteristics: learning takes place via participation (acting and interacting) and reification (producing artifacts); the CoP develops criteria by which they recognise membership; newcomers are engaged via legitimate peripheral participation; the sense of identity of members is transformed; knowledge is shared; and value is created.

Within the social sciences, infrastructures are understood in physical terms and viewed as background structures and systems with the foundational element being "the facilitation of activity" (Latham & Layton, 2019). It is infrastructure that creates the space for a city's productivity, "positioning residents, territories and resources in specific ensembles where the energies of individuals can be most efficient…" (Simone, 2004, p. 407). There are various types of infrastructure. One is social infrastructure. It can be defined as any physical public space that facilitates sociality, for example libraries, parks, sidewalks and churches (Enneking et al., 2025). The purpose of social infrastructure is to enhance connections within existing groups, as well as provide opportunities for individuals to connect across differences (Latham & Layton, 2019). The influence of social infrastructure on the health of a society is explored in the non-fiction book by Klinenberg (2018). Although not an academic publication, Enneking et al. (2025) state that this work has been gaining "increasing attention" (p. 10). Klinenberg concludes that well-cared for public spaces foster connections between diverse people living in proximity.

Simone (2004) introduced the notion of people as infrastructure, within the field of urban geography. Wilson and Jonas (2021, p. 1333), state that Simone's notion "reverberates powerfully" through the field and served to broaden the understanding of infrastructure. Simone theorises that residents of a decaying inner city of Johannesburg, are their own infrastructure as they collaborate with each other to navigate every day survival. According to Simone (2004, p. 407), "this (people) infrastructure is capable of facilitating the intersection of socialities so that expanded spaces of economic and cultural operation become available to residents of limited means." Thus, marginalised and deprived communities become networks of collaboration to make up for the infrastructure that the municipality of the city cannot create or repair, for their own survival. These networks are sustained by individuals who familiarise themselves with "a broad range of spatial, residential, economic and transactional positions". The value of the network is that it "carries traces of past collaboration with an implicit willingness to interact with one another" (Simone, 2004, p. 408).

Building on Simone's notion, I propose that a CoP can be viewed as an infrastructure, as an intersection of socialities is also created by a CoP to expand spaces of operation. Table 1 shows the similarities between a CoP and people as infrastructure, organised by the three characteristics of a CoP:

Table 1: Similarities between the characteristics of a CoP and people as infrastructure (Rettler-Pagel, 2023; Simone, 2004; Wilson and Jonas 2021)

Charac-teristics	**CoP**	**People as infrastructure**
Domain	Shared concern or interest; need for learning opportunities	Shared concern to sustain life; need for economic and cultural opportunities
Community	Voluntary membership; members often work in professional proximity but may not have met otherwise; opportunities for newcomers to join the CoP	Implicit willingness to interact with one another; actors live in proximity but are not socially connected; cooperation is fostered between actors and new arrivals
Practice	Shared repertoire of resources for learning within the domain; flexible activities of members continuously develop to refine practice	Available resources are used for economic collaboration; flexible activities of residents continuously develop to foster socio-spatial life in cities

Simone's (2004; 2013) notion of people as infrastructure is set against the backdrop of a decaying inner city, where people come together to preserve life. While the backdrop of a CoP in higher education is not nearly as dire, its members are still driven to connect with each other to address the learning needs they have that are not met by existing structures. In the field of DH, the members of the CoP with limited means in terms of digital knowledge and skills, can collaborate in the space to enhance their capabilities and expertise.

Due to the fact that social infrastructure is concerned with fostering interaction within groups and across differences (Latham & Layton, 2019), a CoP can be viewed not just as infrastructure in a general sense, but specifically as social infrastructure. This view indicates that a CoP is more than just a support network. It places an emphasis on the role a CoP can play. Communities need social infrastructure for well-being and sustainable growth (Klinenberg, 2018). In terms of technology, digital infrastructures need to be in place first, before any digital tool can be used. Yet, a CoP is not regarded as important as an infrastructure. Viewing a CoP as a social infrastructure, especially in DH, points to the contribution it can make to the sustainability of DH in local contexts.

3 DigiCoP background

In 2022, a CoP centred on innovative teaching with technology in the Faculty of Humanities, was formed as part of a cross-faculty project of the Centre for Teaching and Learning (CTL) at the North-West University. Three people were nominated by the Deputy Dean of Teaching and Learning to be the convenors of the CoP. I was asked to be one of the three convenors. We used the university communication channels for recruitment and about 30 lecturers joined voluntarily after the first call. The activities of the CoP in 2022 were dictated by the CTL project and included monthly online get-togethers and one annual in-person get-together, funded by the project. The CTL project also funded software licences for the CoP members, with options such as Kahoot, Canva, Filmora, Padcaster and Mentimeter. During online sessions members demonstrated how they used these and other digital tools such as Articulate Rise, Padlet, Framapad and Edpuzzle in teaching and learning. Another topic of discussions was how to use lesser-known functions of the learning management system (LMS). The years of 2022 and 2023 were characterised by members learning to use the digital tools and the sharing of the applications thereof in teaching and learning. In 2023, we organised the Cirrus Challenge, in conjunction with the Faculty of Economic and Management Sciences. The challenge entailed learning how to use a new assessment software called Cirrus, with an incentive of a 12-month tool licence of their choice. In June 2023, we hosted the first in-person Showcase, attended by 39 members,

with ten members leading discussions on how they used technology in their teaching and learning. The event was funded by the CTL project.

The CTL project ended in December 2023. Two of the three convenors stepped down, and I recruited two other members so that we could continue to organise CoP activities for 2024 and 2025. We were motivated by the network that was created and the positive feedback from the members. Without the prescriptions of the CTL project, the online sessions decreased to four in the year, which I found more manageable than the monthly sessions. We organised more showcases and added a hackathon event. During the hackathon, members worked in groups to find a tech driven solution to boost student engagement using existing ed-tech apps.

With the establishment of the Centre for Digital Humanities (CDH) in the Faculty of Humanities, my fellow convenor and I reconceptualised the CoP within the centre. We chose a name that signals a CoP concerned with digital humanities, namely DigiCoP. For 2026, we have held two online get-togethers, one about creating a fillable pdf document and a second to compare the existing, and new LMS. Three in-person showcases with a Padlet workshop were also organised, funded by the CDH. At present, DigiCoP has 56 members. They are mostly academic teaching staff from various programmes in the Faculty of Humanities, a few support staff from the Centre of Teaching and Learning, and one academic from the Centre for Text Technology.

4 DigiCoP as an example of social infrastructure

DigiCoP can be viewed as social infrastructure of the CDH. This Centre is dedicated to putting people at the heart of digital innovation. One phrase of the Centre's vision that aligns with DigiCoP as social infrastructure, is "to build platforms that enable people to share and connect" (CDH, 2024). While DigiCoP is not a physical platform, it does create a space where members can engage about digital tools in teaching and learning. Additionally, the Centre's first strategic goal is to build a strong human-centred DH infrastructure. DigiCoP can be viewed as a type of this infrastructure, as it provides a background structure that facilitates activity (Latham & Layton, 2019), in the form of lecturers coming together to learn from each other about how to use digital tools innovatively in their teaching and learning.

The domain of DigiCoP is innovative teaching and learning with digital tools, embedded in DH. Relationships in the community are fostered by online get-togethers, email communication and in-person gatherings like the showcases and hackathon. These events are structured more informally than the usual conference and ample time is provided for networking and discussions, always with refreshments. When the members come together around a certain topic like the new LMS, they use the space as an intersection to share experiences and learn from each other in a sustainable way. I use the term sustainable, as the conversations between members and their learning from each other, often continue after the gatherings and lead to more CoP activities.

The practice of DigiCoP can be understood as the sharing of resources that include experiences, tools, and strategies to address challenges with digital tools in the sphere of teaching and learning (Mercieca, 2017). DigiCoP resources include the recordings of all online sessions, a poster listing free digital tools, and the shared experiences of attending the Showcases and listening to members' success stories or failures when digital tools did not work as planned. Similar to a domain of infrastructure, DigiCop has the ability to reach beyond a single event: for example, the CoP has been active for five years.

Although no formal evaluation study was conducted on the impact of the CoP, I observed several positive outcomes within the community. Firstly, members gained access to the paid versions of applications that they could use in their classes in 2022 and 2023. Many members were able to use applications such as Kahoot and Canva for the first time, and found support with technical challenges from their peers in the CoP. In informal discussions at the Showcases, these members reported that the applications had been received very positively by their students and that they were gaining confidence in using such technology in class. Further evidence of the use of these applications was provided by the email requests I received after

the licences expired. Secondly, members also commented on the space that the CoP created for idea generation. Two members' informal discussion about the use of Graphics Interchange Format (GIF) images and humorous memes in their PowerPoint presentations led to a showcase presentation and the possibility of a research project. The two members commented on how being part of the community gave them the confidence to develop an idea that had initially seemed frivolous. Thirdly, some members decided to conduct research together on a shared interest. Two examples of academic outputs that are a direct result of CoP activities are our paper on learning to use Mentimeter (Andrianatos & Morelli, 2024) and a longitudinal research project within the Faculty of Humanities titled *Digital Competencies and Training Needs for Learning Technology Integration among North-West University Lecturers*.

5 CoP considerations and challenges

The members of DigiCoP use each other's experiences of teaching and learning with digital tools, as a learning resource. The activities offered by DigiCoP differ from the training opportunities offered by CTL, mainly because it is the lecturers who share experiences for their own benefit. This creates a more nuanced understanding of what the application of a digital tool looks like in an authentic teaching and learning environment. As the members are mostly involved in the daily teaching of students, they share successes and pitfalls differently from colleagues who offer training to lecturers, but who do not teach students themselves. In my experience, lecturers are more inclined to informally reach out to teach other when they have a challenge with a digital tool, than logging a ticket to get assistance from the support office. These are important considerations for DigiCop, as we strive to engage members in the sharing of experiences and not just arrange external trainers to conduct a session where communication is mainly trainer-led with limited interaction.

A second consideration is that we try to steer clear of using DigiCoP activities for research purposes. Members of DigiCoP participate in order to learn from each other. Engagement should be spontaneous. When members need to give structured feedback, it may prompt the idea that in order to be a member they have to do something in return. Additionally, the lecturers work in a research intensive environment and are bombarded with requests to complete surveys and give input by the institution and colleagues doing research. DigiCoP must be a space where the members can focus on learning from each other, without having to complete a questionnaire and give feedback after every activity. Such requests will possibly lead to members leaving or avoiding the activities.

The first challenge that comes to mind with DigiCop, is time constraints. Most academics have full schedules, with compulsory tasks such as teaching, marking and delivering research output. In this context, DigiCoP activities can be seen as a nice-to-have and may not always be a priority for the members. It is also difficult to find a time for the activities that will suit most of the members. One example is the scheduling of events in exam time, as the lecturers do not have to teach classes, but the problem with this time is that lecturers are needed in exam sessions and then have to complete the marking of the exams within a strict deadline. Secondly, it is proving difficult to get members to take ownership of DigiCoP. By ownership I refer to members identifying discussion topics or volunteering to share their experiences and practices. From my perspective, if the convenors do not take the lead in planning and executing activities, the initiative from members are limited. We have had success when we approach a member to present on a topic, but independent topic presentation does not seem to catch on. Thirdly, I have experienced that a lack of funding can negatively impact in-person gatherings. Refreshments are important for community building and social connections (Cox & McDonald, 2017), and without funding, refreshments are not possible. When the CoP was "funded" by the CTL project, we had the added bonus of licences to digital tools that were very useful in teaching and learning. When the funding ceased, we were instructed to acquire the funding from the faculty. The process of requesting funds for software licences proved to be unsustainable due to limited budgets and the complicated process of reaching the right person at the tool company to issue an invoice in the format required by the university for less than 10 licences. The responsibility of acquiring licences for members should not fall on the convenors of a CoP, but should be handled by management.

6 Conclusion

A CoP in the field of DH is much more than an optional support group. In this paper I argued that it can be viewed as a social infrastructure with the purpose to bring people with a shared concern together, to form a network of relationships as they develop a practice and shared identity. This view builds on the notion of Simone (2004) that people can be infrastructures. There are commonalities between aspects within the domain, community and practice of a CoP, and people as infrastructure as shown in Table 1. Specifically, a CoP can be viewed not just as an infrastructure, but as a social infrastructure, as it provides opportunities for and enhances connections between people. This perspective highlights the broader significance and necessity of a CoP. Such a community can provide a structure that enables collaboration and sustainable growth as members use each other's experiences as learning resources. In the context of DH, this view underscores the crucial role of CoP for sustainability of DH in local contexts. DigiCoP can be viewed as a social infrastructure that contributes to the realisation of the CDH's vision and advances the Centre's first goal of fostering human-centred infrastructure. Investment in such social infrastructure should accompany the investment in digital infrastructure.

Limitations

There are a few points of friction when comparing a CoP with social infrastructure. Firstly, examples of social infrastructures are physical spaces such as libraries, parks and sidewalks. While they bring people together, their purpose is mostly to foster sociality, and not learning. A CoP does not have a physical structure and the main purpose is not socialising, but learning. Secondly, these physical spaces have been built according to specifications, while a CoP comes together in an informal way with a flexible hierarchy. Bicchi (2023) notes that a CoP is "highly improvisational" and in this sense it is the opposite of constructed infrastructure. Thirdly, a physical social infrastructure can typically accommodate large numbers of people, while a CoP is usually a smaller group. The DigiCoP membership has varied between about 30 to 60 in the past five years. Finally, there is a contrast between the permanence and durability of a physical social infrastructure, compared to the fragility of a CoP. Physical social infrastructures cannot cease to exist in the same way that a CoP can stop functioning when its convenors and members become disengaged.

Ethics Statement

I am the longest serving convenor of DigiCop. As the convenor and the author of this paper, my positionality influenced how I interpreted a CoP in general and the history and activities of DigiCoP. The information on DigiCoP that I included in this paper is publicly available and no information or data was collected from members. Descriptions are based on my own involvement and there is no identifying information about specific members.

Acknowledgments

I would like to gratefully acknowledge Robyn Bunt who worked closely with the convenors to conceptualise the CoP, and who has supported us with all sorts of CoP challenges over the past five years.

References

Andrianatos, K. & Morelli, J. 2024. Sharing vulnerability: A duoethnographic enquiry into the development of digital competencies at a South African university. *CriSTaL*, *12*(2):1-23.

Bicchi, F. (2023). Cultivating communities of practice: From institutions to practices. *Global Studies Quarterly, 4*(1), 1-10.

Centre for Digital Humanities (CDH). (2024). About us. Retrieved August 10, 2026, from humanities.nwu.ac.za

Cox, M.D., & McDonald, J. (2017). Faculty learning communities and communities of practice. In J. McDonald, & A. Cater-Steel (Eds.), *Communities of practice: facilitating social learning in higher education* (pp. 47-72*). Springer eBooks*.

Enneking, G., Custers, G., & Engbersen, G. (2025). The rapid rise of social infrastructure: Mapping the concept through a systematic scoping review. *Cities*, *158*, Article 105608.

Klinenberg, E. (2018). *Palaces for the people: How social infrastructure can help fight inequality, polarization, and the decline of civic life*. Penguin.

Latham, A., & Layton, J. (2019). Social infrastructure and the public life of cities: Studying urban sociality and public spaces. *Geography compass*, *13*(7), p.e12444.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Mercieca, B. (2017). What is a community of practice? In J. McDonald & A. Cater-Steel (Eds.), *Communities of practice: facilitating social learning in higher education* (pp. 3-26*). Springer eBooks*.

Reaburn, P., & McDonald, J. (2017). Creating and facilitating communities of practice in higher education: theory to practice in regional Australian University. In J. McDonald, & A. Cater-Steel (Eds.), *Communities of practice: facilitating social learning in higher education* (pp. 121-152*). Springer eBooks*.

Rettler-Pagel, T. (2023). Communities of practice in the higher education landscape: A literature review. Every Learner Everywhere. https://www.everylearnereverywhere.org/resources/communities-of-practice-in-the-higher-education-landscape-a-literature-review

South African Centre for Digital Language Resources (SADiLaR) (2025). ESCALATOR: Sterngthening Digital Humanities & Computational Social Sciences in South Africa. Escalator-information-booklet-digital.pdf

Simone, A. (2004). People as infrastructure: Intersecting fragments in Johannesburg. *Public culture*, *16*(3), pp.407-429.

Simone, A. (2013). Cities of uncertainty: Jakarta, the urban majority, and inventive political technologies. *Theory, Culture & Society*, *30*(7–8), 243–263.

Smith, S. U., Hayes, S., & Shea, P. (2017). A Critical Review of the Use of Wenger's Community of Practice (CoP) Theoretical Framework in Online and Blended Learning Research, 2000-2014. *Online learning*, *21*(1), 209-237.

Van der Walt, A. & Mabaso, J. (2025). ESCALATOR: December 2020 – May 2024, Report and Recommendations. ESCALATOR: December 2020 - May 2024 Report & Recommendations | Zenodo

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.

Wenger, E., Trayner, B., & De Laat, M. (2011). *Promoting and assessing value creation in communities and networks: A conceptual framework*. Open University of the Netherlands.

Wilson, D. & Jonas, A. (2021) The people as infrastructure concept: appraisal and new directions. *Urban Geography, 42*(9), 1333-1340.