

BEYOND TRADITIONAL CREDENTIALS: EXPLORING OPPORTUNITIES FOR MICRO-CREDENTIALS TO SUPPORT LIFELONG LEARNING AMONG WOMEN IN NORTHERN NIGERIA

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Abstract

This paper presents initial findings on the transformative potential of micro-credentials as an alternative approach to promoting lifelong learning among women in Northern Nigeria. It addresses the limitations of traditional credentialing systems, which often fail to consider the socio-cultural and economic realities of women in this region. Despite growing global recognition of non-traditional learning pathways, women in Northern Nigeria continue to face significant barriers, including limited access to formal education and entrenched gender norms. Using a qualitative approach, twelve in-depth interviews were conducted with women aged 18 and above, who are literate in English, across four educationally disadvantaged states. Descriptive statistics and thematic analysis were employed to analyse quantitative and qualitative data respectively. The findings reveal that while micro-credentials are valued for their flexibility and potential to enhance economic participation, challenges such as digital illiteracy, infrastructural deficits, socio-cultural constraints, and concerns about credential legitimacy persist. The study underscores the need for localized, inclusive, and community-driven micro-credential initiatives. It recommends that policymakers should support programmes that address digital skills gaps, infrastructure limitations, and gender-specific barriers in order to empower women through flexible, community-based lifelong learning opportunities.

Key words: Traditional Credentials, Micro-Credentials, Lifelong Learning.

Introduction

Lifelong learning has become an indispensable instrument for individual empowerment, social inclusion, employability and sustainable economic development. It encompasses learning across the life course through formal, non-formal and informal settings, enabling individuals to continually acquire knowledge and competencies in response to changing circumstances (UNESCO, 2016). For many women in Northern Nigeria, however, access to continuous learning remains constrained by socio-cultural norms, poverty, early marriage, household responsibilities, limited mobility and inadequate educational facilities. These barriers are particularly pronounced among women in rural, conflict-affected and economically disadvantaged communities (Adewale et al., 2018; Yusuf & Balogun, 2020).

Conventional education systems often compound these challenges because they are characterised by rigid curricula, lengthy programmes, fixed schedules, formal entry requirements and centralised delivery. Such structures may not accommodate women who must combine learning with childcare, household responsibilities and income-generating activities. Conventional credentialing also tends to give greater recognition to formal institutional learning than to competencies acquired through informal and non-formal experiences, including entrepreneurship, agriculture, tailoring, healthcare and community development (UN Women, 2020). Alternative learning and credentialing mechanisms are therefore needed to recognise diverse learning experiences while responding to the practical circumstances of disadvantaged women.

Within this context, micro-credentials have emerged as a potentially important mechanism for widening participation in lifelong learning. They provide focused recognition of specific knowledge, skills and competencies acquired through relatively short and targeted learning experiences. Their modular structure allows learners to concentrate on competencies relevant to their personal, professional or economic needs and progressively build their learning. Gauthier (2020) notes that the flexibility of micro-credentials enables learners to participate according to their individual circumstances, making them particularly relevant to women unable to engage in conventional full-time education.

The relevance of micro-credentials is strengthened when their content is linked to practical livelihood and employment opportunities. Potential areas include tailoring, cosmetics, digital literacy, financial management, entrepreneurship, agricultural processing, healthcare support and digital marketing. Such programmes can provide focused skills that women can immediately apply within households, communities or small businesses. Consequently, micro-credentials have the potential to establish a stronger connection between learning, livelihood improvement and economic participation. Another important advantage is flexibility in time, location and delivery mode. Digital platforms can allow women to access educational resources through mobile devices without travelling to conventional institutions. This is particularly significant where mobility is restricted by household responsibilities, cultural expectations, distance or insecurity. The portability and stack ability of micro-credentials can enable women to acquire competencies progressively rather than undertaking lengthy programmes (Brown et al., 2021).

However, technology alone cannot eliminate educational exclusion. Poor internet connectivity, high data costs, inadequate digital devices and limited digital literacy may prevent women in low-resource communities from benefiting from online learning. The digital gender divide may therefore reproduce existing inequalities when programmes are not designed around the realities of disadvantaged women (World Bank, 2022). Inclusive micro-credential programmes consequently require affordable access, digital literacy training, learner support and community-based participation mechanisms.

Cultural and linguistic considerations are equally important. Programmes delivered exclusively through English-language, text-heavy materials may exclude women with limited academic English proficiency or formal literacy. The use of Hausa and other relevant local languages, together with audio-visual resources, mobile-friendly platforms and practical demonstrations, could improve accessibility and comprehension. Such localisation would make micro-credentialing more culturally responsive and better suited to the learning realities of women in Northern Nigeria.

Recognition and credibility also remain critical. For micro-credentials to contribute meaningfully to women's empowerment and economic participation, learners and employers must have confidence in the value of the certificates awarded. Poorly regulated or unrecognised credentials may have limited labour-market value and discourage participation. Institutional credibility, quality assurance and recognition are therefore essential, requiring collaboration among universities, government agencies, employers, professional bodies and civil-society organisations (Oliver, 2019; Ifijeh & Yusuf, 2020).

Community participation can further determine the success of micro-credential initiatives. Women's associations, community centres, faith-based organisations and local development groups can provide trusted channels for disseminating information, supporting learners and facilitating peer learning. Partnerships among universities, government institutions, technology providers, NGOs and community organisations could combine digital learning with local support structures and promote sustainable participation.

Properly designed micro-credentials can contribute to inclusive and equitable learning opportunities and provide alternative educational pathways for women excluded from conventional systems. They are consequently relevant to SDG 4, which promotes inclusive quality education and lifelong learning, and SDG 5, which focuses on gender equality and women's empowerment. By enabling women to acquire recognised competencies, strengthen employability and participate in economic activities, micro-credentials may help reduce educational and socio-economic inequalities.

Despite these possibilities, empirical evidence concerning the applicability, acceptability and sustainability of micro-credentials among educationally disadvantaged women in Northern Nigeria remains limited. Existing literature has focused considerably on higher education, professional development and employability, with less attention to women in low-resource and conflict-affected settings. There is therefore a need to examine the socio-cultural, technological, infrastructural, linguistic, financial and institutional conditions that shape women's willingness and ability to participate in micro-credential programmes. This paper addresses this gap by examining micro-credentials as potential mechanisms for promoting lifelong learning among women in Northern Nigeria. It positions micro-credentials not merely as technological innovations but as learning pathways that must be flexible, affordable, credible, culturally appropriate and responsive to women's practical needs.

Traditional credentials, such as diplomas, certificates, and degrees, have long served as formal evidence of educational achievement and professional competence. Typically awarded by accredited institutions after the completion of a structured curriculum, these credentials are widely recognized by employers, governments, and academic institutions (Oliver, 2019). They signify not only subject-matter knowledge but also the commitment and discipline of the learner, and often serve as a gatekeeper for access to employment, further education, and social mobility (UNESCO, 2016).

Micro-credentials are short, targeted learning experiences designed to equip learners with specific skills or competencies without the need to enroll in full-degree programmes. They are increasingly recognised as flexible and personalised alternatives to traditional education, especially valuable in rapidly evolving job markets that demand upskilling and reskilling (Oliver, 2019). Micro-credentials can be earned through various online platforms, universities, or professional training bodies and are often stackable, meaning multiple micro-credentials can build towards a larger qualification (Wheelahan & Moodie, 2021).

The analysis in this paper is grounded in the framework of Transformative Learning Theory, developed by Jack Mezirow in 1991. The theory focuses on the profound shifts that occur in an individual's perspective and worldview through critical reflection and learning. Transformative learning is centered on the process of questioning previously held assumptions, acquiring new knowledge, and adapting to evolving societal roles. This theory is particularly relevant in the context of empowering women in Northern Nigeria, where socio-cultural and economic challenges often limit access to traditional forms of education. By enabling women to engage in alternative learning pathways such as micro-credentials and digital badges, transformative learning offers a means to challenge these barriers and foster personal and societal growth.

The relevance of this theory lies in its focus on empowerment through learning. It posits that education can lead to profound changes in an individual's self-perception and their role within society. In Northern Nigeria, many women face substantial obstacles to formal education due to cultural norms, economic constraints, and gender-based expectations. Micro-credentials provide an opportunity for women to acquire skills and knowledge that are directly relevant to their needs, without the constraints of traditional education systems. This transformative process enables women to take on new roles, both in the workforce and their communities, by breaking free from restrictive societal norms.

Finally, transformative learning is inherently aligned with lifelong learning. The theory supports the notion that learning should be a continuous, evolving process. Micro-credentials, with their modular and flexible structure, fit seamlessly into this model, enabling women in Northern Nigeria to engage in lifelong learning and continually upgrade their skills. This aligns with the broader societal need for ongoing re-skilling and adaptation, particularly for marginalized groups seeking to navigate an ever-changing socio-economic landscape.

In Northern Nigeria, the disparity in educational access between men and women is pronounced, with female literacy standing at only 47.7% compared to 71.3% for males, as reported by the National Bureau of Statistics (2022). This significant gap highlights the ongoing challenges that women in the region face in accessing education. Socio-cultural norms, including deep-rooted patriarchal values, often prioritize male education over female education, limiting the opportunities available to women (UNICEF, 2020). Additionally, early marriages and childbearing responsibilities disproportionately affect young girls, leading to high dropout rates and limiting their chances to continue formal education (Okeke & Nwachukwu, 2018).

Economic challenges further compound these issues, with many families prioritizing the education of boys due to limited financial resources, leaving girls with fewer opportunities for schooling (World Bank, 2022). In many rural areas, the lack of infrastructure, such as schools or safe transport, further restricts women's access to education (UNESCO, 2021). These barriers are exacerbated by gendered societal norms, which often deem women's roles as domestic caregivers and limit their mobility, making it difficult for them to pursue traditional schooling models that require physical attendance in educational institutions (Adamu, 2020). Given these structural barriers, there is a critical need for educational alternatives that are both accessible and culturally relevant. Innovations like micro-credentials and digital badges present a flexible and scalable solution for addressing these challenges (Oliver, 2019). These alternatives allow women to learn at their own pace, in their own space, and without the rigid constraints of traditional educational systems. Such programmes can be designed to accommodate the specific needs of women in Northern Nigeria, enabling them to gain valuable skills while balancing familial and social responsibilities (Patel & Ragupathi, 2020). These flexible learning models can therefore play a pivotal role in bridging the gender gap in education, offering women the chance to overcome the barriers they face in accessing formal education.

Micro-credentials have emerged as a promising solution to the educational and economic exclusion many women experience, particularly in regions with limited access to traditional education systems. These short, stackable, competency-based courses are designed to be flexible, accessible, and tailored to individual learners' contexts, allowing marginalised groups to gain valuable skills without the time or financial investment required by traditional degrees (Oliver, 2019).

Unlike conventional educational models, micro-credentials focus on specific skills and knowledge, enabling learners to demonstrate their competencies in a way that is directly aligned with the needs of the workforce (Gibson et al., 2015). This form of credentialing offers several advantages, particularly for women in areas where socio-cultural and economic barriers hinder access to formal education. By offering modular learning options that can be completed at one's own pace, micro-credentials address the specific needs of learners who may have familial, work, or other social responsibilities (Patel & Ragupathi, 2020).

Research Questions

The paper responded to the following research questions:

1. What are women's perceptions of the relevance and potential benefits of micro-credentials for lifelong learning and economic empowerment in Northern Nigeria?
2. What socio-cultural, technological and digital-literacy barriers affect women's participation in micro-credential programmes in Northern Nigeria?
3. What motivates women to participate in micro-credential and lifelong learning opportunities?
4. What factors influence women's perceptions of the credibility, recognition and acceptance of micro-credentials?
5. What forms of community support, language and instructional design are preferred by women for effective participation in micro-credential programmes?

Methodology

This study adopted a qualitative approach. Data were obtained through in-depth interviews with twelve (12) women across Borno, Yobe, Adamawa, and Zamfara, the four educationally disadvantaged states in northern Nigeria (UNICEF, 2023). A purposive sampling procedure was used to select both the states and the participants. The inclusion and exclusion criteria outlined in Table 1 guided the selection of participants. The data collected were analyzed using thematic analysis to elicit meaningful patterns, insights, and findings from the participants' experiences and perspectives.

Table 1: Inclusion and exclusion criteria

Criteria Category	Inclusion Criteria	Exclusion Criteria
Gender & Age	Female, aged 18 years and above	Below 18 years of age
Residency	Resident of Borno, Yobe, Adamawa, or Zamfara for at least 5 consecutive years	Not resident in any of the target states for 5 years
Educational Status	Ability to read and write in English language	Inability to read and write in English language
Learning Interest	Willing to engage in education, skills training, or digital learning	Uninterested in learning or resistant to micro-credentials/digital learning
Digital Access	Has access to use a smartphone/tablet or community resource for digital learning	No access to digital devices and unwilling to learn, even with support

Consent to Participate	Provides informed consent to participate	Unwilling to participate in the interview
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Findings

The study produced eight major findings concerning the perceptions, experiences, aspirations and challenges of women in Northern Nigeria regarding digital learning and micro-credentials. Participants generally perceived micro-credentials as practical, flexible and accessible alternatives to conventional forms of education. They considered them particularly relevant to women who had been unable to pursue or complete formal education because of poverty, early marriage, conflict or other socio-economic circumstances. Participants believed that micro-credentials could provide opportunities to acquire practical and marketable skills without the substantial financial, time and institutional commitments associated with university education. Skills such as tailoring, cosmetics, digital entrepreneurship and other vocational competencies were viewed as potentially useful for improving livelihoods. The possibility of obtaining a recognised certificate after acquiring such skills was also considered motivating. As one participant from Adamawa stated, “I couldn’t go to university, but if I can learn a skill online and get something to show for it, that’s enough to help my family.” This finding suggests that micro-credentials were perceived not merely as educational alternatives but as potential pathways for women to re-enter learning and participate more meaningfully in economic activities.

Despite the perceived benefits of micro-credentials, participants identified significant socio-cultural and domestic constraints that could limit women’s participation. Spousal approval emerged as an important consideration, particularly in communities where women’s educational and economic decisions may be influenced by household structures and gender expectations. Domestic responsibilities were also perceived as competing with opportunities for learning, particularly where women were expected to prioritise childcare, household management and other family obligations. A participant from Zamfara explained, “If my husband agrees, I will try it. But I cannot make such decisions on my own.” This statement illustrates how women’s participation in digital learning may depend not only on the availability of educational opportunities but also on the extent to which their social and household environments permit them to take advantage of those opportunities. Consequently, expanding micro-credential programmes without addressing these socio-cultural realities may limit their effectiveness among women in disadvantaged communities.

Poor internet connectivity, inadequate access to digital devices and the high cost of internet data were identified as major obstacles to participation in digital learning. These challenges were particularly pronounced among participants living in rural and peri-urban communities, where reliable internet services and affordable digital resources were less readily available. Participants indicated that even when they had an interest in acquiring skills online,

technological and financial constraints could prevent them from accessing learning materials consistently. A participant from Borno reported, “Even when I wanted to learn something online, I had no data, and the connection in our village is always poor.” This finding demonstrates that the availability of online learning opportunities does not automatically translate into accessibility. For micro-credentials to effectively reach disadvantaged women, issues of connectivity, affordability and access to appropriate digital devices must be considered as integral components of programme design and implementation.

The study further revealed a substantial gap between basic mobile-phone ownership and the ability to use digital technologies for educational purposes. Although many participants reported using mobile phones and applications such as WhatsApp for communication, most had little or no experience using their devices for structured learning. E-learning platforms, video tutorials, online assessments and other digital learning tools were unfamiliar to many participants. One participant explained, “I only use my phone to call and chat. I don’t know how to use it to learn anything.” This finding indicates that simply providing access to digital learning platforms may not be sufficient to ensure meaningful participation. Participants may require preliminary training in basic digital skills, including navigating learning platforms, accessing digital content, submitting assignments and participating in online activities. Foundational digital literacy should therefore be considered an important prerequisite for successful participation in micro-credential programmes.

Despite the barriers identified, participants demonstrated considerable enthusiasm for lifelong learning and skills acquisition. Their motivation was largely associated with the desire to become employable, generate income, support their families and achieve greater financial independence. Learning was therefore understood in practical and socio-economic terms rather than solely as a means of obtaining academic qualifications. For many participants, acquiring a new skill represented an opportunity to improve their household circumstances and become more economically productive. This finding suggests that micro-credential programmes that are closely aligned with local livelihood opportunities and labour-market demands may be particularly attractive to women in disadvantaged communities. The strong motivational orientation towards employment and self-reliance also indicates that participants may respond positively to learning programmes that demonstrate clear and immediate pathways from skills acquisition to economic opportunity.

Another important finding was participants’ uncertainty regarding the legitimacy, credibility and recognition of micro-credentials. Some participants questioned whether certificates obtained from unfamiliar online platforms would be accepted by employers, government agencies or other institutions. This concern reflects the importance participants attached to the identity and reputation of the institution issuing the credential. One participant asked, “Will any company accept this certificate if it’s not from a school or government?” The concern suggests that participation may be influenced not only by the content and flexibility of a micro-credential but also by the perceived value of the resulting certificate. Participants therefore

appeared to favour credentials associated with reputable universities, government agencies, recognised organisations or credible institutional partnerships. This finding underscores the need for appropriate quality assurance, institutional recognition and standardisation mechanisms to enhance confidence in micro-credentials.

Participants also expressed a preference for supportive and collaborative learning environments. They indicated that participation would be more attractive and less intimidating if other women within their communities were undertaking similar programmes. Community-based settings such as women's associations, faith-based groups and local community centres were identified as potentially useful spaces for supporting participation and learning. A participant from Zamfara stated, "If other women in our group are also doing it, I will be encouraged to join." This statement highlights the potential role of peer influence in building confidence, motivation and commitment among women who may be unfamiliar with online learning. Community-based support could also provide opportunities for participants to share experiences, assist one another with digital challenges and maintain motivation throughout the learning process. Consequently, integrating peer-support mechanisms into micro-credential programmes could help reduce feelings of isolation and strengthen participation.

Finally, participants expressed strong preferences for instructional materials presented in local languages and delivered through audio-visual formats. Hausa and other familiar local languages were considered easier to understand, while text-heavy materials, particularly those presented in English, were perceived as challenging by some participants. One participant remarked, "I understand better when I hear or watch in Hausa. Reading too much English is hard for me." This finding suggests that language and instructional format are important considerations in designing inclusive micro-credential programmes for women with varying levels of formal education and literacy. Audio-visual resources, including videos, demonstrations and narrated materials, may make learning more accessible and engaging. The finding therefore highlights the importance of culturally responsive instructional design that takes account of participants' linguistic backgrounds, literacy levels and preferred modes of learning.

Discussion of Findings

The findings of this exploratory study provide insights into the potential of micro-credentials to support lifelong learning among women in Northern Nigeria. The first major finding was that participants perceived micro-credentials as practical, flexible and accessible alternatives to conventional education. Participants particularly valued the possibility of acquiring marketable skills without having to meet the time, financial and institutional requirements associated with university education. Skills such as tailoring, cosmetics and digital entrepreneurship were considered potentially useful for improving livelihoods and supporting household income. This finding concurs with the positions advanced by UNESCO (2023), the World Bank (2022), and Yusuf and Afolabi (2022), which emphasise the potential of flexible, skills-oriented and alternative learning pathways to expand educational opportunities for

populations excluded from conventional education. The agreement is particularly evident in the emphasis placed on flexibility, practical skills and employability. The finding also extends existing literature by demonstrating that women in the study context do not necessarily view micro-credentials primarily as substitutes for academic degrees; rather, they perceive them as pragmatic opportunities for acquiring immediately useful competencies. This suggests that the value of micro-credentials among disadvantaged women may lie in their capacity to provide a second chance for learning and economic participation.

The second finding revealed that socio-cultural expectations and domestic responsibilities significantly influence women's ability to participate in digital learning. Participants identified the need for spousal approval and competing household responsibilities as important constraints. This finding concurs with UNICEF (2023) and Olaore (2020), which identify socio-cultural and gender-related factors as persistent barriers to women's educational participation in conservative and disadvantaged settings. The present finding therefore reinforces the argument that educational interventions targeting women must consider the social environment in which learning takes place. However, the finding also adds a contextual dimension to the existing literature by showing that these barriers may extend to emerging digital learning opportunities. In other words, digital delivery alone does not remove traditional barriers to women's education. Even where a learning opportunity can technically be accessed from home, women may still require permission, time and family support to participate. Consequently, micro-credential initiatives must engage not only prospective learners but, where appropriate, families, community leaders and other influential stakeholders.

The third finding indicated that inadequate digital infrastructure, poor internet connectivity, limited access to devices and high data costs constitute significant barriers to participation. This finding strongly concurs with the World Bank (2022), which highlights the persistence of digital inequalities and disparities in access to digital technologies, particularly among rural and disadvantaged populations. The finding is also consistent with broader concerns about the digital divide, whereby differences in connectivity, affordability and access to devices translate into differences in educational opportunity. The study therefore demonstrates that digitalisation can simultaneously create opportunities and reproduce existing inequalities. While micro-credentials may reduce geographical and institutional barriers associated with conventional education, they may introduce technological and financial barriers for women without reliable connectivity or affordable data. The implication is that micro-credential programmes designed for disadvantaged women should incorporate mechanisms such as community digital centres, subsidised connectivity, offline learning resources and mobile-compatible content.

The fourth finding concerned the digital literacy gap among participants. Although many women possessed basic mobile phones and used applications such as WhatsApp for communication, most had limited experience using their devices for educational purposes. This finding is consistent with the concerns reflected in the literature on digital inclusion, particularly the broader emphasis on digital competence as a condition for meaningful

participation in technology-mediated learning. However, the finding provides an important qualification to assumptions that increased mobile-phone penetration automatically creates readiness for online education. The participants' experiences demonstrate a distinction between access to technology and the ability to use technology educationally. Thus, the introduction of micro-credentials without preliminary digital literacy support may unintentionally exclude the very women such programmes are intended to reach. The finding therefore supports a phased approach in which foundational digital literacy is integrated into micro-credential initiatives before or alongside the delivery of specialised skills.

The fifth finding revealed a strong motivation among participants to engage in lifelong learning, particularly where learning could lead to employability, income generation, family support and financial independence. This finding concurs with UNESCO (2016) and Agyapong and Alemna (2021), which conceptualize lifelong learning as an important mechanism for social participation, empowerment and economic development. The agreement suggests that disadvantaged women may perceive education not simply as an academic pursuit but as a practical instrument for improving their livelihoods and strengthening their capacity to contribute to household and community development. The finding also reinforces the relevance of micro-credentials because their short, skills-focused and potentially employment-oriented nature corresponds closely with the aspirations expressed by participants. However, the finding also implies that programme designers must ensure that the skills offered are relevant to local economic opportunities rather than assuming that any digital credential will automatically translate into employment or income.

The sixth finding was participants' scepticism concerning the legitimacy and recognition of micro-credentials. Participants questioned whether certificates obtained from unfamiliar online platforms would be accepted by employers, government institutions or other relevant organisations. This finding concurs with Oliver (2019) and OECD (2021), which emphasise the importance of quality assurance, recognition, credibility and standardisation in the development and adoption of micro-credentials. The agreement indicates that concerns about recognition are not unique to the Nigerian context but represent a broader issue affecting the acceptance and scalability of micro-credential systems. In the context of Northern Nigeria, however, the issue may be particularly important because women who have already experienced exclusion from conventional education may be reluctant to invest their limited resources in credentials whose labour-market value is uncertain. The finding therefore points to the need for reputable institutional partnerships involving universities, government agencies, professional bodies and employers. Clear standards for assessment, certification and recognition could strengthen trust and increase the perceived value of micro-credentials.

The seventh finding demonstrated the importance participants attached to community-based support and peer learning. Participants indicated that they would feel more confident and motivated if other women within their communities were undertaking similar learning activities. This finding concurs with UNESCO (2016) and Agyapong and Alemna (2021),

which emphasize the importance of supportive learning environments and collective participation in promoting lifelong learning. The finding is particularly relevant to the Northern Nigerian context because community and group structures may provide mechanisms for overcoming some of the social and technological barriers identified in the study. Women could support one another in navigating digital platforms, share devices or learning experiences and encourage the learning process. Community-based delivery may therefore provide a bridge between conventional face-to-face learning and fully online micro-credential provision. Rather than viewing digital micro-credentials as exclusively individualised online experiences, programme designers could incorporate women's associations, community centres, faith-based organisations and other trusted local structures into programme delivery.

The eighth finding concerned participants' preferences for local-language instruction and audio-visual learning formats. Participants generally indicated that they understood learning materials better when delivered in Hausa or other familiar local languages and preferred audio-visual materials to text-heavy content. The finding concurs with UNICEF (2023) and Yusuf and Afolabi (2022), particularly regarding the importance of addressing literacy, language and contextual factors in expanding educational participation among disadvantaged populations. The finding further supports the argument that educational technologies should be adapted to learners' linguistic and cultural contexts rather than simply transferring conventional English-language content to digital platforms. The preference for audio-visual resources is also significant because it may enable participants with limited literacy or educational experience to engage more effectively with practical and skills-based learning. Consequently, the localisation of micro-credentials should encompass not only curriculum content but also language, instructional media, examples, assessment methods and modes of learner support.

Conclusion

This exploratory study highlights both the potential and the challenges of micro-credentials in promoting lifelong learning among women in Northern Nigeria's educationally disadvantaged states. For participants in Borno, Yobe, Adamawa, and Zamfara, micro-credentials offered practical, flexible avenues to gain skills and economic empowerment, especially for those affected by early marriage, poverty, or conflict. However, barriers such as socio-cultural norms, limited digital literacy, infrastructural deficits, and doubts about the recognition of these credentials pose serious constraints. Despite these challenges, women expressed a strong desire for learning and self-improvement, underscoring the need for targeted, accessible, and context-sensitive micro-credential initiatives.

Recommendations

In view of the findings of this study, the following recommendations are made:

1. Design localised, skills-based micro-credentials in areas like tailoring, digital trade, and agriculture, using Hausa and audio-visual formats.
2. Address socio-cultural barriers by engaging men, leaders, and faith-based groups to build social learning support.

3. Encourage peer learning through women's groups and local centers to foster motivation and reduce isolation.
4. Improve digital infrastructure via partnerships for affordable devices, internet access, and public learning spaces.
5. Ensure recognition and legitimacy by aligning with credible institutions and developing a national micro-credential framework.

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