



THE GENESIS OF MICRO-CREDENTIALS AND NEP 2020: A SYSTEMATIC OVERVIEW

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RESEARCH ARTICLE



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Abstract

This paper aims to probe the evolution of micro-credentials from early 21st century when internet evolved a revolutionary medium in education system. The growing demand of skill-based certification in 2000s gained popularity because of the flexibility the Internet made possible which was absent in the conventional education system. Online platforms like Coursera, edX, Udacity, Skillshare, and FutureLearn etc. offer upskilling in order to gain job requirements in various fields like technology, management, and data analysis etc. which surpasses the long-term degree mandates of the 2000 to 2015. Furthermore, NEP 2020 paces the significance of micro-credentials which makes Indian education system learner friendly. NEP 2020 adjoins micro-credentials with formal setting of education which connects academic curriculum with professional requirements. However, micro-credentials in Indian education lacks in various aspects such as universal standardization, quality assurance of the credits, inaccessibility to disadvantaged groups and many more which have been discussed.

Keywords: *Micro-credentials, History, Indian Education system, Challenges*

Introduction

Micro-credentials are short certifications that mark an individual's skills in a specific area. They're designed to provide a more modular, attainable system to earn proficiency without being enrolled to a full degree course. Micro-credential can be integrated to form larger credentials which may be considered as master degree qualifications when shared by learner. Also, these credentials are fully recognized by standard set of rules and fosters quality assurance (European Commission, 2020). In addition, these micro-credentials can be gained with the help of various online platforms which represent a specific skill that is in demand of a particular job. Micro-credentials can be earned by gaining targeted skill at a time in the form small certification or digital credits organised through formal classes via physical or online mode (Bloom Board, 2021).

Micro-credentials are more widely required by professionals in order to upskill quickly in areas like technology, project management, digital marketing, and data science etc (Kato et al., 2020). A credential issued for a relatively small learning project that consists of several modules in a given subject (ICDE, 2019). Furthermore, they're more into providing expertise in various areas which can be helpful for career upliftment, changing need of industries, or staying up-to-date with new technologies. Moreover, these certifications are typically awarded by universities, industrial leaders, or professionals and can be an addition to Curriculum Vitae. They're valued for their relevance and ability to fulfil specific needed targets in jobs (Wheelahan and Moodie, 2021a). Micro-credentials, unlike traditional degrees, caters skill by learners in a cost and time effective manner which are later on get validated (State University of New York, 2021).

Evolution of Micro-credentials

➤ Conventional Education System i.e. Before 2000s

Conventional education line up to provide learner with a well-directed structure in various disciplines like math, science, literature, history, and arts etc. In addition to academic knowledge there is a point of convergence with critical thinking and intellectual development. Conventional education involves long duration of time for example, a typical school education lasts 12 years, and undergraduate university degrees typically take 3–4 years to complete, while postgraduate degrees can take 2 additional years.

Furthermore, curriculum is set by variety of educational authorities (schools, colleges, universities) which is rigid in nature. Students follow a predetermined timetable with classes, exams, and assignments throughout their academic length of time. In conventional education, students receive formal credentials like high school grade sheets, bachelor's degrees, master's degrees, and doctorates upon completing their respective courses. These credentials later on are recognized by employers, institutions,

and governments. Conventional education often assesses students through various kinds of academic assessments such as exams, essays, presentations, and projects, which aim to focus on academic learning and theoretical understanding of the learner of the course they are enrolled in. Conventional education especially at the higher education level i.e. college/university can be expensive for reasons such as tuition fees, accommodation, textbooks, reference books, and other expenses. The skills and knowledge acquired in conventional education may need to be updated over time, especially as industries and technologies evolve (Tanya Garg, 2021).

➤ **Arise of Distance Education**

To reshape education system various measures have been taken globally such as increased access to computers and internet, advancement in technology, growth of online program and universities, cost efficiency and flexibility, introduction of collaborative and interactive learning tool and unfolding of Massive Open Online Courses (Yu S Sergeenko, 2021). In the beginning of 21st century, the internet became more accessible and reliable, making it easier for educational institutions to reach students online i.e. facilities like broadband internet connections became more common, aiding with the delivery of digital instructions. It was also found that 50% and above people have attended MOOCs only by mobile devices (Clement, 2020; International Telecommunications Union (ITC), 2021).

The introduction and development of Learning Management Systems (LMS) like Moodle, Blackboard, and WebCT, eFront, Sakai, Chamilo, etc enabled organizations to assist and deliver course materials, assignments, and assessments online (Khondkar R. Islam, 2017).

With the flourishing availability of notebook, personal computers and internet access, more students were able to participate in online courses, even in remote or rural areas where traditional schools weren't available. Institutions started offering fully online degrees and certifications, especially in areas like engineering, management, business, education, and information technology. Universities such as the University of Phoenix founded in 1976 had already established itself in the online education space since 1989, and in later period other institutions like Virtual University (or Online university) founded in 1960s include introduction of computer and its use in 1970s etc (Paul A. Kurzman, 2013). Distance education involves an affordable and flexible substitute to conventional on-campus education, especially for learners, educators and working professionals in isolated areas. Moreover, there is a flexibility in learning process that involve learning at their own pace and schedule, reducing the need for travel and other associated costs (DeakinCo, 2017). Inclusion of collaborative and interactive learning tools lead to the different learning communities which result in altogether a different interactive experience such as video conferencing, discussion forums, and collaborative tools (like Basecamp, Google Workspace, Slack, and Dropbox etc.) (Maiya Arzayeva, 2015)

In the late 21st Century, the rise of platforms like Coursera, edX and FutureLearn were being initiated which offered no or low-cost courses from renowned universities worldwide which assured quality education to broader audience (Ahmat et al., 2021). This technological evolution contributed in creating an environment for online learning while in India the rise of distance education during early 2000s involves introduction of accessibility of internet in urban areas of India. In addition to it, internet cafes, home broadband were the area of attraction for e-learning platforms which built an expansion in the area of technology in India.

Furthermore, educational organisation-initiated survey to make education more engaging that led technology into practice through e-learning platforms, learning tools and online content. IGNOU, founded in 1985 marks the introduction of distance education in India which in the beginning of 2000s expands in order to set up a large range of certificate, diploma, undergraduate, postgraduate programme. In addition, a revolution in distance education was made in the field of technical education across India to improve the quality in engineering and technology through online lectures with the help of National Programme on Technology Enhanced Learning (NPTEL). As the internet flourished, private companies and online education platforms began to expand in the educational format. Companies like NIIT, Infotrain Jetking, Tata Interactive Systems, and others launched distance education programs in areas such as IT, business, and management. The demand for professional courses like MBA, IT certifications, and vocational training came into business (Sampat Ray Agrawal, 2014). Many private institutions offered these programs in a distance education format, meeting the needs of working professionals who sought to improve their skills without leaving their jobs. In particular, the expansion of distance learning was noticed in fields like management, where institutions like Symbiosis, Narsee Monjee Institute of Management Studies, T.A. Pai Management Institute, Amity University and Sikkim Manipal University offered MBA programs via distance education. These programs became very popular among working professionals. India's rapid growth in the IT sector during the 2000s created an increasing need for tech-savvy professionals. Distance education in IT, software engineering, and related fields was crucial in filling this demand. Institutes like Aptech, Floatway, Indeed Inspiring Infotech, QSpiders and Hewlett Packard's training programs were pivotal in offering accessible distance learning to cater to the booming IT job market. (Anju Grover Chaudhary., 2006)

➤ **The Growth of Skill Development i.e. 2010 to 2015**

In 2015, government launched National Skill Development Mission (NSDM) that aims to provide skill-based training which results in short term certifications in order to improve employability in various fields (Samiksha Neroorkar, 2019; Matthias Pliz, 2021). Furthermore, the collaboration of educational organization was made with industrial job experts to know the raised gap

between job demand and aspirant's qualification in order to create skill-based certification programs which ultimately considered as the introduction of micro-credentials (Thomas Gauthier, 2020)

➤ **Commencement of Online Platform i.e. 2015 to 2020**

In 2015, Platforms like Coursera, edX, Udemy, and LinkedIn Learning were initiated which were offering courses in varied range of fields like data science, management, and digital marketing. The Indian government initiated SWAYAM (Study Webs of Active Learning for Young Aspiring Minds), an online platform designed to provide free online courses, which also included certifications. SWAYAM courses were an early example of micro-credentials in India, offering learners the chance to gain recognition for completing specific modules or courses (A Subaveerapandian, 2022, K. Sathish, 2021)

Corporations and Institutions

Companies like TCS (Tata Consultancy Services), LinkedIn learning, and Infosys, Accenture and Wipro began offering micro-credential programs through partnerships with platforms like Coursera and edX to help upskill their employees. (Jonathan Donner, 2020)

➤ **Endorsement and Augmentation through NEP 2020**

The National Education Policy (NEP) 2020 focuses on the rising need for a more flexible, specific, skill-based perspective to education which employs for the integration of skill development at each stage of education. Hence, the greater recognition of micro-credentials in this policy pushes lifelong learning and credit accommodation through digital routeway. As National Education Policy (NEP) 2020 of India addresses the need for a vision with respect to education which can align with global trends toward lifelong learning and continuous skill development. Micro-credentials are a key factor for this vision, as it offers a pathway to acquire specific skills that are recognized in the job market. The NEP 2020 put micro-credentials in practice through several ways, making education more dynamic and flexible. (Kishore Kumar, 2020)

Moreover, NEP 2020 proposed the significance of lifelong learning which implies individuals can continuously develop skills throughout their lives. Micro-credentials play a significant role in this framework, providing opportunities for learners to acquire new competencies in a modular and flexible manner, without the compulsion to commit to full degree programs. The NEP upholds for a perspective in which the learners can assemble credits through short-term courses or certifications with the inclusion of concept of micro-credentials, allowing learners to gain qualifications for specific skills. NEP 2020 offers the amalgamation of variety of educational qualifications under National Credit Framework (NCrF). Through different modes of learning, a learner can earn micro – credentials with the help of various sorts of short-term modular skill based online learning formats (Rashmi Rangarajan, 2023)

Furthermore, NEP 2020 reinforces the direct alignment of the development of skills through vocational education with demand in job market. Hence, helping learner to gain effective employable skills through micro- credentials is a productive way to get certified in specific skills in various areas such as technology, management, business etc.

Besides, NEP 2020 insists for the expansion of digital platforms for learning such as SWAYAM, Coursera, edX, and other Massive Open Online Courses (MOOCs) which can offer short-term courses with certification, known as micro-credentials. Additionally, the policy highlights for the use of technology i.e. micro-credentials delivered digitally and can leverage technology to provide just-in-time learning that is both affordable and scalable which ultimately creates accessible and flexible learning pathways.

NEP 2020 encourages students to explore subjects across disciplines as micro-credentials can put in practice by offering short, focused courses in different fields, reinforces students to acquire skills in interdisciplinary perspective. The policy asserts that students will be able to enter and exit the education system at various steps i.e., they can start with a certificate-level micro-credential and make a progress to a diploma and eventually accomplishing a degree. This enables more personalized exploration in educational system where learners can stop and restart their learning as per their requirement.

NEP 2020 suggests the setup of an Independent Accreditation Mechanism which underlines the significance of assurance of quality education which will align with the standard set by accreditation bodies which will advocate the role in ensuring academic and industry standards through micro-credentials.

Furthermore NEP 2020 emphasizes the collaboration of regulatory bodies like University Grant Commission, All Indian Council for Technical Education, National Council for Vocational Education and Training with industrial authorities of job market ensures the development of micro-credentials which will play a significant role in bridging the gap between eligibility of the individuals and demand of job (Pouliou & Pouliou, 2024). NEP 2020 reinforces the vitality of continuous professional development (CPD) for learners, educators, researchers, and professionals of various fields which is an effective way for professionals to upskill in areas relevant to their careers through micro- credentials such as certifications in data science, leadership, innovative trends, new teaching methodologies, or emerging technologies (Nguyen et al., 2023).

➤ The Current Status of Micro-Credentials in India

Increase in interest and demand of industry towards technologies such as AI, Robotics, Blockchain, Data analytics, Machine Learning etc pushed the emergence of micro-credentials which has been continuously supported by National Skill Development Corporation (NSDC) (Kamrul Ahsan, 2023).

In addition to Private and Public educational institutes a wide variety of professional certification courses offering micro-credentials which have large recognition in job market and industrial level are also available such as SWAYAM and platforms like UpGrad, Skillshare, Simplilearn, Axonify, and MasterClass etc. respectively. With the increasing use of blockchain technology in order to issue verified form of micro-credentials which are digital badges has been a revolutionary milestone in the field of credentials which is promising to provide a secure and portable form of micro-credentials. (A Subaveerapandian, 2022)

Micro-credentials lack the acceptance of universal standardization as micro-credentials advocate discrete behaviour in the quality of certification. In addition, different assessment techniques to award micro-credentials lead to question the credibility of these credentials. Also, absence of valid accreditation process leads to varying recognition among vivid industries, institutes. It becomes a challenging task at international level to locate authentic platforms to award micro-credentials which can be trusted by the learner, educator, or a professional.

Moreover, various conventional organizations do not accommodate the interdisciplinary programs of micro-credentials to pursue full term degree courses based on micro credential certifications. Additionally, the issue to select the credentials which has more market value has been a rising concern as too many online options are being entertained from various platforms, institutes. Moreover, there is no universal access to technology and still there are various areas which are technologically disadvantaged and learners are unaware of online based micro-credential programs. Furthermore, various micro-credential programs are not affordable as there are a variety of high-profile platforms or institutions that cost a lot which leads to the limitation of certain groups of people who can not meet the demand of charges (Henri Pirkkalainen, 2022).

In addition, for micro-credentials to work in the long term at industrial level, various platforms must find sustainable models that involve a balance between sustainable programs and gaining advantages meanwhile accommodating a focus on quality and accessibility. Furthermore, some micro-credential programs do not synchronize with real-time demand of job market i.e. industrialists are not able to find employees with the right skills for their job.

Moreover, learners with conventional perspective in the field of education doesn't value short certification programs like micro-credentials. The Conventional learners opine that well renowned degree courses have high weightage than that of micro-credentials when it comes to fulfilment of job requirements is one of the major notions about micro-credentials.

Conclusion

Micro-credentials have evolved as a flexible, skill-focused alternative to traditional education, driven by digital platforms and the demand for industry-relevant expertise. They offer personalized learning pathways, flexible credentials, and recognition from employers, making them an attractive option for lifelong learning and career advancement. As universities and accrediting bodies integrate them into their framework, micro-credentials are increasingly bridging the gap between formal education and the dynamic job market, equipping learners with practical, targeted and upskilled qualifications.

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