



Theme: Transforming Education Through Open and Distance E-Learning: Inclusive, Innovative, and Sustainable Solutions.

Title: Reimagining Open and Distance Learning through Community-Based Participatory Action Research: Lessons from African Rural University

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Abstract

Open and Distance Learning (ODeL) has expanded access to higher education, but access does not necessarily produce meaningful participation, contextual relevance or community connection, particularly in rural African settings. This conceptual paper examines how Community-Based Participatory Action Research (CBPAR) can inform a more socially embedded model of ODeL. The study used a conceptual synthesis and illustrative case approach, combining an integrative review of literature with analysis of documented educational practices at African Rural University (ARU), Uganda. ARU was selected purposively because its Visionary Approach, Epicenter Strategy, experiential learning and engagement with Traditional Wisdom Specialists provide a community-oriented educational model, although ARU does not currently operate a formal ODeL programme. The analysis identified five interrelated principles: learner-centred engagement, communities as co-educators, contextualized learning, indigenous knowledge integration, and learning through community action. These principles informed a CBPAR-Enhanced Community of Inquiry framework that adds Community Engagement Presence to teaching, social and cognitive presence. The proposed framework positions communities as co-designers, co-educators, co-researchers and co-evaluators, while treating digital technologies as enablers of relationships and inquiry rather than ends in themselves. The paper concludes with an operational pathway for curriculum, assessment, partnerships, digital delivery and knowledge governance.

Keywords: Open and Distance Learning; Community-Based Participatory Action Research; Community Engagement; Community of Inquiry; Indigenous Knowledge; Rural Transformation



1. Introduction

Open and Distance Learning (ODEL) has become an important mechanism for widening access to higher education by reducing geographical and, in some cases, socioeconomic barriers to participation (Bozkurt et al., 2020). Digital learning environments, mobile technologies, learning management systems and other communication technologies have expanded the possibilities for reaching learners who cannot participate in conventional campus-based education. However, access to a digital platform should not be equated with meaningful educational inclusion.

The COVID-19 pandemic exposed this distinction. While digital technologies supported continuity of education, the disruption also revealed inequalities in connectivity, devices, electricity, affordability, digital competence and learner support (Bozkurt et al., 2020; UNESCO, 2021). These challenges remain especially significant in rural and underserved African communities (ITU, 2023; UNESCO, 2023). The problem is therefore both technological and pedagogical: learners may gain access to content while remaining socially isolated or disconnected from the contexts in which they live and work.

A further challenge concerns contextual relevance. Standardized digital content can distance learning from local livelihoods, cultures, indigenous knowledge systems and community priorities. This is particularly problematic where higher education is expected to contribute to rural transformation. The central problem addressed in this paper is therefore not simply how education can be delivered across geographical distance, but how distance learning can remain relational, participatory and connected to community realities.

Community-Based Participatory Action Research (CBPAR) offers a useful conceptual basis for addressing this problem. Drawing from action research and participatory traditions (Lewin, 1946; Freire, 1970), CBPAR emphasizes equitable partnership, co-learning, shared knowledge production, reflection and action (Israel et al., 2017). These principles have potential relevance to ODeL because they reposition learners and communities as active participants rather than treating communities merely as settings in which learning is applied.

African Rural University (ARU), Uganda, provides an illustrative institutional case. ARU's Visionary Approach, Epicenter Strategy, experiential learning and engagement with Traditional Wisdom Specialists connect university learning with community knowledge and development challenges (Maali, 2025, 2026; Musheshe & Maali, 2025). ARU is not presented as an established CBPAR-based ODeL institution. Rather, its community-engaged practices are examined as a source of transferable principles that could inform ODeL design.



The paper addresses four questions: (1) What pedagogical and structural challenges limit meaningful participation in contemporary ODeL? (2) What CBPAR principles are relevant to addressing these challenges? (3) What transferable lessons can be derived from ARU's community-engaged educational model for ODeL? and (4) How can these lessons be integrated into a CBPAR-Enhanced Community of Inquiry framework?

The paper makes two principal contributions. First, it translates community-engaged practices into an explicit ODeL design logic rather than treating ARU as evidence that CBPAR-based ODeL already exists. Second, it proposes Community Engagement Presence as an extension of the Community of Inquiry framework and specifies how this presence can be operationalized through curriculum, partnerships, assessment, technology and community knowledge governance.

2. Literature Review

2.1 ODeL and the Problem of Distance

ODeL has evolved from correspondence and broadcast models to digitally mediated environments involving learning management systems, mobile technologies, video conferencing, MOOCs and learning analytics (Garrison, 2011; Moore & Kearsley, 2012; Bozkurt et al., 2020). This evolution has increased flexibility, but it has not eliminated the educational significance of interaction, support and context. Hodges et al. (2020) further distinguish deliberately designed online learning from emergency remote teaching, underscoring the importance of pedagogy rather than technology alone.

The concept of transactional distance is also relevant. Moore (1993) argues that psychological and communication distance can exist even when physical distance is the defining feature of distance education. Thus, an ODeL system can reduce geographical distance while leaving learners experiencing instructional, social or relational distance. The present paper builds on this concern by arguing that community connection is an additional dimension of meaningful distance learning.

2.2 Structural and Pedagogical Challenges in Rural African ODeL

Digital inequality remains a major constraint. Connectivity, affordability, electricity, device ownership and digital skills can combine to create unequal participation (ITU, 2023; UNESCO, 2023). However, the digital divide should not be reduced to whether a learner owns a device. Effective participation also depends on time, financial resources, institutional support, digital literacy and the suitability of learning materials.



Learner isolation is a second challenge. Social presence and teaching presence are important to learner motivation and persistence, but online interaction alone may not establish meaningful relationships with the social environments in which learners live (Garrison et al., 2000, 2010; Martin et al., 2020). A learner may participate frequently online without connecting course knowledge to local problems.

Contextual relevance constitutes a third challenge. In rural settings, learning is embedded in livelihoods, culture, agriculture, local governance and indigenous knowledge. When digital curricula treat these realities as peripheral, the distance between formal knowledge and lived experience can increase. The implication is not that all curriculum content should be localized, but that learners should have structured opportunities to interpret and apply disciplinary knowledge in their own contexts.

2.3 CBPAR as a Participatory Learning Logic

CBPAR emphasizes equitable relationships among academic and community participants, shared ownership, co-learning, collaborative inquiry and action. Its roots can be associated with Lewin's (1946) action research and Freire's (1970) dialogical pedagogy, while contemporary CBPAR emphasizes partnership, reflection and action (Israel et al., 2017; Minkler & Wallerstein, 2008).

For ODeL, the value of CBPAR is its capacity to transform the learner's locality into a legitimate context for inquiry. A learner can identify a community problem, investigate it with relevant actors, connect observations to disciplinary concepts, co-develop a response, document the process digitally and reflect on the outcome. This converts distance from a barrier into a potential learning resource.

2.4 Community Engagement and Indigenous Knowledge

Community-engaged learning connects academic study with authentic community contexts and can support application, reflection and civic responsibility (Bringle & Hatcher, 2011; Tremblay et al., 2018). In ODeL, geographical dispersion can therefore be reframed: learners' communities can become distributed learning sites rather than locations from which learners must be separated.

Indigenous knowledge is particularly important in this context. Decolonial scholarship challenges the privileging of a single knowledge tradition and emphasizes epistemic plurality (Ndlovu-Gatsheni, 2018; Smith, 2021). ARU's engagement with Traditional Wisdom Specialists illustrates one-way local knowledge holders can participate in university learning. However, digital documentation raises governance concerns. Consent, attribution, ownership, cultural sensitivity and community control must be addressed before knowledge is digitized or redistributed.



2.5 Community of Inquiry and the Proposed Extension

The Community of Inquiry (CoI) framework explains meaningful online learning through the interaction of teaching presence, social presence and cognitive presence (Garrison et al., 2000). Teaching presence concerns design and facilitation; social presence concerns relationships and interaction; and cognitive presence concerns inquiry and meaning-making.

The present paper does not argue that CoI is inadequate. Rather, it identifies a boundary in its application to community-oriented ODeL: the framework primarily describes processes within the educational learning community, whereas CBPAR explicitly draws external community actors into knowledge production and action. Community Engagement Presence is therefore proposed as a complementary dimension.

Community Engagement Presence refers to the structured participation of community actors and community knowledge in defining learning problems, contributing expertise, mentoring learners, supporting inquiry, interpreting findings, participating in assessment and reflecting on action. It should be understood as an extension that connects the online learning community with the learner's wider social and cultural environment.

2.6 Critical Synthesis and Knowledge Gap

Three gaps emerge from the literature. First, ODeL and CBPAR have largely developed as related but distinct bodies of scholarship: ODeL emphasizes access, instructional design, interaction and digital technologies, while CBPAR emphasizes participation, reciprocal knowledge production and action. Second, community members are not consistently positioned as educational partners within ODeL design. Third, community engagement is often discussed normatively without a clear mechanism showing how it can be translated into curriculum, assessment, digital interaction and knowledge governance.

This paper addresses these gaps by connecting CBPAR principles to the CoI framework and using ARU as an illustrative case. The proposed contribution is therefore not a claim of empirical effectiveness, but a theoretically grounded design framework that can subsequently be tested.

3. Methodology

The study adopted a conceptual research design with an illustrative case analysis. Conceptual research is appropriate where the purpose is to synthesize existing knowledge, clarify relationships among concepts and develop theoretical propositions rather than estimate population parameters (Jaakkola,



2020). The study therefore did not collect primary survey or interview data and makes no statistical claims.

ARU was purposively selected as an illustrative case because its documented educational philosophy includes experiential learning, the Visionary Approach, the Epicenter Strategy and engagement with Traditional Wisdom Specialists (Maali, 2025, 2026; Musheshe & Maali, 2025). The case was used to identify practices that could potentially be translated into ODeL. Because ARU does not operate a formal ODeL programme, the case is explicitly treated as a source of transferable principles rather than evidence of implemented CBPAR-based ODeL.

The conceptual synthesis drew on literature concerning ODeL, CBPAR, community-engaged learning, indigenous knowledge, experiential learning and the Community of Inquiry. Contemporary literature was emphasized, while seminal sources were retained where necessary for theoretical foundations. Institutional materials concerning ARU were used only to describe the educational practices attributed to the institution.

Analysis proceeded in four stages. First, recurring ODeL challenges were identified. Second, CBPAR principles were extracted and compared with those challenges. Third, documented ARU practices were examined for points of convergence with those principles. Fourth, the resulting relationships were translated into an operational framework specifying actors, activities, digital functions and expected learning/community processes. This procedure moved the paper beyond descriptive literature review toward conceptual framework development.

The study does not claim empirical generalizability. Its intended contribution is analytical transferability: institutions can examine whether the proposed principles and mechanisms are appropriate to their own contexts. The framework should therefore be subjected to empirical testing before claims are made about effects on learner persistence, achievement or community outcomes.

4. Findings

Five interrelated findings emerged from the conceptual synthesis and ARU case analysis. The findings are presented together with their proposed implications for ODeL implementation.

CBPAR principle	ARU illustration	ODeL operationalization	Expected contribution
Participation and co-design	Community-engaged learning and local problem identification	Learners and community actors jointly identify	Greater contextual relevance and learner agency



		authentic learning problems and learning products	
Reciprocity and co-education	Traditional Wisdom Specialists and community resource persons	Virtual/community mentoring, guest dialogue, local demonstrations and community-generated resources	Multiple knowledge sources and stronger social connection
Co-learning and inquiry	Experiential learning linked to community realities	Structured community inquiry, field evidence, digital documentation and reflective discussion	Critical thinking and application of theory
Knowledge pluralism	Engagement with indigenous/local knowledge	Digital stories, community archives and locally generated case materials subject to consent and ownership rules	Cultural relevance and epistemic inclusion
Action and reflection	Community-oriented problem solving	Learners co-design, implement, document and evaluate feasible responses	Applied competence, innovation and community-oriented learning

4.1 Community Engagement and Learner-Centred Education

The analysis indicates that learner-centred ODeL should extend beyond participation in digital activities to include structured engagement with authentic problems. ARU's community-oriented model provides an illustrative mechanism: students can observe local challenges, interact with community actors, interpret evidence and participate in action. In ODeL, the same logic can be implemented through community-based assignments linked to online discussion, supervision and reflection.

4.2 Communities as Co-Educators

ARU's engagement with Traditional Wisdom Specialists demonstrates the possibility of recognizing community members as contributors to university learning. In an ODeL environment, this could involve local mentors, farmers, health workers, artisans, leaders or other knowledge holders participating through recorded interviews, live dialogues, community demonstrations or mentoring.



The important change is institutional: community expertise becomes part of the planned learning design rather than an incidental addition.

4.3 Contextualized Learning through CBPAR

CBPAR can turn learners' communities into sites of inquiry. Rather than relying exclusively on hypothetical cases, course activities can require learners to investigate locally identified issues, compare evidence with academic concepts, develop possible responses and reflect on outcomes. The digital environment then becomes a space for documenting, discussing and analyzing community-based experience.

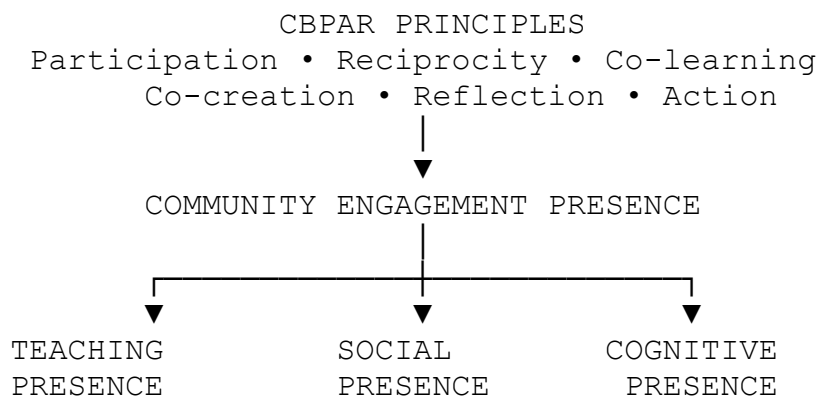
4.4 Indigenous Knowledge and Knowledge Governance

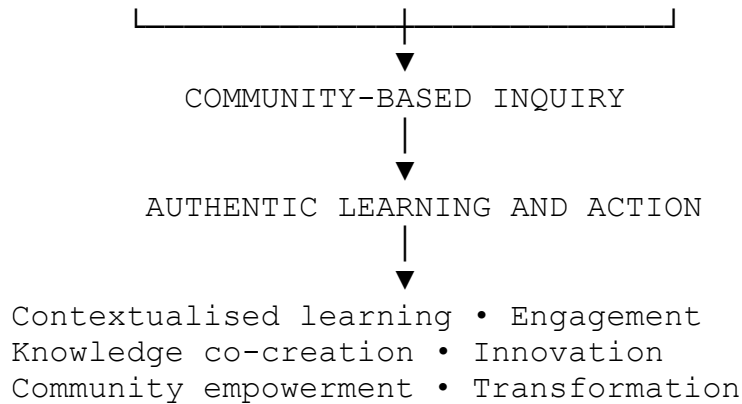
The synthesis supports the inclusion of indigenous and local knowledge, but only under participatory governance. Community members should have a role in deciding what can be documented, who can access it, how it is attributed and whether it may be reused. Thus, indigenous knowledge integration should be treated as both a pedagogical issue and an ethical governance issue.

4.5 CBPAR-Enhanced Community of Inquiry

The central conceptual finding is that Community Engagement Presence can connect the established CoI dimensions to the wider community environment. Teaching presence organizes learning; social presence supports relationships; cognitive presence supports inquiry; and Community Engagement Presence creates structured connections with community actors, knowledge and action. The four dimensions remain interdependent rather than hierarchical.

Figure 1. CBPAR-Enhanced Community of Inquiry Framework





The conceptual logic is that Community Engagement Presence connects the formal learning environment to the social and developmental environment surrounding the learner. Teaching presence provides academic direction, social presence creates meaningful relationships, cognitive presence supports inquiry and knowledge construction, while community engagement presence connects these processes to local knowledge, experience and action.

5. Discussion

The purpose of this paper was to explore how CBPAR can contribute to reimagining ODeL by drawing conceptual lessons from ARU's community-engaged educational model. The findings suggest that the major challenge is not simply how to deliver education across geographical distance, but how to prevent distance education from becoming socially and contextually disconnected. This interpretation is consistent with scholarship emphasizing that effective ODeL depends not only on technological infrastructure but also on interaction, learner support, contextual responsiveness and meaningful engagement (Bozkurt et al., 2020; Garrison et al., 2000; Martin et al., 2020). The contribution of the present paper is to argue that the community should be incorporated more explicitly into this understanding of meaningful distance learning.

The finding that meaningful engagement extends beyond participation in virtual classrooms is consistent with constructivist and experiential theories of learning. Vygotsky (1978) emphasizes the social nature of knowledge construction, while Kolb (1984) demonstrates the importance of experience and reflection in learning. CBPAR extends these ideas by locating learning within collective processes of inquiry and action involving community actors (Israel et al., 2017). Thus, while conventional ODeL may provide opportunities for learners to interact with instructors and peers online, a CBPAR-informed model creates additional opportunities for learners to apply academic knowledge to problems emerging from their own environments.



This distinction is important because learner engagement and community engagement are not synonymous. A learner may be highly active in an online discussion forum but still experience little connection to the social realities surrounding them. The proposed approach therefore seeks to move from engagement *within* the virtual classroom towards engagement *between the virtual classroom and the learner's community*. This represents one of the principal conceptual implications of the study.

The finding that communities can function as co-educators is similarly grounded in CBPAR scholarship. Israel et al. (2017) and Minkler and Wallerstein (2008) emphasize equitable partnerships and shared knowledge production, challenging conventional relationships in which researchers or professionals retain primary authority over knowledge. ARU's engagement with Traditional Wisdom Specialists illustrates how this principle can operate within higher education (Maali, 2025; Musheshe & Maali, 2025). The implication for ODeL is therefore broader than inviting community members to give occasional guest lectures. Community actors can participate in identifying problems, contributing knowledge, mentoring learners and evaluating solutions.

The finding concerning contextualized learning also reinforces the importance of moving beyond standardized content delivery. Existing scholarship has raised concerns about the capacity of ODeL to remain culturally and contextually relevant across diverse settings (Bozkurt et al., 2020; Ehlers, 2020). Freire's (1970) critical pedagogy provides a particularly useful theoretical lens because it views education as a dialogical process grounded in learners' lived realities. CBPAR operationalizes this principle through participatory inquiry, enabling learners and communities to identify issues, generate knowledge and act upon their findings.

The ARU case therefore provides more than an institutional example. It illustrates a pedagogical principle: learning becomes more meaningful when academic knowledge is placed in dialogue with lived experience and community knowledge. This principle can potentially be translated into ODeL without reproducing ARU's institutional structure in its entirety. For example, a learner studying rural development could investigate a locally identified development problem; an education student could work with a local school to examine a pedagogical challenge; and an agriculture student could investigate a farming practice with local farmers. Digital platforms could then provide the spaces for learners to document, discuss, analyse and reflect on these experiences.

The integration of indigenous knowledge further strengthens this argument. Decolonial scholarship has challenged the dominance of Western epistemologies in higher education and called for greater recognition of diverse knowledge systems (Ndlovu-Gatsheni, 2018; Smith, 2021). ARU's engagement with Traditional Wisdom Specialists demonstrates one institutional response to this challenge. The implication for ODeL is that digital learning should not simply reproduce standardized knowledge in electronic form. It should also create opportunities for learners to encounter, interrogate and contribute to multiple knowledge systems.



At the same time, the findings require a critical qualification. The digitization of indigenous knowledge can reproduce the very power imbalances that decolonial approaches seek to challenge if communities are not involved in determining what knowledge is shared, how it is interpreted and who controls its use. A CBPAR-informed ODeL approach must therefore treat community participation as an issue of knowledge governance, not merely as a pedagogical technique.

The findings also require a reconsideration of the role of technology. Contemporary ODeL increasingly incorporates learning management systems, artificial intelligence, adaptive learning and learning analytics (Bond et al., 2024; Knox, 2019). These developments create important opportunities, but technological sophistication does not automatically produce meaningful learning. Existing scholarship has cautioned against technological determinism and emphasized the continuing importance of pedagogy and human interaction (Selwyn, 2016; Zawacki-Richter & Qayyum, 2019).

The present study extends this argument by proposing that technology should be understood primarily as an enabler of relationships, inquiry and action. In a CBPAR-informed ODeL model, the value of a digital platform is therefore determined partly by its capacity to connect learners with educators, peers, community experts and local knowledge systems. This reframes technology from being the centre of ODeL towards being an infrastructure that supports a wider educational ecosystem.

Theoretical contribution: extending the Community of Inquiry

The most important theoretical contribution of the paper concerns the Community of Inquiry framework. Garrison et al. (2000, 2010) conceptualize meaningful online learning through the interaction of teaching presence, social presence and cognitive presence. The framework has been highly influential because it explains how instructional design, social interaction and knowledge construction interact within online learning environments.

However, the present analysis identifies a conceptual boundary in applying the framework to community-oriented and rural ODeL. The traditional CoI configuration is principally concerned with the relationships and processes constituting the learning community within the educational environment. CBPAR draws attention to relationships that extend beyond that environment by positioning external community members as partners in knowledge production and action.

The proposed Community Engagement Presence therefore extends rather than replaces the existing three presences. It introduces an explicit relationship between the online learning community and the wider community in which learners live. Teaching presence provides academic direction; social presence supports meaningful interaction; cognitive presence facilitates inquiry and knowledge construction; and Community Engagement Presence connects these processes with community knowledge, actors and locally identified problems.



This theoretical extension is important because it changes the unit of analysis from the online classroom alone to the wider learning ecosystem. The learner is simultaneously a participant in a digital learning community and a member of a physical, social and cultural community. CBPAR provides the conceptual bridge between these two spaces.

The framework consequently advances the argument that meaningful ODeL in rural and underserved contexts should be understood as a process of community-based inquiry mediated, but not determined, by technology. This is the paper's principal conceptual contribution.

Practical and policy implications

The theoretical argument has implications for curriculum design. ODeL programmes could incorporate structured community-based inquiry in which learners investigate authentic local problems and connect their findings to course concepts. Such activities would be consistent with experiential learning and could strengthen the practical relevance of programmes (Kolb, 1984; Bringle & Hatcher, 2011).

Assessment would also need to evolve. If learners are expected to investigate community problems, collaborate with community actors and develop contextually appropriate responses, assessment should capture these competencies rather than relying predominantly on examinations and individual written assignments. This would align assessment more closely with the participatory and experiential foundations of CBPAR.

Institutional policy would likewise need to recognize community engagement as part of ODeL quality rather than as an optional extension activity. This would require universities to develop partnerships with local organizations and knowledge holders, prepare lecturers for community-engaged digital pedagogy and establish appropriate mechanisms for recognizing community contributions.

However, implementation cannot be assumed to be straightforward. Community-based ODeL could face the same digital inequalities that already constrain distance education. Rural connectivity, device access, digital literacy and institutional capacity remain important barriers (ITU, 2023; UNESCO, 2023). Moreover, meaningful community participation requires time, trust and institutional commitment. The framework should therefore be understood as a design orientation rather than a universal implementation formula.

Limitations and future research

The study is conceptual and relies on literature synthesis and documented institutional practices rather than primary empirical data. The ARU case is therefore illustrative rather than representative. In



addition, ARU does not currently operate a formal ODeL programme, meaning that the proposed transfer from its community-engaged model to digital distance education remains a theoretical proposition.

This limitation also creates an important research agenda. Future studies should empirically examine how Community Engagement Presence can be operationalized and measured within ODeL programmes. Research could investigate whether CBPAR-informed ODeL improves learner engagement, persistence, academic performance, contextual relevance and community outcomes. Comparative studies involving established ODeL institutions would be particularly valuable in determining which elements of the framework are transferable across different institutional, technological and cultural contexts.

7. Conclusion

This paper argues that reimagining ODeL in rural African contexts requires more than expanding digital access. Meaningful distance learning should connect learners with educators, peers and the communities in which learning is situated. CBPAR provides a useful conceptual logic because it emphasizes participation, reciprocity, co-learning, knowledge co-creation, reflection and action.

The ARU case demonstrates transferable principles through its community-engaged educational orientation, experiential learning and engagement with Traditional Wisdom Specialists. These practices do not constitute evidence that ARU has already implemented CBPAR-based ODeL. Instead, they provide an illustrative basis for translating community-engaged pedagogy into digital learning environments.

The proposed CBPAR-Enhanced Community of Inquiry framework adds Community Engagement Presence to teaching, social and cognitive presence. Its distinctive contribution is to connect online learning processes with community actors, local knowledge, authentic problems and action. The framework therefore shifts the unit of attention from the online classroom alone to the wider learning ecosystem.

Implementation should remain context-sensitive. Rural connectivity constraints, institutional capacity, community trust and indigenous knowledge governance can limit adoption. The framework should consequently be treated as a design proposition requiring empirical testing, adaptation and evaluation. Its promise lies in repositioning technology as an enabler of human relationships, collective inquiry and locally relevant learning rather than as the defining purpose of ODeL.



8. Recommendations

- a) Pilot Community Engagement Presence in selected ODeL courses where community-based inquiry is academically appropriate, rather than assuming that every course requires the same model.
- b) Establish community learning partnerships with clear roles for learners, lecturers, local mentors, organizations and knowledge holders.
- c) Redesign selected assignments around authentic community problems, supported by online supervision, reflection and peer discussion.
- d) Develop assessment approaches that recognize inquiry, collaboration, reflection, application and community-oriented problem solving.
- e) Develop institutional protocols for indigenous and local knowledge covering consent, attribution, ownership, access and culturally sensitive information.
- f) Invest in low-bandwidth, mobile-friendly and offline learning options so that community-based ODeL does not reproduce digital exclusion.
- g) Train academic staff in participatory research, community-engaged digital pedagogy, facilitation and ethical knowledge governance.
- h) Empirically test Community Engagement Presence and compare CBPAR-informed ODeL with conventional ODeL models using learner and community outcome measures.

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