

E-learning Community of Practice and Pedagogy in a Resource Constrained University

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Abstract

This study examines the creation, functioning, and sustainability of an e-learning community of practice (CoP) in a resource-limited educational setting. Using Situated Learning Theory (SLT), educators from various fields collaborated to improve e-learning methods. The research used educational design research with a mixed-methods approach, including analysis, design, implementation, and evaluation phases. Findings highlight that effective e-learning CoPs require clear objectives, strategic member recruitment, appropriate digital platforms, collaborative discussions, and ongoing professional development. The CoP promoted knowledge sharing, skill enhancement, community building, and mutual support among educators. Institutional leadership is crucial for fostering voluntary participation and recognizing e-learning's importance. The study concludes that e-learning CoPs are vital for educator capacity building, lifelong learning, and delivering 21st-century skills. Recommendations stress supportive leadership and integration of CoPs into professional development to sustain educational innovation.

Keywords: E-learning, Community of Practice, Educational Design Research, situated learning, pedagogical practice, resource-constrained environments.

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(Received 20 September 2024; Revised 02 June 2025; Accepted 18 May 2025; Published 06 August 2025)

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Introduction

Sustainable Development Goal 4 emphasizes the importance of ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all (United Nations, 2015). Educational institutions contribute to this objective by adopting various approaches and producing graduates equipped with 21st-century skills. There is significant pressure on these institutions to incorporate e-learning in delivering modern teaching and learning methodologies. To address this challenge, educators must possess comprehensive, up-to-date knowledge of the technologies and processes that facilitate effective technology-enhanced learning.

The development of an electronic community of practice (eCoP) involves uniting educators who have a shared interest in e-learning and fostering a collaborative environment for learning and knowledge exchange. Amidst the rapidly evolving technological landscape, communities of practice (CoP) have proven to be effective in building capacity for e-learning engagement (Beatty et al., 2020). CoPs provide spaces for informal learning; however, their informal nature can result in limited understanding of structures and functions, thereby diluting their effectiveness (Li et al., 2009).

Additionally, given the resource constraints and busy schedules of educators, ensuring they possess the necessary knowledge is a challenging task. Consequently, within a resource-limited context, building and maintaining a sense of community in e-learning practice can be difficult. Effective e-learning requires a thorough understanding of the tools, design, and delivery of quality and creative pedagogy that equip graduates with 21st-century competencies. The

adoption of e-learning methodologies and practices contributes to achieving Sustainable Development Goal 4 by ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all (United Nations, 2015).

This paper analyzes the process of establishing a community of practice with a specific focus on e-learning in a resource-constrained environment. The main objective is to present the process of setting up, operating, and sustaining an e-learning CoP in such a context, leading to the following specific objectives:

- to describe the membership composition of an e-learning CoP in a resource-constrained context;
- to examine activities in an e-learning CoP in a resource constrained context; and
- to analyze the identities and relationships that are sustained in an e-learning CoP in a resource constrained context.

The above objectives translate into the following research questions:

- What is the composition of membership in an eCoP within a resource-constrained context?
- What types of activities take place in an eCoP in a resource-constrained context?
- How do identities and relationships develop and sustain within an eCoP in a resource-constrained context?

Literature Review

E-learning has become a significant mode of education, especially for resource-limited institutions. Communities of practice (CoPs), defined as groups who share a concern or passion and deepen their knowledge through regular interaction (Wenger, 1998), can enhance e-learning's effectiveness. For such institutions, CoPs improve teaching, learning, and knowledge-sharing in e-learning environments (Fuller, 2022).

E-learning is being increasingly adopted in institutions with limited resources, despite facing challenges such as restricted access to infrastructure, insufficient digital literacy, and inadequate institutional support (Chirwa, 2018). Studies by Fisser (2013) and Olojo et al. (2012) indicate that these institutions often encounter difficulties in implementing e-learning due to factors like limited funding, technological constraints, and digital divide. Nonetheless, the integration of communities of practice (CoPs) can be a strategic intervention to enhance collaboration, knowledge sharing, and support among educators and students.

Wenger's (1998) concept of communities of practice supports collective learning across disciplines. In e-learning, CoPs aid peer learning, pedagogic practice development, and collaborative problem solving, especially in resource-limited institutions. Emphasizing social learning is crucial where there is a lack of formal training (Lave & Wenger, 1991). Studies by Garrison et al. (2000) and Lai et al. (2006) affirm that CoPs enhance e-learning through shared resources, peer support, and innovative pedagogy. For instance, Garrison's Community of Inquiry

framework highlights the importance of social, cognitive, and teaching presence in online learning.

Despite their benefits, implementing CoPs in resource-constrained settings faces challenges like limited technological access, inadequate educator training, and the digital divide. Without substantial institutional support, maintaining eCoPs proves to be difficult (Fisser, 2013; Cox & Troter, 2017). Additionally, teachers and students may lack skills needed for effective online CoP participation (Meyer, 2014).

Several strategies have been identified in the literature to address the challenges faced by CoPs in resource-constrained institutions. These include using mobile technologies, promoting blended learning environments, and providing institutional support for collaborative learning. Mobile technologies are particularly highlighted as a solution to overcome infrastructure limitations in many resource-constrained settings (Brown, 2005; Burton, 2022). Additionally, virtual learning environments (VLEs) and open-source platforms can offer spaces where CoPs can thrive without significant financial investment (Palloff & Pratt, 2007). Training programmes focused on digital literacy and community-building skills can help foster successful CoPs.

E-learning encompasses a wide range of applications and processes, including computer-based learning, web-based learning, virtual classrooms, and digital collaboration (Epignosis, 2014). In this paper, e-learning is defined as learning supported by information and communication technologies (ICTs). The Internet, as an ICT tool, has transformed pedagogy regarding access to resources, usability, and the types of interactions that occur in e-learning and pedagogy

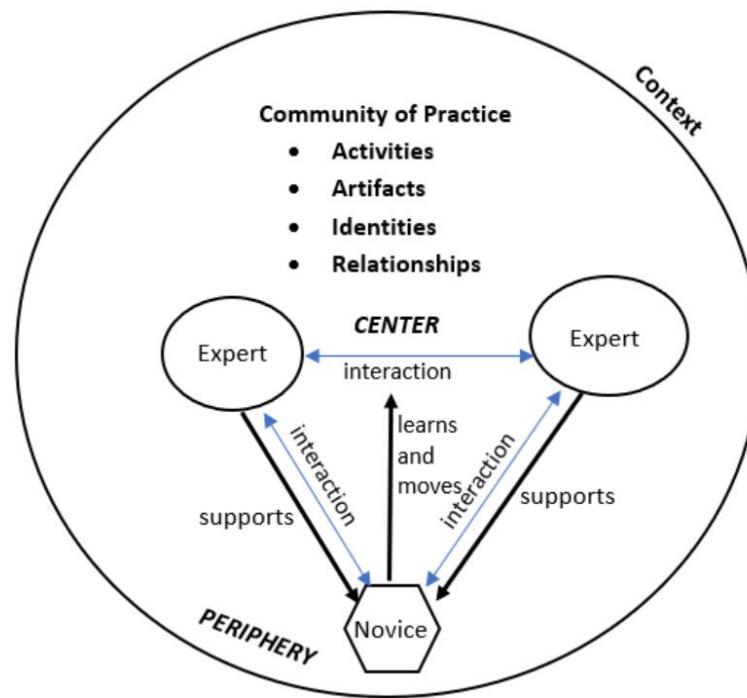
(UNESCO, 2023a). An e-learning CoP provides an environment in which educators at various expertise levels learn together to develop and improve e-learning professional practice. According to Dron (2023), in resource-constrained contexts, ICT tools and devices, as well as human resources, tend to be costly. To develop an effective knowledge society as part of pedagogic practice, investment in educators to attain competencies in e-learning methodologies and practices is necessary (Food and Agriculture Organization [FAO], 2021).

Situated learning theoretical lens

Situated Learning Theory (SLT), developed by Jean Lave and Etienne Wenger, explains how learning occurs in communities of practice (CoP). SLT suggests that knowledge is best learned where it is used. In an e-learning CoP, new educators (novices) progress to an expert level through practice. Learning happens naturally within authentic contexts, cultures, and activities. SLT emphasizes collaborative group settings and real-life experience-based activities. Educators advance from peripheral participation to central roles as they gain expertise and actively engage in the community's practices. The concept of Legitimate Peripheral Participation (LPP) describes this progression.

Figure 1

Model of Situated Learning Theory (Adapted from Epignosis, 2014)



SLT aptly describes the e-learning CoP as it involves creating an authentic real-life context (E learning Essentials, 2020). In an e-learning CoP, educators explore e-learning tools and platforms, design e-content, and facilitate and assess learning. This exploration happens through interaction, leveraging social architecture. The context where experts and novices interact is crucial for learning, with well-crafted activities and artefacts aiding relationship building and identity formation. Novices can move from the periphery to the centre with expert support.

The model identifies two participant categories: experts (knowledgeable members) and novices (beginners). Members share experiences voluntarily, starting as novices and becoming experts through mentorship (Goodhue & Seriamlu, 2021). As they gain knowledge, the scaffolding is

removed, allowing them to act independently while still contributing to the community. Novices advance within the CoP by participating in workshops, meetings, and conferences that encourage diverse viewpoints and respectful interactions (Sheldon, 2021; Drew, 2019). Interaction with experts is key to building this CoP.

Methodology

Intervention description

To answer the research questions, an intervention that involved establishing and engaging with an existing e-CoP in a resource-constrained context and implementing targeted strategies to observe, support, and analyse its dynamics was designed and implemented. The intervention plan was structured around each of the research questions.

The intervention in relation to membership composition analysis involved conducting a participant mapping using an online survey and interviewing key informants to identify demographics, professional backgrounds, skill levels, and motivations for joining the eCoP. We also implemented digital engagement tracking for online participants and used attendance records for face-to-face participants to understand membership trends. We facilitated onboarding programmes to assess how new members are integrated into the eCoP.

Regarding activity examination, we implemented structured engagement strategies in terms of discussion forums, webinars, and collaborative projects that helped us observe participation patterns. We also used activity logs and content analysis to track interactions, knowledge-sharing

behaviours, and resource utilization. We introduced workshops and evaluated participation levels and learning outcomes.

With regard to identity and relationship analysis, we conducted longitudinal case studies throughout the research to observe how individuals develop professional identities within the CoP. We introduced mentorship programmes to examine how relationships are formed and sustained over time. We used network analysis to map relationships and influence within the CoP. Finally, we applied focus group discussions to explore members' perceptions of identity and collaboration.

Research Approach

A mixed methods approach, using both qualitative and quantitative research, was used to thoroughly understand the research objectives (Global OER Graduate Network, 2020). This fusion of methodologies leverages the strengths of both approaches, offering a richer and holistic perspective. This mixed-method intervention predominantly used qualitative (interviews and case studies) with some qualitative-quantitative analysis (survey) to comprehensively address the research questions.

This study employed educational design research (EDR) as its primary methodology, focusing on developing effective educational practices and innovations. EDR integrates rigorous research with practical application, bridging the gap between educational theory and practice to achieve meaningful improvements in education. The study aligns with the procedural and execution frameworks of educational design research as outlined by Hammond & Wellington (2021). The

mixed methods approach followed distinct phases: analysis and exploration; design and prototyping of the intervention; implementation and evaluation; reflection and documentation; and dissemination (McKenney & Reeves, 2018).

Phase 1: Analysis and Exploration

This initial phase focused on understanding the challenges faced by the university and examining existing knowledge about e-learning, communities of practice (CoPs), and pedagogical practices in resource-constrained settings. Researchers conducted interviews with educators and students to gather insights into their experiences with e-learning. Challenges identified include poor internet access, low digital literacy, and inadequate infrastructure.

A comprehensive literature review was performed to provide context for these findings. This review explored topics such as available e-learning tools and devices, generic pedagogical practices, and both explicit and implicit knowledge related to e-learning methodologies (Wilkinson et al., 2019). The literature also examined how educators adopt expert e-learning, the identities, and relationships within CoPs, and how these relationships facilitate knowledge sharing and professional growth.

Educators in e-learning were essential stakeholders, and their views shaped the intervention. The researchers designed a community-based intervention in which educators actively participated, laying the foundation for subsequent phases.

Phase 2: Design and Prototyping of the Intervention

Based on the findings from the analysis phase, researchers developed a tailored intervention to support the creation and sustainability of an e-learning CoP. A low-bandwidth digital platform prototype was created for sharing teaching resources, pedagogy discussions, and collaborative course design. A small group of six educators evaluated this prototype and gave useful feedback on its usability and relevance.

Phase 3: Implementation and Evaluation

The intervention was scaled up at the university and evaluated using qualitative and quantitative methods. The digital platform was implemented in selected colleges, where educators attended regular online and offline CoP sessions, exchanging best practices for incorporating e-learning into their teaching methods.

Data collection methods included interviews and observations analytics to evaluate improvements in teaching practices and student outcomes. Six educators participated in the e-learning CoP over two semesters. Participants were intentionally chosen based on their enthusiasm for e-learning and diverse levels of expertise in both e-learning and pedagogy. The educators represented diverse disciplines, including science-based courses, humanities, and professional teacher education programmes, ensuring a broad spectrum of perspectives (Mertens, 2023).

Workshops and engagements were held to promote collaboration and reflection among educators. The first workshop was pivotal in defining the operation and objectives of the

intervention. Throughout these engagements, educators shared their knowledge and experiences, contributing to the community's growth. Interviews with officials from the Institute of Open Distance and e-learning (IoDeL) and the Directorate of Information and Communication Technology Support (DICTS) provided additional insights into leadership support for e-learning initiatives.

Phase 4: Reflection and Documentation

In this phase, researchers analysed the collected data to identify the strengths and weaknesses of the intervention. The observation revealed that educator collaboration and the adoption of e-learning practices had improved; however, challenges such as inconsistent participation and limited technical support persisted. The documented lessons learnt will guide future improvements and possible replication of the intervention.

Data collection methods included workshops, meetings (both virtual and face-to-face), and observations of e-learning artifacts shared by participating educators. Given the resource-constrained context, participants utilized available tools and devices, often employing a Bring Your Own Device (BYOD) approach. The community also leveraged various e-learning tools and social media platforms to facilitate communication and collaboration outside formal meetings. The researchers maintained an active role throughout the process.

Data analysis followed Hammond & Wellington's (2021) approach, involving analytical and interpretative reviews of transcribed data. This process included reading, re-reading,

categorizing, and identifying themes within the data. Content analysis was conducted to investigate community practices, examining participant interactions, activities, and the results that contributed to a sense of belonging within the CoP.

Phase 5: Dissemination

The final phase involved sharing the research outcomes with broader audiences to encourage replication and inform policy and practice in similar contexts. The research team prepared articles for publication in educational technology journals and presented findings at conferences on higher education in resource-constrained settings. Moreover, a workshop was conducted for other universities in the region, during which strategies for establishing effective eCoPs with limited resources were discussed.

Findings

The findings from this study highlight the complex dynamics of an eCoP in a resource-constrained context, revealing key insights into its membership composition, activities, and the identities and relationships that sustain it. The eCoP comprised a selected mix of educators, students, and IT support staff, with participation influenced by factors such as digital literacy, access to technology, and professional development needs. Activities within the CoP revolved around knowledge sharing, peer support, and structured training, with asynchronous discussions being more prevalent due to internet limitations. Despite challenges such as limited institutional support and engagement disparities, innovative strategies like microlearning, mentorship, and hybrid learning models help sustain participation. Furthermore, members develop evolving

digital identities, transitioning from traditional teaching or learning approaches to more collaborative and technology-integrated practices. Trust, reciprocity, and informal mentorship play a crucial role in fostering relationships, though barriers such as lack of face-to-face interactions and unequal participation persist. By understanding these dynamics, targeted interventions can be designed to enhance the effectiveness and sustainability of eCoPs in similar contexts. Findings from this study are categorized into four themes: membership composition analysis, activity examination and identity and relationship analysis. Under each theme, participant interview and observation findings are presented.

What is the composition of membership in an eCoP within a resource-constrained context?

Membership was granted to educators who participated in delivering various course units within the teacher education programme. Members developed a shared repertoire of resources, including experiences, stories, tools, and methods for addressing recurring issues, forming a shared practice. This process required time and sustained interaction between novice and expert members, taking two semesters to establish strategies for both formal and informal interactions among participants.

Educators, as members, shared a passion for e-learning, a competence setting them apart from others. For these members, e-learning represented a unified sense of purpose. The recent COVID-19 pandemic necessitated innovative and remote working methods, leading to an increased adoption of e-learning, regardless of challenges. The selected educators reported similar experiences in e-learning, raising questions about appropriate tools, course design and

assessment, and learning management systems. These discussions highlighted that members were collectively focusing on e-learning as their primary domain. *“What defines us in this space is our ability and willingness to share all our knowledge and practical approaches.”* (Participant 3, personal communication)

In the workshops, educators actively participated in formulating the goals of e-learning community of practice (CoP). All participants were responsible for devising plans for subsequent action strategies. After reaching a consensus on the aspects of the learning management system to focus on, they proceeded to design courses that incorporated these attributes and shared their experiences. Participants voluntarily assumed roles in organizing and conducting formal workshops on e-learning. *“The members collaboratively agreed on the agenda and the facilitators to invite.”* (Participant 5, personal communication). A notable outcome of the workshops was the emergence of a self-driven spirit among educators; a phenomenon not observed prior to these sessions. Consequently, there was a need to recruit members willing to mentor others and engage in mutual learning regarding e-learning and pedagogy. (Field Notes).

The establishment of the e-learning CoP fostered a shared interest, competence, and commitment to e-learning practices, distinguishing its members from others. *“These individuals volunteered to promote shared e-learning practices, thereby creating common ground, inspiring participation, guiding learning, and attributing meaning to e-learning initiatives.”* (Participant 6, personal communication)

The activities within this CoP included both virtual and physical meetings where participants discussed recent developments and challenges in e-learning. To maintain cohesion and leverage the social architecture, members actively engaged in scheduled meetings. Dominant discussions during workshops and meetings revolved around e-learning tools and devices, including recent developments in artificial intelligence and their impact on the education system. Discussions also covered topics such as technology, pedagogy, and assessment. A sense of mutuality was evident in the execution of activities related to the e-learning community practices. Educators bonded and informally consulted with each other about e-learning processes. (Field Notes).

These activities provided a platform for building relationships as educators recognized the need to consult with each other informally. *“Outside formal meeting activities, educators continued to set up meetings and discussions about course design and assessment.”* (Participant 5, personal communication). It was observed that educators felt a sense of belonging in the newly created CoP focused on e-learning. During a collaborative project activity, another notable observation was the sharing and exchange of knowledge and experiences related to e-learning practice. The formally organized workshops were filled with stories related to e-learning practices and how educators overcame challenges. These workshops offered an environment where both expert and novice participants could try out their innovations and learn from each other in a supportive setting.

A stronger sense of collegiality became apparent as interactions in meetings and workshops shifted from reporting to conversing. *“Educators admitted that through their interactions, they*

were learning from each other, and participants began recognizing each other as experts in specific technological tools." (Participant 4, personal communication). Meetings and workshops provided an environment conducive to peer review and feedback on ongoing experiences.

During conferences and seminars, participants actively shared their experiences and networked. Over the two semesters of implementing the e-learning CoP activities, it became necessary to change venues for meetings due to increased participation. Initially starting with a few core members, by the end of the second semester, twenty educators were actively engaged, exceeding the capacity of the initial meeting space. The growing interest required moving the last workshop to a venue capable of hosting sixty participants. (Field Notes). The enthusiasm and engagement of educators in the workshops and conferences contributed significantly to the expansion of the e-learning CoP.

What types of activities take place in an eCoP in a resource-constrained context?

There was knowledge sharing and peer support mechanisms through which participants actively exchanged teaching materials, learning resources, and technology tips, often repurposing open educational resources (OERs). *"The discussions revolved around context-specific challenges, such as teaching large classes with limited digital infrastructure."* (Participant 2, personal communication) Informal peer mentorship emerges as a key strategy, with experienced members guiding new ones through troubleshooting technical issues.

The modes of interaction and participation patterns were asynchronous, synchronous, voice notes, and short videos relating to their experiences. The asynchronous discussions were mainly

on WhatsApp, Telegram, and online forums which were the most utilized channels due to unstable internet connectivity and time constraints. Synchronous sessions (live Teams/Zoom/Google Meet discussions), while valued, were less frequent due to data costs and bandwidth limitations. It was also observed that voice notes and short videos were preferred over long text-based discussions, helping bridge literacy and accessibility gaps. This is because of the preciseness of the message. (Field Notes).

There were also training and capacity-building activities. Members participated in self-paced courses, webinars, and interactive workshops, but attendance dropped when sessions required high bandwidth. *“Microlearning strategies (short tutorials, daily tips, and quizzes) increased engagement, particularly among educators who juggle multiple responsibilities.”* (Participant 1, personal communication). Simulation-based learning like practicing with the LMS platforms in sandbox environments was more effective than purely theoretical trainings that took place.

Engagement challenges and participation barriers, with limited institutional support meant that participation was largely voluntary, leading to inconsistent engagement. Gender and socioeconomic disparities affected access, with participants in some faculties struggling more with digital literacy and device availability. It was observed that the lack of incentives (certifications, recognition, and professional credits) led to lower sustained participation over time.

Innovative strategies to overcome challenges included offline-first solutions, such as downloadable content and SMS-based learning, that helped in mitigating connectivity issues. *“Hybrid learning models, combining in-person meetups with online interactions, improved engagement for participants with poor internet access”.* (Participant 2, personal communication). Community-driven challenges and competitions like recognition of best digital teaching practice increased motivation and participation.

How are identities and relationships developed and sustained within an eCoP in a resource-constrained context?

Several aspects related to the operation of e-learning needed clarification. It was essential for educators to take practical measures to address the e-learning scenario, which necessitated creativity and innovation. Indeed, educators dedicated considerable amounts of time to analyzing real issues associated with pedagogy and e-learning. Topics such as flipping the classroom, innovative assessment methods, and pedagogical approaches for e-learning were addressed. Educators were required to initiate changes in their practices to overcome obstacles to e-learning, including negative attitudes and mindsets. *“As we now perceive each other as colleagues in this e-learning endeavour, we support one another both in formal and informal spaces that we are developing”.* (Participant 4, personal communication). Consequently, members advocated for a streamlined e-learning policy within the institution. A simple e-learning manual was already being developed by the community members. The sharing of experiences related to e-learning by both novice and expert participants helped shape the identity of the participants and fostered their relationships (Field Notes).

The e-learning community of practice, which initially started with six core members, had grown beyond its capacity over time, indicating plausible relationships and benefits gained by participating members. Some members expressed the need to establish similar but smaller communities within their departments due to the increasing numbers (Field Notes). The core members visited various locations within and outside the university to benchmark how e-learning communities of practice were established, grown, and sustained. Some members traveled abroad to share experiences and learn from others, thereby creating several networks and expanding the catchment area. As a result, this e-learning community of practice was building capacity to the extent that some core members were prepared to break off and lead their development at lower levels.

The eCoP provided space for the formation of digital identities among the educators. Participants gradually developed a shared identity as digital educators and learners, often redefining their professional roles. It was observed that the initial skepticism about e-learning evolved into confidence in using digital tools, especially when new participants saw practical applications for their work. *“Some participants struggled with imposter syndrome, doubting their ability to engage effectively due to limited tech skills, but peer encouragement helped in building confidence.”* (Participant 3, personal communication). Educators in the CoP experienced a shift from traditional teaching methods to more interactive, student-centred online pedagogies.

It was also a forum for building and sustaining relationships. It was clear that trust and reciprocity emerged as the foundation of strong relationships; participants who received help were more

likely to contribute back. *“Mentorship structures organically formed, with experienced members guiding newer ones through challenges such as using Learning Management Systems (LMS) and adapting teaching materials.”* (Participant 1, personal communication). Collaborative projects, such as co-creating lesson plans or open educational resources, fostering a sense of belonging and shared purpose started emerging. The relationships were often maintained beyond the CoP, leading to professional networking and interdisciplinary collaborations. Indeed, some of the participants started developing small CoPs in their own units and departments.

There were also challenges in relationship building. Since, on several occasions, the activities were virtual, the absence of face-to-face interactions at times made it difficult to form deep personal connections, particularly for new members. Participants who were not initially from the teaching background, sometimes, struggled with differing expectations of engagement and knowledge-sharing norms. (Field Notes). The unequal participation levels created a hierarchy-like structure, where a small group of active participants drove most discussions while others remained passive. Technical jargon discouraged some participants from engaging fully, particularly those new to digital learning.

Strategies that strengthened identities and relationships included encouragement, buddy system, recognition, and hybrid engagement. *“Encouraging storytelling and reflective practice, where members shared their digital learning journeys, helped build personal connections”* (Participant 2, personal communication). Buddy systems and small group interactions increased engagement, particularly for those who felt intimidated in larger discussions. Recognition mechanisms (badges, shout-outs, leadership roles) incentivized participation and strengthened

the members' sense of belonging. Hybrid engagement models, where occasional in-person meetups complemented virtual discussions, improved relationship-building.

Discussion of Findings

In resource-constrained contexts, the impact of information and communication technologies (ICTs) on teaching and learning can only be realized when educators are competent and understand how to integrate them into the curriculum. The computer revolution has significantly transformed the learning landscape, expanding education beyond traditional classrooms to any place and time. Currently, e-learning is primarily delivered via the Internet, although it was previously delivered using a blend of computer-based methods (UNESCO, 2023b). With e-learning, students can study at their convenience and as frequently as they desire (Epignosis, 2014). Additional benefits include avoiding commuting to and from class and selecting specific parts of courses to learn. When educators effectively engage in e-learning, it can enhance higher-order thinking skills, provide creative and individualized options for student expression, and better prepare students for ongoing technological changes in society and workplace. There are numerous learning management systems (LMS) and methods available for delivering courses (Wilson et al., 2020). With appropriate tools, various processes such as test marking and content creation can be automated (Epignosis, 2014). However, these operations in resource-limited contexts face challenges like limited internet connectivity and pirated software licenses.

From the perspective of situated learning, mastering the use of e-learning tools and devices is closely linked to educator practice, emerging within the context of educators' work, and is heavily

social, relational, and influenced by the social and material arrangements among educators (Staempfli, 2020; Fourtané, 2022). This platform addresses the relationships between educators as novices and experts, activities, identities, artifacts, and communities of knowledge and practice. It concerns the process by which novice educators become part of a Community of Practice (CoP) (Goodhue & Seriamlu, 2021). An e-learning CoP considers many factors including the tools and devices used in designing, developing, and facilitating e-learning courses. Nevertheless, resource constraints affect innovative and flexible learning scenarios, assessment in an e-learning environment, and platforms that offer effective e-learning-based activities, with issues related to copyrights and plagiarism posing additional challenges.

Platforms and tools that facilitate dialogue between internal and external perspectives while enabling educators to participate at various levels are crucial. Encouraging relational approaches, creating both public and private meeting spaces, establishing a rhythm for the CoP, and providing community gardeners are important aspects (Goodhue & Seriamlu, 2021; Staempfli, 2020). While individual educators may excel in specific areas of e-learning, training sessions or courses often provide only limited interaction opportunities. Leveraging everyone's strengths through continuous interactions using available platform tools is essential, emphasizing that e-learning is a collective journey rather than a competition. In this manner, educators will select tools accessible to them despite resource constraints. Support needed for engaging in e-learning could be right next door, explored within the context of community relations (Ubuntu). Ubuntu, a Southern African philosophy from the Nguni Bantu languages, encapsulates "humanity" or "I am because we are," reflecting the essence of human connection and community (Letseka, 2012). It

emphasizes interconnectedness, compassion, empathy, and collective responsibility, advocating for societal harmony and greater good.

In well-resourced environments, e-learning has expanded to include devices like laptops, smartphones, robotics, and artificial intelligence. Membership in the e-learning CoP involves individuals passionate about e-learning who collaborate to improve their skills, share knowledge, and innovate within this field. This community includes educators, instructional designers, developers, and researchers, all working together to enhance their practices through collaborative efforts (Sheldon, 2021). Recognizing the importance of mutual agreement among members at all levels, the focus is on interaction, discourse, and participation processes within social and physical contexts, as proposed by Lave & Wenger (1991). The Situated Learning Approach supports the idea that meaning is created through participation in the world.

Key to establishing a CoP are its members, recruited from various educational disciplines on a teacher education and training programme. Some educators, passionate about e-learning, engage in collaborative exploration of tools and design and deliver courses in a blended learning mode. The created e-learning CoP provides participants with a safe and welcoming space, fostering comfort in asking questions, sharing ideas, expressing opinions, and engaging in dialogue about e-learning and pedagogic practices. Trust-building and open communication are essential to enable free participation (Sheldon, 2021).

Workshops offered hands-on training with technology tools and methods, along with presentations by guest speakers. These workshops emphasized open and transparent communication, focusing on ongoing dialogue and sharing experiences. They also included discussions on user manuals, scripts, tools, and other resources to support the development of relationships and the transfer of both explicit and tacit knowledge related to e-learning practices. Discussion forums, utilizing synchronous and asynchronous approaches, provided powerful environments for clarifying and explaining e-learning experiences and practices. Real-time chat groups addressed quick questions, and collaborative reflection allowed educators to innovate and address challenges collectively. Participants' reflections on their experiences contributed to the evolution of the e-learning CoP, enhancing their understanding and application of e-learning principles.

The e-learning CoP facilitated the construction of new relationships and knowledge related to e-learning practices, crucial for addressing contextual issues in resource-constrained environments. The operational e-learning CoP engaged in sensitization activities, transforming shared values into policy guidelines and practitioner briefs. Educators' participation in the community led to significant transformations in their understanding of e-learning, generating new knowledge and establishing a common knowledge base for future reference.

Implications for practice

Even with limited resources, an e-learning community can significantly affect pedagogic practice, transforming traditional educational methods, and fostering new approaches to teaching and learning. This community has implications for e-learning practitioners in resource-constrained

contexts by providing a space for connection and networking, which supports educators even in such environments.

This e-learning community of practice acts as a strategy for professional learning amidst the evolving e-learning needs of educators. The resource-constrained context requires more implicit knowledge and approaches than those available in the global market. Educators need a space like this to share experiences and observe others, learning how different tools and devices function. The narratives and conversations of each member validate the implicit knowledge about e-learning practices in this context, supporting the idea that learning is embedded in daily work routines rather than separated from them.

Another implication of this community is for educators to understand that within their work environment, members can receive help with their routine challenges. E-learning as an operational environment contains all the expertise needed, as well as challenges that require a communal approach. It is noteworthy that despite these challenges, educators can find enjoyment, gain confidence, and find their work more meaningful.

Limitations of this study

While this research makes several important contributions to the field, certain limitations should be acknowledged. Firstly, from a methodological perspective, the study relies on data drawn from a limited number of educator interviews. The inclusion of additional sources of data, such as classroom observations and interviews with university leaders, students' family members, and

insights from their homes, would have strengthened the findings. Secondly, there is a notable deficiency in providing rich contextual information to facilitate a comprehensive understanding of the results. Future studies would benefit from incorporating more detailed contextual data to present a fuller picture.

Conclusion

The process of setting up, developing, and sustaining an e-learning community of practice in a resource-constrained context relies on the resilience of its members and their ability to explore available tools. In such contexts, there may be limitations in both hardware and software that affect the community. However, by applying Ubuntu principles, the participants in these contexts can support each other in using emerging technology. This resilience provides a significant means for educator practitioners to access ongoing knowledge necessary for 21st-century pedagogy. The formation of an e-learning community of practice requires the founder and members to utilize the collective expertise within the group. Building a successful e-learning community of practice takes time and effort, needing active participation from both the community facilitator and its members. With consistent nurturing and a supportive environment, the community can serve as a valuable resource for continuous learning and professional development.

Acknowledgements

All educators who accepted to work with me as we explored the e-learning community.

Funding information

Carnegie Foundation of New York, the Makerere University Directorate of Research Early Career Researcher Project, funded this study.

Ethics

This research involved human participants, and therefore, all ethical considerations were strictly adhered to. Firstly, informed consent was obtained from each participant, who retained the right to withdraw from the study at any time without coercion. Secondly, the environment in which the participants operated ensured that interactions remained collegial and professional. Furthermore, in compliance with ethical standards, no participant was identified by name within this research.

Author Bios

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Disclosure statement: No potential conflict of interest was reported by the authors.

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