

Leveraging on Micro-Credentials for Graduate Employability in Nigeria: The Need for Collaboration between Employers of Labour and the Universities

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Abstract

This study focuses on analytical description of micro-credentials for graduate employability in Nigeria. It examines the need to rebrand university education with much emphasis on the need for inclusion of micro-credentials as part of the integrated programmes in Nigerian universities. The study establishes the fact that there is a gap between university outputs and skills needed for economic development. The study sees the traditional learning in Nigerian universities as unfit in this current economy and this makes most or majority of university graduates not to possess skills to harness resources for economic development. Pointing to the fact that micro-credentials as skill-based mode of learning is required to rebrand university outputs but through collaboration and active involvement of employers of labour. Benefits of micro-credentials are highlighted as the study also identifies possible challenges which universities may face for integration of micro-credentials as programme. The way forward to address these challenges are presented and the study concludes that the integration of micro-credentials into the curricula of Nigerian universities would offer a promising avenue for enhancing graduate skill acquisition for employability; and also, provide them the opportunity of becoming job creators. Based on the discourse in this study, it was recommended among others that government through the National Universities Commission (NUC) should mandate all universities to prepare a working template for the inclusion of micro-credentials in all their programmes which must be within the years slated for each programme.

Key words: Leveraging, Micro-credentials, Graduate, Employability, Collaboration

Introduction

The system and programmes of education in Nigeria are planned to serve as tools for socio-economic development. This is also the desire of any other country of the world for investing maximally on educational programmes. This is to enable the countries meet their local needs and compete favourably for the socio-economic global race. The 1999 constitution of the Federal Republic of Nigeria sees education as right of every citizen. By implication, it means that educating the citizen is the development of the nation. It is through education, individuals in a country would acquire needed skills, knowledge and virtues to meet individual's immediate needs and national needs.

No country is said to rise above the quality of her education (Ottan, 2019), the quality of the contents of the curriculum and delivery would determine quality of graduates.

Meanwhile, higher education, among other levels of education in Nigeria is charged with the responsibility of producing required man-power needed for cultural sustainability and developed economic nation. University education is the apex level of education in Nigeria and graduates are accorded respect as resource individuals for national development. It is not amazing but rather a matter of concern seeing Nigerian universities turning out more than 300,000 graduates annually and yet little or no impact is felt on socio-economic development of the country. In Abuja, the Independent Service Delivery Monitoring Group (ISDMG, 2013) explains that Nigerian tertiary institutions are performing below average when compared to some other institutions in Africa. The group further confirms that no Nigerian university ranked among the first 100 in Africa or among the first 5,000 in the world when it comes to credible performances. Universities are established with the intention to produce required human resources for cultural, political and socio-economic development of a nation. Therefore, universities are established for the realisation of human and national development (Odiaka, 2012 and Okebukola, 2015).

University graduates in Nigeria face significant challenges regarding employability, primarily due to lack of job opportunities that align with their qualifications. Studies have indicated that many graduates struggled to be employed or create job shortly after completing their studies. Ottan (2019) remarks that many university graduates are not employable due to the fact that skills and abilities to perform and compete favourably in the world economy are not possessed, especially in the era of skill driven contemporary world. Universities in the face of technological challenges are expected to produce graduates who are to be job creators and not job seekers (Abdullahi, 2020). This is where the traditional approach to university curricula needs to be reviewed, repackaged and rebranded to offer much demanded impacts for economy development. Captains of industries in Nigeria are pressed to employ graduates that possess basic manipulative skills not the class of degree. According to Peters (2023), the universities in Nigeria have been programmed to structure courses in traditional ways instead of following the modular path of content structure which is a sine-qua-non for micro-credentialing. Stressing that over the past decades, reports abound of mismatch between the requirements of employers and that of the university outputs.

Furthermore, the internet learning has exposed Nigerian youths to creativities and initiatives of soft skills. This makes them have little regard for rigorous and lengthy traditional learning in the universities. This is because those soft but specific skills without certification from any university is more earning that makes the youths to be self-dependent. Such skills include skit making, youtube, graphic designs and e-commerce among others. Universities in developed countries do have a paradigm shift by adjusting the curriculum to meet the need of the new skills currently needed for human potentials focusing mainly on manipulative and human relations skills. The soft skills programmes arranged, monitored are acquired within the shortest time frame and the knowledge needs are formalised for certification. This initiative is not only to build human resources for economic needs but also used to explain the dynamic nature of educational system; which is said to be changing as changes reflect in the society where education serves.

Hence, micro-credentialism is a concept of idea that offers opportunity to bridge the skill gap that seems to make the transition from tertiary education to the world of work, difficult and which, may be affecting many developing countries (Peters, 2023). Micro-credential is gaining traction as viable means for enhancing upskilling of the workforce in the global world now and has potential pathways for gaining employment for some students. This is an area that universities in Nigeria needs to explore to give employability opportunities for the graduates as part of transformative agenda.

Concept of Micro-credential

The word micro-credential is a language used to provide formal evidence for skills acquisition within shortest period of time. Although, it has no universally consensus meaning. Hence, its meaning varies and it is determined depending on the context usage. According to the European Commission (2021), micro-credentials are short learning experiences that lead to certification of specific skills. This initiative aims to support the development, implementation, and recognition of micro-credentials across various institutions, businesses, sectors, and borders. BloomBoard (2021) sees micro-credentials as a form of micro-certification earned by proving competence in one specific skill at a time, via a portfolio of evidence, created through classroom practice. The Organisation for Economic Co-operation and Development (OECD, 2021) submitted that micro-credentials are an organised learning activities with an associated credential; the credential recognises a skill or competency that has been acquired through an organised learning process and validated through an assessment. The

Malaysian Qualification Agency (2020) views the concept as digital certification of assessed knowledge, skills, and competencies in a specific area or field, which can be a component of an accredited programme or stand-alone course supporting the professional, technical, academic, and personal development of the learner. In the opinion of United Nations Educational, Scientific and Cultural Organisation (2022), micro-credential is a record of focused learning achievement, verifying what the learner knows, understand or can do.

By and large, the definitions observed so far laid emphasis on two important things: ‘the organised learning associated with credentials’ and ‘certification to recognise a skill’. These imply that micro-credentials are not just acquisition of skills but formally coordinated and organised for updated skills in an individual. In clear term, the concept ‘micro-credential’ is a philosophy and mind set for getting people updated for upskills and integration of new skills and other aspects of knowledge to the existing skills and knowledge possessed by individuals to be relevant in the trend of global economy through formalised learning environment.

Micro-credential and University Education in the 21st Century

Micro-credentials are increasingly recognised as effective tools for facilitating rapid upskilling in the 21st-century workforce. It is an avenue that allows learners to gain specific skills and knowledge tailored to current job market demands, supplementing traditional university education certificate. Higher institutions of learning are adopting micro-credentials to assist students acquire required competencies and connect with broader learning opportunities (Oliver, 2021). Micro-credentials are competency-based learning, focusing on skill learning process which issue learners with a certificate upon completion.

According to Newby and Cheng (2020), micro-credential is a relatively new technology-based learning concept and are fast gaining recognition in the higher education landscape, being seen as one of the disruptive forces of change under higher education. Introducing micro-credential in university education holds the potential to change how universities offer degree programmes and students acquire their qualifications. Oliver (2021) is of the opinion that micro-credential may be an additional, alternate, complementary or component part of a formal qualification. That is, an added valued skills acquisition for one to be reckoned with in the society when it comes to social and economic relevance. The Association to Advance Collegiate Schools of Business (AACSB) sees the concept of micro-credential as certifications

granted by assessed mastery of a specialised competency (AACSB, 2021). This implies that university can develop micro-credential programmes and along side with the existing curriculum for the students; and students stand to benefit by having skill-based certificate and university degree certificate.

Hence, it should be considered as a sub-unit of a credential that may accumulate into a larger credential or degree or be part of a learner's portfolio. It is worthy of note that micro-credential learning contents must align with formal qualification levels such as a Bachelor or Master's degree (Oliver, 2019). Micro-credentials are specialised certifications that shows proficiency in specific skills or knowledge areas possessed by the trainees. This is different from traditional degrees, which require extensive study across a broad curriculum. The micro-credential focuses on targeted skill and competency that are imminent and immediately needed for a job role. The credentials can be presented in form of digital badges or certificate earned through short courses under gone. Pickard (2019) noted that digital badges are a popular form of micro-credential. They serve as visual symbols of achievement and can be displayed on professional networking profiles, resumes, or personal websites. For each badge, therein contains metadata detailing the issuing organisation, criteria for earning the badge, and evidence of the skills acquired (Carey & Stefaniak, 2018).

History has it that COVID-19 pandemic has changed virtually traditional approach ways of doing things to modern styles which are more reliable, less time consuming and opened. Thus, the emergence of micro-credentials can be traced back to the early 21st century, coinciding with advancements in technology and the rise of online learning platforms. Initially, these credentials emerged as a flexible, accessible alternative to traditional education, catering to the needs of a diverse, global audience (Oliver, 2019). Lemoine and Richardson (2020) reported that the acceptance and adoption of micro-credentials have grown, particularly among employers recognizing their practical value. Major corporations such as Google, IBM, and Apple have integrated micro-credentials into their hiring and training practices, viewing them as valid indicators of skill proficiency. The COVID-19 pandemic further accelerated the adoption of micro-credentials, as individuals sought to upskill or reskill during periods of lockdown, driving a significant increase in online course enrolments (Raimi & Ahmed 2021). The College Board (2021) was of the opinion that micro-credentials offer several distinct advantages over traditional degrees in terms of structure, duration, and cost. Traditional degrees, such as bachelor's and master's programs, provide a

comprehensive education covering a wide range of topics. They typically require a significant time investment—often four years for a bachelor's degree and two years for a master's degree—and can be financially burdensome.

The world is being driven by skill potentials and this is what make people to command respect in the socio-economic struggle of life. The developed nation prioritized and valued skills rather than certificates for transformation and desired economic development. The universities in the developed world, according to Lemoine (2020), have intensively focusing on skill-based programmes and activities for graduates for them to withstand the dynamics of socio-economic, technology and political life of the world. The universities as the highest level of education in the world are producers of high-level man-power for the over all development of a nation and the world as a whole.

The Place of Nigerian Universities in the Global Ranking: A Concern for All

Nigerian universities over many decades ranked very low in global university rankings, with none of the university enlisted into the top 1000. This situation reflects ongoing concerns about their performance and progress on the international stage. Factors such as inadequate funding, poor infrastructure, and limited research output contribute to these low rankings, prompting discussions about the future of higher education in Nigeria. According to Okebukola (2011), universities in Nigeria are challenged with many factors that hinder their global ranking, rather than having reasons for high rankings. Factors such as inadequate research funding, limited access to modern technology, poor infrastructure, and inadequate training for staff, bad governance, unstable curriculum and student unrest. These are parts of the issues contributed to a lower positioning of the universities in Nigeria in global rankings, despite some institutions showing potential for improvement through research and community service initiatives. As against some of the challenges often identified by previous researchers, the issue quality of graduates among the universities is Nigeria as regard their impact on economic and socio-cultural development of the nation is a major concern. Graduating students with little or no specific skills. What worries the more is yearly increase in number of the universities and graduates. Okiki (2024) reported that the latest Quacquarelli Symonds (QS) World University Rankings 2025 have been released, featuring over 1,500 universities across 105 higher education systems. QS is a leading higher education analytics firm that publishes annual world university

rankings, evaluating institutions based on academic excellence, reputation and global diversity. It presented that the United States leads with 197 institutions featured in the rankings, followed by the United Kingdom with 90 and mainland China with 71. Imperial College London secured second position, the University of Oxford and Harvard University are in third and fourth place, while University of Cambridge completes the top five. Okiki (2024) noted that Nigeria is represented by two universities in the rankings, with the University of Ibadan and the University of Lagos both placing between 1100-1200 positions. This is an indication that universities in Nigeria are still far from economic reality when it comes to programmes and quality of graduates been produced.

In year 2019 alone, the University Digest Report according to the National University Commission (NUC) (2019) revealed that there were 166 universities legally existing and the year, it was on record the universities graduated for undergraduate studies alone 213, 715 students. This number cut across full-time and part-part programme in all the programmes. The concern here is obvious, that if in a year, Nigeria can produce such huge number graduates, expectedly, there should be significant positive impacts on the socio-economic life of the nation. More so, the country is blessed with natural resources that only need human inputs for transformation processes for the world benefits and specifically for Nigeria advantage ahead other countries of the world. In the same year (year 2019), the number of universities have it in their record for enrolling 1, 939, 745 students in various courses for both full-time and part-times. Expectedly, by the time the universities will begin to turn out these number as graduates, it would double and above what has been recorded in year 2019.

However, the number of universities would continue to increase arithmetically and so all the number of graduates would continue to increase geometrically (Ottan, 2019). The ultimate purpose of the urge investment in education (both private and public) is return benefit to individual and the nation as a whole. What is it Nigeria as a country is actually benefiting in investing in university education in face of global economic challenges? Answer to this question is a concern for researchers. The programmes and the curriculum of university education in Nigeria unlike what are happening in the developed countries where the programme of university education is flexible to accommodate new developments, innovations and ideas; still remain the same for the past two decades. This is a call to rebrand the university education in Nigeria.

Among the universities that has successfully taken the rare benefits of micro-credentialism philosophy in the world is the University of Maine System in Orono, United State of America. The university repackaged all programmes and integrated micro-credential in all. Business Services Apprenticeship, Craft Beverage, Computer Support Specialist and Facilitation Skills among others are micro-credential programmes under the watch of University Maine System for all the students.

Rebranding University Education Curriculum Through Micro-credential: Need for Collaboration Between University and Employers of Labour

The need to rebranding university curriculum by integrating micro-credentials involves creating short, sector-endorsed courses that align with the skills needed in the job market. The employers of labour otherwise known as job provider determine type of competencies needed for job performance. Hence, there is need to bridge the gap of interest between providers of labour and the employers of labour. Patric (2023) pointed out in public discourse that some university degrees are outdated and irrelevant to socio-economic need of the nation. Emphasising the evolution and emerging issues of the world do bring new life that must be approached in a new way using new discovery approaches. Citing example of crime actions on internet which brought the idea of cybercrime as a course in universities. Similar thing is experienced in labour market. Where the job owners are forced be exigence of emerging issues to use new skills and methods to sustain and maintain the job.

The idea behind the current slogan that ‘get the skills not degrees’ is evident prove that the world economy is driven by skills not really the number of certificates. The universities by all standard are to meet the economy needs of the nation through teaching, research and community services. These are the 3-core value of any university in Nigeria. In aspect of research and teaching, universities are to micro-scope the needs and aspiration of the nation for teaching and research outputs. The economy driven researches in universities is expected to be impactful and honest. To be honest is to face the reality of economic challenges of the nation. This requires nexus or collaboration between universities and employers of labour to ensure that university graduates are equipped with skills and values that can meet the evolving demands of the workforce. By working together, universities can tailor their programmes to enhance career advancement opportunities for students while addressing the specific needs of employers, thereby reducing the disconnect between educational outcomes and job requirements.

The University of Minnesota (2024) maintained that Micro-credentials are meticulously designed to address specific needs within the job market, offering a targeted, competency-based approach to education. By focusing on practical and applicable knowledge needed in the society. Micro-credentials bridge the gap between traditional academic programmes and the immediate needs of employers, providing learners with a direct pathway to employment and career advancement. In actual sense, micro-credential is symbol of an innovative response to the shifting landscape of workforce demands, offering a means to acquire relevant, up-to-date skills in a flexible and accessible format.

They stand at the intersection of education and employment, providing a bridge that not only helps individuals advance their careers but also enables employers to find the skilled workers they need to thrive in the 21st century. As the drive for micro-credentials continues to gain momentum, it is an innovation in education industry, one that values lifelong learning and the continuous development of skills aligned with the evolving needs of the global economy. This is why the employers of labour or job owners become important stakeholder in determining what to teach in the universities and type of research needed for societal acceptability and economy value. The authorities of universities in Nigeria needs alignment between educational outcomes and the needs of employers. By so doing, the key players or captain of industries both mini and corporate organizations would be coming working tools to integrate skill-based acquisition into teaching and research of university education. The followings are some of the key benefits for collaboration between universities and employers of labour for micro-credentialism:

- i. **Relevance:** Industries can provide invaluable insights into the current and future skills requirements of their sectors, ensuring that micro-credentials are aligned with real-world demands.
- ii. **Practicality:** Collaborative efforts can lead to the development of micro-credentials that are grounded in practical applications, enabling graduates to apply their knowledge directly to their work.
- iii. **Industry Validation:** Micro-credentials developed in partnership with industries are more likely to be recognized and valued by employers, enhancing graduate employability.

- iv. **Resource Sharing:** Universities and industries can pool their resources to develop high-quality micro-credentials, including subject matter expertise, infrastructure, and funding.
- v. **Continuous Improvement:** Collaborative relationships can foster a culture of continuous improvement, as both parties work together to refine and update micro-credentials based on feedback and emerging trends.
- vi. **Workforce Readiness:** Graduates gain practical skills that make them more attractive to employers.
- vii. **Real-World Experience:** Students engage in internships and projects, providing them with hands-on experience.
- viii. **Skill Development:** Employers help shape curricula to ensure students learn relevant skills for the job market.
- ix. **Knowledge Sharing:** Both parties exchange insights and expertise, fostering innovation.
- x. **Talent Pipeline:** Employers can identify and nurture prospective employees before graduation.
- xi. **Economic Growth:** Strong partnerships can lead to enhanced local economies and increased job opportunities.
- xii. **Research Collaboration:** Universities and businesses can collaborate on research projects leading to new innovations.
- xiii. **Networking Opportunities:** Students gain access to professional networks, enhancing their career prospects.
- xiv. **Increased Funding:** Partnerships can lead to grants and funding for educational programs and research initiatives.
- xv. **Community Engagement:** These collaborations can enhance community contributions through shared projects and initiatives.

Meanwhile, effective collaboration for the integration of micro-credentials for undergraduates between employers of labour and universities in Nigeria can be sustained through:

- i. **Establish Partnership Goals:** Define clear objectives for the collaboration that benefit both the employer and the university.

- ii. Create Internship Programs: Offer internships for students that provide practical experience and exposure to the workplace.
- iii. Joint Research Projects: Collaborate on research initiatives that align with industry needs, leveraging academic resources and expertise.
- iv. Advisory Boards: Form advisory boards including industry representatives to provide input on curriculum development and skills training.
- v. Networking Events: Host events and workshops that facilitate networking between students, faculty, and industry leaders.
- vi. Guest Lecturing: Invite industry professionals to guest lecture, providing students with real-world insights and networking opportunities.
- vii. Skill Development Workshops: Co-host workshops to enhance skills that are highly sought after in the industry.
- viii. Scholarship Opportunities: Create scholarships or sponsorships for students from the university, fostering a stronger relationship.
- ix. Feedback Mechanisms: Implement regular feedback channels where employers can share their workforce needs and expectations.
- x. Community Engagement Projects: Collaborate on projects that benefit the local community, reinforcing corporate social responsibility and student involvement.
- xi. Major Challenges of Collaboration

Challenges and Way Forward of the Inclusion of Micro-credentials in Nigeria Universities

Inclusion of micro-credentials in Nigerian universities is vital and is a means to revive the lost value of education. Nigeria students, in the face of global technological and economic challenges, need skill-based education programmes as against the traditional and conventional approach. Change as the only permanent phenomenon and is inevitable. But, needed to withstand and accommodate innovations. The universities may encounter the following challenges for the inclusion or integration of micro-credential in the system:

1. Awareness and Understanding: Limited awareness about what micro-credentials may hampers their adoption among students and stakeholders;
2. Quality Assurance: Concerns about the standardization and recognition of micro-credentials can affect their credibility;

3. Infrastructure: Lack of proper technological infrastructure and labs to support the delivery of micro-credential programmes;
4. Policy Framework: Inadequate regulatory policies governing the issuance and recognition of micro-credentials;
5. Cultural Resistance: Traditional education systems may resist shifts toward more flexible learning paths;
6. Funding and Resources: Lack of financial resources to develop and sustain micro-credential programmes;
7. Curriculum Integration: Challenges in integrating micro-credentials into existing curricula and educational programmes;
8. Assessment and Evaluation: Difficulty in developing effective assessment methods for micro-credential learning outcomes; and
9. Market Demand: Uncertainty in job markets regarding the acceptance and value of micro-credentials by employers.

To move forward, Nigerian universities should focus on raising awareness through the use of media platforms both print and electronic for sensitizing the public and key players of the university education on values, immediate and remote benefits of micro-credential, developing quality assurance mechanisms, collaborating with industries, creating supportive policies, and building technological infrastructures.

Conclusion and Recommendations

In conclusion, the integration of micro-credentials into the programme Nigerian university curricula would offer a promising avenue for enhancing graduate skill acquisition for employability; and also, provide them the opportunity of becoming job creators. By providing students with specialized skills and certifications, micro-credentials would bridge the gap between academic knowledge and economic manipulative skill demands. This would lead to improved career opportunities, higher earning potential, and greater overall satisfaction for graduates. The key takeaways from this analysis include:

- i. Micro-credentials can complement traditional degrees: They offer focused training on specific skills and competencies, enhancing graduates' marketability;
- ii. Industry collaboration: Partnerships between universities and businesses can ensure that micro-credentials are aligned with current industry needs;

- iii. Flexible learning opportunity: Micro-credentials can be offered online or in-person, catering to diverse student needs and preferences; and
- iv. Potential challenges and solutions: Issues such as cost, quality assurance, and recognition need to be addressed to fully realize the benefits of micro-credentials.

Strategically, incorporating micro-credentials into Nigerian universities can equip graduates with the skills and knowledge necessary to thrive in a competitive global job market. This means that investment in graduate employability will not only benefit individual students but also contribute to the overall economic development of the nation. Meanwhile, based on the discourse so far and the need to move the university education in Nigeria to meet global standard, the followings are recommended:

- i. The government through the National Universities Commission (NUC) should mandate all universities to prepare a working template for the inclusion of micro-credentials in all their programmes which must be within years slated for each programme;
- ii. The NUC should request the universities to prepare the learning contents for micro-credential programme for validation and national and global relevance;
- iii. The government through the NUC should serve as mediating agent between the universities and employers of labour for the nature of programmes to be offered as micro-credentials;
- iv. In order to avoid, the conflict roles during the implementation of micro-credentials programmes, universities and employers of labour should be guided by MoU; and
- v. Performances of the beneficiaries of micro-credentials should be determine by employers of labour.

References

- Carey, K., & Stefaniak, J. E. (2018). *An exploration of the utility of digital badges as a certification tool in higher education*. Education and Information Technologies, 23(6), 2175-2192.
- College Board. (2021). *Trends in college pricing 2021*. Retrieved from College Board.
- European Commission. (2021). Proposal for Council Recommendation on a European Approach to Micro-Credentials for Lifelong Learning and Employability. Brussels: European Commission.
- FRN (1999). Constitution of the Federal Republic of Nigeria 1999. Abuja: FGN.
- ISDMG, (2013). Strategic meeting for civil society organization. An unpublished presentation

by Naisr Fagge. Abuja.

- Lemoine, P. A., & Richardson, M. D. (2020). *Micro-credentials, nano-degrees, and digital badges: New credentials for global higher education*. International Journal of Advanced Educational Research, 5(2), 1-7.
- Malaysian Qualification Agency (2020). Guidelines to good practices: Micro-credentials.
<https://www2.mqa.gov.my/qad/v2/garispenduan/2020>
- National Universities Commission (2019). Nigerian University System Statistical Digest.
 Abuja: NUC.
- Odiaka, T. I. (2012). *Fund and the state of university education in Nigeria*. Inaugural lecture,
 university of Ibadan. Ibadan, Nigeria.
- OECD Education Policy Perspective (2021). Micro-credential innovations in higher education:
 Who, What and Why? <https://www.oecd-ilibrary.org>
- Okebukola, P. (2015). Issues with funding of education in Nigeria. *Guardians News Paper*.
 19th Aug, 2015.
- Oliver, B. (2019). *Making micro-credentials work for learners, employers and providers*.
 National Centre for Vocational Education Research. Retrieved from
<https://www.ncver.edu.au/research-and-statistics/publications/all-publications/making-micro-credentials-work-for-learners-employers-and-providers>
- Olufemi, P. (2023). Micro-credentialing as an acceptable model for Open, Distance and e-learning – A Path to Developing a Policy Framework. A text of keynote address presented at inaugural conference of the Open Distance and E-learning Association of Nigeria (ODELAN). Ilesha-Remo: Ogun State.
- Ottan, J. O. (2019). Funidng, internal efficiency and goal achievement of university education
 in North-central, Nigeria. Ilorin: University of Ilorin, Nigeria
- Pickard, L. (2019). *The Growing Importance of Micro-Credentials*. TechTrends, 63(3), 315-316.
- Raimi, L., & Ahmed, Z. (2021). Covid-19 Pandemic: *A Catalyst for Change in Teaching and Learning*. Journal of Education and Learning, 10(4), 107-115.
- UNESCO International Institute for Educational Planning (2023). Short courses, micro-credentials and flexibility learning pathways: A blueprint for policy development and action. Paris: UNESCO