



THE ROLE OF MICRO-CREDENTIALS IN PROFESSIONAL DEVELOPMENT OF SKILLS IN EMPLOYEES: A QUALITATIVE STUDY FROM AN EMERGING ECONOMY

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ABSTRACT

To investigate the role of micro-credentials in professional development of skills in employees working in academia and industry. In-depth qualitative interviews with teachers, instructors, directors, industrial experts and government representatives were taken from across the city. The authors conducted 12 interviews and it was found out that micro-credentials play a pivotal role in developing skillful workforce. Due to the changing trends in post-COVID world, learning skills and keeping up to-date with new technology has become very important. Higher education commission (HEC) of Pakistan has taken several initiatives, however still a lot of work has to be done to acknowledge and cope with the upcoming challenges. It is also observed that employers prefer practical skills over theoretical knowledge because they want employees to be prepared to take up the tasks and fulfill them in the most effective manner. The major point of discussion in this paper is that micro-credentials are needed to prepare skillful workforce in the emerging economy of a developing country. Instead of making fixes for conventional education, micro-credentials are providing basic skills by blurring the line in higher education between public and private sectors. Micro-credentials can contribute towards division and coherence of skills and knowledge required in industry. The broader spectrum sees an employ as not only a part of the organization, also a person who has stake in and who can contribute towards society.

KEYWORDS: micro-credentials, professional development, emerging economy

1. BACKGROUND AND SIGNIFICANCE

“The transformation of education begins with teachers – reminds us that teachers and educators deserve to work in a supportive environment, have access to professional development, and be empowered to be innovative and creative to ensure their students can succeed.

From critical thinking to coding and literacy, educators are helping the next generation (to) develop the skills they need to adapt to our rapidly changing world, succeed in tomorrow’s economy, and find solutions to future challenges.”

Justin Trudeau, Prime Minister of Canada on October 5, 2022

“Microcredentials”, “badges ” or “microcertificates” have become a very important aspect of personalized professional development in recent years and one of the most prominent topic in skills policy literature (OECD, 2020; European Commission, 2020; Cedefop, 2021). The Fourth Industrial Revolution (4IR) is characterized as an era of innovation, digitalization and emerging technologies (Schwab, 2016). Micro-learning is also assumed to be informal approach of professional learning as the environment, structure and application are based upon the discretion of trainer (Glatthorn, Boschee, Whitehead, & Boschee, 2019). As Tucker (2019) suggested, Leaders who want to create a learning environment and encourage innovation have to invest resources, time and energy to build sustainable infrastructure fostering professional learning to facilitate the anticipated change.

Dr Ata ur Rehman who is the leading scientist of Pakistan and former chairman of Higher Education Commission (HEC) of Pakistan, emphasized on expanding skills set by learning new things during COVID-19 pandemic and shared a link of a website on his official twitter account where thousands of free online courses were available. Also chairing the meeting, former Prime Minister Imran Khan stressed over designing the technical and professional training according to the market needs in order to bridge the gap between educational institutions and industries.

Griliches (1969) and Welch (1970) developed the Skill-Based Technological Change theory which suggests with the advent of technology, the relative demand for skilled labour has been increased. This theory has been advocated the importance of skilled labour in technological era for many years. The link between necessary skillsets and labour market can be legitimized with the use of personalized micro-credentials. SBTC theory is aiding to determine the link

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between micro-credentials and higher technological skills to bridge the gap between academic programmes and the skills required for sustaining in labour market (Cirlan & Loukkola, 2020). With the emergence of new databases, the SBTC theorists have operationalized those elements of unobserved skills which they have been looking for (Lauder et al., 2018).

Human capital theory forms the baseline proposition of micro-credentials which believes the right credentials or qualification at the right time is essential for a professionally equipped individual in order to enter through the socially congested labour market (Brown et al., 2020; Livingstone, 2019). For the development of micro-credentials programs, digital platforms need to be developed as a micro-units of learning within the institutions and record transmissions between its affiliate institutions is an important aspect as well (Keevy & Chakroun, 2019).

There are two main sections of this study. First one provides the details about origin, emergence and usefulness of micro-credentials for the personalized professional development of employees. And how Human capital theory forms the basis of micro-credentials and how it forms a tertiary education system for the skills development of workforce (Brown et al., 2020). In the second part, the link between micro-credentials, professional development and employment opportunities in the gig economy will be illustrated.

With an emerging consensus among researchers, Micro-credentials are described as short courses substantive and aligned with industrial insights enough to be considered as professional qualification (Kato et al., 2020). The structure and focus of micro-credentials has a significant potential to support a gig economy. Pakistan was ranked 4th in the global digital gig market in 2017 according to a report by the Oxford Internet Institute (OII). Cirlan and Loukkola (2020) claimed that micro-credentials will revolutionize the higher education.

Many employed persons working full time and lack behind because of social, financial issues, can enhance their skills with the help of Massive Online Education System. It has increased opportunities for potential professional students of Pakistan and can be beneficial for employees who like to develop themselves and excel in their professions (Urooj, Ali, Bano, & Mukarram, 2022).

Not only for professional development, but micro-credentials also serve employers interests by promoting personalized student-centered learning (Wills & Xie, 2016). Arguably they are considered to be a low cost alternative of higher education. Micro-credentials can be offered in hybrid or blended form i.e., online, group and face-to-face. However they are mostly linked with online learning and self-paced (Kato et al., 2020). It prepares graduates for the upcoming challenges of professional world, equips them with necessary skill sets and encourages them for further education (Moodie et al., 2019; Wheelahan & Moodie, 2017).

According to Klaus Schwab (2016) there is a need of specialized, highly skilled and knowledge workers in the market. As many major employers have already changed their focus from degrees to skills readiness to work in the organization (Akhtar, 2020; Kukulska-Hulme et al., 2022).

Therefore, we organized the study to initially focus upon exploring perceptions and opinions about the role and recognition of micro-credentials in skills development. Henceforth, this research is aimed to study the potential role of micro-credentials to equip an employee with the specialized skill sets; the altering process of conventional ways of learning and its benefits for the professional development of teachers to analyze the progress in the resurgence of post-COVID economy.

2. MATERIALS AND METHODS

2.1. DESIGN

We carried out qualitative research utilizing semi structured interviews to gather data through in-depth interviews of respondents from academia and industry across Karachi (Pakistan) in order to understand and explore the role of micro-credentials in professional development according to a range of diverse perspectives. Interviews are the most suitable tool to provide in depth knowledge and a detailed insight about a phenomenon when there is very little known about it (Gill et al., 2008).

Semi-structured interviews are comprised of both structured and some open ended questions. It helps to get the insights about core areas needed to be explored and allows the researcher to probe questions deviating from the fixed set of questions to get more relevant information from the interviewee (Britten, 1995).

2.2. SAMPLING AND RECRUITMENT

We constructed a sampling framework which included certified professionals, industrial experts, and professional skill instructors, heads/directors in academia and teachers in higher education institutions.

An invitation to participate and schedule interview was sent to the potential respondents of the study. Those who responded and volunteered to become respondent of the study were sent information leaflet, consent form and brief topic guide having main areas which needed to be explored during the interview (**Box 1**). Those who didn't respond, they were sent reminders at max thrice.

To ensure depth and breadth of data coverage, the sampling frame was constantly reviewed and adapted according to the requirement of the study. It continued till the point of data saturation had been reached (Ritchie and Spencer, 1994). At the 9th interview, saturation was achieved but 3 more interviews have been taken.

Box 1: Main Areas Explored In Interviews

- **Micro-Credentials role and benefits in professional development of teachers**
- **Development of skills through alternative ways of learning**
- **Micro-credentials as tertiary form of education**
- **Efforts of Higher Education Commission (HEC) for skills development**
- **Development of skillful workforce ready to take up industrial challenges**

2.3. DATA GENERATION

Semi-structured interviews were conducted to gather data from respondents. Interviews were scheduled for not more than one hour and in majority of the cases it lasted for 25-35mins. Consent was sought prior to the interview recording. Before conducting interviews, we went through all of the relevant material from the participants available on digital and non-digital platforms which enabled us to come up with tailored interviews according to the experience and expertise of the respondents.

2.4. DATA HANDLING AND ANALYSIS

Interviews were recorded in an audio recorder and field notes were written soon after the completion of every interview. The recorded interviews were transcribed with accompanying field-notes. Identifiers were removed and replaced with labels to identify data. Then it was added as a separate response in a merged data sheet.

Data collection and analysis is an iterative process, initially emerged findings inform succeeding interviews. Iterative inductive approach resulted in new themes that were emerged out of gathered data (Morgan & Nica, 2020).

Attention to negative case was given and deviant cases were actively sought to ensure rigorous data and strength of our findings with added interpretations (Pope et al., 2000)

It was ensured that both researchers acknowledged their personal characteristics, backgrounds and potential biases regularly and we intentionally avoided any kind of leading notions on the basis of self-assumed perceptions to influence interpretation of the data (Mays & Pope, 1999).

3. RESULTS

We attained an 80% (12/15) of response rate (see table I for profile of respondents). After thorough data analysis, following key themes were emerged and our findings are established upon these themes as well: i) Importance of Micro-credentials in development of skills; ii) changing trends of learning in post-COVID19 world; iii) Efforts being undertaken by Higher Education Commission (HEC); and iv) Employers prefer practical skills.

Table I: Characteristics of Participants

Identifier	Discipline	Designation	Gender
R1	Academic/Practitioner	Lecturer	Female
R2	Academic/Policy	Assistant Director	Male
R3	Academic/Practitioner	Assistant Professor	Male
R4	Academic/Policy	Assistant Professor	Male
R5	Academic/Policy	Associate Professor	Female
R6	Policy/design & Implementation	Director	Female
R7	Industry Expert	Manager	Male
R8	Industry Expert	Manager	Male
R9	Academic/Practitioner	Lecturer	Female
R10	Member ICMAP	Senior Finance Executive	Male
R11	Industry Expert	Regional Head	Male
R12	Academic/Practitioner	Short course instructor	Male

3.1. IMPORTANCE OF MICRO-CREDENTIALS IN DEVELOPMENT OF SKILLS

Micro-credentials have showcased opportunities in professional development of skills. It has a potential of validate and improve skills. The Open Courseware initiatives is promoting and improving quality of education in Pakistan by giving access to open content. It has been observed to develop skills via workshops and short courses conducted at university for staff, faculty and graduate students to record their professional experiences. Importance of developing skills is being acknowledged by both academia and industrial experts.

.... Certainly micro credentials play huge a role in the professional development of employees because after acquiring generic education once you start to move on and progress in your career which ever function you are working in whether it be manufacturing or service industry as you progress on in your career you realize there are certain skills you need to learn in order to excel in the particular management structure you are working in or certain skills you would require or you need to polish in order to excel in your particular field.

....they will be very important because skills would be more relevant in the future as opposed to the generic degrees that we have. (R7)

Micro-credentials have been recognized as a way to move forward by acquiring skills needed to perform on the job responsibilities. It has been argued that conventional degrees providing theoretical knowledge and they are lacking in practical skills development.

We need to update our curriculum, it should be different from traditional methods of learning because there a lot of people struggling for jobs as they have degrees but they lack skills..

...short course will develop skills in them and they will keep earning their bread and butter also.

...I'm not saying formal education is not important, all I'm saying is it should be well complemented with specialized skills to survive in the competitive world. (R1)

The demand of micro-credentials has been increasing since e-learning has been introduced. Professionals have to keep themselves up to date with the new developments and keep polishing already learned skills in order to remain active in their respective fields.

...they are very demanding and highly appreciated. It can assist professionals in polishing their existing skills and learning new knowledge. (R12)

....you should be aligned with skills required in your field, it will be only possible with short courses and here I see its future. So I want people associated with any profession not specifically teaching, whatever profession you have chosen, you should stay upto date and you should gain relevant skills. (R2)

Instead of going towards another degree for enhancing skills while working in an organization, people prefer short courses because it facilitates them to learn skills within short span of time with minimum investment.

Besides learning a lot of courses which are not useful in their professional life, they can spend their time by learning and developing skills better and then they can excel in their professions. (R9)

3.2. CHANGING TRENDS OF LEARNING IN POST-COVID19 WORLD

Covid-19 crisis had an unprecedented impact on education and businesses. More than 90% students were affected during covid-19 as their education was disrupted and on campus classes were stopped. Initially when the pandemic struck us, our education system was not prepared for such catastrophe. Educationists and institutions had to quickly move towards some replacement, at that time e-learning emerged as the best possible solution. In the post covid-19 world, technological advancement and e-learning has changed the work environment and ways of learning also.

...the history will be divided into pre-covid and post-covid world. Covid was a tragic time period for the entire world, but it was the time when we learnt a lot of things like for example the online education. (R6)

....the role of micro credentials has become really important specially after the time of covid, people have shifted to IT courses like cloud computing, block chain which are not only giving them bread and butter but they are very up to the date with the current trends. (R1)

Covid-19 actually helped people to realize the importance of technology; we explored the alternative ways of learning which changed the traditional methods and new trends were emerged to facilitate learning and learners.

...If you talk about conventional learning or conventional methodology of teaching so just let's just take a case of COVID...here comes the role of micro-credentials/micro trainings because we'll have to shift towards the e-learning also. Since the conventional ways of learning had been stopped and you had to switch to other ways of teaching, there was no other option. We all shifted towards e-learning and managed with shortened course outlines...Covid actually helped to go towards short courses and unconventional methods of learning. (R2)

E-learning acted as the rescuer when conventional methods of learning were halted. However, it also became part of the changing trends in which not learning can be facilitated also the work from home can be facilitated. Once a technology is adopted, it stays for long until another came to replace or enhance it.

As a matter of fact, in COVID times, when everyone was homebound and majority of work done was from home... teachers adopted methods of online training and (increased) use of green screen to be more interactive. (R11)

Not just for professional skills development, micro-credentials can also be utilized to increase awareness of changing technologies and developing skills to remain competitive in the ever changing global world.

The world is not static. Everything is changing, we can see that we have come from very static position in the academia especially with curriculum and the credentials that we have followed and we have developed and we have changed... (R4)

Micro credentials have become an important part of once both professional and personal growth in terms of the ever changing technology and advancements in the field of both study and professional subjects. These credentials help us to be aware of all the recent advancements in by learning them we make ourselves capable of today's requirements. (R11)

3.3. EFFORTS BEING UNDERTAKEN BY HIGHER EDUCATION COMMISSION (HEC) OF PAKISTAN

Higher education commission (HEC) of Pakistan emphasizes on skills development of teachers and students as well. Educational TV for agriculture and farmers is known for years. To support homeschooling, the TeleSchool Pakistan initiative has been commended widely. The TeleSchool Pakistan is supplemented with SMS and web support to provide a platform for interactivity during and after lectures. HEC has been arranging workshops and remote training to enhance skills of teachers.

I know of higher education commission Islamabad. They are doing a lot in that since that old chairman brought all of these changes in higher education commission, he brought lots of changes and he introduced all these foreign funded programs for teachers..., he also introduced all these programs like micro credentials, short courses...

I used to be invited in all these workshops arranged by HEC,...they gave opportunities to teachers to come and attend these workshops and they also arranged people coming from abroad especially to bring good experience, people who were subject specialist, they were called to arranged skills development workshops for the teachers. (R5)

It is also noticed that few people lack interest in learning, they are more interested in monetary benefits.

People learn to earn, not everyone is interested in gaining knowledge out of their degree programs. This is the bitter reality which people don't normally discuss these days. (R3)

But the unfortunate part is that teachers themselves are not very interested in learning from these workshops, they are more interested in what TA/DA they'll be getting out of it... So they are more interested in monetary benefits rather than the learning side of it.... I've also worked as a trainer in these workshops and many of the teachers coming from far flung areas, they were more interested in monetary benefits as compare to skills development. (R5)

However, preference is still with degree programs if we talk about formal education system of Pakistan. Reforms and regulations are more directed towards conventional methods of learning as compare to modern and changing trends of learning.

HEC almost focused towards the degree programs... (R3)

...The government in the education sector should introduce these short learning coursesor made it compulsory for the students to learn new skills or to learn new ideas. How to develop their personal skills or professional skills? By these short courses... (R8)

...they (micro-credentials) are giving us the opportunity to inform ourselves and our trainers who are coming to us with modern trends. I think education without these short courses will always be incomplete because this is our way to be aware with the changing trends... (R6)

3.4. EMPLOYERS PREFER PRACTICAL SKILLS

Practical skills are gaining more prominence as compare to theoretical knowledge. Employers prefer practical problem solving skills over theoretical understanding of problems.

People from other countries will utilize resources from our country and they need skills not degrees for remote work. For example I have a degree...plus certification...There is another person with same degree but no other courses or certifications at all. Who do you think has better chances of being selected by the employer? I think that's me. (R1)

It is also easier to learn through online platforms, you can also add these certifications on your professional profiles on social media. They increase chances of employment on platforms like rozee.pk, linked in and other recruitment sites.

If you acquire a micro credential through an online course, you don't need to have any physical correspondence and you can be given access to an online certificate which you can display on your social media platform or professional network like LinkedIn which will also inform those who are reviewing your profile that you possess these certain micro credentials. (R7)

One of the micro-credentials instructors told that these courses are not only preparing students for industrial challenges but also inculcating practical learning skills in teachers who are engaged in teaching professional degrees.

We are helping our students to solve real life problems before going to the industry, I think in this way they would become much more successful professionals. (R6)

Few jobs require skills more than conventional degrees such as web development, apps development, editing and freelancing jobs. Employers need skillful workforce rather than knowledgeable students and preparing students according to market requirement is a challenging task for teachers.

It requires lower cost and lesser time for having skills to earn and contribute for the country, another example is of IT related freelancing jobs, a certification of adobe Photoshop would do fine for a 10th grader instead of being a graduate first and then acquiring those skills.

...it will substitute some outdated conventional degrees as the world is getting more specific for skills as fields are getting diversified and specialized so certifications will grow with that too which saves time cost for both employers and employees. (R10)

Micro-credentials are very favorable for the industries, we are focused on one point of skills and most of our industries need specific skill... (R4)

However skills development is important as long as the employers are seeking skills more than conventional degrees. It seems to be the future of education and might play a critical role in economic crunch situations for countries like Pakistan where education is expensive and employment opportunities are fewer.

Skills development is important but only as long as it is the preference of your employer. (R3)

...in the coming years employees will be seeking these courses as a pivotal or having the pivotal role in their professional and personal career. (R8)

4. DISCUSSION

4.1. OVERVIEW OF FINDINGS

A broad range of consensus was found among the experts of both academia and industry about role of micro-credentials in developing personalized and professional skills. Our data indicates that while there is conventional methods of learning are widely used and degrees are basic requirement for jobs, skills are playing major role in maintaining membership in an organization and in coping with challenges of changing trends. HEC has also acknowledged the importance of developing curriculum according to the industrial requirements and has also taken initiatives by introducing micro-credentials for skills development of teachers and students. However still there are few obstacles which need to be addressed in making these courses available to the wider range of population, bringing changes into the policy to develop similar curriculum across the country and by providing equal opportunities for learning and development.

4.2. STRENGTHS AND LIMITATIONS

The iterative approach of data analysis strengthens rigour in data collection and analysis. Maximum variation sampling technique was used to include as many differing perspectives as possible with a high response rate of 80% with an extensive preliminary work which continued till the attainment of data saturation.

There are few limitations which need to be discussed. Though we achieved high response rate, however a small size has been used in this research study. A larger sample size might give more insights about the phenomenon of the study.

We tried our best to include a wide range of perspectives utilizing purposive sampling so that the gathered data give comprehensive set of insights to study the phenomenon of research in detail. Participants were not overburdened and interviews were scheduled at their preferred timings and place. Interview duration was also decided according to the participant's given time. The study used semi structured interviews; however respondents were probed and welcomed for adding anything which they wanted before the closing of their interviews. Generalizability of findings has always been a concern in qualitative research. That being said, we believe that the themes identified in the study have transferability and applicability to other countries acknowledging the role of micro-credentials along with conventional degree programs (Sheikh et al., 2014).

4.3. CONSIDERING THE FINDINGS IN THE LIGHT OF THE EXISTING LITERATURE

Our findings suggest that the role of micro-credentials is very crucial and higher education institutions should explore ways of adopting these short skills development courses in curriculum (Cheng, Watson, & Newby, 2018; Mah, 2016). Grant (2016) reported that most of the people who earn micro-credentials, they do not display it and this lack of acknowledgment needs to be changed to make it widely known and valued.

Also a critical aspect is faculty readiness and institution support which is only possible when all of the stakeholders involved in the process of design and implementation realizes the importance of these short courses (Wilson et al., 2016). The fundamental aspect of teaching practices is its emphasis on positive learning experience with changing trends and technology. Moreover, we found out that respondents were taking micro-credentials as a way of improving skills and teachers especially affirmed that it will aid them in becoming better teachers (Zimmer et al., 2021). Micro-credentials are proving to be a source of filling the gap of skills while hanging around as tertiary education (Tehan, 2020).

The need for workers to update their skills was more felt during the pandemic of covid-19 (Brown, 2021). People may argue that conventional degrees provide comprehensive knowledge, however these skills provide quick fixes that respond to industrial needs and the most discussed issue related to formal study or training is the amount of time and cost it takes to complete a conventional degree (Tehan & Cash, 2020)

4.4. IMPLICATIONS FOR POLICYMAKERS

Micro-credentials play a vital role in the professional development of skills. Educators perceive micro-degrees as an important element in their career growth as it provides them an opportunity to learn new skills, discuss their ideas, and

increase their employability and competence. Thus, policymakers should take the necessary steps to promote micro-learning prospects for teachers and students.

Micro-credentials can also work as an instrument to shape higher education system in a way that it provides a student not just with education but with necessary skills to get employed after completing higher education. The reorientation of education from knowledge development to producing skilled workers has been greatly amplified by micro-credentials. Micro-credentials can accomplish three goals at the same time: first they help to design a curriculum more focused on work (Muller & Young, 2014); second, they make education system more market oriented and responsive towards technology (Marginson, 2006); and third, it may embed as key component of higher education, drive additional income for institutions offering it and create skilled workforce relevant to the industry (Tehan, 2020).

5. CONCLUSIONS

Micro-credentials can contribute towards division and coherence of skills and knowledge required in industry. The major point of discussion in this paper is that micro-credentials are needed to prepare skillful workforce in the emerging economy of a developing country. Instead of making fixes for conventional education, micro-credentials are providing basic skills by blurring the line in higher education between public and private sectors (Wheeler, 2016). When universities become more responsive to industrial and employer demands, micro-credentials can contribute by bridging the gap between workplace requirements and higher education curriculum.

Micro-credentials can elevate few difficulties: It requires data sharing across the institutions and also seek to discipline educational institutions; it advocates tertiary flexible education system which reorients the objective of higher education from knowledge purposes to employment purposes; it might end up in a market of privatized higher education institutions; it seeks to divert students from traditional to contemporary education system; the main focus is to develop a skilled workforce to fulfill the demand of labour not to produce knowledge workers.

The broader perspective of education is to prepare individuals that have reason to value education and live lives to contribute towards society (Nussbaum, 2000; Sen, 1999), rather than developing them for some specific jobs and providing them skills as quick fixes for the employer needs. Education gives meaning to life and having a reason to value it is at its core, a skilled worker not only contributes in the growth of its organization but also becomes part of occupational evolution (Winch, 2014). The broader spectrum sees an employ as not only a part of the organization, also a person who has stake in and who can contribute towards society (Bernstein, 2000).

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