A proposed model in designing curriculum for micro-credentials in the Philippines

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Abstract

This study explores the use of micro-credential as an innovative curriculum design for addressing individuals' needs and the industry's demands. Specifically, since offering micro-credentials is relatively new in the Philippines, the study proposed a curriculum development model that will be useful in guiding curriculum experts and educational institutions in designing micro-credentials. The proposed model is both linear and dynamic. Considering the unique cultural, political, and economic context of the Philippines, the proposed model reflects the different curriculum sources, and the internal, external, and organizational influences that are considered in designing micro-credentials. The proposed model is the first to be developed in the country and it could also be used as a model for designing micro-credentials in other countries.

1. Introduction

There are 1,963 higher education institutions (HEI) in the Philippines. Out of this number, 111 are state universities and colleges, 118 are local universities and colleges, and 1,721 are private universities and colleges. All higher education institutions (HEIs) in the Philippines are preparing to meet the challenges and demands of the Fourth Industrial Revolution (FIRE). Universities and colleges began introducing new curriculum designs like flexible curriculum, research degrees, transdisciplinary and multidisciplinary programs, professional degrees, and life-long learning opportunities. Instruction is also adapting a learning and learner-centered approach to instruction, and new ICT

technologies are introduced to improve the learning delivery and ensure students' access to quality education.

Micro-credential is one of the innovative programs introduced in Philippine education. The European Commission (2020) defines micro-credentials as a *proof of the learning outcomes that a learner has acquired following a short learning experience*. OECD (2021) also defines it as an *organized learning activity with an associated credential – the credential recognizes a skill or competency that has been acquired through an organized learning process and validated through an assessment*. In comparing emerging definitions of micro-credentials, three common factors were found. First, the duration of micro-credential programs is short and recognizes *small amounts of learning* (Walsh 2021), unlike traditional degrees which take years to finish. Second, micro-credentials are specific. The identified skills or competencies are focused and covered under a series of lessons or modules. (Ralston, 2020). Third, micro-credentials require demonstrating mastery of the subject matter through assessment (McGreal & Olcott, 2022).

A growing number of non-traditional students and professionals would like to enroll in various degree programs and short-term courses, and lifelong learning opportunities are becoming popular among the public. One of these programs is the micro-credential. Today, micro-credentials are receiving an accelerating interest from learners, educators, and policy makers as a means of upskilling, academic advancement, and personal development. Higher education institutions see micro-credentials as a *strategic reset* (McGreal & Olcott, 2022).

The necessity for micro-credentials was also driven by economic shifts, changing job qualification criteria and by students needing more employment opportunities and career advancements (ICDE, 2019; Matkin et al., 2020 in McGreal and Olcott, 2022). In Asia, the widening skills mismatch, and damaging costs on sustained commercial and economic growth (see Ra, Chiin and Liu, 2015) also creates extensive necessity for micro-credential courses. The International Council for Open and Distance Education (2019) reports an increasing gap between what is taught in traditional higher education and current workforce needs. Students' capabilities and workforce needs demonstrate a growing disconnect, resulting in young adults wishing for short training opportunities relevant to the needs of the workplace. Skills, not degrees, are the preference. (ICDE, 2019; Kasriel, 2018). These challenges necessitated a global change in higher education, delivery of instruction, labor market, and policies.

Micro-credentials are gaining popularity within higher education systems. In Australasian universities alone, institutions with micro-credentialing policy increased by 20% compared to 2019 (Selvaratnam & Sankey, 2020). Offering micro-credentials can post several benefits to HEIs. Higher education institutions use credential programs to *increase visibility and build their brand*. Because they can attract diverse learners through unique

and alternative courses, they also have the power to appeal to these individuals to enroll in their formal education programs (Kato, et.al. 2020).

The unique flexibility that micro-credentials bring also allows for small-scale experimentations of emerging trends in approaches, technologies and strategies in instruction, operation, and even programs offered (European University Association, 2020; OECD, 2021). Micro-credentials are also cost-effective due to reduced materials production, facility use, and employees training cost and time (Ghasia, et.al, 2019; OECD, 2021). Other benefits of micro-credentials include employability of completers (Maina et.al, 2022), quality in the acquisition and verification of skills (Kato, et.al, 2020), and provision for lifelong learning (Desmarchelier & Cary, 2022).

Micro-credentials were also made more popular when the COVID-19 pandemic happened. Significant and devastating shifts emerged as COVID-19 disrupted the education, economic, and political landscape. The pandemic is considered as the biggest education crisis in history (Karakose, 2021). Educational institutions were compelled to deliver instruction non-traditionally, affecting billions of students (UNESCO, 2020). In the Philippines, there was a 17.7% unemployment rate accounting to 7.3 million unemployed Filipinos (Philippine Statistics Authority, 2020). Governments, including policy makers, were put under pressure to react quickly and decisively (Herrera, et.al, 2020) and were forced to the trade-off between economy and health (Alvarez, et.al, 2020)

Micro-credentials recently catapulted into popularity due to COVID-19 to address these urgent needs. But even prior to the pandemic, there are countries that have already been developing new means to cope and adapt to these rapid changes and one of these emergencies is the utilization and development of micro-credentials to provide the immediate needs of the society. The demand and acceptance of these trainings, also referred to as *alternative credential, digital badges* or *industry-recognized certificates* were bolstered by the rising exigency for upskilling and re-skilling among employees to keep up with rapid technological, professional, and social changes (Kato, Muros & Weko, 2020).

This study aims to propose a model for designing micro-credential that is relevant and responsive to the needs and context of the Philippines. Micro-credential is one of the curricular innovations introduced in Philippine education. The proposed model will guide instructors, administrators, and educational institutions in the design, development, and implementation of micro-credentials. The proposed model will be the first model for designing micro-credentials in the Philippines.

2. Methodology

The study proposes a model for designing micro-credentials in the Philippine higher education institutions. The study focuses on the following research questions:

1. What influences should be considered in designing micro-credentials in the Philippines?

2. What challenges, issues, and problems that should be considered in designing micro-credentials in the Philippines?

3. What model for designing a curriculum for micro-credential can be developed?

2.1. Data Gathering Procedure

To answer the research questions and to provide a basis for the development of the proposed model, the following activities are done:

Phase I: Document Analysis - The researchers examined the different program standards and guidelines (PSG) from the Commission on Higher Education. This will provide information on the legal requirements to be considered in designing, developing, and implementing higher education curricula and other programs. The PSG also includes the governance and structure of the programs.

Phase II. Focused Group Discussion with Faculty Members and Administrators - This phase includes consultation and discussion with instructors and administrators to discuss possible challenges, demands, and issues in developing and implementing micro credentials in the Philippine contexts. The questions during the focus group discussion (FGD) focused on the following key questions:

1. What demands, considerations, challenges, and issues should be considered in designing micro credentials in the Philippines?

2. What challenges, issues, and problems should be considered in designing micro credentials in the Philippines?

3. What are the possible opportunities for micro credentials in the Philippines?

4. How can educational institutions design and develop micro-credentials?

Phase III - Development of the Proposed Model for Designing Micro-credentials - Based on the result of phase 1 and 2, a tentative model reflecting the processes and consideration for designing micro-credentials is developed.

Phase IV - Validation of the Proposed Model for Designing Micro-credentials - The proposed model was presented to several instructors and administrators in different fields. The model was used to design sample micro credentials, its weakness and strengths were identified, and suggestions for revision were presented and considered to finalize the model.

2.2. Participants of the Study

In this study, 33 instructors were invited to discuss diverse issues, challenges, possible problems, and opportunities for offering micro credentials in the Philippines. These instructors were purposely selected based on their expertise and willingness to explore designing micro credentials in the Philippines. The study also selected 15 administrators from different academic colleges to provide ideas and share their experiences and college initiatives designing micro credentials in their areas and fields.

2.3. Data Analysis

The result of the data gathering was analyzed and interpreted qualitatively. The results from the document analysis are presented as part of the external influences to be considered in designing micro credentials. The results from phases 2 to 4 were interpreted qualitatively through thematic analysis and coding important themes from the responses of the participants and the results of the discussion. The process includes: (1) reviewing the result of interview and focused-group discussion; (2) coding by identifying data that are relevant to the study; (3) organizing the data into themes that are relevant to the study; and (4) writing the report based on the research questions of the study. Actual statements are reported to support and strengthen some ideas, processes, and views (Pawilen, 2021).

3. Results and Discussion

The result of the study is clustered and reported based on the research questions of the study.

3.1.Influences that should be Considered in Designing Micro credentials

The results of the document analysis and Focus Group Discussion identified several influences that should be considered in designing a micro-credential in the Philippine context. The results in Table 1 are based on issuances from government agencies like CHED, DEPED, and TESDA. They are also based on the experiences of the deans, instructors, and other institutions in designing a program in the Philippine context.

Table 1. Influences to be considered in designing micro credentials

Educational Requirements of the Commission on Higher Education (CHED)
Demands from the Industry
Needs, Challenges, and Issues in the Society
Educational Requirements from the Department of Education (DepEd)
Educational Requirements from the Technical Education Skills Development Authority (TESDA)
Philippine Qualifications Framework (PQF)
ASEAN Qualifications Reference Framework (PQRF)
Fourth Industrial Revolution Demands
Stakeholders' demands

Disciplinary and Professional Associations
External Quality Assurance System
School's philosophy, vision, and mission
Academic programs and other curricular offerings
Instructional Support System
Administrative Support System
Learning environment
Internal Quality Assurance System
Faculty members
Students
School Administrators
School's organizational structure

The identified influences remind the designers and developers of micro-credentials that there are certain standards that they need to comply with. The influences will also identify the needs that are essential to be addressed by the micro-credentials. According to curriculum experts like Taba (1962), Wheeler (1967), Walker (1972), Skilbeck (1976), Nicholls (1978), Print (1993) Stark and Lattuca (1997) and Oliva (2005), understanding the different influences and sources of curriculum is important in any curriculum design activities. Furthermore, the influences provide a clear context in which the curriculum is developed and provide essential data for the situational analysis.

3.2.Challenges to be Considered in Designing Micro credentials

An FGD was conducted with 20 instructors from different fields like engineering, medical technology, tourism and hospitality, teacher education, business administration, language and communication arts, Christian education, and public management, and with 10 program administrators and deans. The FGD focused on analyzing different challenges, issues, and problems that should be considered in designing micro-credentials. Table 4 presents the results of the FGD.

Table 2. Challenges in Designing Micro credentials

Lack or Limited Understanding of Micro credentials
Design of Micro credentials
Accreditation and Recognition
Quality Assurance System
Duplication with Existing Non-Formal Education Programs
Faculty Qualifications and Training
Expanding Micro credentials to Basic Education

The concept of micro credential is relatively new in the Philippines. School administrators' and professors' understanding of the concept of micro-credential is unsystematic and still needs refinement. Similarly, this lack of common understanding around the concept of micro credential was also observed by Kiiskila (2022) in other

countries. Thus, it is not clear also how the curriculum design of a micro credential is different from a formal education curriculum.

Another concern raised during the FGD was accreditation. In the Philippines, there is currently no system for accrediting and recognizing micro credentials. The Commission on Higher Education has not yet released any guidelines about micro credentials in the country. The Professional Regulation Commission (PRC) only recognizes seminars and training for the continuing professional education of Filipino professionals from accredited providers. The National Educators Academy of the Philippines (NEAP) also provides training for teachers and administrators in basic education. These seminars and training were not yet classified as micro credentials. Ralston (2020) observed this lack of accreditation of micro credentials as one of the major challenges of this new education program.

Other challenges that were identified during the FGD were the quality assurance system (both internal and external) that will standardize the quality of content, delivery, and implementation of micro credentials in the country. The issue of lack of standardization was also observed in Europe (EU, 2020). There is also a concern of ensuring that micro credentials should not duplicate the programs of Technical Education Skills Development Authority (TESDA). Currently, TESDA is offering a lot of technical and vocational courses and programs for all types of students.

The participants of the FGD also believed that the implementation of the micro credential system in the country requires producing qualified faculty and training for the existing instructors who will teach the courses. Finally, the participants believed that microdetails should also be offered in basic education to promote basic, functional, and multiple literacies for all people especially to indigenous groups of people who are living far from local schools and to the poor and the needy who are deprived of a privilege to finish basic education. Accordingly, these micro credentials could be in the form of *badges*. Badges are basically indicators or a recognition of successful completion of learning a skill or a program.

3.3. The Proposed Model for Designing a Micro-credential

The results of the document analysis, focused-group discussion, and the suggestions and comments during the validation session led to the development, revision, and finalization of the proposed model for designing micro-credentials in Philippine context. Pawilen (2012) opined that an ideal curriculum development model for the Philippines should consider the education and social context of the country and recognize that there are various influences that shape the design of any curriculum. Thus, in the development of the proposed model, the research participants described how they plan, design, and develop curriculum in their programs and fields. Figure 1 shows the proposed model for designing micro-credentials.
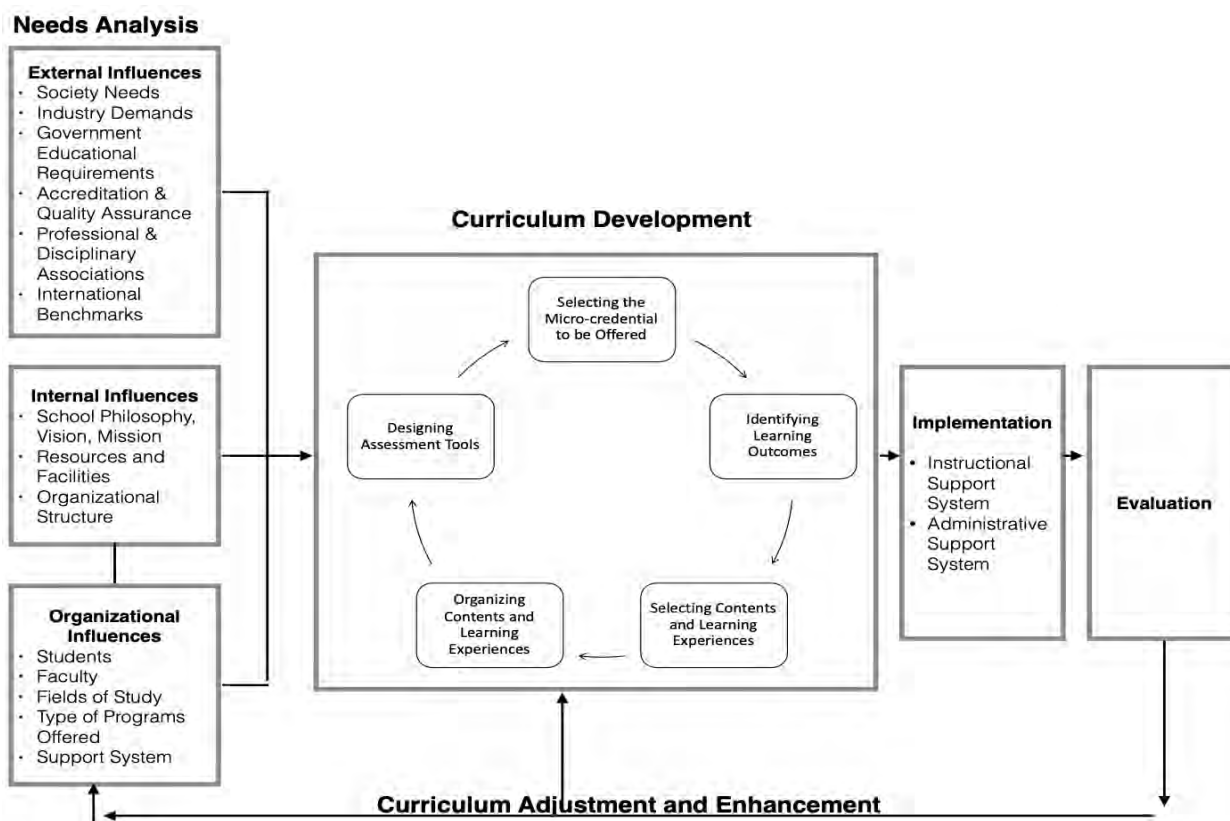
Figure 1. Proposed Model for Designing Micro-credentials

Phase 1. Needs Analysis - Designing curriculum for micro-credentials commences by conducting a needs *analysis* that will allow curriculum designers to respond to the needs of the stakeholders and to the demands, challenges, issues, and problems of the society. The curriculum sources identified in Table 1 were clustered into three categories based on the three *curriculum influences* identified by Stark and Latucca (19987). These curriculum influences are *internal, external, and organizational influences.* Internal influences identify the general sources of curriculum from societal needs, government standards, industry demands, and educational requirements from agencies and organizations that a curriculum needs to comply with. The internal influences include school-related variables such as philosophy, mission, vision, goals, available resources, and organizational structure. The organizational influences are specific to the program, field. or department who will offer the micro-credential. These organizational influences include the students, the faculty, fields of study, type of programs and qualifications to offer, and support system.

Phase 2. Curriculum Development - This phase describes the activities that are done in developing a micro-credential. Once the needs are identified as a result of Phase 1, curriculum development starts following this process:

1. *Selecting the micro-credential to be offered* - At this phase, the developers will decide on the type of micro-credential to offer whether *stackable courses* or stand-alone lifelong learning programs, or for professional development and skills training.

2. *Identifying learning outcomes* - The learning outcomes need to be aligned with the standards of the PQF and AQRF, and they need to comply with the standards of CHED if the micro-credentials are related to undergraduate and graduate studies (stackable courses), DepEd if related to basic literacy and basic education, and TESDA standards for technical and vocational programs. In the design of learning outcomes, it is important to comply with the *outcomes-based education* requirements of the CHED for higher education-related micro credentials.

3. *Selecting contents and learning experience* - Once the learning outcomes are identified the developers will select contents and learning experiences appropriate to the students and to the levels of micro-credentials that they are trying to develop. In this phase, appropriate instructional activities are decided, and contents are carefully selected to reflect the needs of the students and the chosen qualifications.

4. *Organizing contents and learning experiences* - This phase includes organizing the contents into lessons or modules. It includes scheduling the learning activities and deciding on the duration of the micro-credential. This phase also involves making decisions on the delivery of the program whether face to face, blended learning, hybrid learning, or online.

5. *Designing assessment tools* - The final stage includes designing appropriate assessment tools that will measure the learning of the students in every micro-credential. Assessment tools should be aligned with the desired learning outcomes of each micro-credential.

Phase 3. Implementation - The third phase includes providing appropriate instructional and administrative support systems that are essential in implementing a micro-credential. It also includes the actual implementation of a micro-credential. Hence, it is essential to decide on the qualifications of instructors who will teach in a micro-credential. Instructors need to have the necessary (1) education and training, (2) experience, (3) expertise, and (4) exposure in the type of micro-credential that is offered.

Phase 4. Evaluation - This phase includes the evaluation of the micro-credential after the implementation. Evaluation looks at the things and processes to be improved in the design, development, and implementation of the micro-credential. It also assesses the effectiveness and compliance of the contents and learning experiences with the standards set.

Phase 5. Adjustment and Enhancement - In this phase, the results of the evaluation are used to make adjustments and enhancements in the curriculum. Necessary revisions

can also be done at any phase to improve the content and delivery of the curriculum based on the result of feedback and formative assessments.

The proposed model was presented to the research participants and experts for validation. They also tried using the model in designing sample micro-credentials in different fields and areas. The result shows that the model is effective in designing 21 types of micro-credentials. The result of the validation shows that the experts agreed that the proposed model was able to:

1. Show an easy to follow and logical process of developing a micro-credential.

2. Identifies the different curriculum influences that are considered in designing micro-credentials.

3. Shows how designers plan and develop micro-credentials in any field.

4. Indicate the major phases of curriculum development (Planning, design, implementation, and evaluation) that are applicable in designing micro-credentials; and

5. Communicate processes or procedures that are clear and easy to follow

The model presented in Figure 1, is dynamic, linear, and cyclical. Dynamic, because it allows adjustments at any phase and presents a comprehensive and contextual influences and sources of curriculum for micro-credentials. It is linear because it follows a sequential progression or logical flow of activities to follow in curriculum design and development. It is cyclical because the design of micro-credential does not stop at evaluation. Instead, the results of evaluation are used to improve and redesign the micro-credential. The model reflects the necessary procedures and processes in designing and in developing a curriculum. (see Taba, 1962; Wheeler, 1967; Walker, 1972; Skilbeck, 1976; Nicholls, 1978; Print, 1993; Stark & Lattuca, 1997; Oliva, 2005).The results of the validation of the curriculum experts also show that the model can be used in designing a micro-credential in any field or level.

4. Conclusion

The introduction of micro-credentials poses a huge challenge in Philippine education. The proposed model will be a great help to guide educational institutions, curriculum designers, and instructors who are interested in designing micro-credential courses in the country. The proposed model is the first model for designing micro credentials in the country. The development of the proposed model for designing micro-credentials identifies several curriculum influences that could serve as sources of curriculum for micro-credentials.

As an innovation, the implementation of micro-credentials in the country presents several challenges and issues related to the design of micro credentials and the quality

assurance system, accreditation, and educational standards to comply. However, if the proposed model is followed carefully, these challenges and issues could be addressed perfectly. Thus, the proposed model will be useful to all the educational institutions who are interested in offering micro-credentials. Finally, the proposed model will contribute in preparing the country in responding to the development of educational programs that are fit for the demands of the Fourth Industrial Revolution.

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