MICRO CREDENTIALING GUIDLINES FOR LIFELONG LEARNING SKILLS DEVELOPMENT OF WORKING ADULTS IN KAMPALA CITY UGANDA

BY

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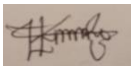
2024

DECLARATION

I, **KATAGWA Rogers,** solemnly affirm that this dissertation is my original work and that it has never been submitted to any institution of higher learning for academic purposes.

Signed  Date 2nd /December/ 2024

KATAGWA Rogers

APPROVAL

This dissertation has been submitted for examination with our approval as university supervisors**.**

Signature …… Date ……..

Prof Paul Muyinda Birevu

Signature…….. Date…….

Dr. Oscar Mugula

LIST OF ABBREVIATIONS

DIT	Directorate of Industrial Training
FAC	Facilitators
IDI	In Depth Interviews
KII	Key Informant Interview
LMS	Learning Management System
MAK	Makerere University
MOOC	Massive Open Online Courses
OMCI	Owners of Micro Credential Institutions
RMIT	Royal Melbourne Institute of Technology
YMCA	Young Men's Christian Association
WAS	Working Adults Still Studying
WASD	Working Adults Who Finished Studies

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TABLE OF CONTENTS

DECLARATION i

APPROVAL ii

LIST OF ABBREVIATIONS iii

ACKNOWLEDGMENT iv

TABLE OF CONTENTS v

LIST OF TABLES ix

ABSTRACT x

CHAPTER ONE: BACKGROUND OF THE STUDY 1

1.0 Introduction 1

1.1Background of the Study 1

1.1.1 Historical Background 1

1.1.2 Conceptual Background 3

1.1.3 Contextual Background 5

1.1.4 Theoretical Framework 6

1.2 Problem Statement 8

1.3 Goal 9

1.3.1 Specific Objectives 9

1.4 Research Questions 9

1.5 Significance of the Study. 9

1.6 Scope of the Study. 10

1.6.1 Geographical Scope 10

1.6.2 Content Scope 10

1.7. Definition of Key Significant Terms ..... **Error! Bookmark not defined.**

CHAPTER TWO: LITERATURE REVIEW 12

2.0 Introduction 12

2.1 Theoretical Frameworks ..... **Error! Bookmark not defined.**

2.2 The micro-credentials on offer selected Training Institutions in Kampala 12

2.3 The Present Micro-credentials Delivery and Credentialing System 14

2.3.1 Models of Micro-Credentials Delivery: 14

2.3.2 Credentialing System 15

2.4 Guidelines for Developing Micro-credentials for Skills Development of Lifelong Learners 16

2.5 Research gaps 18

CHAPTER THREE: RESEARCH METHODOLOGY 19

3.0 Introduction 19

3.0.1 The Research Philosophy 19

3.1 Study Area 21

3.2 Research Design 19

3.2.1 Qualitative Research 20

3.2.2 Case study Research Design 20

3.3 Study Population 21

3.4 Sampling Procedures 22

3.4.1 Purposive Sampling 23

3.4.2 Convenience Sampling 23

3.5 Methods and Instruments of Data Collection 23

3.5.1 In-depth Interviews 24

3.5.2 Key Informant Interviews 24

3.6 Data Analysis 25

3.7 Data Quality Control 24

3.7.1 Credibility 24
3.7.2 Triangulation 25
3.7.3 Research Procedure 26
3.7.2 Ethical Considerations 26
3.7.3 Challenges met and Solutions 26
3.8 Conclusion 27
CHAPTER FOUR: PRESENTATION OF FINDINGS 28
4.1 Introduction 28
4.2 Respondent Characteristics 28
4.2.1 Understanding of micro-credentials ..... **Error! Bookmark not defined.**
4.3 Micro-credentials on offer in selected training institutions in Kampala. 30
4.4 Micro-credentialing delivery and credentialing system. 33
4.5 Guidelines Followed in the Accreditation of micro-credential Providers. 38
CHAPTER FIVE: DISCUSSION OF FINDINGS 41
5.1 Discussions 41
CHAPTER SIX: SUMMARY, CONCLUSION AND RECOMMENDATIONS 46
6.1 Summary 46
6.2 Conclusion 48
6.3 Recommendations 48
6.4 Areas for Further Research 50
REFERENCES 51
APPENDICES 57
APPENDIX I: In-depth Interview Guide for Micro Credential Learners 57
APPENDIX II: Key Informant Interview Guide for the owners of micro Credential Institutions 59

APPENDIX III: Key Informant Interview Guide for Micro Credential Facilitators.....61

APPENDIX IV: Budget.....64

APPENDIX V: Work Plan.....**Error! Bookmark not defined.**

LIST OF TABLES

Table 4.1 The distribution of the participants according to gender……28

Table 4.2 The distribution of participants according to age bracket……..28

Table 4.3 The distribution of participants according to educational level……28

Table 4. 1: The distribution of the participants across the program of study is summarized in table 4.1 below:……. 30

ABSTRACT

This study established micro-credentialing guidelines for lifelong skills development of working adults in Kampala city Uganda. It was guided by three specific objectives namely: (i) to establish micro credentials on offer in selected institutions in Kampala District; (ii) to analyze the micro credentialing delivery system, and (iii) to establish guidelines to be followed in the accreditation of Micro credentials. The researcher located the study in an interpretive paradigm and adopted a qualitative approach using case study design to aid the processes of data collection and analysis. I adopted purposive and convenience sampling strategy to collect data from 30 participants. The Micro credentials on offer in the selected Institutions in Kampala district were either online or in-person micro credentials. These included among others: quantitative data analysis, oral communication, software repair and networking programming just to mention but a few. The micro-credential delivery system varied from institution. In some institutions they were delivered theoretically while in others they were delivered practically. An institution wishing to become a micro credentialing institution should register with the Ministry of Education and Sports, developing a micro credential curriculum, train its facilitators on delivering micro credentials virtually or in-person, putting in place infrastructure for delivering micro credentials, develop robust quality assurance system and put in place authentic assessment tools. The findings underscored the role of micro-credentials as bite-sized, specialized learning modules offering practical, specific skills tailored to industry needs. Through diverse delivery methods and adherence to accreditation guidelines, institutions aim to equip learners with relevant competencies and enhance their employability. The study highlighted the importance of industry collaboration, continuous professional development for facilitators, and leveraging technology to improve the delivery and accreditation systems of micro-credentials. The study recommended that institutions should align micro-credential with industry needs, delivery systems made flexible and accommodative, institutions should adhere to quality assurance standards and accreditation guidelines and finally develop micro credential courses which are cost-effective.

CHAPTER ONE

BACKGROUND OF THE STUDY

1.0 Introduction

In contemporary employment world, skills development and professionalism are the predominantly core aspects considered by the employers at workplace. TVET (2019) states that professionalism and application of practical skills have been contested on different employment opportunities platforms by civil society, Non-Government Organizations (NGOs), private sector employers, and small-scale business operators among others. Various debates and discussions have rotated around the skills miss match that is exhibited by graduate employees. To address these rampant phenomena, micro credentials have been developed and implemented to bridge the gap that exists between skills acquisition and practice. However, different employers have questioned the validity of these micro credentials on grounds of lack of clear guidelines that are used to measure competence. This study aimed at generating micro-credential guide lines for lifelong skills development among the working adults.

In this chapter, the researcher presented the background of the study, stated the problem, goal, objectives, justification, significance, scope and ended with operational definitions of the study

1.1Background of the Study

1.1.1 Historical Background

In 2017, key representatives from the Royal Melbourne Institute of Technology (RMIT), University Australia under the umbrella of RMIT credentialing program coined the term micro-credentials to mean small courses that were developed, delivered and embedded into the curriculum of the University. Information literacy was the first micro-credential to be developed followed by digital literacy micro-credential. Later multiple course shells were developed via the University's new learning management system (ALA Clearing House, 2017).

The University formulated the RMIT Creds team to collaborate with key groups within the University and industry partners to develop multiple micro-credentials that can address identified skills gaps. RMIT sees micro-credentials as an industry validated way for students to demonstrate skills and achievements that are transferable across sectors and careers. The very first institutions to be engaged in conducting Micro credentials were Deakin University in Australia, Massachusetts Institute of Technology and the State University of New York, both in the United States, as well as Ontario Tech University in Canada, among others. (UWN, 2023)

A recent international survey of university and industry leaders cited lack of agreed standards like framework, quality assurance and trust as the greatest barriers to micro-credential adoption (Holon IQ, 2021). When there is no integration of micro-credentials into the institutional framework, it is seen as an add-on, and the costing is not clear. The lack of incentives for faculty and staff has also been noted (Cirlan & Loukkola, 2020; COL, 2019; ICDE, 2019; Kato et al., 2020; Matkin et al., 2020; & Pickard, 2018). This is an indicator that guidelines upon which micro-credentials can be assessed and validated is not in place even in bigger institutions where micro-credentials where developed.

The advancement of micro-credentials long predates the pandemic. But more recently, modular learning has been seen as an effective way to re-skill and up-skill people that have become unemployed due to the COVID-19 crisis (Cirlan, &Loukkola, 2020). Hence, the European Commission argues that a larger uptake of micro-credentials could foster educational and economic innovation and contribute to a sustainable post-pandemic recovery. In addition, amidst the dramatic economic fallout of the COVID-19 pandemic, institutions in the public and private sector are increasingly faced with new economic and workforce imperatives for the future which calls for multiple skilling (Carnevale et al., 2020)

In Africa, South Africa was the first country to introduce micro-credentials (Mashininga, 2023). To streamline the delivery and assessment of micro-credentials courses, African governments are supposed to develop a broad framework for micro-credentials (Selvaratnam, et al, 2020). Such broad frameworks will inform and guide individual countries and institutions to develop country-specific frameworks for the recognition of learning through micro-credentials (South African Council on Higher Education 2022). This implies that there are no clear guidelines of micro-credentials in Africa. The South African Councils on Higher Education has reported that Kenya and South Africa are trying to come up micro credentialing guidelines.

Micro-credentials gained momentum in Africa during the emergency of the COVID-19 pandemic which laid a neutral ground for global organizations like UNESCO AND UNICEF to give blended perspectives about micro credentials which would ultimately accelerate the formalization and standardization of micro-credential courses. The organization achieved this by giving definitions of the concept.

1.1.2 Conceptual Background

Micro-credentials are compact, targeted qualifications that certify specific skills or competencies, often aligned with industry demands or professional development (Oliver, 2019). They require a formal assessment to validate the learner's mastery of a particular skill or competency, often resulting in a digital badge or certificate that can be stacked towards a larger qualification (UNESCO, 2021) and Micro-credentials are closely tied to lifelong learning, enabling learners to upskill or reskill in response to evolving professional demands (Brown et al., 2022). Though some people confuse them with short courses, they are different. In contrast, short courses are broader in scope and typically offer general knowledge or skills without necessarily leading to formal certification or industry recognition (Wheelahan & Moodie, 2021).

Micro-credentials are closely tied to lifelong learning, enabling learners to upskill or reskill in response to evolving professional demands (Brown et al., 2022). They are increasingly being standardized and accredited by educational institutions and industry bodies.

Micro-credentials represent an alternative approach to career and professional development whereby an individual's skills, achievements, and accomplishments are recognized. Emergence of micro-credentials, digital qualifications in Uganda, is rooted in an increased demand for quality and digitalized higher education, and a growing demand for skilled human capital tailored for the industry.

Micro is a term that means "extremely small (ACQF. 2022). Credential is a term that can be used to mean "the abilities and experience that make someone suitable for a particular job or activity, or proof of someone's abilities and experience.

Moreover, recent trends in the high cost of higher education, employer concerns about graduate skills and competencies, and student frustrations about the lack of job opportunities have all been catalysts for universities, independent credentialing agencies, and leaders of national qualification reference frameworks to rethink the broader credentials continuum (Bates, 2020; International Council for Open and Distance Education (ICDE), 2019; Matkin, 2018; Matkin, et al., 2020; Oliver, 2019; Selvaratnam, et al. 2020). In USA also, there is a serious shortage, especially in computer-related fields (Envoy Global, 2021).

Micro-credentials present an innovative and flexible format that focuses on specific areas or skills and opens opportunities for flexible modularity, as well as fitting with trends of stackable credentials and the unbundling of education (Huijser et al, 2020. On the other hand, (Beirne, et al 2020) points out that the International Council for Open and Distance Education (ICDE, 2019) and the Organization for Economic Co-operation and Development (OECD) have adopted variants of the concepts to mean micro credentials for example 'alternative credentials', which encompasses but also differentiates between academic certificates,

professional certificates, digital badges. Micro-credentials are a representation of professional credentials designed to build in-demand career skills (Learn, 2021). It focuses on career skills development across providers to create highly focused curriculum to enable them offer instant access that works for organizational learning and development operations (D'Orio, 2019).

In addition, Micro-credentials can be offered in formal, informal and non-formal settings and they can also be offered online learning as Massive Open Online Courses (MOOCs), but can also be face-to-face or blended. There is a practical need for guidelines, methods and policies to deal with their recognition.

1.1.3 Contextual Background

Micro-credentials can be defined as "certification of learning that can accumulate into a larger credential or degree, be part of a portfolio that demonstrates individuals' proof of learning, or have a value in itself" (ECIU, 2020). Oliver's (2019) 'everyday use' definition is helpful in this respect: "A micro-credential is a certification of assessed learning that is less than a formal qualification" (p. 19). Keeping this definition in mind, both micro-credentials and short courses fall within the scope of this research report, which contributes to an exploratory study.

In Uganda, Micro-credentials were introduced by European commission to Uganda through their Digital Education Action Plan 2021–2027 (European Commission, 2020). This means that Micro-credentials are very recent and haven't gained a lot of popularity in Uganda. That is why sometimes they are referred to as short courses which tend to be focused, short and vocational. Some vocational private and public institution like Directorate of Industrial Training, YMCA, Nakawa Vocational Training College, Ntinda Vocational Training College among others also offer these micro-credentials without a framework to be followed (TVET, 2022).

The DIT is a skills quality assurance body mandated to develop occupational standards, regulate work-based training schemes, apply and expand the Uganda Vocational Qualifications

Framework, accredit assessment centres, assess and award Uganda Vocational Qualification. This is the body that assesses and validates these micro-credential/short courses in Uganda. Currently, it is running a very flexible program of enabling people who never went to school in a formal setting but possess practical skills to attain certificate after being subjected to a compulsory examination and assessment.

However, during 2022 annual meeting of DIT, the director decried the lack of a streamlined framework which can act as a tool for assessing micro-credentials. He also added that what they are using now are just guidelines from the Ministry of Education so there is need for quick formulation of the micro-credential guidelines (MOE, 2022).

1.1.4 Theoretical Framework

A number of theories have been used to understand the development and use of micro credentials. These include but are not limited to lifelong learning theory, adult learning theory and experiential learning theory of David Kolb (1984).

Experiential learning theory defines learning as the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience (Kolb, 1984). Experiential Learning Theory (ELT) provides a holistic model of the learning process and a multi linear model of adult development, both of which are consistent with what we know about how people learn, grow, and develop. The theory is called experiential learning to emphasize the central role that experience plays in the learning process, an emphasis that distinguishes ELT from other learning theories. This theory helps in understanding the learning experiences since learning involves cognitive, psychomotor and affection, and it is what exactly the theory explains. The main gap in this theory is the failure to explain the framework to which lifelong adults can learn.

Adult learning theory was developed by Malcolm Knowles in 1968 (Malcolm, 1968). Adult learning theory is the concept or study of how adults learn and how it differs from children. It

aims to show how adult learning is distinct and identify the learning styles which suit them best.

1.1.4.1 Lifelong learning theory.

Lifelong learning is the development of human potential through a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment in all roles, circumstances, and environment. Lifelong learning embraces all forms of learning, formal and informal, throughout life.(Michael, 1992) call it a "seamless education.

According to (Candy, 1991) there is a relationship between lifelong learning, adult learning and self-directed learning, which is viewed as part of lifelong learning. Lifelong learning also includes formal, non-formal and informal learning extended throughout the lifespan of an individual, so that the individual can attain the fullest possible development. The term "lifelong learning" appeals to the researcher because it entails growth, change and development.

The common ideas in all the theories are the idea that they are all theories of adult learning and lifelong learning. They all symbolize that learning can be informal, unplanned and incidental. Learning of adults is dynamic in nature and also what is clear is that all the theories of learning aim at equipping adults with skills, knowledge and attitudes which they can harness to survive in this competitive world. Therefore, benchmarking on lifelong learning theory will give me opportunity to understand the modalities and issues surrounding adults that are taking up micro-credentials to propose a micro-credentialing framework for lifelong working adults in Uganda. Using qualitative lens in the above historical, contextual and conceptual background, it is clear that micro-credential guidelines which should be followed by institutions providing micro credentials have been neglected by many researchers yet a well-developed guideline helps in the formalization, standardization and validation of micro-credential certificates. Despite limited research on micro-credentialing guidelines because of its recent evolvement, micro-

credentials are being regarded as a means to enable students develop a transcript of 'skills' that would have appeal to employers who see the value of agile and flexible learning that short courses can offer.

1.2 Problem Statement

In Uganda, Micro-credential courses give professionals ability to focus on what is needed in the workplace in an agile manner. Micro-credentials offer opportunities for lifelong learning and Carey (2015) suggests that adult learners prefer short, targeted micro-credentials to a long-term degree program. Micro-credentials follow competency-based professional learning, and they make use of digital badges to recognize leaner's skills, achievements and accomplishments (Fong et al., 2016). Despite the great significance of micro-credentials towards skills and professional development in Uganda, there is concrete evidence that one of the biggest challenges of micro-credential provision, validation and standardization is lack of a micro credentialing guide lines for lifelong skills development of working adults (Cirlan, & Loukkola, 2020). In addition, a recent international survey conducted by universities and industry leaders from USA cited lack of agreed standards, framework, quality assurance and trust as the greatest barriers to micro-credential adoption, provision and assessment (Holon IQ, 2021). And yet lack of standardized information like framework of micro-credentials decreases their credibility and results in recognizers depending on other sources of information to verify the individual's skills and competences (Kassi & Lehdonvirta, 2019).

Multiple studies which have been conducted on micro-credentials have mainly focused on criteria for providing credentials (Nuffic, 2018), a call for standardization of micro-credential course showcases (Resei, et al., 2019; Kato, et al., 2020), a strategic reset: micro-credentials for higher education leaders. (McGreal & Olcott, 2022), and seven lessons learned from implementing Micro-credentials. (Acree, 2016). Therefore, little is known about the micro-credential guidelines that are used to accredit and develop micro credentials for lifelong skills development of working adults in Uganda and this justified this study.

1.3 Purpose of the study

The purpose of this study was to generate micro-credential guidelines for lifelong skills development among working adults in Kampala, Uganda.

1.3.1 Specific Objectives

1. To assess the micro-credentials on offer in selected training institutions in Kampala.
2. To analyse the present micro-credential delivery and credentialing system.
3. To examine guidelines to be followed in the accreditation of micro-credential providers.

1.4 Research Questions

1. What are the different micro credentials offered by the selected training institutions in Kampala?
2. What are the delivery and credentialing systems used in offering existing micro credentials?
3. What guidelines are institutions using to accredit micro credentials in Kampala?

1.5 Significance of the Study.

The study findings aided various stake holders such as Ministry of Education and Sports, Institutions of Higher Learning such as universities, Vendor/Private micro-credentials institutions to understand micro-credential guidelines for developing and accrediting micro credentials.

The study enabled the Ministry of Education and Sports, Institutions of Higher Learning such as universities, Vendor/Private micro-credentials institutions to improve on the existing strategies, plans and policies aimed at designing the appropriate curriculum that is suitable for working adults who take up micro credentials.

The study was a turning point to how micro credentials could be a process of promoting lifelong learning to those who have acquired them and got stuck with them.

1.6 Scope of the Study.

The study scope provided for the boundary of the research in terms of geographical scope, content scope, geographical, time frame.

1.6.1 Geographical Scope

The study was conducted in Kampala district from two institutions which included Makerere University and Directorate of Industrial training.

1.6.2 Content Scope

The study explored micro credentialing guidelines for lifelong learning skills development of working adults in Uganda.

1.7 Operational definitions

Micro-credentials

Micro-credentials are certifications that verify, validate, and attest to specific skills, competencies, or knowledge achieved by an individual, often in a short and focused learning experience (Oliver, 2019). They are "small, stackable credentials that allow learners to demonstrate mastery in a specific skill, often contributing to larger qualifications and aligned with labor market demands. (UNESCO, 2021).

Lifelong learning Skills

Lifelong skills are essential abilities and competencies that individuals continuously develop and refine throughout their lives to adapt to personal, professional, and societal changes. These include critical thinking, communication, adaptability, problem-solving, and digital literacy. These skills encompass the ability to adapt to new situations and overcome challenges, fostering personal growth and professional success (OECD, 2019).

Skills Development

Skills development refers to the process of acquiring, improving, and refining abilities and knowledge to enhance individual performance and productivity. It involves formal, informal,

and non-formal learning opportunities tailored to meet evolving personal, professional, and industry needs.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter delved into key debates about the micro-credentialing that exist both locally and globally. This chapter was devoted to the review of relevant literature that is related to the researcher's topic of the study. The chapter entails a sub-chapter of theoretical review, empirical studies on related topics arranged in accordance with the themes derived from the set objectives, and synthesis of the literature to reflect the knowledge gap.

This chapter also dealt with the review of scholarly literature on the examination of a micro credentialing guidelines for lifelong skills development of working adults in Kampala, Uganda. The review of literature was done under three categories according to the specific objectives of the study.

The first category establishes the micro-credentials on offer selected training institutions in Kampala; the second category analyzed the present micro-credentials delivery and credentialing system and lastly, the third category developed guidelines for developing micro-credentials for skills development of lifelong learners.

2.2 The micro-credentials on offer

According to Lee & Leis (2021), they assert that micro-credentials have gained significant attention in the field of education and professional development due to their potential to address the evolving needs of learners and the workforce. Micro-credentials, also known as digital badges or nano-degrees, are concise and targeted learning experiences designed to develop specific skills or competencies. They have emerged as a response to the increasing demand for flexible, industry-relevant education. This literature review provided a detailed overview of the different micro-credentials offered worldwide as follows;

Digital Badges:

Digital badges are graphical representations of achievements or skills acquired through a specific learning experience. They are digital artifacts that serve as a form of recognition, validation, and evidence of an individual's accomplishments or competencies. Digital badges are typically displayed and shared online, allowing learners to showcase their achievements across various platforms and communities. They often utilize metadata to provide detailed information about the learning outcome, issuer, and assessment criteria (Wolfenden et-al, 2020). Nano-degrees are a form of micro-credentials that focus on developing specific skills in a particular domain. They are typically offered by educational institutions or industry partners and provide learners with practical knowledge and hands-on experience. In contrast to traditional degree programs that span several years, nano-degrees are designed to be shorter and more targeted, typically lasting anywhere from a few weeks to a few months (Wang & Robson, 2022).

Stackable Credentials:

Stackable credentials refer to the concept of accumulating and combining multiple micro-credentials or certifications to create a comprehensive and flexible qualification. These credentials can be earned sequentially or simultaneously, allowing learners to build a personalized learning pathway tailored to their specific career goals and interests. In this detailed explanation, we will delve into the characteristics, benefits, and considerations associated with stackable credentials (Casilli et-al, 2021). Open Badges are a type of digital badge that adhere to an open standard, allowing individuals to represent and showcase their achievements, skills, and competencies in a verifiable and portable format. Developed by the Mozilla Foundation in 2011, Open Badges are designed to provide a digital representation of

learning accomplishments that can be displayed and shared across various platforms and online communities (Jansen et-al, 2021)

I found out that there are no clear guidelines used to deliver and develop micro credentials hence the research aimed at developing the guidelines that help different institutions to develop and deliver different micro credentials.

2.3 The Present Micro-Credentials Delivery and Credentialing System

Micro-credentials have emerged as a flexible and targeted approach to lifelong learning, offering learners the opportunity to acquire specific skills and competencies. This literature review provided an in-depth analysis of the current micro-credentials delivery and credentialing system as follows;

2.3.1 Models of Micro-Credentials Delivery:

Educational Institution-Based Models: Educational institution-based models for delivering micro-credentials involve the integration of micro-credentials within existing educational programs and institutions such as universities, colleges, and vocational schools. These models leverage the expertise and resources of educational institutions to offer micro-credentials as part of their educational offerings Darling-Hammond et-al (2017)

Online Learning Platforms and Massive Open Online Courses (MOOCs):

Online learning platforms and MOOCs have emerged as popular avenues for delivering micro-credentials. These are digital platforms that offer a wide range of educational resources, courses, and tools to facilitate learning. These platforms provide learners with the flexibility to access learning materials and engage in educational activities at their own pace and convenience. Online learning platforms can be categorized into various types, including dedicated e-learning platforms, learning management systems (LMS), and specialized platforms for micro-credentials or specific subjects Li & Lalani (2021)

Blended Learning Approaches: Blended learning approaches combine traditional face-to-face instruction with online or digital learning activities to create a comprehensive and flexible learning experience. This instructional model leverages the strengths of both in-person and online learning to enhance student engagement, personalize learning, and promote active participation Graham (2019)

Workplace-Based Delivery: Workplace-based delivery is a method of delivering micro-credentials that focuses on providing learning experiences and skill development within a professional work environment. This approach recognizes the value of workplace learning and leverages the context of real-world tasks and challenges to enhance learners' skills and competencies Warhurst & Hedges (2021)

2.3.2 Credentialing System

The credentialing system is a structured and systematic process of assessing, validating, and recognizing individuals' knowledge, skills, competencies, and qualifications. It serves as a means of providing evidence of an individual's capabilities, expertise, and credibility in specific domains. The credentialing system is widely used in various contexts, including education, professions, industries, and regulatory bodies, to ensure that individuals meet certain standards and requirements (Laaser & Weber, 2021).

The primary purpose of credentialing is to establish a reliable and standardized framework for evaluating individuals' qualifications and abilities. It enables employers, educational institutions, and regulatory bodies to make informed decisions regarding employment, admission, licensure, or certification (Moss & Van der Pol, 2022). The credentialing process serves several key purposes:

Assessing Competence: Credentialing verifies that individuals possess the necessary knowledge, skills, and competencies required to perform specific tasks or roles effectively.

Ensuring Quality and Standards: Credentialing establishes benchmarks and standards that reflect the expectations and requirements of a particular field or profession.

Promoting Public Trust and Safety: Credentialing helps protect the public by ensuring that individuals practicing in regulated fields meet certain standards of competence and adhere to ethical guidelines among others (Moss & Van der Pol, 2022).

2.4 Guidelines for Developing Micro-credentials for Skills Development of Lifelong Learners

The development of micro-credentials for skills development of lifelong learners requires careful consideration of various factors. This sub-section provides guidelines for designing and developing effective micro-credentials that cater to the needs of lifelong learners and promote continuous skill enhancement as follows; to develop meaningful micro-credentials, it is crucial to identify the specific skills and competencies that are relevant to the target audience. Conduct a thorough analysis of industry trends, job market demands, and emerging skill requirements to ensure the micro-credentials address the most sought-after skills (Kuhfeldt, 2021). Clearly define the learning outcomes that learners will achieve upon completing the micro-credential. Learning outcomes should be specific, measurable, achievable, relevant, and time-bound (SMART) to provide learners with a clear understanding of what they will gain from the learning experience (Carr, 2021)

Create engaging and interactive learning experiences that facilitate active learning and skill development. Incorporate a variety of instructional strategies, such as case studies, simulations, project-based learning, and real-world applications, to enhance learner engagement and skill acquisition (Hung et-al, 2021)

Adopt competency-based assessment methods to evaluate learners' skills and competencies effectively. Design assessments that align with the stated learning outcomes and provide

opportunities for learners to demonstrate their proficiency through performance-based tasks, portfolios, or practical examinations (Biemans et-al, 2022)

Recognize that lifelong learners have diverse backgrounds, interests, and learning preferences. Design micro-credentials that offer flexibility and personalization options, allowing learners to choose their learning pathways, pace, and modes of delivery (Freitas et-al, 2021)

Establish clear pathways for progression within the micro-credentialing system. Design a hierarchy of micro-credentials that enable learners to build upon their skills and advance to more advanced levels. Ensure that the micro-credentials are stackable, allowing learners to accumulate credentials towards broader certifications or qualifications (Janssen & Boon, 2021).

Leverage technology to facilitate the delivery and assessment of micro-credentials. Utilize online platforms, learning management systems, and digital badging systems to provide accessible and scalable learning experiences (Araujo, et al., 2017). Explore the use of emerging technologies like virtual reality, augmented reality, and artificial intelligence to enhance the effectiveness and engagement of micro-credential programs. It also promotes collaboration and peer learning opportunities within micro-credential programs. Encourage learners to engage in discussions, group projects, and peer feedback to facilitate knowledge sharing, networking, and the development of teamwork skills (Young, et al., 2019).

Establish robust quality assurance mechanisms to maintain the credibility and value of micro-credentials. Ensure that the development and assessment processes adhere to established standards and guidelines (Laaser & Weber, 2021).. Involve subject matter experts, industry professionals, and credentialing bodies in the review and validation of micro-credential programs.

Continuously evaluate and improve micro-credential programs based on feedback from learners, instructors, and industry stakeholders. Monitor the effectiveness of the micro-

credentials in meeting the intended learning outcomes and adjust the content, delivery methods, or assessment strategies as needed.

2.5 Research gap

Micro-credential platforms play a pivotal role in the micro-credentials ecosystem by facilitating the issuing, managing, storing of micro-credentials and the transfer of data between different stakeholders of the ecosystem (Araujo, et al., 2017). There have been some attempts to explore different aspects of micro-credential adoption in different contexts and from different perspectives (i.e. Mischewski, 2017; Gauthier, 2020; Young, et al., 2019). However, there is limited research discussing the experiences but particularly learning experiences.

In addition, developing effective micro-credentials for skills development of lifelong learners requires a thoughtful approach that aligns with the needs and preferences of the target audience. By following these guidelines, educational institutions and organizations can design micro-credentials that empower lifelong learners to acquire and demonstrate valuable skills throughout their professional journey. However, even though the guidelines are very important in the provision of micro credential in Uganda, little is known about which guidelines can be applied in the Uganda context.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter systematically presented the research approaches and techniques which were used to collect and analyze data. It describes the research design, study population, sample size and sampling techniques. The methods and instruments that were used to collect data, data quality control and data analysis methods were also explained.

3.1 The Research Philosophy

This study adopted an interpretive philosophical paradigm. An interpretivist philosophical paradigm is associated with the qualitative research approach (Kermode et al, 2007),. This is because the paradigm sought to understand a phenomenon under study from the experiences or angles of the participants using different data collecting methods. Also, the researcher constructed meanings from the phenomena under study through his own experiences and that of the participants in the study. Moreover, interpretivist assert that reality is subjective because it is from the individual perspectives of participants engaged in the study and are thus multiple or varied (Gihuru, 2017). In the process of looking for the true state of the phenomena under study, I applied the Interpretivist Research Paradigm in order to engage the research participants, to discuss, dialogue about my topic of study.

3.2 Research Design and Approach.

According to (Muaz, 2013), a research design refers to the set of methods and procedures used in collecting and analyzing measures of the variables specified in the research problem. Since this study follows an interpretive paradigm, the most suitable research design to underpin it was case research design. There are multiple research designs which the researcher can choose

which include descriptive design, exploratory design, ethnographic. However, this study employed case study design.

3.2.1 Qualitative Research

The study was qualitative in nature and it adopted a case study design to understand the micro credentialing guidelines for lifelong skills development of working adults in Uganda. The researcher was deeply interested in understanding the micro credentials that are offered in Uganda, how they are delivered and the micro credentialing system and the guidelines for developing and accrediting micro credentials for skills development of learners. Kincheloe (2003) discusses, qualitative research is grounded in people's experience as its learning, felt and undergone which clearly signifies that the social world can be understood from the angle of people's perception of it.

Conceptually, qualitative research belongs to multiple disciplines. However, on various theoretical explanations, it emphasizes socially constructed nature of reality, intimate relations between the research and what is being studied. It also stresses that knowledge and meaning are acts of interpretation; hence there is no objective knowledge which is independent of thinking and reasoning humans (Gephart, 1999). It can be agreeable from the views above that the qualitative approach enables researchers interpret people's knowledge and perceptions of the world around them.

3.2.2 Case study Research Design

This study employed a descriptive case study design with the intention of getting an up-close and concrete understanding of micro credentialing guidelines for lifelong skills development of working adults. As (Ary et al, 2002) contends, that a case study allows the researchers to concentrate on a specific situation to identify the various interactive issues of interest to the researcher. The units of analysis were the working adults studying or who studied micro

credentials as the prime research participants, facilitators of the micro credentials and the owners of micro credential institutions

3.2 Study Area

This study was carried out in Kampala Uganda especially in the areas where micro credentialing institutions are found and that were Makerere University and Directorate of Industrial training. The researcher selected some working adults studying micro credentials at Makerere University and Directorate of Industrial Training or those that finished and also the facilitators of micro credentials and the owners of both institutions. The principle aim of this study was to understand the micro credentialing guide lines of lifelong skills development for the working adults in Kampala city Uganda. The study was anchored on understanding different micro credentials that are offered at Makerere University and Directorate of Industrial training, the methods of delivery they use to offer these micro credentials and the micro credentialing system and the guidelines the institutions followed when developing or accrediting the micro credentials for skills development for lifelong learners.

3.3.1 Study Population

The researcher used three population categories for this study. These included working adults studying or who studied micro credentials as the prime research participants, facilitators of the micro credentials and the heads of micro credential institutions in Kampala city and other stake holders depending on the gaps created by the unanswered questions. I managed to interview a total of 30 participants from Makerere University and Directorate of Industrial training.

3.3.1.1 ***Working adults studying micro credentials*****:** these were included in the study because they were the prime research participants. Since I was interested in understanding the micro credentialing guidelines for lifelong skills development of working adults, this particular category of population was very pertinent in enabling me understand which micro credentials are offered to them and how they are delivered. I dealt with those who are still studying micro

credentials and those who finished and I managed to sample 10 getting 5 from Makerere University and 5 from Directorate of Industrial training.

3.3.1.2 ***Facilitators of micro credentials*****:** This is another group that the researcher dealt with in order to not only get more information on which micro credentials they offer and the methods of delivery they use but also to get information on which guidelines they use to develop and accredit micro credentials for skills of lifelong learners and credentialing system. Facilitators are the ones who teach the learners of micro credentials so engaging them gave more insight on how micro credentials are delivered and which micro credentials they offer. I managed to sample 10 getting 5 from Makerere University and 5 from Directorate of Industrial training.

3.3.1.3 ***The heads of micro credential institutions***

These included the head of departments, the deans of the schools, Principals, Directors and the Vice chancellors of different institutions that offer micro credentials in Kampala city. These acted as key informants. In their different capacities, the above owners of micro credential institutions played a consequential role in making decisions on which micro credentials should be offered, the mode of delivery and the guidelines they follow while developing the micro credentials. I also sampled 10 getting 5 from Makerere University and 5 from Directorate of Industrial training.

3.3.2 Sampling Procedures

Sampling is the selection of sample size from the study population. There are two types of sampling from which a researcher can choose. These are probability and non-probability sampling (Cohen *et al* 2000). In the former, the chances of members of the wider population being selected for the sample are known, whereas in the latter, the chances of members of wider population being selected for the sample are unknown. In this study, the researcher chose to use the non-probability sampling procedures such as purposive, convenience and snowball sampling. Purposive sampling allows the selection of participants with specific characteristics

or knowledge relevant to the research, ensuring rich and meaningful data and Ideal when targeting individuals. Convenience is effective for pilot studies or exploratory research where gaining a broad overview is the primary goal.

3.3.2.1 Purposive Sampling

Purposive sampling is said to enable the researchers to handpick the cases to be included in the study on the basis of their judgment of their typicality or interest to satisfy their specific needs (Cohen *et al* 2000, Robson 2002). Purposive sampling was used to select the institutions that offer micro credentials in Kampala city. The selection of Micro credential institutions were based on the following criteria

i) Those institutions that are recognised by the National Council for Higher Education to be offering micro credentials in Kampala city.
ii) The Institutions that are currently developing micro credentials

Makerere University was selected and the Directorate of Industrial Training (DIT)

3.3.2.2 Convenience Sampling

This is also known as accidental, opportunity (Cohen *et al* 2000) or haphazard (Trochim, 2006) sampling. It involves choosing the nearest available people to serve as participants and continuing that process until the required sample size has been obtained. The selection of micro credential facilitators and the heads of micro credential institutions was conducted using convenience sampling. It was very easy for the researcher to interview those that he easily found in their offices and those who freely accepted to be interviewed for this study.

3.5 Methods and Instruments of Data Collection

In the study, the researcher used a set of qualitative research instruments. Below, he gave a brief description and justification of the different methods and instruments he used to generate the necessary data.

3.5.1 In-depth Interviews

As (Dash, 2017)argues that researchers ask questions considering the guidance; however, when researchers need extra information, they can continue the conversation based on the questions provided ahead of time for clarity, exploration and understanding. In-depth interviews were conducted with 10 working adults still studying or finished micro credentials and the researcher got 5 from Makerere University and 5 from Directorate of Industrial training. The interviews rotated around understanding the micro credentialing guidelines for lifelong skills development of working adults. The main goal of this type of interview was to find out which micro credentials are offered, mode of delivery and the credentialing system.

3.5.2 Key Informant Interviews

Key informant interviews were conducted with people who by virtue of their positions at the Micro credential Institutions was considered to have significant information regarding the understanding of micro credentialing guidelines. These included the facilitators of micro credentials, the head of departments, the deans of the school and the Principals of micro credential institutions in Kampala City. Key informant interviews sought to further understand the micro credentials offered, the mode of the delivery that is used to offer the micro credentials and the credentialing system and also the guidelines that are followed when developing micro credentials at an institution.

3.6 Data Quality Control

The researcher considered and conducted trustworthiness using credibility, conformability, and dependability criteria.

3.6.1 Credibility

Credibility is one of the most important factors in ensuring data quality control and establishing trustworthiness (Vazire, Schiavone & Bottesini, 2022). This was done because it is a way the researcher ensures that the study achieves what is intended to achieve (Cresswell, 2014). The

researcher also applied credibility by member checking, peer debriefing (other supervisor and research expert), thick description, reflexivity (knowing researcher's role), saturation, and external audits in regard to this study. The researcher carried out a pilot study exercise for the instruments of data collection

3.6.2 Triangulation

The rational for triangulation was to crosscheck information gathered from different categories of respondents. For this particular study, In depth and Key informant Interview method were used. The study population was also carefully selected to reflect heterogeneity in terms of religion, socio-economic status, gender and age. Some information captured through in-depth interviews was crosschecked during the key informant interviews for consistency, accuracy and appropriateness.

3.7 Data Analysis

Literature on qualitative data analysis shows that although there are diverse approaches, they are recurring. According to Kane (1995:245) analysis of qualitative data involves getting the information (*collecting*), boiling it down (*reducing*), organizing it in various ways to help you see patterns and relations (*displaying*), deciding what you have got (*drawing conclusions*), and satisfying yourself and others that you have found what you think you have (*verifying*). The entire process involves repetitive loops: what you learn in one stage may send onto the next stage or back to an earlier stage.

Data from key informant and in-depth interviews was analyzed using content and thematic qualitative data collection methods after being recorded in the field note books. The researcher entered data into the computer. The raw data was then processed in the Microsoft word, edited and kept in a soft copy form. This was followed by careful reading of the data for correction of grammatical and other related errors.

Data was then arranged according to the research questions. I read and re-read to identify similar themes and the possible sub-themes. It was at this point that differences, linkages, similarities, contradictions, crosscutting ideas and unique revelations were sorted out to develop a coherent body of data that guided analysis and discussion of the findings in chapter four. Some data was also summarized and presented in textboxes.

3.8 Research Procedure

After the approval of the research proposal, the researcher obtained a letter from the University granting permission to proceed with data collection. This was presented to the head of department for acceptance and authorization to undertake this study. The authorities' permission to the researcher was needed to clarify and avert suspicion about the study and helped to elicit increased willingness on the part of respondents to be objective and honest while responding to questions posed to them.

3.9 Ethical Consideration

The issue of ethics is an important consideration in research that involves human subjects (Ary, 2002). Research ethics is appropriate behavior of a researcher relative to the norms of society (Zikmund, 2000). The researcher ensured privacy, confidentiality and explained to participants the main purposes of the research. This was to inform the participants that the research was purely academic before engaging them in the study. More so, he took into account the consent of the respondents, avoidance of forgery and plagiarism was considered when presenting the research findings.

3.9.1 Delimitations of the study

Participants who were suspected of being biased when answering the questions asked. This was managed by explaining to them the purpose of the research and informing them how safe their information was to be. Besides that, participants who were suspected of fearing to provide data with complete honesty and openness were managed by assuring them of confidentiality of the information provided.

3.8 Chapter summary

This chapter discussed the choice and justification for the research methodology adopted for this study. The methods used were qualitative in nature and aimed at understanding the micro credentialing guidelines for lifelong skills development of working adults in Kampala city Uganda. The data collection tools were designed in a way that they would ensure the realization of the objectives of the study.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

Chapter four presents the findings on the micro-credentials among working adults in Kampala city Uganda. This chapter contains the descriptive analysis with a reflection of the specific objectives in form of themes. Data collection by virtue of interviews conducted with working adults studying or who studied micro credentials as prime research participants, facilitators of the micro credentials and the leaders of micro credential institutions in Kampala city informed this analysis by giving a stream of evidence in regards to micro credentialing guide lines of lifelong skills development for working adults in Kampala city.

The study was anchored on understanding the different micro credentials that are offered at Makerere University (CEES and CIT) and Directorate of Industrial training, the methods of delivery they use to offer these micro credentials and the micro credentialing system and the guidelines the institutions follow when developing or accrediting the micro credentials for skills development for lifelong learners.

In this particular study, the researcher applied a qualitative approach of data analysis from which in-depth interpretation was drawn regarding the perceptions of key informants on micro credentialing guide lines of lifelong skills development for working adults in Kampala city.

4.2 Respondent Characteristics

There were thirty participants including 10 working adults studying or who studied micro credentials from both institutions; 10 facilitators of micro credentials; and 10 heads of micro credential institutions in Kampala city.

4.1 Socio-demographic characteristics of the study participants

The demographic characteristics focused on gender, educational background, language spoken and experience of primary study participants.

Tables: Showing the socio-demographic characteristics of the study participants

Table 4. 1: The distribution of the participants according to gender

s/n	Gender	Frequency
1	Female	11
2	Male	19
	Total	**30**

Table 4. 2: The distribution of the participants according to age bracket.

s/n	Age	Number of participants
1	20-30	5
2	31-40	10
3	41-50	8
4	51-60	7
	Total	**30**

Table 4.3: The distribution of the participants according to educational level

s/n	Education level	Number of participants
1	Technical	5
2	University	25
	Total	**30**

Source: Field data 2023

Table 4. 4: The distribution of the participants across the program of study is summarized in table 4.4 below:

s/n	Course	No participants	Designation
1	II-WAS 01	5	3 from DIT & 2 from Mak
2	II-WASD02	5	2 from DIT & 3 from Mak
3	KI-FAC-03	10	5 from DIT & 5 from Mak
4	KI-OMCI04	10	5 from DIT & 5 from Mak
	Total	**30**	

4.3 Micro-credentials on offer in selected training institutions in Kampala.

The study explored the micro-credentials on offer in selected training institutions in Kampala. Micro-credentials are as the same as digital badges which are mainly offered online however, my interaction with the participants indicated that there are micro credentials which are delivered physically. The findings reveals that micro credentials which are offered online included oral communication skills, software repair, Networking program and quantitative data analysis using SPSS. The physical micro credentials that offered included Agribusiness management, Mechanics and Environment.

To support this statement one learner said;

> I pursued a micro credential in oral communication because I had issues with oral communication. It was online and the facilitators would instruct us to watch some oral presentation which included how you compose yourself and you keep eye contact with the audience (***IDI, Student, Makerere, CEES***).

> I am an IT expert but I had challenges with repairing software windows so when I heard of an online short course I enrolled and pursued and I filled that gap in my

profession. We were introduced to software repair and within 2weeks I had learnt because it was a daily learning (***IDI, Student who finished, Makerere, CIT).***

I work with a networking development company so I had challenges with developing some networking programs. I enrolled for an online short course in networking program which provide me with the opportunity to connect with professionals in the field and build my professional network **(IDI, Student, Makerere, CEES).**

However, those who enrolled for physical micro credentials revealed the following micro credential on offer. The findings reveals that these micro credentials are pursued by learners who are already in the same field but want to improve a specific skill in the same field. Those who pursued mechanical micro credentials said;

I pursued a micro credential in Auto Mechanics. It not only focused on fixing cars but it was also about understanding the complexities of modern vehicles, which is a valuable skill in the automotive industry ***(IDI, Student, DIT).***

Micro credentials offered at the Directorate of Industrial Training are characterized by their practical and industry-focused nature. These programs cover a range of technical disciplines, including engineering, welding, electrical installation, and automotive mechanics, ensuring graduates are job-ready. ***(IDI,*** S**tudent, DIT)**

These micro credentials cover areas such as industrial welding, electrical installation, auto mechanics, plumbing, and pipefitting, aligning with the specific needs of the industrial workforce. ***(KII, Director, DIT)***

> The Micro Credential in Environmental Impact Assessment and Management I am pursuing is blended in nature we have online facilitators and on campus facilitators. ***(IDI, Student, Mak)***
>
> I pursued micro credentials like Agribusiness Management, customer care, public speaking at Makerere University. These micro credentials covered agribusiness principles, marketing strategies, and entrepreneurship, preparing individuals for leadership roles in the agribusiness value chain ***(KII, Facilitator, MAK).***

The findings indicate that one student can pursue multiple micro credentials in the same discipline. However, this can be possible when one qualifies to pursue them.

When it came to the importance's learners attach to micro credentials. Two (2) participants Still Studying Micro Credentials at Makerere University eluded that;

> "I attach great importance to my micro credential because it is equipping me with practical skills that are directly applicable in my future work as an agricultural extension officer. It's not just theoretical; it's preparing me for real-world challenges." (KII, Facilitator, MAK).
>
> The micro credential in Agribusiness Management is crucial for my career goals. It adds a layer of business acumen to my agricultural knowledge, making me a well-rounded professional capable of contributing to the economic aspects of the agriculture sector. (KII, Facilitator, MAK).

As far as enrollment criteria is concerned, academic qualifications were a primary consideration, along with a keen interest or relevant background in the specific field of study. For instance, micro credentials in sustainable agriculture looked for individuals with a background in agricultural sciences and a passion for sustainable farming practices.

The owners emphasized the importance of micro credentials in providing learners with focused, practical skills relevant to their chosen fields. These programs were seen as crucial in addressing industry needs, enhancing employability, and contributing to sustainable practices. Owners stressed the role of micro credentials in shaping competent professionals ready for immediate application of skills in real-world scenarios.

4.4 Micro-credentialing delivery and credentialing system.

The findings from the study revealed that the micro-credential delivery system varies from institution to institution because each institution had its own credentialing system. Further, it was also reported that the methods of delivering micro-credentials were practical and hands-on nature. Further, the findings of the study revealed that the delivery system must have experienced facilitators, well formulated curriculum that is skills based and flexible assessment system (assessing both theory and practical). It was also revealed that the facilitators integrated the practical methods with the theoretical knowledge to produce competent learners to fit in real-world.

> My micro credential involved fieldwork, community engagement, and industry simulations. The accreditation methods were described as comprehensive, combining written exams with practical assessments, ensuring a thorough evaluation of both knowledge and skills ***(Student, DIT).***

A student who finished micro credential at DIT said that

> The facilitator for DIT said, for us here at DIT, we assess learners in both theory and practical courses to find out whether they have skills in both theory and practical and then we accredit them with certificates. Some pass and others fail so I think it depends on the institution where such a student studied from

The leader of micro credential institution said;

> For us here at our Institution we have different categories of learners with different ambitions and aspirations. We also have working learners who work during day and those who work during night so as the owner of the institutions we thought it wise to develop a blended delivery system to accommodate all those categories of learners that I have mentioned.

The owner of the micro credential institution agreed with facilitators on the integration of the delivery systems when he said,

> Since there are different students who may want to study at different times and from different places, we need to be flexible though it is difficulty especially when it comes to online learning as it needs trained facilitators and also gadgets to use like computers, internet and many other things.
>
> Delivery system of our micro credentials included interactive lectures, hands-on fieldwork, and research projects. We utilize a competency-based assessment approach, and accreditation is achieved through rigorous evaluation by both internal and external quality assurance bodies. (52 male participant from Mak CEES)

Student who attained six micro-credentials Online agreed that the delivery system was primary established by the institution for example the content, the tools to use and methods of delivery. She further reported that the system was banking in nature where the facilitator dictates what will be taught, when and the time. The role of the learner in this case was to abide by the set system. The methods of delivery were in form of quiz, Essay writing, peer to peer discussion and it was done in a virtual classroom setting. In her words she said;

> Most of micro credential sessions are banking in nature because the facilitators are the ones who developed the content and uploaded them on the online platforms, my role was to login to those platforms and start listening to what facilitator has recorded.

Another Makerere Student from CIT added that

> The methods of delivery were peer to peer discussions, easy writing and quiz. It was difficult for us to really feel we are in class because of the way these courses are delivered for example when we were writing essays, after writing you send to the facilitator who sends the marks after marking, you cannot know the reason why you have failed just in case and there is no way a facilitator can guide on what is needed to be done in case you want to do the corrections.

Another learner also added that

> The mode of assessment was through online exams, she said, we did exams after completing all the modules of the course and if you get less than 70%, it means that you have failed and have to repeat the course, we studied for 3 weeks, some times a month and others would even go for up to three months and after finishing and passing well, you get a certificate in form of digital budge (IDI, Learner, Mak)

The a similar view was also supported by a learner who completed her micro-credential from the UK based University when he said;

> For us we enrolled courses online and the lecturer was recording the content and posting it to the web that was just like MUELE. You could log in any time and do the assignments that the facilitator puts there. I did that course for 3 weeks and after finishing I got a certificate (IDI, Learner, Mak, CEES).

The directors of micro credentialing institutions at Makerere University and DIT agreed that the delivery system and accreditation of these micro credentials should be blended in nature to meet the needs of all learners.

One director revealed that;

> Our delivery method involves a combination of in-person lectures, practical field sessions, and online resources. Assessment includes continuous evaluation, group projects, and a final examination. Accreditation is done through the institutions established quality assurance processes, ensuring that the micro credential meets set standards.

In addition, the findings reveal that these micro credentials to be offered require a more experienced person since they are skills based and practical.

To prove this one facilitator reported;

> Facilitating online courses requires technical Proficiency to be comfortable with using online platforms for communication, collaboration, and content delivery. This includes proficiency in tools like Zoom, Microsoft Teams, Google Meet, or other video conferencing software.

In addition, it was also reported that to be able to deliver content online a facilitator must have communication skills, facilitation skills and knowledge content. To support this one participant said;

> Online learning requires a lot of facilitation Skills like skills of facilitating group discussions, managing group dynamics, and keeping participants engaged and focused.

Another participant added;

> Having Content Knowledge makes you have a deeper understanding of the subject matter. This includes not only knowledge of the content itself but also an understanding of how to present it in a clear and engaging way.

When it came to having communication skills, the director confirmed that;

> Effective online facilitators need strong communication skills to engage participants, explain concepts clearly, and manage discussions. This includes both verbal and written communication skills.

When it came to having experience in offering physical micro credentials the participants said;

> Industrial training micro credentials are facilitated by a mix of industry experts and qualified instructors. These facilitators bring hands-on experience to the classroom, ensuring that learners acquire practical skills aligned with industry standards. (IDI, Student, DIT)

The head of DIT said

> Micro credentials were facilitated by experienced professionals, combining academic expertise with practical knowledge.

However, the findings revealed that those who had completed their Micro Credentials shared positive insights, emphasizing the richness of their learning experiences. Online courses involved lectures, discussions demonstration and physical programs such as Agriculture and mechanics involved a combination of theoretical classes, hands-on lab work, field visits, and collaborative projects. The findings also reported that micro credentials are accredited depending on the standards set by the institution. For example, accreditation methods for online courses included question and answer session, quiz, online timed exams and the assessment and accreditation of the physical micro credentials included exams, practical assessments, and research projects, reinforcing the practical applicability of the acquired knowledge. This implies the assessment and accreditation of micro credential defers on the basis of the mode of delivery.

From my conversation with the owners of micro credential institution, it was reported that diverse delivery methods are employed in delivering these micro credentials such as in-person lectures, practical sessions, and online resources. Micro credentials are subjected to

accreditation via established University quality assurance processes or national vocational training standards. These micro credentials are always competency-based, involving assessments such as continuous evaluation, question and answer sessions, projects, and final examinations.

4.5 Guidelines Followed in the Accreditation of micro-credential Providers.

The study conducted interviews with owners of existing micro-credentials offered at selected training institutions at Makerere University (CEES and CIT) and the Directorate of Industrial Training (DIT) in Kampala. The focus was on the guidelines followed by these institutions in accrediting micro-credential courses, their alignment with the learner's needs, and strategies employed for industry collaboration. The study also explored how learners can ensure recognition of their micro-credential learning, strategies to make accredited micro-credentials more affordable and accessible.

The study conducted with Micro Credential Facilitators at Makerere University (CEES and CIT) and DIT in Kampala revealed that meeting the securing a license from the ministry of education and sports that permits to operate as an awarding is the first guideline followed in the accreditation process of the micro credential. It was also noted that though micro credential institution has the ability to assess and accredit micro credentials the ministry is mandate to supervise and regulate on matters to do with the relevance of the course, costs charged, content delivered, and the experience of facilitators. That's why the Ministry emphasis the issue of collaboration between micro credentialing bodies and employers, recognition of micro credentials by learners and employers, affordability and accessibility, practical up skilling without a traditional degree, delivery and accreditation system improvements, and the role of micro credentials in addressing skills gaps.

The findings revealed that institutions prioritize aligning micro-credential courses with learners needs, incorporating practical experiences, and engaging in continuous consultations with

institutions experts. The Ministry of Education and Sports guidelines plays a pivotal role, with adherence considered crucial for accreditation. Institution bodies and employers are actively involved in setting standards and validating the value of micro-credentials, ensuring their relevance in the workforce. The owners of micro credential institution noted;

> We follow guidelines that involve aligning micro credential courses with learners needs. Regular consultation with institutional experts is always prioritized to ensure that our courses are relevant in improving professionalism of learners (KII, Head, DIT)

It was also revealed that before micro credentials are delivered the facilitators embark on setting clear learning objectives which give direction how the course will be run. The objectives are also set to inform the learners on what is needed to complete a particular online/physical micro credential. One facilitator of micro credential from Makerere University noted:

> We define the learning objectives for each session or module. Ensure that these objectives are communicated to the learners and facilitators at the beginning of the course.

One learner from Makerere also noted

> Yes before starting the actual learning the facilitators explain to us the objectives which includes what will be covered, how it will be covered and what is needed to be covered.

Another guideline which emerged from the study was issue to with the developing content. The facilitators agreed that developing content is part and partial as far as delivering micro credentials are concerned. The development of the content is based on the nature of the micro credential and the level of practicability. It was also revealed that facilitators use content types to accommodate all the learners.

One facilitator noted;

> We use multiple content types such as videos, interactive quizzes, readings, and discussion forums to enhance learner's participation.

> During the learning of micro credential in oral communication, the facilitators would put videos to watch, engage us in question-and-answer sessions and quiz. However, the quiz had time limit if the time expires without completing then you have failed the course (IDI, Learner, Mak)

Another issue that emerged during the conversation with the leader of micro credential institution was the issue of quality assurance. It was further revealed that Quality assurance methods focused on the direct relevance and applicability of the course to the specific skills or competencies being targeted. This included a more targeted assessment of course content, instructional methods, and learning outcomes. Since micro-credentials often cater to specific industry and learning needs, the findings reveal that quality assurance should prioritize ensuring that these courses align with current industry standards and practices.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

The discussion of findings is critical because it allowed me to indicate how the current study reinforces what is already known or how it differs from other similar studies. The discussions were based on the three objectives; micro credentials offered by institutions, Micro credentialing delivery system and guidelines to be followed in accreditation of micro credentials.

5.1 Discussions

This section discusses the findings of the study about the Micro credentialing guidelines for lifelong skills development of working adults in Kampala city Uganda in relation to the three objectives which include; micro credentials offered by institutions, Micro credentialing delivery system and guidelines to be followed in accreditation of micro credentials.

The study's findings indicate that micro-credentials are certified documents that serve as recognized evidence of achieving learning outcomes from shorter, less time-intensive educational or training activities. These credentials are designed to validate competency-based skills, outcomes, and/or knowledge using transparent standards and reliable assessments. Consequently, they have the potential to enhance graduates' employability prospects. Moreover, micro-credentials can be accepted for credit by institutions or organizations, or they can serve as attestations for employers. A micro-credential attests to specific knowledge or skills competencies with defined learning outcomes and may or may not be stacked towards larger units of accreditation (Brown et al., 2021; Cirlan, & Loukkola, 2020; COL, 2019; Debiais-Sainton, 2020; Fonget al., 2016; Kato et al., 2020).

In addition, the study participants perceived micro-credentials as bite-sized, specialized learning modules that are offered both online and practical, specific skills, equipping learners for the dynamic demands of the job market. Micro-credentials have gained significant attention

in the field of education and professional development due to their potential to address the evolving needs of learners and the workforce. The findings are in relation to what Lee & Leis (2021) who define them as digital badges or nano-degrees, they are concise and targeted learning experiences designed to develop specific skills or competencies.

The findings also revealed that Micro credentials represent a growing trend in higher education, emphasizing modularity and stack ability. They consist of small, individual learning units combined to form broader qualifications, acting as stepping stones towards larger educational objectives. Further, they can also serve as a bridge between single courses and full degrees, offering a more flexible and accessible learning path. This finding was in line with the findings of Wolfenden et-al (2020 who argues that micro credentials when combined can lead a learner to more macro credentials. There was also an agreement about micro credentials have no time and age limit it's a lifelong learning endeavor. This was in line with the lifelong theory which argues that learning starts from cradle to grave it's not limited by anything.

The findings of the study also reveals that Micro-credentials are designed to deliver essential skills training for those looking to up skill or reskill, giving them a competitive edge in today's job market. They also competency-based award that showcases an individual's expertise in a specific area. The true value of a micro-credential lies in its ability to address current industry demands, offering recipients a distinct advantage in their careers.

The findings reveal that there are micro credentials which are offered online and physical. The online micro credentials included oral communication course, oral communication skills, software repair, Networking program and quantitative data analysis using Statistical Package Social Science. These courses were typically offered online. The content, the methods and assessment were also done online with the facilitators being at center of developing the methods, content and determining how they will be assessed.

The findings further revealed that oral communication course included contents like the Fundamentals of Oral Communication which focused on understanding and exploring the basics of effective communication, including verbal and nonverbal aspects. Another aspect was public Speaking Techniques which focused on enabling learners learning how to prepare and deliver engaging speeches, including structuring content, using visual aids, and managing nerves. How to listen effectively was also another content which aimed at enabling learners understanding the importance of active listening and how it enhances communication. Also, developing Interpersonal Communication skills was emphasized and learners called upon to develop skills for effective one-on-one communication, including building rapport and handling difficult conversations. They also aimed at enabling learners understanding body language and other nonverbal cues to enhance communication and convey confidence and finally develop skills for communicating effectively in professional settings, including meetings, interviews, and presentations. Understanding how cultural differences can impact communication and learning strategies for effective cross-cultural communication. Overall, these topics can be tailored to the specific needs and goals of the course participants, and interactive activities, discussions, and feedback can enhance the learning experience.

This was the same with other course units like software repair where focus was put on how a student can identify a problem or issues that are causing the software to malfunction and be able to analyze the root causes of such a scenario. And they were taught how to handle such problems. This may involve making changes to the software code, updating software components, or implementing workarounds to address the issue.

The findings of the study reveals that physical Micro credentials offered at Makerere University span various disciplines, including agriculture, environmental science, business, and engineering. These programs are characterized by their focused nature, providing learners with targeted knowledge and skills in specific areas for immediate application in their chosen fields. Another important finding was that all these physical Micro credentials at the offered are

tailored to meet the skill needs of industries. These programs cover industrial welding, electrical installation, auto mechanics, plumbing, and pipefitting, providing learners with hands-on skills for immediate application in industrial settings.

The findings of the study in relation to analyzing the present micro-credential delivery and credentialing system revealed that facilitators emphasized the diverse delivery methods, including a blend of online and in-person modalities, and highlighted the importance of flexibility, hands-on experiences, and continuous assessment in the programs. These are in relation to what Darling-Hammond et-al (2017) who assert about educational institution-based models for delivering micro-credentials which involve the integration of micro-credentials within existing educational programs and institutions such as universities, colleges, and vocational schools.

Similarly, these are digital platforms that offer a wide range of educational resources, courses, and tools to facilitate learning. These platforms provide learners with the flexibility to access learning materials and engage in educational activities at their own pace and convenience. Online learning platforms can be categorized into various types, including dedicated e-learning platforms, learning management systems (LMS), and specialized platforms for micro-credentials or specific subjects Li & Lalani (2021)

The findings of this study in relation to developing guidelines to be followed in the accreditation of micro-credential providers showed a prioritization of aligning courses with industry needs, incorporating practical experiences, and engaging industry experts in consultations. Adherence to Ministry of Education and Sports guidelines was deemed crucial for accreditation, with active involvement of industry bodies and employers in setting standards. Learners were advised to actively engage in industry networks and seek endorsements for better recognition, while strategies for affordability included partnerships with industry sponsors and flexible payment plans.

Micro-credentials were seen as practical for upskilling, with recommendations for continuous professional development for facilitators and embracing technology to improve delivery and accreditation systems. These were in relation to what Hung et-al (2021) asserts about creating an engaging and interactive learning experience that facilitate active learning and skill development.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter provides a summary of the findings, conclusions and recommendations of the study based on the data presented, interpreted, analysed and discussed in Chapter four and five, as well as the literature review in Chapter two.

6.1 Summary

The study sought to examine the micro credentialing guidelines for lifelong skills development of working adults in Kampala city, Uganda. And in order to do so there was need to establish the micro-credentials on offer in selected training institutions in Kampala; to analyze the present micro-credential delivery and credentialing system; and to develop guidelines to be followed in the accreditation of micro-credential providers.

The study investigated the significance of micro-credentials in selected training institutions in Kampala, focusing on the perspectives of both current students and graduates. Participants perceived micro-credentials as bite-sized, specialized learning modules that offer practical, specific skills, equipping learners for the dynamic demands of the job market. Motivations for enrollment included the need for targeted, career-relevant skills and a desire for continuous learning.

Findings underscored the flexibility and immediate applicability of micro-credentials in addressing industry demands, with specific programs like Industrial Welding, Electrical Installation and Maintenance, and Auto Mechanics highlighted for their contribution to enhancing employability and addressing real-world challenges. The study also identified areas for improvement in delivery methods and suggested strategies to better integrate micro-credentials into existing academic frameworks, ultimately emphasizing their role in helping employers understand skills gaps and facilitating career advancement for learners.

The study delved into the perspectives of Micro Credential Facilitators from Makerere University and the Directorate of Industrial Training (DIT) regarding existing micro-credentials in Uganda. Facilitators emphasized the diverse delivery methods, including a blend of online and in-person modalities, and highlighted the importance of flexibility, hands-on experiences, and continuous assessment in the programs. Identified gaps in delivery methods ranged from limited integration of real-world industry projects to a need for more personalized learning experiences and increased interactivity in online modules.

Strategies for improvement included incorporating industry collaborations, adaptive learning approaches, mentorship programs, and promoting collaborative learning environments. Micro credentials were recognized as valuable tools for employers to understand skills gaps, offering specific insights into candidates' competencies, while integration into mainstream learning involved mapping micro credentials to existing academic programs, establishing pathways for credit transfer, and fostering collaboration between academic departments.

The study conducted interviews with Micro Credential Facilitators from Makerere University and the Directorate of Industrial Training (DIT) in Kampala to explore the guidelines followed in accrediting micro-credential courses, their alignment with industry needs, and strategies for industry collaboration. Findings revealed a prioritization of aligning courses with industry needs, incorporating practical experiences, and engaging industry experts in consultations. Adherence to Ministry of Education and Sports guidelines was deemed crucial for accreditation, with active involvement of industry bodies and employers in setting standards.

Learners were advised to actively engage in industry networks and seek endorsements for better recognition, while strategies for affordability included partnerships with industry sponsors and flexible payment plans. Micro-credentials were seen as practical for upskilling, with recommendations for continuous professional development for facilitators and embracing technology to improve delivery and accreditation systems. Employers could utilize micro-

credentials to understand skills gaps, and integration into mainstream learning involved mapping to existing courses and collaboration between academic departments. Hence, the study highlighted the significance of aligning micro-credentials with industry needs and providing accessible pathways for upskilling to address skills gaps in the workforce.

6.2 Conclusion

The study on micro credentialing guidelines for lifelong skills development of working adults in Kampala city, Uganda, provided valuable insights into the significance of micro-credentials in addressing the dynamic demands of the job market. The findings underscored the role of micro-credentials as bite-sized, specialized learning modules offering practical, specific skills tailored to industry needs. Through diverse delivery methods and adherence to accreditation guidelines, institutions aim to equip learners with relevant competencies and enhance their employability. The study highlighted the importance of industry collaboration, continuous professional development for facilitators, and leveraging technology to improve the delivery and accreditation systems of micro-credentials. Hence, micro-credentials were identified as practical tools for up skilling, facilitating career advancement, and addressing skills gaps in the workforce, emphasizing their crucial role in lifelong skills development in Kampala city, Uganda.

6.3 Recommendations

Based on the findings of the study on micro credentialing guidelines for lifelong skills development of working adults in Kampala city, Uganda, several recommendations can be made to enhance the effectiveness and accessibility of micro-credentials as follows;

It is crucial for micro-credential providers to continue prioritizing alignment with industry needs. This can be achieved through regular consultation with industry experts, updating course content to reflect current trends and practices, and incorporating practical experiences into the curriculum. Additionally, fostering partnerships with industry sponsors can ensure that micro-

credentials remain relevant and beneficial to learners seeking to acquire skills that are in demand in the job market.

To cater to the diverse learning preferences and schedules of working adults, micro-credential programs should offer flexible delivery methods. This includes a blend of online and in-person modalities, as well as options for part-time or self-paced learning. Incorporating hands-on experiences and continuous assessment into the programs can enhance engagement and ensure the acquisition of practical skills.

Adherence to quality assurance standards and accreditation guidelines, such as those set by the Ministry of Education and Sports, is essential to ensure the credibility and recognition of micro-credential programs. Micro-credential providers should actively engage with industry bodies and employers in the accreditation process, seeking their input to validate the value and relevance of the credentials.

Strategies to make micro-credentials more affordable and accessible should be explored, particularly for learners from underserved communities or those with limited financial resources. This could include offering flexible payment plans, promoting scholarship programs, and partnering with industry sponsors to provide financial assistance or tuition subsidies.

Facilitators involved in delivering micro-credential programs should undergo continuous professional development to stay updated on best practices in teaching and learning. This can include training in innovative instructional methods, technology integration on emerging technologies, and strategies for enhancing learner engagement and success.

Efforts should be made to integrate micro-credentials into the mainstream education system, aligning them with existing academic programs and establishing pathways for credit transfer. Collaboration between academic departments and recognition of micro-credentials as valuable components of lifelong learning can facilitate this integration process.

Micro-credential providers should engage in targeted marketing and promotional activities to raise awareness about the value and benefits of micro-credentials among potential learners, employers, and other stakeholders. This can include showcasing success stories, highlighting the practical applicability of micro-credentials, and emphasizing their role in addressing skills gaps in the workforce.

In terms of industry and employer collaboration, the study suggests that establishing collaborative forums, involving industry representatives in curriculum development, and fostering a transparent accreditation process are essential for defining and aligning standards. Learners can ensure recognition by maintaining digital portfolios, engaging in industry projects, and networking.

To make micro credentials more affordable and accessible, strategies include exploring partnerships for funding, implementing tiered pricing, leveraging technology, promoting scholarship programs, and creating modular courses. Practical up skilling can be achieved through micro credentials, online courses, industry projects, and flexible scheduling.

Suggestions for improving the education system in Uganda involve enhancing collaboration, implementing quality assurance frameworks, leveraging technology, fostering partnerships with international accrediting bodies, and strengthening teacher training programs.

6.4 Areas for Further Research

Micro credentials were found to help employers understand skills gaps by offering a granular view of competencies, providing tangible evidence of specialized skills, and enabling personalized training plans. Therefore, this study recommends that a study should be conducted on how to align micro credentials with the mainstream learning system to integrate them into existing structures, establishing credit transfer mechanisms, and developing industry-recognized standards.

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APPENDICES

APPENDIX I: In-depth Interview Guide for Micro Credential Learners

Dear Participant,

I am Katagwa Rogers a student of Makerere University pursuing a Master's degree in Adult and Community Education (MACE) conducting a study entitled "***A Micro Credentialing Guidelines for Lifelong Skills Development of Working Adults in Kampala City Uganda"***

I sincerely appreciate the valuable time you have accorded to me to carry out this study. This interview guide is to collect information on the existing micro credentials, the micro credentialing systems and mode of delivery and guidelines considered while accrediting the micro credentials.

Please answer with sincerity and utmost honesty. Feel free to share with us what you know and feel about this topic because information provided will be treated with utmost confidentiality. Your anonymity in the course of reporting the findings of the study will be ensured through the use of pseudonyms. Your cooperation will be highly appreciated.

1. Personal/general information:

Interview date ……Interview time…….....

Interview venue…… Interview duration……

Marital status…….Age……..

Gender…….Education level……

Occupation……

Section A: Existing Micro Credentials offered in selected training Institutions.

13. What do you understand by the term micro credentials?
14. What motivated you to enroll for these micro credential courses?
15. What micro credentials did you/are you pursuing from your institution?
16. From your perspective, what other micro credentials do you know?
17. What importance do you attach on these micro credentials?

Section B: The Delivery and Credentialing Systems used in offering existing Micro Credentials.

18. Tell us your learning experiences while pursuing these micro credentials?
19. Tell us the story about the delivery and accreditation methods?
20. Which delivery methods are/was more convenient to you while pursuing these micro credentials and why?
21. Who were the facilitators and where did these micro credentials lessons offered?
22. What do you think are the gaps in the methods of delivery being used by facilitators?
23. From your perspective, what strategies can be employed to improve on the delivery and accreditation system in the Education system of Uganda?
24. How can micro credentials help employers to understand skills gap?
25. How can micro credentials be aligned to fit in the mainstream learning system?

APPENDIX II: Key Informant Interview Guide for the heads of micro Credential Institutions

Dear Participant,

I am Katagwa Rogers a student of Makerere University pursuing a Master's degree in Adult and Community Education (MACE) conducting on a study "***A Micro Credentialing Guidelines for Lifelong Skills Development of Working Adults in Kampala City Uganda"***

I sincerely appreciate the valuable time you have accorded to me to carry out this study. This interview guide is to collect information on the existing micro credentials, the micro credentialing systems and mode of delivery and guidelines considered while accrediting the micro credentials.

Please answer with sincerity and utmost honesty. Feel free to share with us what you know and feel about this topic because information provided will be treated with utmost confidentiality. Your anonymity in the course of reporting the findings of the study will be ensured through the use of pseudonyms. Your cooperation will be highly appreciated.

1. Personal/general information:

Interview date ……Interview time…….....

Interview venue…… Interview duration……

Marital status…….Age……..

Gender…….Education level……

Occupation……

Section A: Section A: Existing Micro Credentials offered in selected training Institutions.

1. What do you understand by the term micro credentials?
2. What criteria do you follow while enrolling learners in the offered micro credentials?
3. Explain the nature of micro credentials that are offered by your institution?
4. From your perspective, what other micro credentials do you know?
5. What importance do you attach on these micro credentials?

Section B: The Delivery and Credentialing Systems used in offering existing Micro Credentials.

6. Tell us the story about the delivery and accreditation methods?
7. Who are currently the facilitators of micro credentials at your institution?
8. What do you think are the gaps in the methods of delivery being used by facilitators?
9. From your perspective, what strategies can be employed to improve on the delivery and accreditation system in the Education system of Uganda?
10. How can micro credentials help employers to understand skills gap?
11. How can micro credentials be aligned to fit in the mainstream learning system?

Section C: Guidelines employed by institutions to accredit micro credentials in Kampala?

12. What guidelines do you follow while delivering these micro credential courses?
13. What guidelines has the ministry put in place to follow before being licensed to offer these courses?
14. How can industry bodies and employers agree on the standards and objective assessment of micro credential value?
15. How can learners ensure their prior micro credentialed learning is recognized by future employers and education providers?
16. How can assessed and accredited micro credentials become more affordable and accessible?

17. How in practical terms can learners up skill or extend their knowledge without taking several years to complete a degree?
18. From your perspective, what strategies can be employed to improve on the delivery and accreditation system in the Education system of Uganda?
19. How can micro credentials help employers to understand skills gap?
20. How can micro credentials be aligned to fit in the mainstream learning system?

APPENDIX III: Key Informant Interview Guide for Micro Credential Facilitators

Dear Participant,

I am Katagwa Rogers a student of Makerere University pursuing a Master's degree in Adult and Community Education (MACE) conducting on a study "***A Micro Credentialing Guidelines for Lifelong Skills Development of Working Adults in Kampala City Uganda"***

I sincerely appreciate the valuable time you have accorded to me to carry out this study. This interview guide is to collect information on the existing micro credentials, the micro credentialing systems and mode of delivery and guidelines considered while accrediting the micro credentials.

Please answer with sincerity and utmost honesty. Feel free to share with us what you know and feel about this topic because information provided will be treated with utmost confidentiality. Your anonymity in the course of reporting the findings of the study will be ensured through the use of pseudonyms. Your cooperation will be highly appreciated.

1. Personal/general information:

Interview date ……Interview time…….....

Interview venue…… Interview duration……

Marital status…….Age……..

Gender…….Education level……

Occupation……

Section A: Section A: Existing Micro Credentials offered in selected training Institutions.

1. What do you understand by the term micro credentials?
2. What criteria do you follow while enrolling learners in the offered micro credentials?
3. Explain the nature of micro credentials that are offered by your institution?
4. From your perspective, what other micro credentials do you know?
5. What importance do you attach on these micro credentials?

Section B: The Delivery and Credentialing Systems used in offering existing Micro Credentials.

6. Tell us the story about the delivery and accreditation methods?
7. What do you think are the gaps in the methods of delivery being used by facilitators?
8. From your perspective, what strategies can be employed to improve on the delivery and accreditation system in the Education system of Uganda?
9. How can micro credentials help employers to understand skills gap?
10. How can micro credentials be aligned to fit in the mainstream learning system?

Section C: Guidelines employed by institutions to accredit micro credentials in Kampala?

11. What guidelines do you follow while delivering these micro credential courses?
12. What guidelines has the ministry put in place to follow before being licensed to offer these courses?
13. How can industry bodies and employers agree on the standards and objective assessment of micro credential value?
14. How can learners ensure their prior micro credentialed learning is recognized by future employers and education providers?
15. How can assessed and accredited micro credentials become more affordable and accessible?

16. How in practical terms can learners up skill or extend their knowledge without taking several years to complete a degree?
17. From your perspective, what strategies can be employed to improve on the delivery and accreditation system in the Education system of Uganda?
18. How can micro credentials help employers to understand skills gap?
19. How can micro credentials be aligned to fit in the mainstream learning system?