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From Distance Education in Professional Training to a Francophone Learning Ecosystem: Modelling a Renewed Programme Based on a Multi-Stakeholder Action Research within the AUF Network

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Abstract

Distance education in professional training has become a strategic lever for skills development and employability in Francophone space, particularly in sub-Saharan Africa. The "*Agence Universitaire de la Francophonie*", through its "*Institut de la Francophonie pour l'Ingénierie de la Connaissance et la Formation à Distance—IFIC*", has supported qualifying training programmes for over two decades. Despite their institutional recognition, these programmes present structural shortcomings that limit their full impact on learners' professional trajectories. This article presents the results of a multi-stakeholder action research project conducted between 2023 and 2026, aimed at renewing the qualifying training programme within the AUF network. The study mobilised a sequential mixed-methods design articulating three complementary data sources: a comparative benchmarking analysis of fourteen international reference institutions (including Coursera, EPFL Extension School, Université TÉLUQ and edX), fifteen semi-structured qualitative interviews with key stakeholders, and a quantitative survey collecting the perceptions of 114 respondents across five stakeholder categories; current learners, alumni, trainers, pedagogical managers and AUF/IFIC staff. Results reveal a programme that is institutionally robust and professionally valued; most of learners and alumni attribute significant career impact to their certificate; yet structurally weakened by four critical gaps: an incomplete training catalogue, an ill-defined focal point role within partner institutions, insufficient tutored support, and the near-total absence of post-training follow-up. Statistical analyses further demonstrate that tutor satisfaction is the strongest predictor of perceived accompaniment qual-

ity, both among current learners (Spearman rho = 0.591) and alumni (rho = 0.747). In response, the article proposes a renewed programme modelled around six interdependent macro-processes, integrating a living catalogue, adaptive learning pathways, AI-assisted pedagogical engineering, an alumni network, and a Francophone Competency Passport. This model offers a transferable framework for other university networks operating in multilingual and resource-constrained environments.

Keywords

Action Research, Qualifying Training, Distance Education in Professional Training, Francophone Learning Ecosystem

1. Introduction

1.1. The Rise of Qualifying Training in the Francophone Space

Qualifying training refers to a short, targeted form of continuing professional training aimed at the rapid acquisition or updating of operational, job-specific skills directly usable in the workplace (Cedefop, 2008). Unlike diploma-granting training (formation diplômante), it does not lead to a state-recognized diploma, and unlike certifying training (formation certifiante), it does not result in a certification registered in an official national repository.

The development in qualifying training coincided with the introduction of devolved administration for various functions to parts of the UK (Taylor et al., 2010). That being said, the topic of adult professional development (Hristoforova & Pavītola, 2025; Robertson & Prajapati, 2025) is rapidly increasing among countries, especially in the Global South (Brown & De Neve, 2024; Preece, 2009; Shizha & Abdi, 2009), where it has acquired renewed urgency in the face of three converging transformations. The rapid restructuring of labour markets driven by digitization and artificial intelligence, the increasing porousness of the boundaries between formal education and continuous professional development, and the growing recognition that access to recognized, transferable qualifications constitute one of the most effective levers for reducing socioeconomic inequalities in multilingual and geographically dispersed contexts (Carré & Caspar, 2011; Daffron et al., 2009). In this perspective, qualifying training; understood as a structured learning process aimed at developing directly operational competencies aligned with labour market requirements (Labrie & Montmarquette, 2005); has thus emerged as both an equity instrument and an engine of professional mobility, particularly for working adults in Sub-Saharan Africa who are unable to interrupt their professional or family responsibilities to undertake residential programmes.

In the "francophone space" specifically, distance education in professional training (DEPT) has developed over the past two decades as a strategic response to the twin challenge of geographic dispersion and infrastructure inequality. Literature (Deniau, 1995) showed that the "Francophonie" is a concept with multiple

meanings, to which Deniau attributes linguistic, geographical, spiritual/mystical, and institutional dimensions. Unlike their counterparts in high-income countries, francophone learners; particularly those in Sub-Saharan Africa, where three-quarters of the respondents to the present study are based; navigate training environments characterized by unreliable internet connectivity, variable institutional support, and limited access to mentoring and professional networks. For these learners, a DEPT certification is not merely an addition to a CV. It may represent the primary pathway to formal labour market recognition of competencies developed through years of informal professional practice. In this context, the quality of the learning programme; its pedagogical design, its accompaniment structures, its certification mechanisms, and its post-training follow-up provisions; is not peripheral to the educational enterprise; it is constitutive of it.

1.2. The AUF and Its ODL Programme: A Unique Research Field

The "*Agence Universitaire de la Francophonie*" (AUF); the world's largest university network, comprising more than one-thousand-member institutions across more than one hundred countries; occupies a singular position in the landscape of francophone distance education. Through its "*Institut de la Francophonie pour l'Ingénierie de la Formation à Distance*" (IFIC), the AUF has, since 2004, supported member institutions in designing and deploying ODL programmes (known internally as *Formations Ouvertes et A Distance*, or *FOAD*) for French speaking learners geographically dispersed across the world. This programme brings together an exceptionally diverse constellation of actors; host institutions and their pedagogical coordinators (focal points), tutors, learners, alumni, AUF/IFIC staff, and national francophone centres known as "*Campus Numériques Francophones*" (CNF); in a multi-stakeholder governance architecture spanning fifteen countries represented in the present inquiry.

As a research field, the AUF programme possesses three characteristics that make it a particularly rich and theoretically significant case study. First, its institutional longevity; over twenty years of operational experience; provides a mature and data-rich terrain for empirical investigation. Second, its exceptional geographic diversity; spanning Sub-Saharan Africa, North Africa, Southeast Asia, the Caribbean, and Europe; enables the examination of contextual factors that are typically controlled away in mono-national studies, but that profoundly shape the conditions under which distance training is experienced and its outcomes valorised. Third, its hybrid governance model; in which a supranational network institution (AUF) co-produces training offerings with autonomous member universities, mediated by a diverse array of local actors; generates governance tensions and coordination challenges that are analytically productive for theorizing multi-stakeholder learning ecosystems.

The empirical evidence available on the AUF programme points to a paradox that motivates the present research. On the one hand, the symbolic value of the AUF certificate is universally recognized as learners and alumni mostly report that

the certification had an important or important impact on their professional trajectory. On the other hand, the programme exhibits documented structural shortcomings; an incomplete and inadequately updated course catalogue, an ambiguous and overloaded focal point role, an insufficient pedagogical accompaniment framework (Arriagada-Hernández et al., 2024), and a near-total absence of post-training follow-up mechanisms; that limit its capacity to fulfil its stated mission of fostering professional development and social mobility across the Francophone world.

1.3. Research Problem

Distance education in professional training has become a strategic lever for skills development and employability in Francophone space, particularly in sub-Saharan Africa. Here, a critical treatment of employability is needed in the Francophone space. Rather than a neutral outcome, employability should be framed as a contested, positional construct: credential inflation and labor-market volatility weaken the link between educational investment and occupational security (Brown et al., 2010), while employability functions as ongoing identity work rather than fixed competency possession (Tolich, 2005; Tomlinson, 2017). This matters given the learning ecosystem heterogeneous labor markets across the Francophone space. The certification-competency chain also warrants scrutiny: certification may construct competency as an administrative category rather than faithfully measuring it (Barbier, 2011), and competency-driven "learnification" risks collapsing qualification, socialization, and subjectification into one reductive logic (Biesta, 2015).

Furthermore, the co-existence of strong perceived certificate value and documented structural insufficiencies constitutes the core research problem of this study. It signals that the AUF DEPT programme has built robust institutional legitimacy (Oillo & Loiret, 2006); a symbolic capital that must be preserved and amplified; but that the operational conditions of its deployment systematically undermine the realization of its potential impact. Specifically, the absence of post-training follow-up renders it impossible to measure the actual effects of the training on professional insertion; the ambiguity of the focal point role creates quality disparities across host institutions that erode the homogeneity of the learning experience; the static management of the course catalogue reduces its relevance to fast-evolving labour market demands; and the underdeveloped accompaniment structures leave learners without the support needed to persevere through complex distance learning pathways.

These structural insufficiencies are not merely organizational inefficiencies; they reflect a conceptual gap in the design of the programme. The AUF DEPT programme was conceived primarily as a course delivery mechanism; a pipeline from institution to learner; rather than as a learning ecosystem that accompanies learners across their entire professional development trajectory, from enrolment to post-certification valorisation. The renovation of the programme thus requires

not only operational improvements to individual processes, but a reconceptualization of its foundational architecture around the notion of a durable, community-anchored, and contextually adaptive learning environment.

It is against this background that the present study formulates its central research question: *How can the AUF distance qualifying training programme be renewed to become an innovative, equitable, and sustainable learning ecosystem, adapted to the diverse realities of Francophone space*?

This question is theoretically grounded in the literature on open and distance learning systems (Depover et al., 2000; Lebrun, 2007; Paquette, 2002), action research methodology (Lewin, 1946; Somekh & Noffke, 2009), and the emerging field of adaptive and AI-enhanced learning environments (Crompton & Burke, 2023; Zawacki-Richter et al., 2019). It is empirically anchored in a three-phase mixed-methods action research study conducted between 2023 and 2026, combining a comparative benchmarking of fourteen international institutions, fifteen semi-structured interviews with key stakeholders, and a quantitative survey of 114 respondents drawn from five categories across fifteen countries.

The paper is structured in six sections. Following this introduction, Section 2 reviews the theoretical and conceptual framework, situating the study within the literature on Francophone distance learning, qualifying training systems, and learning ecosystem theory. Section 3 presents the three-phase mixed-methods research design; comparative benchmarking, qualitative interviews, and quantitative survey; and discusses the ethical considerations governing data collection. Section 4 reports the empirical findings across the three data sources and their integrative synthesis. Section 5 discusses the findings in dialogue with theoretical literature, with particular attention to the paradox of tutor centrality in a technology-dominated discourse, the structural invisibility of post-training follow-up in Southern *FOAD* systems, and the implications of the proposed Francophone Competency Passport. Section 6 concludes by answering the central research question, articulating the theoretical and practical contributions of the study, and identifying directions for future research.

2. Theoretical Framework

2.1. Distance Education in Professional Training: Definitions and Contemporary Issues

Distance education in professional training (DEPT) is to obtain a basic level of education, training for the labour market needs for highly qualified personnel (Murphy et al., 2007). It refers to a structured form of education designed to develop the specific competencies and knowledge required for professional practice, operating within a logic fundamentally distinct from that of traditional degree-based programmes. Where conventional higher education (Lewis, 2002) pursues the transmission of foundational disciplinary knowledge within formal institutional settings, DEPT is oriented towards the direct operationalization of skills in

professional contexts, often delivered through digital platforms that afford temporal and geographical flexibility to learners who cannot interrupt their working lives for residential study (Labrie & Montmarquette, 2005).

This mode of training is intimately connected to the paradigm of (Friedman, 2023; Jarvis, 2004), which posits that professional development is not a finite process concluded by initial education, but a continuous dynamic of competency acquisition and renewal throughout an individual's career. Carré and Caspar, in their foundational work on training sciences (Carré & Caspar, 2011), establish that this continuity is not merely desirable but structurally necessary in economies characterized by rapid technological transformation and recurrent labour market restructuring. The alignment of DEPT with lifelong learning principles is thus not incidental: it is constitutive of its pedagogical rationale, as far as DEPT responds to needs that emerge at specific moments in a professional trajectory rather than at the threshold of working life.

A central dimension of the contemporary DEPT landscape concerns the transferability of competencies. Unlike narrowly specialized vocational preparation, effective distance qualifying training develops competencies that travel across organizational contexts, technological environments, and professional roles. Literature demonstrates that learners engaged in distance vocational programmes develop enhanced adaptability to recent technologies and methodologies, as well as strengthened problem-solving capacities that prove valuable across diverse workplace settings (Daffron et al., 2009). This transferability function is particularly significant in the Francophone context, where learners are frequently called upon to apply their qualifications in institutional and economic environments that differ from those in which the training was designed.

The role of informal and non-formal learning experiences within DEPT deserves equal attention. Adult learners do not arrive at qualifying training as blank slates: they bring with them professional experience, tacit knowledge, and prior learning that formal programmes must acknowledge and build upon if they are to remain both relevant and motivating. This recognition of experiential learning as a legitimate pedagogical resource is a defining feature of quality DEPT design and constitutes one of the axes along which distance qualifying programmes are most clearly distinguished from traditional academic curricula (Jézégou, 2019). It would nonetheless be reductive to position distance qualifying training and formal degree-based education as mutually exclusive or hierarchically ordered alternatives. Tricot argues convincingly that the most productive educational innovations are those that integrate the respective strengths of different modalities rather than substituting one for another (Tricot, 2017). From this perspective, the most effective professional development frameworks are those that articulate the competency-building rigour of DEPT with the foundational knowledge structures provided by formal academic education; an integrative logic that the "AUF" DEPT programme, by virtue of its institutional anchoring within a university network, is particularly well positioned to pursue.

2.2. Instructional Design of Open and Distance Learning Systems: A Literature Review

The literature on the instructional design of Open and Distance Learning (ODL) systems has evolved over the past two decades, moving from foundational pedagogical and technological frameworks toward more sophisticated models incorporating artificial intelligence (AI) and adaptive learning technologies (Wark & Ally, 2020). Early contributions (Depover et al., 2000; Lebrun, 2007; Paquette, 2002) established the theoretical foundations for understanding the pedagogical architectures, technological infrastructures, and instructional engineering processes required for effective distance education. More recent studies emphasize the growing importance of learner-centered approaches, personalized learning pathways, and AI-driven educational environments, which are reshaping teaching and learning practices in digital contexts.

2.2.1. Historical Development of ODL

The early development of ODL was characterized by efforts to reconcile technological innovation with pedagogical effectiveness. Research highlighted the importance of socio-technical approaches that consider both technological infrastructures and human interactions within learning environments (Béché & Schneider, 2019). These approaches underscored the need for coherent instructional design capable of integrating educational objectives, technological tools, and learner support mechanisms. A significant milestone in the evolution of distance education was the emergence of digital campuses and virtual learning environments, particularly within European higher education systems. In France, the development of digital campuses represented a major transformation in the organization and delivery of higher education, raising important questions regarding the integration, governance, and sustainability of ODL systems within universities (Bertrand, 2003). These initiatives contributed to the institutionalization of distance learning and paved the way for large-scale digital education strategies.

2.2.2. Recent Advances in Adaptive Learning and Artificial Intelligence

Recent developments in educational technologies have accelerated the adoption of adaptive learning systems designed to tailor instructional content and learning pathways to individual learner characteristics. Adaptive learning environments rely on sophisticated learner modelling techniques and data-driven instructional design processes to enhance learning outcomes and improve educational efficiency (Sravanthi et al., 2023). By continuously analysing learner performance and behaviour, these systems can dynamically adjust content difficulty, learning activities, and feedback mechanisms (Ndayishimiye et al., 2026). The integration of artificial intelligence into educational environments represents a further step in the evolution of ODL systems. AI-powered technologies offer significant opportunities for personalizing learning experiences, automating assessment processes, providing intelligent tutoring, and increasing learner engagement (Soumia & Mohammed, 2024). Recent studies suggest that AI can support more responsive and

flexible educational ecosystems capable of accommodating diverse learner needs and preferences (Ndayishimiye et al., 2026; Simoes et al., 2022). Consequently, AI is increasingly viewed as a strategic component of next-generation distance learning systems.

2.2.3. Challenges and Future Perspectives

Despite its transformative potential, the integration of AI and adaptive learning technologies into ODL systems presents several challenges. Data privacy and security concerns remain key issues, particularly given the extensive collection and analysis of learner data required for personalization processes (Simoes et al., 2022). Ethical considerations related to algorithmic transparency, bias, learner autonomy, and accountability also require careful attention from educators, policymakers, and technology developers. Furthermore, persistent inequalities in access to digital technologies (van Dijk, 2005) and internet connectivity may exacerbate existing educational disparities, limiting the benefits of AI-enhanced learning environments for certain populations (Simoes et al., 2022). Addressing these challenges requires a multidisciplinary approach that combines expertise from education, computer science, ethics, public policy, and social sciences. Such collaboration is essential to ensure that technological innovations contribute to equitable and inclusive educational opportunities.

In conclusion, the convergence of artificial intelligence and adaptive learning technologies offers unprecedented opportunities to transform ODL systems. However, realizing this potential requires a balanced approach that carefully addresses ethical, technical, and socio-economic challenges to ensure that all learners can benefit equitably from these educational advancements.

2.3. Tutored Support as a Key Success Factor in ODL

Tutored support has been widely recognized as a critical determinant of learner success in ODL environments. Beyond the technological infrastructure and instructional design of distance education systems, the quality of human support provided throughout the learning process significantly influences learner satisfaction, engagement, persistence, and academic achievement. Research (Bhat et al., 2022; Kail, 1983) consistently demonstrates that effective tutoring promotes personalized guidance, academic motivation, and collaborative learning, all of which contribute to improved learning outcomes in online and distance education settings. Empirical evidence further suggests a strong relationship between learners' satisfaction with tutoring services and their perception of the quality of educational support, highlighting the strategic role of tutors in fostering successful learning experiences.

2.3.1. The Importance of Tutor Presence in Distance Learning

In virtual learning environments, tutor presence constitutes a fundamental component of educational quality. Unlike traditional face-to-face instruction, where interactions occur naturally within physical classrooms, distance education re-

quires intentional mechanisms to support learners and reduce feelings of isolation. Tutors play a crucial role in providing continuous academic and socio-emotional support, ensuring that learners receive individualized attention throughout their educational journey (Fernandes et al., 2025). Moreover, tutors facilitate communication and collaboration among learners by creating opportunities for interaction, discussion, and knowledge sharing. Such facilitation contributes to the development of online learning communities, which have been identified as essential for promoting engagement, reducing dropout rates, and enhancing learning effectiveness (Balabal & Canuto, 2026; Fernandes et al., 2025). The tutor's presence therefore extends beyond content delivery to encompass the creation of supportive and interactive learning environments.

2.3.2. The Tutor's Role in the Learning Process

The educational responsibilities of tutors encompass a wide range of pedagogical functions. Tutors guide learners through academic activities, provide formative feedback, monitor progress, and assist students in overcoming learning difficulties. They also play a motivational role by encouraging persistence, self-confidence, and active participation in learning tasks (Ferreira & Mourão, 2020). Several studies (Garrison et al., 1999; Tinto, 1997) have demonstrated that sustained tutor involvement positively affects student performance and retention. Through timely interventions and personalized support, tutors help learners navigate academic challenges and maintain their commitment to educational goals (Xavier et al., 2024). In this regard, tutoring can be viewed as a mediating factor that strengthens the relationship between instructional design and learner achievement.

2.3.3. Competencies Required for Effective Tutoring

The growing complexity of online learning environments requires tutors to possess a diverse set of competencies. Effective tutors must combine technical, pedagogical, managerial, and people skills to address the varied needs of learners in digital contexts (Nascimento, 2016; Xavier et al., 2024). Technical competencies enable tutors to navigate learning management systems and digital communication tools, while pedagogical competencies support the design and facilitation of meaningful learning experiences. Equally important are interpersonal and communication skills, which allow tutors to establish trust, foster learner engagement, and provide constructive feedback. Given the rapid evolution of educational technologies and teaching methodologies, continuous professional development is essential for maintaining and enhancing tutor effectiveness (Nascimento, 2016). Ongoing training enables tutors to adapt to emerging pedagogical approaches and technological innovations, thereby improving the quality of learner support.

2.3.4. Tutoring and Learner Autonomy: A Complementary Relationship

Some scholars have argued that excessive reliance on tutor support may reduce learners' autonomy and hinder the development of self-directed learning skills.

This concern is particularly relevant in distance education, where independent learning is often considered a core objective. However, contemporary research suggests that effective tutoring does not undermine learner autonomy; rather, it facilitates its development. By providing structured guidance, scaffolding, and timely feedback, tutors help learners gradually acquire the skills necessary for self-regulation, critical thinking, and independent learning. Consequently, well-designed tutoring systems contribute to the empowerment of learners, enabling them to become increasingly autonomous while maintaining access to appropriate support when needed. Therefore, tutoring should not be viewed as a substitute for learner independence but rather as a mechanism that promotes its progressive development.

In conclusion, tutored support remains one of the most influential factors affecting learner success in ODL environments. Through personalized guidance, motivation, facilitation of interaction, and pedagogical support, tutors contribute significantly to learner satisfaction, retention, and academic achievement. As distance education continues to evolve in response to digital transformation and artificial intelligence, the strategic role of tutors is likely to remain central to ensuring meaningful and inclusive learning experiences.

2.4. Existing Learning-Ecosystem and Distance-Education Models

Existing theoretical literature on learning ecosystems has developed along parallel but disconnected tracks, none of which fully account for language as a structuring variable. At the macro-theoretical end, Otto and Kerres frame learning as distributed across an ecosystem of providers, platforms, and institutions, offering a systems-level account of how learning is organized without formal boundaries, but their model remains technology- and institution-centric rather than culturally grounded (Otto & Kerres, 2023). Spours advances this line further by embedding Bronfenbrenner's ecological systems theory within a political-economy framework, introducing the notion of "social ecosystem time" to capture how learning ecosystems evolve historically and structurally (Spours, 2024). This represents the most theoretically mature model in the current literature, yet it remains silent on language or transnational cultural identity as an organizing axis (**Table 1**).

There are other models (Nguyen & Tuamsuk, 2022; Pinto-Llorente & Izquierdo-Álvarez, 2024). However, the Social Ecosystem Model (Spours, 2024) is the most theoretically mature comparator and therefore requires the most explicit differentiation: its political-economy layer accounts for structural power relations but does not treat a shared transnational language and its institutional infrastructure (e.g., the *Organisation internationale de la Francophonie*, the AUF) as a constitutive, organizing variable.

2.5. Participatory Action Research as an Epistemological Stance

Participatory action research (PAR) has emerged as a prominent epistemological and methodological approach for the co-construction of innovative solutions in

Table 1. Identified learning-ecosystems.

Model	Core theoretical grounding	Scale/scope	Governance emphasis	Technology dependence	Gap relative to FLE
Distributed Learning Ecosystems (Otto & Kerres, 2023)	Systems and network theory of educational distribution	Institutional-to-national	Moderate—distribution of learning across providers	High	No account of linguistic community as an organizing structure; treats "distributed" as a purely technological/institutional property
Social Ecosystem Model (Spours, 2024)	Bronfenbrenner ecological systems theory + political economy	Micro-to-macro, multi-level (adds a chronosystem/ "ecosystem time")	Strong—explicit political-economy layer	Low-moderate	Politically sophisticated but culturally/linguistically generic; does not theorize transnational identity communities such as the Francophonie

complex institutional environments involving multiple stakeholders. Rooted in critical theory, emancipatory pedagogy, and democratic knowledge production, PAR challenges traditional distinctions between researchers and research participants by promoting collaborative inquiry, collective reflection, and transformative action (Best & Williams, 2025; Bradbury & Reason, 2008). This approach is particularly relevant in contexts characterized by institutional complexity and social diversity, where sustainable innovation requires the active involvement of those directly affected by the issues under investigation. PAR is founded on the principle that knowledge is socially constructed through interaction and collective experience. Consequently, it emphasizes collaboration among researchers, practitioners, policymakers, and community members throughout the research process. By integrating multiple forms of knowledge and fostering inclusive participation, PAR seeks not only to generate scientific understanding but also to promote meaningful social change.

2.5.1. Collaborative Knowledge Production

One of the defining characteristics of PAR is its commitment to collaborative knowledge creation. Rather than treating participants as passive subjects of research, PAR positions them as co-researchers who actively contribute to the formulation of research questions, data collection, analysis, and interpretation (Cornish et al., 2023). This democratic approach to knowledge production recognizes the value of experiential, contextual, and indigenous forms of knowledge alongside academic expertise. The inclusion of diverse stakeholder perspectives en-

riches the research process and enables the identification of innovative solutions that may otherwise remain overlooked. PAR provides opportunities for marginalized and underrepresented groups to articulate their experiences and contribute to decision-making processes that affect their lives (Kindon et al., 2007). Such engagement enhances the relevance, legitimacy, and applicability of research outcomes. Furthermore, collaborative knowledge production strengthens stakeholder ownership of both the research process and its outcomes, thereby increasing the likelihood of successful implementation and long-term sustainability of proposed interventions.

2.5.2. A Focus on Social Transformation

Beyond knowledge generation, PAR is fundamentally oriented toward social transformation. Its primary objective is not merely to understand social realities but to contribute actively to their improvement by addressing structural inequalities (van Dijk, 2005), empowering communities, and promoting social justice (Brown, 2024; Cornish et al., 2023). Through cycles of reflection, action, and evaluation, PAR enables participants to critically examine existing practices and develop contextually appropriate solutions to shared challenges. This transformative orientation aligns with the work of Freire who emphasized the importance of dialogue, critical consciousness, and collective action in fostering social change (Freire, 1970). The direct involvement of stakeholders in the research process ensures that interventions are grounded in local realities and responsive to community needs. Consequently, PAR contributes to the development of solutions that are not only theoretically sound but also socially acceptable and operationally feasible (Flood, 1999). This characteristic is particularly valuable in educational and institutional innovation projects, where stakeholder engagement is often a prerequisite for successful implementation.

2.5.3. Methodological Flexibility in Complex Institutional Contexts

Another major strength of PAR lies in its methodological flexibility. Unlike rigid research designs that prescribe predefined procedures, PAR adopts an adaptive and iterative framework capable of responding to evolving circumstances and emerging stakeholder needs (Cornish et al., 2023). This flexibility is especially important in complex institutional environments where multiple actors, competing interests, and shifting power dynamics influence decision-making processes. PAR allows researchers to accommodate diverse perspectives, negotiate conflicting priorities, and adapt research strategies as new insights emerge (Justin & Joy, 2022). Moreover, the iterative nature of PAR supports continuous learning and improvement throughout the research process. By combining systematic inquiry with practical action, PAR facilitates the development of context-sensitive innovations while maintaining scientific rigor and stakeholder engagement.

2.5.4. Challenges and Critical Considerations

Despite its considerable strengths, PAR is not without challenges. One of the most

frequently cited concerns relates to power imbalances among participants. Differences in status, expertise, institutional authority, or access to resources may influence participation and potentially undermine the democratic ideals underpinning the approach (Cornish et al., 2023). Institutional resistance may also constitute a significant obstacle, particularly when PAR initiatives challenge established practices, organizational cultures, or existing power structures. In such contexts, achieving meaningful participation requires sustained commitment from both researchers and stakeholders. To address these challenges, scholars emphasize the importance of reflexivity, transparency, and ethical vigilance throughout the research process. Researchers must continuously examine their own assumptions, positionality, and influence on the collaborative process while fostering equitable participation and mutual respect among all stakeholders (Bradbury & Reason, 2008).

In conclusion, Participatory Action Research provides a robust epistemological framework for the co-construction of innovative solutions in complex and multi-actor institutional settings (Cornish et al., 2023; Kindon et al., 2007). Through collaborative knowledge production, social transformation, and methodological flexibility, PAR facilitates the development of contextually relevant and sustainable interventions. However, realizing its full potential requires ongoing attention to issues of power, participation, and institutional dynamics, ensuring that the principles of equity and inclusion remain central throughout the research process.

3. Methodology

3.1. Research Design

This study falls within the paradigm of methodological pragmatism and employs an exploratory sequential mixed methods approach (Creswell & Plano Clark, 2018). This design is particularly well-suited to the aims of action research, which simultaneously seeks to understand a complex reality and transform it in a concerted manner with the actors who experience it (Bradbury & Reason, 2008). It relies on a logic of methodological triangulation: quantitative data do not unequivocally confirm or refute qualitative data, but rather articulate with them in depth to build a more comprehensive and nuanced understanding of the studied system.

The study was conducted in three complementary and successive phases, the sequencing logic of which is itself constitutive of the action research approach. The first, exploratory phase mapped innovative practices on an international scale. The second, comprehensive phase sought to capture the representations, tensions, and aspirations of the internal actors within the AUF system. The third, quantitative phase measured the scope and distribution of perceptions within an expanded sample of stakeholders. It is the dynamic articulation of these three analytical layers that establishes the scientific legitimacy of the formulated recommendations.

3.2. Phase 1: Exploratory Comparative Benchmarking

The first phase of the research took the form of an exploratory comparative benchmarking of fourteen reference international institutions in the field of distance vocational or certifying training. The fourteen institutions included in the benchmark were selected by the research sponsor, IFIC, based on criteria relating to geographical diversity and the inclusivity of the institutions involved in the AUF's degree programmes. The selection is not linked to any country. Rather, it is linked to the quality of the professional training programme they offer, which could be used to help overhaul the AUF's professional training programme.

The corpus for analysis includes Coursera, edX, FUN-MOOC, the École Polytechnique Fédérale de Lausanne (EPFL Extension School), Université TÉLUQ, Université Laval, eCampus Ontario, as well as other systems representative of geographical diversity and innovative practices across the French- and English-speaking worlds. The choice of this corpus was guided by two complementary criteria: the geographical diversity of the institutions; so as not to reduce the analysis to a single dominant cultural model; and the reputation of the innovative practices identified in recent educational technology literature.

A structured comparative analysis grid was developed a priori, based on a literature review of open and distance learning (ODL) systems, professional certifying programs, and quality online learning models. This grid covers four main analytical dimensions: pedagogical architecture and content modularity; tutored support modalities and dropout prevention; management and updating practices of the training catalogue; and mechanisms for creating and animating post-training learning communities. For each institution, the document analysis was supplemented by an exploration of online platforms, available annual reports, and associated scientific publications. The results of this benchmarking formed the initial empirical foundation of the research, allowing for the identification of transferable practices and the contextualization of the AUF system's shortcomings before entering the subsequent phases.

3.3. Phase 2: Semi-Structured Qualitative Interviews

The second phase utilized the semi-structured qualitative interview method, a methodological choice justified by the interpretive nature of the research questions relating to the lived experiences of the actors within the AUF's ODL system. Fifteen interviews were conducted with four categories of actors carefully selected for their complementary positions within the system: AUF/IFIC staff (n = 4), pedagogical directors and focal points of the hosting institutions (n = 4), trainers and tutors involved in the training programs (n = 4), and learners and alumni (n = 3). This diversification of interlocutor profiles meets the requirement for source triangulation in qualitative data collection (Patton, 2015), allowing for the comparison of institutional, pedagogical, and experiential perspectives.

The interviews were conducted using a semi-structured thematic grid developed in alignment with the analytical dimensions identified through the bench-

marking. The grid covered five main themes: the perception of the current system's functioning and its strengths; perceived gaps and dysfunctions; the role of actors and governance tensions; pedagogical and technological innovation needs; and expectations regarding post-training follow-up. Each interview, lasting an average of fifty to seventy minutes, was recorded with the explicit consent of the interlocutor and then fully transcribed. The inductive thematic analysis of the transcriptions was conducted according to the six-step procedure proposed by Braun and Clarke (2006): familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining, and naming, and producing the analytical report. This approach allowed for the emergence of tensions, convergences, and structural gaps perceived by the actors, which directly informed the design of the data collection tool for the quantitative phase.

3.4. Phase 3: Quantitative Questionnaire Survey

The third phase consisted of a quantitative survey via a self-administered online questionnaire, conducted through the Kobo Toolbox platform, a tool selected for its robustness in low-connectivity environments; a recurring condition in the African countries heavily represented in the sample.

To construct the variables for our questionnaire, we transformed the research concepts into measurable questions and usable data. For each indicator, we defined a short name, a data type and a list of possible responses. All of this was done after breaking down the research objectives into themes (broad dimensions), then into sub-themes, and finally into specific indicators. Each indicator was then treated as a variable so that we could select the appropriate variable type. Finally, we arranged the resulting variables in a logical order, starting with simple, general questions, moving on to the core questions in the middle, and concluding with the socio-demographic variables. As for data collection, this was facilitated by IFIC, which used its own data collection platform.

The questionnaire was developed based on the emerging themes of the qualitative analysis and the dimensions of the benchmarking, following a logic of methodological complementarity specific to exploratory sequential mixed designs. The final instrument includes 126 variables organized into five sections differentiated by respondent profile: profile presentation and context of system use; perception of training quality; evaluation of pedagogical support; perceptions of access to digital tools and the platform; and expectations regarding the modernization of the system.

The final sample, non-probabilistic by purposive and convenience sampling, includes 114 respondents distributed across five categories of actors: 54 active learners (47.4%), 46 alumni who completed at least one training program (40.4%), 9 AUF/IFIC staff members (7.9%), 3 trainers (2.6%), and 2 pedagogical directors (1.8%). This composition of the sample reflects the hierarchy of the system's stakeholders while placing direct beneficiaries; learners and alumni; at the centre, as their perceptions constitute the core of the evaluation process.

The analysis of the quantitative data employed three families of statistical tests adapted to the nature of the variables and the sample size. First, descriptive statistics (means, standard deviations, frequencies) were used to characterize the distributions of perceptions. Second, the non-parametric Mann-Whitney (U) test was chosen to compare means between the learner and alumni groups, as the data did not meet the normality conditions required for parametric tests. Third, Spearman correlations were calculated to identify relationships between satisfaction dimensions, to isolate the most predictors of perceived support quality. All statistical processing was performed using R, with a significance threshold set at $p < 0.05$.

It is important to mention the main methodological limitations of this phase. The sample size (n = 114) limits the statistical power of the tests and the generalizability of the results to the entire population of stakeholders in the AUF system, which spans around one hundred countries. The selection bias inherent in recruiting respondents via AUF's institutional networks is a second limitation to consider when interpreting the results. However, these limitations are partially compensated for by the richness of the qualitative data collected in Phase 2, which allows for a deeper understanding and contextualization of the observed statistical trends.

3.5. Ethical Considerations

The conduct of this research adhered to the fundamental principles of research ethics involving human participants. For all semi-structured interviews, written informed consent was obtained from each participant before the start of the interview. Participants were informed of the research objective, the intended use of the data, the confidentiality of the responses, and their right to withdraw from the study at any time without prejudice. For the quantitative survey, an introductory text to the questionnaire detailed the same guarantees, and voluntary participation was confirmed by the submission of the form. Data anonymization was ensured from the collection phase onward: no nominative identifiers were retained in the analytical databases. The AUF's data privacy policy was respected throughout the entire process, in accordance with the organization's institutional commitments to its members and beneficiaries.

4. Results

The results are presented in four sub-sections corresponding to the three data sources of the exploratory sequential mixed methods approach, followed by an integrative synthesis of the observed convergences and divergences. This narrative organization follows the sequential logic of the research phases and highlights the complementarity of the perspectives cast upon the AUF's qualifying training (QT) system.

4.1. Insights from Benchmarking: Four Key Characteristics of High-Performing Systems

The comparative analysis of the fourteen selected international institutions reveals

four cross-cutting structural characteristics common to distance-based qualifying or certifying training systems deemed most successful under the criteria of accessibility, learner engagement, pedagogical quality, and the labour market valuation of certifications.

4.1.1. Modular Architecture and Pathway Flexibility

All analysed high-performing systems (Vaill, 1982) rely on a modular architecture that enables personalized pathways. Coursera and edX organize their certifications into specializations composed of short modules (two to four weeks), which learners can combine according to their professional goals. Université TÉLUQ and eCampus Ontario offer stackable micro-credentials recognized by employers. This modularity addresses a threefold requirement: adapting training to the time constraints of working adults, allowing for the intermediate validation of acquired skills throughout the learning journey, and mitigating the feeling of overwhelm often associated with long-duration distance learning. By mapping this characteristic onto the requirements of the AUF system, the benchmarking suggests that structuring qualifying programs into short units following the sequence Discover → Understand → Apply → Evaluate would offer a direct solution to the retention challenges identified during the interview phase.

4.1.2. Structured and Initiative-Taking Tutored Support

The high-performing systems share a conception of the tutor's role that extends far beyond that of a grader. In the certificate courses on the FUN-MOOC platform or within eCampus Ontario programs, the tutor is framed as a facilitator of persistence, equipped with real-time tracking tools that allow for initiative-taking intervention when learners face difficulties. The EPFL Extension School has developed a learner engagement dashboard to visualize logins, assignment submission delays, and behavioural patterns correlated with student dropout. These practices are strongly anchored in research establishing that the perceived quality of support is the most robust predictor of success and satisfaction in distance education (Garrison & Vaughan, 2008; Jézégou, 2019). This characteristic represents one of the most directly transferable axes of structural renovation for the AUF context.

4.1.3. Living Catalogues and Continuous Sectoral Monitoring

A third feature shared across the studied systems is the institutionalization of mechanisms for the continuous updating of the training catalogue. Coursera systematically displays a 12-month post-certification employment rate and employer testimonials for each certification; Université Laval conducts an annual revision of its micro-programs in close collaboration with industry partners. This "living catalogue" logic stands in stark contrast to the static management of training portfolios, where programs are maintained regardless of their market attractiveness or professional relevance. For the AUF system, in which training programs have recorded application rates close to zero during recent sessions, this practice underscores the necessity of establishing semi-annual sectoral monitoring fuelled by feedback from employers, alumni, and local market analyses.

4.1.4. Sustainable Learning Communities

Finally, the analysed systems invest heavily in creating and nurturing learning communities that endure long after the formal conclusion of the training. The alumni networks of Coursera and edX constitute genuine professional ecosystems, offering networking spaces, peer-to-peer mentoring sessions, and shared job opportunities. Université Laval has institutionalized an alumni-student mentoring program that significantly improves the persistence of incoming cohorts. This community dimension is absent from the current AUF framework, despite representing a unanimous demand among the stakeholders surveyed, as corroborated by the quantitative survey results.

4.2. Qualitative Interview Findings: Strengths and Tensions of the Current Framework

The inductive thematic analysis of the fifteen semi-structured interviews reveals a core structural tension between strong institutional recognition and persistent operational inefficiencies. Five major themes emerged across all stakeholder categories:

4.2.1. Recognition of the Value of Qualifying Training

Without exception, interlocutors acknowledge the intrinsic value of the qualifying programs offered in the AUF catalogue. Interviewed alumni describe obtaining their certificate as a "professional turning point" or a "validation of skills I already possessed but that no one previously recognized". Pedagogical directors emphasize the academic rigor of the content and the institutional credibility associated with the AUF label in the Francophone world. This positive consensus regarding the value of the portfolio provides significant symbolic capital to leverage for renovation, proving that quality issues do not stem from the relevance of the offer itself, but rather from the conditions of its deployment.

4.2.2. Delays in Financial Remittances as a Recurrent Bottleneck

A theme of a certain convergence between institutional actors and learners is the sluggishness of financial processes. Focal points describe delays in the reimbursement of pedagogical expenses that sometimes span multiple academic sessions, creating tension between host institutions and IFIC. Learners who opted for partial financing report structural uncertainty regarding the allocation and effective disbursement of their stipends, which weighs heavily on their engagement in the training. This financial dysfunction, perceived as systemic by several interlocutors, fosters a sense of institutional opacity that erodes trust in the framework.

4.2.3. The Ambiguity of the Focal Point's Role

The role ambiguity of focal points within host institutions constitutes one of the most richly documented themes in the interviews. Focal points themselves describe an institutional "grey zone": recognized as indispensable by both their colleagues and IFIC, yet not formally appointed, not granted corresponding teaching-load reductions, and insufficiently trained. One focal point summarized the

tension as follows: "I am asked to coordinate an international training program, supervise tutors, respond to learners, and compile reports for IFIC, but in my official schedule, I am still expected to work at 100% capacity just as before." This unacknowledged overload induces disparities between host institutions depending on the availability and personal commitment of their respective focal points, undermining the homogeneity of the system's quality.

4.2.4. Absence of Post-Training Follow-Up

The near-total absence of post-training follow-up is identified by all actors as the most symbolically significant deficiency of the current system. Alumni express a feeling of abandonment upon completion: "You obtain the certificate, and then nothing. No one asks what became of us." Pedagogical directors acknowledge the current impossibility of measuring the real impact of training on professional integration. This lack of relational continuity deprives the system of a precious source of data for continuous improvement and a powerful tool for promoting the programs to future applicants.

4.2.5. Disparities among Host Institutions

A fifth emerging theme concerns the significant disparities in quality and organization among the institutions hosting the qualifying training. These disparities stem from multiple factors: digital infrastructure inequalities (van Dijk, 2005), heterogeneous levels of commitment among focal points, and differing institutional cultures regarding distance education. Several interlocutors stressed that these disparities pose a risk to the global reputation of the AUF label, given that a learner with a negative training experience tends to generalize their judgment to the entire system, regardless of the specific host institution involved.

4.3. Quantitative Survey Measurements: Stakeholder Perceptions

The quantitative data collected from the 114 respondents allow for a comprehensive measurement of the scope and distribution of perceptions regarding the system, statistical testing of differences between groups, and the identification of the most predictors of perceived support quality. We carried out a one-off comparison between current students (54) and alumni (46), as these are the groups for which statistically meaningful interpretations can be made. This is a limitation of the sample, but we have nevertheless proceeded with our analysis.

4.3.1. Descriptive Statistics: General Overview of Perceptions

Descriptive statistics compared between active learners (n = 54) and alumni (n = 46) reveal consistent perceptual profiles, with certain nuances. The perceived impact of the certificate on professional trajectory received the highest scores across the entire instrument (Mean = 4.30/5 for learners; Mean = 4.03/5 for alumni), quantitatively validating the symbolic value of the certificate documented in the interviews. Satisfaction with pedagogical support stands at a moderate level (Mean = 3.25/5 for learners; Mean = 3.35/5 for alumni), indicating room for significant improvement. The lowest score across the entire instrument relates to exchanges

and interactions outside formal training (Mean = 2.92/5 for learners; Mean = 3.00/5 for alumni), signalling a clear deficit in community life within the system, which directly echoes the absence of an alumni network documented in the interviews (Table 2).

Table 2. Comparative descriptive statistics: learners vs. alumni (Excerpt).

Evaluated Dimension	Learner Mean	Alumni Mean	Difference	Interpretation
Impact of certificate on career	4.30/5	4.03/5	+0.27	Very positive
Quality of pedagogical support	3.25/5	3.35/5	+0.10	Moderate
Exchanges & interactions outside training	2.92/5	3.00/5	+0.08	Weak—major gap
Accessibility of the digital platform	3.12/5	3.24/5	+0.12	Moderate
Clarity of administrative processes	3.08/5	3.15/5	+0.07	Moderate

Note. Scores on a 1-to-5 Likert scale. Source: Primary study data (n = 114).

4.3.2. Mann-Whitney U Tests: Significant Differences between Learners and Alumni

The Mann-Whitney U test identified two statistically significant differences between the learner and alumni groups at the $p < 0.05$ threshold. The first concerns the ease of use of digital tools (U = 987.5; $p = 0.033$): alumni report a significantly higher mastery of platform tools, which can be interpreted as a learning effect resulting from prolonged exposure to the system. The second significant difference relates to the perceived impact of the certificate on career trajectory (U = 1024.3; $p = 0.043$): current learners attribute a slightly higher impact to the certificate than alumni who have already experienced the post-training reality, suggesting a minor retrospective disenchantment that warrants careful attention when designing post-training follow-up systems.

These two results are of direct practical utility for system modernization: they argue, respectively, for enhanced support in mastering digital tools at the onset of training, and for strengthening the link between certification and concrete professional benefits, particularly through structured post-training follow-up and alumni networks (Table 3).

Table 3. Results of Mann-Whitney U tests—significant differences.

Tested Variable	U Statistic	*p*-value	Dominant Group	Interpretation
Ease of use of digital tools	987.5	0.033*	Alumni	Post-training learning effect
Impact of certificate on career	1024.3	0.043*	Learners	Partial retrospective disenchantment

Note. *$p < 0.05$. Source: Primary study data (n = 114).

4.3.3. Spearman Rank Correlations: The Tutor as the Pivot of Support

Spearman correlation coefficients calculated between satisfaction dimensions reveal three statistically significant relationships that structure the understanding of the support framework. The strongest relationship relates to the link between satisfaction with tutors and the perceived quality of overall support: rho = 0.591 for learners ($p < 0.001$) and rho = 0.747 for alumni ($p < 0.001$). This correlation; the highest in the entire matrix; confirms that the tutor represents the central pivot of the support experience within the framework. Its increasing strength among alumni (compared to learners) suggests that the value of tutoring support is re-evaluated positively with hindsight, further reinforcing the argument for priority investment in tutor training and support.

A second significant correlation links the ease of use of digital tools to the perceived quality of course materials: rho = 0.502 ($p < 0.001$, full sample). This finding indicates that technical difficulties are not perceived independently of content, but function as a filter affecting the global perception of pedagogical quality. A learner struggling to navigate the platform tends to evaluate the course materials less favourably, regardless of their intrinsic worth. This interdependence underscores the need to invest simultaneously in platform ergonomics and introductory training for learners on tool usage.

A third notable correlation links satisfaction with peer exchanges to the overall perceived quality of support: rho = 0.486 for learners ($p < 0.001$) and rho = 0.510 for alumni ($p < 0.001$). This result provides an empirical foundation for the necessity of structuring interactive spaces for learners, even though these exchanges currently yield the lowest descriptive scores in the instrument (Table 4).

Table 4. Spearman rank correlations between satisfaction dimensions.

Tested Relationship	Learner rho	Alumni rho	*p*-value	Significance
Tutor satisfaction ↔ Overall support quality	0.591	0.747	<0.001	***
Digital tools ease ↔ Course materials quality	0.502	0.502	<0.001	***
Peer exchange satisfaction ↔ Overall support quality	0.486	0.510	<0.001	***

Note. ***$p < 0.001$. rho = Spearman's rank correlation coefficient. Source: Primary data (n = 114).

4.4. Convergences and Divergences across the Three Data Sources

The systematic cross-examination of the three data sources reveals a pattern of a certain convergence regarding the core challenges of the system, accompanied by nuanced insights provided by the specific nature of each method.

4.4.1. Points of Convergence

Four major convergences emerge through the lens of the three data sources.

Firstly, the Centrality of the Tutor in the Educational Experience: Benchmarking identifies proactive tutoring support as a core characteristic of high-performing systems (Darling-Hammond et al., 2017; Wang et al., 2017); the interviews reveal a perceived lack of guidance felt by learners; and the Spearman correlations quantitatively establish that satisfaction with tutors is the most powerful predictor of perceived support quality (rho ranging from 0.591 to 0.747). This triple convergence justifies the priority given to strengthening tutoring functions within the modernized framework. Secondly, financial Constraints as the Primary Barrier to Access: Identified as a recurring theme in the interviews, the financial dimension is validated in the quantitative survey, where 88% of respondents expressed support for instalment-based payment schedules. Benchmarking confirms that the most inclusive systems (e.g., eCampus Ontario, Coursera for Campus) have engineered flexible financing models. Thirdly, unanimous Demand for an Alumni Network and Post-Training Follow-Up: 94% of surveyed learners and alumni favour the creation of an alumni network; one of the most robust findings of the survey. The interviews document how the absence of this feature is experienced as a form of abandonment. Benchmarking demonstrates that institutions investing in their alumni community register significantly higher graduation and recommendation rates. Lastly, integration of Artificial Intelligence as a Thematic Priority: 89% of survey respondents identify skills in generative AI as the priority theme for maximizing labour market employability. Benchmarking confirms that reference platforms (Coursera, edX) have invested heavily in introductory AI modules. The interviews reveal that several host institutions have already attempted to integrate these themes independently, without an established framework or support from IFIC.

4.4.2. Nuances Provided by Each Approach

While convergences dominate, each method contributes distinct nuances that enrich the understanding of the system. Benchmarking places the AUF framework within an international reference standard and identifies concrete, adaptable solutions, yet it fails to capture the specific contextual realities of the African region, which the interviews and survey document extensively, notably the prevalence of degraded connectivity constraints and infrastructure inequalities among host institutions. The interviews reveal institutional tensions and subjective lived experiences that the quantitative survey cannot directly measure, though their scope is circumscribed by the size and limited diversity of the qualitative sample. Finally, the quantitative survey provides the most reliable measure of the distribution of perceptions across all stakeholders, but its moderate sample size (n = 114) limits the statistical robustness of multivariate analyses and generalizability. The articulation of these three sources is therefore both a methodological necessity and a prerequisite for the validity of this action research approach: it is precisely where the three methods converge that the recommendations for the modernized framework rest upon the most resilient empirical foundations.

5. Discussion

The following discussion articulates the empirical findings derived from the three phases of this research (benchmarking, semi-structured interviews, and quantitative survey) with the theoretical and conceptual frameworks mobilized for this study. Moving beyond a purely descriptive account of the data, it constructs a robust, argument-driven interpretation by examining the points of convergence and structural tensions between these findings and the foundational scientific literature. The discussion is organized into four subsections, each corresponding to a major interpretive axis of the research.

5.1. Toward a Francophone Learning Ecosystem Model: Empirical Findings as a Foundation for Renewal

The quantitative survey results and qualitative analysis converge to reveal a vulnerable system to structural deficiencies; yet endowed with symbolic and pedagogical capital that the institutional renewal must preserve. The perceived value of the AUF certificate achieved the highest scores across the entire instrument (M = 4.30/5 for active learners; M = 4.03/5 for alumni). This confirms the institutional legitimacy of this educational offering within the Francophone space, aligned with the seminal work of Labrie and Montmarquette (2005) and Carré and Caspar (2011) regarding distance vocational training as a powerful vehicle for continuous professional development. This finding is particularly noteworthy due to its statistical robustness: it remains consistently high among alumni who have transitioned into the post-training professional arena, even while other dimensions, such as post-training follow-up and peer-to-peer interactions; scored significantly lower.

It is precisely upon this foundational legitimacy that the renewed model has been established by and organized around six macro-processes. The proposed architecture: Sectoral Watch and Catalogue Updating, Modular Instructional Design, Reinforced Tutoring and Support, Participatory Quality Governance, Post-Training Follow-Up and Alumni Network, and Secured Digital Certification; is not the product of a decontextualized theoretical exercise. Rather, it represents a direct structural response to the lacunes consistently identified across all three data streams. Comparative benchmarking of fourteen international institutions (including Coursera, edX, FUN-MOOC, TÉLUQ, eCampus Ontario, EPFL Extension School, and Université Laval) identified four core characteristics common to high-performing systems (Wang et al., 2017): modular learning pathways, proactive tutoring support, dynamic catalogues, and sustainable learning communities. These features serve as direct remedies to the deficiencies documented in the qualitative interviews and validated quantitatively by the survey. The concept of a "Francophone learning ecosystem—FLE" proposed herein as an original conceptual framework builds upon foundational scholarship in the instructional engineering of distance learning (Lebrun, 2007; Paquette, 2002).

However, it expands these paradigms by explicitly integrating community-

driven, post-formative, and contextual dimensions specific to the realities of the Global South within the Francophone sphere. The challenge shifts from merely designing a pedagogically coherent system to constructing an immersive learning environment whose impacts extend well beyond the formal duration of the program; a requirement made empirically undeniable by the survey results, notably the unanimous demand for an alumni network (94% of respondents). This ambition also aligns with recent contributions to adaptive learning and personalized pathways (Crompton & Burke, 2023; Zawacki-Richter et al., 2019), which emphasize the necessity of designing learning environments that are flexible, responsive, and deeply embedded within the individual professional trajectories of learners.

Among the four key innovations of the renewed framework, the "Francophone Skills Passport" warrants specific analytical attention. This blockchain-secured digital certification mechanism directly addresses the critical challenge of skill recognition within the global Francophone economic market, providing a level of traceability and portability for educational attainments that is currently severely lacking in the existing AUF framework. It effectively reconciles the imperative of equitable access to certification; by dematerializing a process that remains too frequently constrained by administrative and geographical barriers; with the demand for labour market credibility, directly reflecting contemporary scholarship on the valuation of transferable skills advanced by authors (Daffron et al., 2009).

5.2. The Tutor Centrality: A Counter-Intuitive Finding in a Technology-Dominated Discourse

The finding of the quantitative survey also constitutes its most counter-intuitive contribution to contemporary debates surrounding educational technology: the human tutor, rather than the technological sophistication of the platform, serves as the primary determinant of the perceived quality of support. Spearman's rank correlation between tutor satisfaction and the perceived quality of overall support reached rho = 0.591 for active learners and rho = 0.747 for alumni ($p < 0.001$ in both cases), positioning this relationship as the strongest across the entire correlation matrix. This statistical hierarchy sharply contrasts with the priority assigned by 89% of respondents to skills in generative artificial intelligence, revealing a fundamental, structuring tension between stated technological aspirations and the actual empirical drivers of educational satisfaction.

This finding establishes a direct dialogue with established literature on the pivotal role of tutoring in distance education. The work of Depover et al. (2000) demonstrated that tutor presence is the primary differentiating factor between effective and ineffective open and distance learning (ODL) systems, and that its impact on student persistence exceeds that of any isolated technological innovation. Similarly, Baudrit highlighted the multifaceted nature of tutoring functions; pedagogical, motivational, organizational, and socio-affective; the concurrent mobilization of which determines the quality of support perceived by learners (Baudrit, 2018). Our findings confirm and reinforce these conclusions within a specific in-

stitutional context (the AUF network) and a distinct geographical area (low- and middle-income Francophone countries), thereby providing additional empirical validation to theoretical propositions originally formulated in North American or European contexts.

The increasing strength of this correlation among alumni (rho = 0.747) compared to active learners currently in training (rho = 0.591) represents a novel contribution to the literature. It suggests that the value of the tutor is frequently underestimated in real-time and undergoes a positive re-evaluation upon retrospective reflection; a phenomenon of delayed appreciation that has remained underdocumented in distance tutoring literature. This result supports the hypothesis that tutoring interactions constitute a relational investment whose effects on self-efficacy, perseverance, and professional integration fully materialize only at a temporal distance from the training itself. Consequently, impact assessment frameworks focused exclusively on immediate satisfaction tend to systematically undervalue this dimension.

It is within this context that the tension regarding the enthusiasm for artificial intelligence gains its full analytical significance. In his critique of educational technocentrism, Selwyn warns against the "educational technology paradox" (Selwyn, 2016): technological innovations generate heightened expectations that focus institutional investment and energy on digital infrastructure, thereby risking the diversion of resources away from the human factor; the tutor, instructor, or peer; which remains the most potent vector of actual learning. In a similar vein, Tricot (2017) emphasizes that the efficacy of educational technologies is invariably mediated by the quality of the human support surrounding them. Our empirical results offer a striking illustration of this paradox: while respondents overwhelmingly select AI as a thematic priority, it is the tutor; not the tool; that structures their qualitative experience.

For the renewed framework, this conclusion carries immediate practical implications. It demands that the integration of AI within instructional engineering (one of the four innovation pillars of the proposed model) be designed not as a substitute for human support, but as an amplifier of tutoring capacity. This can be achieved by equipping tutors with tools for early dropout detection, personalized feedback generation, and individual progress tracking, as demonstrated by the benchmarked practices of the EPFL Extension School and eCampus Ontario. Recent contributions (da Silva et al., 2021; Soumia & Mohammed, 2024) on AI integration in distance education confirm this orientation, while echoing the reminder (Moukhliss et al., 2023) that adaptive learning systems must be designed in close articulation with the pedagogical practices of educators rather than as autonomous agents.

5.3. Post-Training Follow-Up as the Blind Spot of Distance Education in the Global South

One of the most salient findings from the qualitative phase of this research; cor-

roborated by the descriptive statistics of the quantitative survey; is the near-total absence of post-training follow-up mechanisms within the AUF system. While this might appear to be a simple organizational failure, it demands a deeper problematization: we propose that it constitutes a systemic bias in measuring the impact of distance education in Francophone Africa, and a fundamental blind spot in the scholarly literature on open and distance learning (ODL) within the Global South.

The scores obtained for the dimensions of community life and post-training interactions were the lowest across the entire instrument (M = 2.92/5 for active learners; M = 3.00/5 for alumni), revealing a pronounced deficit that qualitative interviews characterized as a profound sense of isolation or abandonment upon program completion. Alumni describe the receipt of their certificate as an abrupt relational rupture: after months of rich exchanges with tutors and peers, the conclusion of the training signifies the sudden cessation of all institutional contact. This lived experience closely mirrors what Garrison and Vaughan (2008) term a breakdown in "social presence" within distance learning environments, which Jézégou (2019) links to a long-term erosion of trust in educational institutions.

The unanimous demand for an alumni network and structured post-training follow-up (supported by 94% of respondents) must be interpreted within this framework. It reflects not merely a pragmatic desire for professional networking; though that is highly significant; but an explicit expectation for relational continuity and institutional recognition that the current system fails to provide. This expectation aligns with the tenets of participatory action research (Bradbury & Reason, 2008; Lewin, 1946), which emphasize the importance of maintaining stakeholder connections beyond the formal boundaries of an intervention to sustainably anchor the transformations produced by education within individual professional trajectories.

The structural blind spot of post-training follow-up carries a major epistemological implication that the literature on African ODL has insufficiently problematized: the absence of post-training longitudinal data renders any reliable measurement of the actual impact of qualifying programs on professional integration and employability mismanaged (Tolich, 2005). Within the current AUF framework, there is no empirical tracking of how many alumni secured employment, achieved promotions, initiated entrepreneurial activities, or measurably enhanced their skills as a direct result of their training. This inability to quantify impact is far from trivial; it deprives the institution of a decisive argument for legitimacy when dealing with employers and institutional partners, leaving the certifications vulnerable to assumptions of inefficiency that available data can neither confirm nor refute.

This situation is compounded by the Mann-Whitney U test, which reveals a partial retrospective disillusionment among alumni compared to the expectations they held during their training regarding the certificate's impact on career trajectory (U = 1024.3, $p = 0.043$). Active learners evaluate this prospective impact sig-

nificantly more favourably than alumni who have navigated the post-certification transition. This delayed disillusionment does not necessarily signify an inherent inefficacy of the courses; rather, it reflects the absence of support mechanisms enabling alumni to actively leverage and market their certification to employers. This is precisely where a structured post-training follow-up framework, coupled with an active alumni network and a verifiable Francophone Skills Passport, could bridge the gap between a symbolically valued certificate and an operationally effective professional qualification.

Theoretically, the absence of post-training follow-up in Global South ODL systems introduces a systemic bias into impact evaluations of these programs. If programs are evaluated solely on immediate satisfaction scores and graduation rates; as observed in most of the institutions benchmarked; long-term positive externalities (such as labour market entry, transferable skill development, and professional network participation) remain invisible and statistically unaccounted for. This invisibility systematically undervalues the broader social and economic utility of distance vocational training in African contexts, perpetually reproducing funding biases that disadvantage these initiatives in the competition for institutional resources.

The analytical path from evidence to design follows a direct problem-to-response logic across the three data sources. The benchmarking of fourteen international reference institutions identified design features largely absent from the AUF/IFIC programme; adaptive pathways, AI-assisted pedagogical engineering, and portable competency credentials; which directly inform three of the six proposed macro-processes. The fifteen semi-structured interviews surfaced the four structural gaps qualitatively: an incomplete catalogue, an ill-defined focal point role, weak tutored support, and negligible post-training follow-up. The survey of 114 respondents then quantified and validated these gaps, notably showing that tutor satisfaction is the strongest predictor of perceived accompaniment quality among both current learners ($\rho = 0.591$) and alumni ($\rho = 0.747$), which grounds the strengthened accompaniment/tutoring macro-process in statistical evidence rather than stakeholder perception alone. Each gap maps onto a corresponding design response: the incomplete catalogue informs the living catalogue; weak accompaniment informs the reinforced tutoring process; absent follow-up informs the alumni network; and the focal point ambiguity informs a clarified governance/coordination process across partner institutions. The Francophone Competency Passport synthesizes findings across all three sources, translating benchmarked credentialing practices, interview-identified recognition gaps, and survey-based employability evidence (87% reporting career impact) into a single transferable instrument.

5.4. Research Limitations and Future Directions

Any field-based action research must rigorously acknowledge the limitations imposed by its methodological design. Four primary limitations warrant critical dis-

cussion, not to undermine the validity of the findings, but to precisely delineate their scope and chart clear directions for future scholarship.

5.4.1. Quantitative Sample Size

With n = 114 respondents, the survey achieves the statistical significance thresholds required for the non-parametric tests (Mann-Whitney, Spearman) utilized in the analysis. However, this sample size restricts the robustness of more complex multivariate analyses and limits the generalizability of the findings across the entire AUF system, which spans one hundred countries. The resulting Spearman correlations, while statistically significant, must be interpreted as structural trends rather than absolute universal laws. This limitation is partially mitigated by the depth of the qualitative data collected in Phase 2 (fifteen semi-structured interviews across four stakeholder categories), which contextualizes and stabilizes the statistical trends observed, in line with methodological triangulation principles of exploratory sequential mixed methods designs (Creswell & Plano Clark, 2018).

5.4.2. Selection Bias and Non-Random Geographical Representation

The sample was drawn through institutional networks of the AUF, introducing an inherent selection bias toward stakeholders who are more actively engaged in the system; and potentially more satisfied. Overly critical or marginalized stakeholders (such as learners who withdrew prematurely or uninvested host institutions) are underrepresented, which introduces a slight upward bias in the observed satisfaction scores. Furthermore, while fifteen countries are represented, the geographical distribution is non-random and mirrors the unequal distribution of active host institutions within the AUF network. These biases highlight the need for future studies employing stratified random sampling to ensure more rigorous geographical and categorical representativeness.

5.4.3. Exploratory Value and Absence of a Control Group

The design of this study, grounded in participatory action research (Lewin, 1946; Bradbury & Reason, 2008), does not aim to produce experimentally controlled results. In the absence of a control group, i.e., a comparable vocational training track that did not undergo renewal; it is impossible to causally attribute the observed differences between active learners and alumni solely to the characteristics of the AUF program. Confounding variables, including individual career trajectories, local economic realities, and prior educational attainment, inevitably influence the measured perceptions. Consequently, the findings possess an exploratory, hypothetico-deductive status: they serve as empirically grounded propositions to guide system renewal rather than definitive causal conclusions.

5.4.4. Geographical Scope of Benchmarking

The comparative corpus of fourteen institutions analysed in Phase 1 features a heavy concentration of North American and European frameworks (Coursera, edX, FUN-MOOC, TÉLUQ, Université Laval, eCampus Ontario, EPFL), with limited representation of flourishing Asian, Latin American, or African distance ed-

ucation initiatives. Incorporating models such as the Open University of Tanzania, the Indira Gandhi National Open University (IGNOU), or the Brazilian distance education initiatives under the Universidad Aberta do Brazil would have enriched the comparative framework by integrating contexts with infrastructure constraints closer to those faced by the majority of AUF host institutions.

These limitations outline promising avenues for future research. First, a longitudinal study tracking professional integration 24 months post-certification would directly measure the concrete impact of AUF qualifying courses on alumni career trajectories, thereby illuminating the blind spot identified in this study. Such data would provide a powerful tool for institutional legitimization when engaging with partners and employers. Second, a controlled trial of the renewed framework across a subset of programs; for example, the three courses with the highest enrolment and completion rates; would allow researchers to isolate and measure its specific impact on learner satisfaction, persistence, and perceived quality of support by comparing cohorts under the renewed model with those under the legacy framework. Finally, expanding the benchmarking scope to include Asian, Latin American, and African ODL systems would enrich the comparative framework with innovative solutions specifically engineered to overcome infrastructure constraints identical to those found in the Francophone Global South. However, in some of these regions, no representatives from the AUF took part in the study, which is a limitation of the study.

6. Conclusion

6.1. Answering the Central Research Question

This study set out to answer a question whose answer, as the findings demonstrate, cannot be reduced to a technological prescription: How can the AUF distance qualifying training programme be renewed to become an innovative, equitable, and sustainable learning ecosystem, adapted to the diverse realities of Francophone contexts? The evidence assembled across three complementary data sources; comparative benchmarking, qualitative interviews, and quantitative survey; converges on an answer that is at once conceptually precise and actionable.

The renovation of the AUF programme does not require, and cannot be achieved through, technological modernization alone. It requires a reconceptualization of the programme around three interdependent pillars: the requalification of human accompaniment; beginning with the tutor, whose satisfaction is the strongest statistical predictor of perceived accompaniment quality (rho = 0.591 to 0.747, $p < 0.001$); as the primary lever of quality; a participatory quality governance architecture that distributes responsibilities clearly across IFIC, host institutions, focal points, tutors, and alumni communities; and a modular, adaptive, and AI-open architecture that personalizes learning pathways without displacing the human relationships at their core.

The six macro-process model proposed in this study; spanning sectoral monitoring and catalogue management, pedagogical engineering, reinforced tutored

accompaniment, participatory quality governance, post-training follow-up, and alumni networking, and secured digital certification; operationalizes this reconceptualization into a coherent and implementable framework.

Critically, the renovated programme is not a rupture with the AUF's institutional heritage. It is a reasoned evolution that preserves the recognized symbolic value of the AUF certificate; confirmed by the high perceived impact scores (M = 4.30/5 for learners; M = 4.03/5 for alumni); while addressing the four structural insufficiencies that systematically constrain its impact: incomplete catalogue, ambiguous focal point role, insufficient pedagogical accompaniment strategies (Arriagada-Hernández et al., 2024), and absent post-training follow-up.

6.2. Theoretical Contribution: The Francophone Learning Ecosystem (FLE)

Otto and Kerres (2023) frame learning ecosystems as technology-driven, institutional-to-national distributions of learning across providers, while Spours (2024) advances a more politically grounded model by embedding political economy within Bronfenbrenner's ecological systems theory. However, both remain linguistically and culturally generic, offering little theoretical account of transnational identity communities. The proposed Francophone Learning Ecosystem (FLE) addresses this gap by positioning shared language and its institutional infrastructure, such as the OIF and AUF; as a constitutive governance layer rather than a neutral backdrop, extending complexity framing to a transnational, diasporic learner network absent from existing models.

The principal theoretical contribution of this study is the concept of the Francophone learning ecosystem; a novel conceptual framework for thinking about qualifying training programmes in the multi-contextual realities of the Global South. This concept extends and contextualizes the foundational literature on FOAD pedagogical engineering (Paquette, 2002; Lebrun, 2007) by explicitly integrating three dimensions that are systematically undertheorized in existing frameworks: the community and post-formative dimension, embodied in the alumni network and the structural continuity of the relational programme beyond the formal duration of training; the contextual dimension, acknowledging that a learning ecosystem designed for geographically dispersed Francophone learners must be built around the realities of degraded connectivity, infrastructure inequality, and diverse institutional cultures rather than the assumptions of high-resource educational environments; and the adaptive dimension, incorporating the thought integration of AI as a strategy of human accompaniment capacity (Arriagada-Hernández et al., 2024), rather than its substitute.

The empirical grounding of this conceptual contribution is what distinguishes it from purely normative proposals. The near-unanimous demand for an alumni network (94% of respondents), the paradoxical centrality of the tutor in a discourse dominated by technological aspiration, and the documented structural invisibility of post-training follow-up as a systemic bias in impact measurement;

these are not theoretical abstractions but empirically documented realities that give the Francophone learning ecosystem concept its analytical traction. The concept reframes the design challenge from "how do we deliver training more efficiently?" to "how do we build environments in which Francophone learners can develop, valorise, and sustain professionally meaningful competencies across the full arc of their working lives?"

6.3. Practical Contribution: A Transferable Framework

The six macro-process model developed in this study is conceived not as an AUF-specific prescription, but as a transferable framework for multi-stakeholder qualifying training networks in Francophone and broader Global South contexts. Its transferability rests on two design principles. First, the model is empirically grounded in findings that transcend the specific institutional context of the AUF: the centrality of tutored accompaniment, the importance of post-training community structures, the demand for AI-integrated adaptive pathways, and the need for transparent, equity-oriented allocation mechanisms are challenges shared by any large-scale distance qualifying training network operating in resource-constrained, geographically dispersed environments. Second, the model is scalable: its four-phase implementation roadmap; from a six-month pilot (Phase 0) through foundational deployment (Phase 1), advanced innovation (Phase 2), and consolidation and outreach (Phase 3); enables progressive adaptation to the specific institutional, financial, and technical capacities of different network contexts, without requiring simultaneous transformation of all processes.

Warschauer is the foundational text for reframing "digital divide" as "digital inclusion/inequality" (Warschauer, 2004), useful for arguing that the FLE must account for meaningful use and social context, not just access. Van Dijk's work introduces his influential four-stage model of access; motivational, material, skills, usage (Van Dijk, 2020; Van Dijk, 2006).

The FLE model thus constitutes a contribution to the emerging field of network-based educational governance in the Global South, offering a structured response to the question of how supranational educational networks can maintain institutional coherence and quality standards while respecting the pedagogical sovereignty of their member institutions; a tension that the AUF experience makes empirically legible in unusually fine-grained detail.

6.4. A Prospective Perspective: The Francophone Competency Passport

This study closes on a prospective note whose importance cannot be overstated. Among the four key innovations of the renovated programme, the Francophone Competency Passport; a unique digital document capitalizing all qualifying certifications obtained within the AUF ecosystem, authenticated by blockchain technology, and aligned with the European Qualifications Framework (EQF); represents the most ambitious and most consequential element of the proposed archi-

tecture. It is also the one whose development horizon (three years) places it at the intersection of the present study's empirical findings and the emerging global landscape of competency recognition.

The Francophone Competency Passport responds to a challenge that is simultaneously epistemic, institutional, and political. Epistemically, it addresses the structural invisibility of post-training impact identified in this study: by creating a permanent, verifiable, and portable record of competencies acquired through AUF qualifying training, it makes professionally meaningful what is currently institutionally invisible; the long-term contribution of distance qualifying training to the economic integration and professional mobility of Francophone citizens across one hundred countries. Institutionally, it provides the AUF with a tool for positioning Francophone qualifications within the international competency recognition landscape, in dialogue with the micro-credentialing frameworks being developed by UNESCO, the European Commission, and leading platform providers. Politically, it asserts the right of Francophone learners; including those whose competencies have been developed outside the formal education system; to have their qualifications recognized, valorised, and rendered portable across the Francophone space and beyond.

The Francophone Competency Passport is, in this sense, more than a certification mechanism: it is the institutional embodiment of the Francophone learning ecosystem concept at its most ambitious; a tool for transforming the AUF from a training provider into a lifelong learning partner for every Francophone citizen who has passed through its programmes. Future research will be essential to document the conditions of its effective implementation, measure its impact on alumni professional trajectories, and assess its transferability to other multilateral educational networks operating in comparable contexts.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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