Weaving the Experiences of Higher Education Institutions in the Philippines and Japan in Designing and Implementing Micro-credentials

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1．Introduction

The demands of the Fourth Industrial Revolution and the rise of Artificial Intelligence（AI）are immensely changing the landscape of higher education institutions（HEI）in the whole world. There is a demand to produce a workforce equipped with knowledge, skills, and competencies to adapt to a fast-changing and technologically-driven society. The current professional and labor workers need to upgrade their skills and competencies. As such, there is a need for HEIs to provide qualifications that address industry needs and demands and there is a demand to create a new approach to education and training that provides with skilled workers a chance to upgrade their qualifications and implement education programs that support professional and skilled workers' interests and needs for upskilling, reskilling and advancement of their careers.

In the Philippines, there is a need to introduce more innovations and sustain the quality of the traditional formal qualifications HEIs offer. There is also a growing demand for lifelong learning opportunities and developing lifelong learning skills for every individual. Currently, there are two Bills filed in the Senate of the Philippines to create a legal framework for the institutionalization of lifelong learning in the country.

Based on the 2020 data of the Commission on Higher Education（CHED）, the Philippines has a total of 1,975 colleges and universities; 246 are public and 729 are owned by private sectors. Since 2022, the number of HEI joining international ranking and accreditation has been increasing compared to previous years. Internationalization of higher education through the CHED's Transnational Education Program has also allowed Philippine HEIs to explore many collaborative activities in terms of research and joint academic degree program offerings with foreign colleges and universities. Internationalization allowed more innovations to flourish among Philippine HEIs. One of these innovations is the introduction of micro-credentials in the Philippine education system.

In Japan, the concept of micro-credential is relatively new in the Japanese system of education. However, Japan offers many excellent programs and opportunities for lifelong learning, upskilling, retooling, and continuing education for professionals available in any higher education institutions across the country. Since Japan is known as one of the economically developed countries in the world, responding to the rapid demands of industry and preparing its citizens for the use of advanced technology is a necessity for Japanese higher education institutions.

This paper presents a historical snapshot of the experiences of Philippine and Japan HEIs in designing and implementing micro-credentials. As an innovation in education, Philippine universities and colleges saw micro-credential as an opportunity to address challenges of increasing access, sustaining quality, and making education relevant. Japanese universities see micro-credentials as an opportunity to create better educational programs for learners who need to update their competences, skill and knowledge in response to a rapidly changing society. Micro-credential provides a new framework for responding to the needs of the industry and a fast-changing society.

2．What is a micro-credential?

Several terms are used synonymously with micro-credentials, such as online certificates, digital badges, virtual badges, open badges, nanodegrees, micro-masters, alternative credentials, micro degree among others. It shows the diverse understanding, approach, and practice of the micro-credential system in different parts of the world (Brown & Nic-Giolla-Mhichil, 2022; Clements et al., 2020).

A micro-credential is a product or representation of the learning outcomes that a learner has acquired (Mischewski, 2017; Pickard et al., 2018; European Commission, 2020; Pawilen, Tomida & Eugenio, 2023, 2024). It combines the power of formal, non-formal, and informal education (Tracey, 2014; ECIU, 2020; Beverley, 2019; Kilsby & Fountain, 2019). Like any formal education courses and degrees, micro-credentials have essential elements, clearly defined and transparent standards, and quality measures. Micro-credentials, like any non-formal education, are relevant, and involve a small volume of learning, and are portable and flexible. Accessibility and mobility are essential characteristics of micro-credentials that were adapted from informal education.

Micro-credentials are highly specialized. They are designed to provide every individual learner with skills, competencies, and knowledge that respond to industry, cultural, societal, or labor market needs. Micro-credentials are personalized, shareable, and owned by individual learners. Through government agencies and private organizations, the quality of a micro-credential is sustained by following agreed standards with the industry sector or the specific area that it is designed for. Micro-credentials may be stackable or credit-bearing or non-credit which is why the level of learning outcomes, the duration of offering, and the type of assessment are essential to consider especially for stackable micro-credentials.

A micro-credential is different from seminars and trainings. A seminar requires less participation from the learners. In a training course, though a specific skill or competency is targeted at the learners, the learners are just required to try applying the new skills and competencies learned. On the other hand, whether short or offered in more weeks, requires deeper learner engagement. In a micro-credential, the quality of learners' output and performance is ensured through a series of hands-on and on-the-job applications of things learned. For this reason, many companies and organizations prefer a micro-credential for professional development, upskilling, and providing qualifications for their employees and workers.

3．Micro-credentials in the Philippine higher education system

This paper combines personal recollection and direct experiences of the author in designing micro-credentials for teacher education and in training Philippine HEIs in designing and implementing micro-credentials and in helping them establish centers and institutes for micro-credentials and lifelong learning. The study also includes the author's professional experience and recollection as a member of the Technical Working Group (TWG) created by the Commission on Higher Education (CHED). During the meetings and workshops of the TWG, several issues, challenges, and opportunities for designing and implementing micro-credentials were discussed thoroughly to develop the standards for implementing micro-credentials in the country. Analysis of papers, lectures, and documents from HEIs and scholars on micro-credentials were also reported and integrated into this study.

Like in any other country, micro-credentials are relatively new in the Philippine higher education system. Other individuals and HEIs confused micro-credential to an extension program, a strategy for continuing education, or a tech-vocational course. The Technical Education Skills Development Authority (TESDA), the government agency that handles technical and vocational education in the country, is the first to introduce micro-credential in the country in 2021. It issued guidelines and standards on designing and implementing micro-credentials for technical and vocational education programs (TESDA Circular 048 s2021). This resulted in public understanding that micro-credential is applicable only to technical and vocational programs.

The massive effort of CHED to bring in internationalization of higher education in the country brought universities and colleges in the Philippines to micro-credential. To help Philippine HEIs understand micro-credential, the CHED sent several university presidents and experts to Canada and explore collaborations with Canadian HEIs. Micro-credential has become one of the top priority programs among HEIs in the country. When these Presidents and experts came home to the country, the University of the Philippine Los Baños (UPLB) through its Chancellor Dr. Jose Camacho Jr. ordered the UPLB

Office for Institutional Development in Higher Education（UPLB OIDHE）to start training Philippine HEIs in designing micro-credential programs. To date, six centers and institutes for micro-credentials and lifelong learning have been established in various HEIs with the help of UPLB. The training of HEIs which are interested in designing and implementing micro-credentials also continues through the UPLB OIDHE.

The HEI partners in Canada, Europe, USA and Australia look for micro-credentials in the list of programs offered among Philippine universities and colleges. Accordingly, micro-credential provides more opportunities for sharing expertise and innovations and ensuring greater faculty and student mobility through academic exchange programs. Several students also started to inquire about the recognition of the micro-credentials they got from their home countries, and some are interested in the micro-credentials that Philippine HEIs are offering.

Philippine higher education institutions are also facing a lot of demands for Filipino professionals to work abroad, especially in education, healthcare, and nursing. Micro-credential is identified as the fastest and most effective way to develop professionals and other labor workforce and prepare them with the needed skills, knowledge, and competencies. The introduction of MOOCs, Coursera, and other online courses especially during the COVID-19 Pandemic has also escalated the interests of Filipinos in micro-credentials. Many Filipinos attended free micro-credentials and enrolled in credit-bearing micro-credentials during the pandemic. This allowed them to earn more qualifications. Through various technologies, micro-credentials are breaking the geographical divide and allowing more students, professionals, and lifelong learners to gain access to various educational programs around the world. Some of the micro-credentials developed by Philippine HEIs are related to the following fields:

① Teacher Education
② Nursing and Healthcare
③ Agriculture
④ Criminology
⑤ Business, Management, and Marketing
⑥ Information Technology and Computer Science
⑦ Tourism and Hotel and Restaurant Management
⑧ Public Management and Governance
⑨ Music and Fine Arts
⑩ Sports Science

The target learners are post-secondary graduates, out-of-school youths, senior citizens, undergraduate and graduate students, teachers, police officers, community leaders, health workers, indigenous peoples, overseas Filipino workers, professionals, and labor workers. Some micro-credentials are sponsored and co-developed with partner industries and organizations, while others are requested by different local government units.

In the early days of the implementation of micro-credentials in the country, there was a growing concern among professionals and HEIs if the CHED will issue a Program Standards and Guidelines（PSG）to ensure the acceptability and quality of micro-credentials. A PSG will also ensure that only those HEIs that are recognized by the government and are accredited by accrediting agencies could offer micro-credentials. Some individuals and experts are afraid that micro-credentials, since they provide alternative qualifications, will contribute to several HEIs serving as diploma mills. Hence the CHED, last December 2023, issued a Memorandum Order creating a technical working group（TWG）to draft the PSG for micro-credentials and lifelong learning.

The following are some of the observations on the development and implementation of micro-credentials in the Philippines.

A. Evolution of micro-credentials from extension programs: Extension is one of the trifocal functions of higher education institutions in the Philippines. Extension is defined by the Commission on Higher Education as anything that "allows an HEI or an individual faculty to share their expertise to the society or in any institution or organization." Extension activities may take the form of training, seminars, service-learning opportunities, or any activity where the individual faculty or HEI shares their expertise and services with the people. Due to the lack of a model for micro-credentials, many HEIs redesigned their training and seminars into credit-bearing (stackable) and non-credit micro-credentials. For example, agricultural universities are transforming their training and seminars for farmers, businessmen, and professionals into micro-credentials. Teacher education institutions are also shifting their seminars and training for teachers, school owners, and school administrators into stackable micro-credentials. Business education, tourism education, and nursing education are also transforming their seminars and training into micro-credentials that are stackable or non-credit. The evolution of micro-credentials from extension programs allows higher education institutions

to design and implement micro-credentials based on the expertise of the faculty members. It also ensures that the design and duration of the implementation of micro-credentials will remain short and precise.

B. Redesigning continuing professional education courses into micro-credentials: In the Philippines, the Professional Regulations Commission handles professional licensure examinations for several degree programs and through its several Boards, prescribes the required continuing professional education(CPE) units for every professional to renew their professional licenses. Teacher education, accountancy, maritime, engineering, agriculture, nursing and allied health professions, social work, and other fields are looking into the possibility of transforming their CPE requirements to micro-credentials.

Micro-credentials are now seen as a better alternative to the outdated CPE system. A micro-credential ensures quality upskilling of professional workers and allows them to acquire more innovative and responsive qualifications that they may find useful in their work and professions. This ensures the support, acceptance, and respect of industry partners, organizations, institutions, and government agencies to micro-credential systems in retooling and updating the skills, knowledge, and competencies of professionals in various fields.

C. Micro-credentials as ladder to formal qualifications and micro-degrees: Micro-credentials rekindled the interest of Philippine HEIs in designing ladderized curricula and sandwich degree programs. Each student may start enrolling in a micro-credential course, then upon completing several micro-credentials, the completed micro-credentials, upon successfully meeting the standards set by HEI, could be bundled into a micro-degree. In this way, micro-credential paves the way for the development of learning pathways that may lead to a post-secondary certificate, a diploma, a post-baccalaureate certificate, a graduate degree, or a post-graduate qualification. In this case, each micro-credential needs to consider the requirements of the Philippine Qualifications Framework (PQF) to meet and reflect the requirements of every level of education. This ensures the quality of micro-credentials and shows its compatibility with other countries' qualifications framework.

The Commission on Higher Education created a Technical Working Group(TWG) to develop the Program Standards and Guidelines(PSG) for micro-credentials. Part of the task of this TWG is to ensure the compatibility and compliance of each micro-credential to the requirements and demands of the PQF.

D. Micro-credential as a strategy to address the needs of growing industries: Micro-credentials are viewed as a good educational strategy to meet the demands of growing industries in the country. Several companies have started to connect with universities and colleges for the upskilling and retooling of their workforce especially in the areas of ICT, production, business and marketing, and health. Micro-credentials could be an alternative to corporate universities and this type of partnership between universities and companies could push for the development of more relevant curricular programs and it could lead to the introduction of more innovations in the current degree programs that are offered. Furthermore, the development micro-credentials between HEIs and companies redefines the nature of partnership and collaboration between academic institutions and their industry partners.

E. Micro-credential as a lifelong learning opportunity: Micro-credentials are learner-centered and learning-centered. A micro-credential could be designed based on a specific interest or needs of the learners. Micro-credential supports the idea of inclusive education, ensuring that no one is left behind and all are given the opportunity and privilege to study and master a specific area of interest and need. Currently, the University of the Philippines System is offering free residential and online courses to all individuals who are interested in different areas of study. Several universities and colleges across the country have followed by offering micro-credentials through blended learning and by offering Massive Open and Online Courses (MOOCs).

The flexibility and portability of micro-credential allow every learner to enjoy learning conveniently, effectively, and efficiently. Micro-credentials could be adapted as programs for gifted and talented individuals. It could be an alternative to acceleration and early admission for gifted students. Micro-credential system is like an all-in menu of learning opportunities for all people. All people are potential target learners of micro-credentials. They can choose whatever they want to learn, how they will learn, and where they will learn. Micro-credential is bringing the university to where the people are, and it is

also bringing the people near to the university.

F. Micro-credential as an avenue for creating more learning and career pathways: The inclusivity, adaptability, learner-centeredness, portability, and relevance of micro-credentials, and the innovations they bring in transforming higher education opened the opportunity to create learning pathways and career pathways. All are optimistic that this power of micro-credential will address the education and industry gap and create higher education institutions to be an innovation hub while creating multiple qualifications that are globally accepted. Learning pathways make the study of the learners more meaningful, purposeful, practical, and applicable to any context. A learning path allows every student to accomplish more, learn more, and master more skills and knowledge. A career path on the other hand ensures that every learning opportunity will not be wasted; there is always a job, an occupation, or task for everything learned.

In micro-credential system, each micro-credential leads to a specific or several career pathways starting from a lower level to a higher or executive level. It is a developmental strategy to support the progress of every individual and employee. Currently, the CHED is implementing an outcomes-based education system（OBE）that makes it easy for micro-credentials to include learning and career pathways for all degree program offerings in the Philippines.

4．Micro-credentials in the Japanese higher education system

One of the first public emergence of the concept of micro-credentialing is found in the report, issued in 2021 by the Council for the Implementation of Education Rebuilding（a private advisory board to the primary minister at the time）. The document said as follows（Council for the Implementation of Education Rebuilding, 2021）:

> *To promote recurrent education that meets the needs of society and economic activities, the government should promote initiatives that are accessible to more people, such as the active use of distance/online education and the provision of micro-credentials that allow students to study separately for individual units, regarding advanced professional education in graduate schools. In doing so, we will promote initiatives that are accessible to a greater number of people. Also, we will consider how to create a flexible system that allows students to obtain degrees by accumulating credits, and how to ensure international acceptability.*

As is in the any parts of the world, local communities in Japan are experiencing major changes in workplaces and daily lives, evoked by emerged information technologies, climate changes, natural disasters, rapid declining birthrate, and so on. The ministry of education in Japan, the Ministry of Education, Culture, Sports, Science and Technology, or MEXT for short, has implemented a variety of measures to manage the changes in society. Among those measures, the closest program in Japanese HEIs to micro-credential is the Certificate Program（CP）, or Rishu Shoumei Puroguramu in Japanese pronunciation.

The CP is now widely developed by a lot of HEIs in Japan to offer reskilling and/or upskilling for graduates and non-traditional learners such as in-service workers and life-long learners in the regional communities. It should be noted that the CP is not a micro-credential in the following characteristics:

a. the program should be comprised of more than 60 learning hours
b. the certified credits are not stackable within the offering institution, or among multiple HEIs
c. in general, the performance evaluation is not adapted, and the quality of learning is not as guaranteed as in general higher education

However, from 2022, the credits awarded in the Certificate Program can be transferred to graduate programs. This step is a small, but significant development toward more flexible and learner-centered credentialing higher education system.

On the other hand, no other administrative actions to legislate micro-credentials have been observed at all, at least in the documents that have been made public in Japan.

Even though the legislation process for micro-credentials appears to be in stagnant, still we can observe that some private endeavors are in progress. Cyber University is the most prominent agent in the country. The university started micro-credential system in 2024. Although the learning credits are not able to stack between institutions, the university has already implemented a flexible curriculum in which micro-credentials are issued as open badges for each of several thematically related subjects

studied, and multiple micro-credentials can be systematically accumulated to earn an academic degree.

One of the possible reasons for the slow acceptance of the new curriculum concept in Japan can be attributed to the inflexibility of collecting user fees. In fact, Japanese universities, especially national universities, are not accustomed to charging user fees. Micro-credentialing is a new approach in which learners pay for their course enrollment. Without the management skills needed to support flexible revenue generation, micro-credentialing programs cannot be initiated by universities.

Does the Japanese government prohibit the national universities from profit-making? According to the document issued by Ministry of Education, Culture, Sports, Science and Technology（2019）, profit-making activities are apparently allowed.

National University Corporations cannot engage in "commercial business" because they are the corporations whose purpose is to conduct educational and research activities, and because the National University Corporation Operating Grants are utilized to cover expenses related to the operation of national universities. However, this does not mean that the corporation cannot conduct other profit-making activities apart from the activities stipulated in National University Corporation Act, and it does not deny that the corporation may ask its beneficiaries to bear costs and consequently generate income while conducting the activities stipulated in the National University Corporation Law. It is difficult to define uniformly what kind of activities falls within the scope of operations, but basically, the following are some examples of activities that fall within the scope of operations:

- *The purpose of the program is to promote the dissemination and utilization of the results of educational and research activities of universities and other organizations.*
- *The purpose is to promote the dissemination and utilization of the results of the educational and research activities of the university, etc.*
- *If the initiatives are considered to be internal management operations of the Corporation for the purpose of public relations of the University, welfare of the faculty and staff, effective utilization of the Corporation's assets, etc., they*

are considered to be initiatives within the scope of the Corporation's business operations.

However, the Ministry of Education stated it is difficult to define uniformly what kind of activities fall within the scope of the relevant operations for the national universities. It would lead a long communication between the universities and the Ministry to reach a mutual agreement. The vague attitude toward profit-making activities would virtually prohibit their expansion of profitable business.

With the strong link between industry and higher education institutions and with the rapid development and advancement of technology in Japan, there is an immense possibility that micro-credential system will be adapted and integrated in the existing programs. While the progress of micro-credential is taking slow for now, still it offers a fresh idea in fostering a new way for education to collaborate with industry. Micro-credential also provides a creative opportunity to bring the university closer to the people and to all stakeholders.

5．Challenges of higher education institutions in implementing micro-credentials

The implementation of micro-credentials in the Philippines and in Japan is quite challenging and exciting. The following are the identified challenges based on the questions raised by some of Philippine higher education institutions during the conducted trainings and workshops of UPLB OIDHE. These challenges were also true in the context of Japan where micro-credential system is relatively new:

a．**Credit system** – there is a need to define the credit system for micro-credentials. Will it follow the credit system used in formal education? Is there a required number of hours for a micro-credential? Can an HEI give credit to a micro-credential designed and implemented by industrial companies?

b．**Quality assurance** – there is a need to ensure quality of micro-credentials. All HEI that will offer micro-credential should develop their internal QA system and are encouraged to subject their offerings to an external QA system.

c．**Qualifications of instructors** – the instructors of micro-credentials should have the experience,

exposure and expertise in a specific field. Since micro-credentials are competency-based and outcomes-based, finishing a graduate degree is not enough. The instructors must be selected carefully among the most experience experts in various fields.

d. ***Government recognition*** – are all HEIs allowed to offer micro-credentials? Since it is not a formal degree, does an HEI need to seek permit to offer from the government?

e. ***Faculty loads and salary*** – since micro-credentials are not part of the regular loads of faculty members, an additional honorarium should be provided. If possible, micro-credentials should be included in the regular faculty workload of the instructors who will teach micro-credentials.

f. ***Organizational and administrative support system*** – some HEIs believe that micro-credentials should be offered by a separate institute rather than offering it through the colleges. Thus, currently there are six institutes established in several HEIs to offer micro-credentials. These institutes are called institutes for lifelong learning, institute for lifelong education, or institute for continuing education.

6. Conclusion

Several opportunities are coming as the Philippines is still on the process of building its micro-credential system. Micro-credentials brought various curricular and instructional innovations in higher education as it did in technical and vocational education. There are also challenges and issues that need to be addressed. Implementing micro-credential in higher education has implications in all aspects of institutional implementation, including national policies, international academic collaborations, and the way universities and colleges relate to different industries. It calls for updating curricular programs, introducing educational reforms, curriculum, pedagogy, flexible learning pathways, career pathways, and community engagements. Instituting micro-credentials in higher education especially in developing countries or in countries where micro-credential is relatively a new concept in education will pose immense challenges that need to be seriously considered.

If micro-credential is one of the ways for the future, and if its implementation in the education system is unstoppable, then new opportunities, solutions, and innovations will soon arise. Micro-credentials will continue

to shape the future of education, and through technology, it will continue to push for the design and implementation of borderless, inclusive, learner-centered and flexible education.

One possible approach to the better education is to initiate an international consortium between HEIs to recognize the earned credits by students from each partnering institutions as a part of official academic degree in each country. Such effort is feasible within the scope of the current legal basis, even legislation for micro-credentialing in each country is not completed.

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