

Integration of Micro-Credentials into Higher Education: Faculty Perspectives

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Abstract: The aim of this study is to examine the views and expectations of instructors regarding micro-competencies, which are believed to have a significant impact on the future of learning and teaching in higher education. In the study, which took a phenomenological approach based on qualitative research methods, interviews were performed with 12 faculty chosen using a criterion sample procedure and semi-structured interview forms. The collected data was evaluated using both content and descriptive analysis. As a result of the investigation, 2 main themes and 12 sub-themes emerged. As a result of the research, it was determined that micro-competencies have not been sufficiently conceptualized in higher education; micro-competencies are similar to various structures inside and outside the university; different models for their structuring are proposed; and potential problems are anticipated, as well as facilitating options for their implementation. Although it is known that policy and preparation studies are being carried out in the relevant institutions, it is hoped that the views of the faculties revealed as a result of the research will shed light on the integration of micro-competencies into higher education in a more qualified way.

Keywords: Micro-credit, extra-curricular competences, recognition of prior learning, European Qualifications Framework, Council of Higher Education.

About the Article

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Introduction

Micro-Credentials, which have gained significant importance in recent years, are short and focused credits designed to provide the demanded knowledge, skills, and experience. Aggregated micro-credentials can also provide a pathway to a certificate or degree. Micro-credentials are among the technologies and practices that will significantly impact the future of learning and teaching in higher education (Pelletier et al., 2023). The primary reasons for the growing interest in micro-credentials in higher education include the need to develop new competencies with the pandemic, employers' concerns about graduates' skill and competence levels, and challenges related to access to education (McGreal, Mackintosh, Cox, & Olcott, 2022). Micro-credentials are emphasized to be effective in acquiring new and emerging competencies, providing educational opportunities to disadvantaged and vulnerable groups, and ensuring lifelong learning by supporting personal development due to their characteristics of being competency-based, flexible, and demand-oriented (European Commission, 2020).

Despite the growing interest in micro-credentials and efforts to develop them among universities, the integration of micro-credentials into higher education is still in its early stages. One of the main factors hindering this integration is the low awareness of micro-credentials among stakeholders. Therefore, it is crucial to enhance the perspectives and awareness of critical stakeholders in higher education regarding micro-credentials. This study aims to examine the views and expectations of faculty members, who are key stakeholders in higher education, concerning micro-credentials. The next section presents a conceptual explanation of micro-credentials and the current state of their implementation in higher education.

What is a Micro-Credential?

Due to various approaches and practices adopted internationally, micro-credentials have been defined and labeled differently across countries and providers (Resei, Friedl, Staubitz, & Rohloff, 2019). For example, terms like digital credential, alternative credential, digital badge, micro-degree, and nanodegree are often used synonymously with micro-credentials. Micro-credentials encompass a range of formats, from brief courses to more extended diploma or degree programs. Some are designed to facilitate the acquisition of knowledge and understanding. This diversity has made the landscape of micro-credentials complex and fragmented (Cedefop, 2022; Oliver, 2021). Consequently, there has been a need for efforts to promote a common understanding of micro-credentials and raise awareness of their use. In line with this, a UNESCO report examined existing definitions and practices of micro-credentials, gathering input from 47 experts representing diverse regions and educational sectors. As a provisional consensus definition, the following was proposed: A micro-credential is: a) A record of focused learning achievement that verifies what the learner knows, understands, or can do. b) It includes assessments based on clearly defined standards and is issued by a credible provider. c) It holds standalone value and can contribute to or complement

other micro- or macro-credentials, including through recognition of prior learning. d) It meets standards required by relevant quality assurance (Oliver, 2022).

Similarly, a report published in 2022 by five educational institutions in Canada (Bigelow et al., 2022) outlined five key characteristics of micro-credentials:

1. Micro-credentials are related to a specific or distinct skill or competency.
2. Micro-credentials are awarded based on an assessment.
3. Micro-credentials are linked to employment or employers.
4. Micro-credentials can form part of formal qualifications or be added to them. They can be accumulated and incorporated into individual learning experiences.
5. Micro-credentials are short-term courses. They focus on learning within a limited time frame and typically on a specific area. Considering their size and scope, they are more flexible than traditional qualifications.

The different definitions in the literature were compared in light of these characteristics, and it was found that most definitions generally included the first two characteristics but lacked a definition encompassing all the characteristics. In our country, a nationally accepted definition of the micro-credential concept has yet to be established. However, creating a standard definition of the concept appears crucial to raising awareness about the use of micro-credentials.

Micro-Credentials in Higher Education

Universities must swiftly respond to the needs and expectations of industry and society, providing opportunities to empower their stakeholders with innovative skills. The acquisition of micro-credentials enables students to develop the skills that are requisite for their prospective careers. Additionally, micro-credentials can be used as a tool to provide educators with personalized, accessible, and competency-based professional development. It is emphasized that micro-credentials can strengthen the role of higher education institutions in lifelong learning by offering more flexible and modular learning opportunities and providing more inclusive learning pathways (EU, 2020). In a recent Horizon report, panelists assessed micro-credentials' potential to enhance equity, inclusion, and learning outcomes in higher education, without demanding extensive new literacy skills. They also noted that learners and educators would not struggle to adopt micro-credentials, institutional financial support would not be substantial, and the risk of failure would be low (Pelletier et al., 2023).

Despite growing global interest and efforts, the integration of micro-credentials in higher education remains in its early stages. The main barriers to the integration of micro-credentials in higher education are expressed as follows: the lack of policies and regulations regarding the design, implementation, and recognition of micro-credentials, stakeholders' low awareness of micro-credentials, insufficient technical infrastructure,

and the lack of digital competencies among faculty members (Clausen, 2022; Stefaniak & Carey, 2019). Recent international research involving university and industry leaders reveals a lack of agreed-upon standards and quality assurance concerning micro-credentials, which has prevented their widespread acceptance (Holon IQ, 2021). For instance, in 2020, the European Commission identified a distinction between two types of micro-credentials. The first type is offered by formal education institutions and aligns with the European Qualifications Framework and other credit systems. Standards for these micro-credentials can be easily established and integrated into the existing higher education process. On the other hand, the quality assurance management for the second category of micro-credentials, provided by non-formal education providers, is still unclear (EU, 2020). Moreover, Romero-Llop, Castro-Jiménez, Fitó-Beltran, Valero-García, and Martín-Aragón (2022) suggest that faculties and departments are reluctant to recognize credits earned elsewhere. The view is held by some that only higher education institutions should be responsible for the awarding and validation of accreditations. This perspective assumes that faculty members are best placed to guarantee consistency, ranking, and hierarchy within disciplines when designing micro-credentials. However, as academia is slow to adopt and implement micro-credentials, organizations are turning to micro-credentials offered by MOOC platforms to address their employees' skill gaps. Yet, the creation of micro-credentials should focus on collaborative efforts between academia and other institutions and organizations (Msweli, Twinomurinzi & Ismail, 2022).

At this point, the successful integration of micro-credentials into an institution's vision requires higher education leaders to clearly convey the importance and value of micro-credentials to all key stakeholders and to present convincing plans regarding their potential (Olcott, 2021). A review study on the use of micro-credentials in higher education found that there are almost no studies on the awareness of various stakeholders at the higher education level regarding micro-credentials (Thi Ngoc Ha, Spittle, Watt & Van Dyke, 2022). Ralston (2021) also noted that discussions about micro-credentials have largely been conducted at a high level (policymakers, higher education administration, employers, etc.), while the voices of those at lower levels (faculty members, students, etc.) have not been sufficiently heard. However, the low awareness of micro-credentials among students and faculty members significantly limits the potential of micro-credentials. From the perspective of faculty members, discussions about micro-credentials leading to significant changes in the structure of higher education may cause concern about their roles and positions within the university. Additionally, faculty members may be reluctant to make radical changes in teaching processes and, in this context, may not adopt micro-credentials (Murgatroyd, 2022). Therefore, it is crucial to understand the perspectives of key stakeholders on micro-credentials and to increase their awareness.

The aim of this study is to examine the views and expectations of faculty members regarding micro-credentials, which are believed to have a significant impact on the future of teaching and learning in higher education.

Method

Research Design

Since the aim of this research is to determine the views and expectations of faculty members working in higher education regarding the use of micro-credentials, a phenomenological approach, one of the qualitative research methods, has been followed (Creswell, 2017).

Participants

The participants of the study were selected using the criterion sampling technique of purposive sampling (Creswell, 2005). In this context, interviews were conducted with 12 faculty members who participated in the "Micro-credential Workshop" organized by the Vocational Qualifications Authority in Ankara during the fall semester of the 2023-2024 academic year. The participants invited to this workshop are key faculty members working on the institutional integration of micro-credentials at their respective universities. Demographic information about the participants is presented in Table 1.

Table 1. Demographic information of the participants

Participants	Title	Faculty /Institute	Department
P1	Associate Professor	Faculty of Science	Department of Molecular Biology and Genetics
P2	Professor	Faculty of Art and Design	Department of Fashion Design
P3	Lecturer	School of Foreign Languages	Modern Languages Unit
P4	Lecturer	Rectorate	
P5	Professor	Faculty of Engineering	Department of Bioengineering
P6	Associate Professor	Faculty of Education	Department of Mathematics and Science Education
P7	Associate Professor	Graduate School of Education	Program Development
P8	Associate Professor	Faculty of Physiotherapy and Rehabilitation	Physiotherapy and Rehabilitation Education and Communication
P9	Associate Professor	Faculty of Fine Arts	Interior Architecture
P10	Assistant Professor	Faculty of Engineering and Natural Sciences	Department of Geomatics Engineering
P11	Professor	Faculty of Pharmacy	Basic Pharmaceutical Sciences
P12	Professor	Faculty of Pharmacy	Pharmaceutical Professional Sciences

Table 1 shows that four participants hold the title of professor, five hold the title of associate professor, one is a doctor of faculty member, and two are instructors. Additionally, it can be noted that the participants are distributed across the fields of health, science-engineering, and social-humanities based on the units they work in.

Data Collection and Analysis

In order to deeply examine the perceptions and experiences of faculty members regarding micro-credentials, a semi-structured interview form with open-ended questions, developed by the researchers, was utilized. During the preparation phase of the form, a preliminary draft of the interview questions was created by reviewing the literature. Feedback was obtained from three (3) field experts, and the questions were revised based on this feedback. The final interview form, consisting of eight (8) questions, was titled "Faculty Member Interview Form on the Use of Micro-Credentials in Higher Education," and its content validity was tested through expert opinions.

Interviews, each lasting approximately 30 minutes, were conducted via the Zoom platform. With participants' consent, the interviews were recorded. The recordings were transcribed by the researchers. Both content analysis and descriptive analysis methods were used in analyzing the data obtained from the interviews. Data were analyzed using an inductive approach in content analysis. Descriptive analysis was employed to present the narratives through direct quotations from participants (Creswell, 2017). As a result of the analysis, 2 main themes and 12 sub-themes were created. Each sub-theme was examined in terms of its kodes, and findings were presented in detail under the findings section, including frequencies and direct quotations.

Ethics, Validity, and Reliability

All participants were informed about the study before participation and gave their voluntary consent. The participants were informed that their identities would remain confidential throughout the research process and were provided with more detailed and accurate information. In order to ensure anonymity in the research, participants were assigned codes (P1-P12) to protect their identities. To ensure content/coverage validity, the literature was thoroughly reviewed, and the interview questions were carefully written to cover all fundamental topics related to micro-credentials.

Transferability, which indicates the extent to which the results of a study can be applied to other contexts or situations, is also an important aspect in qualitative research (Batdı, 2019). The essence of external validity is the generalization of findings from specific situations to other similar situations (Merriam, 2015). To ensure external validity, the research report should include comprehensive information about the participants and the context of the study (Christensen et al., 2015).

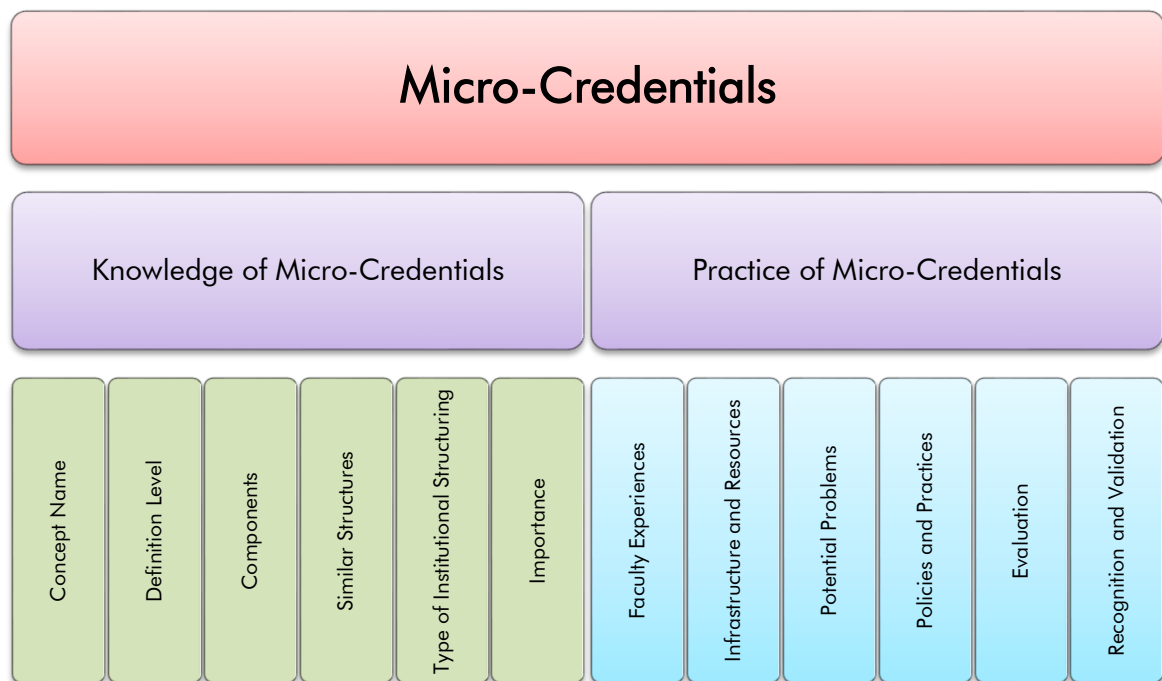
To ensure coding reliability, the data were coded by another researcher separately, and the codes were compared. The agreement percentage among experts regarding the coding of interview data was deemed sufficient for the reliability of data analysis (Yıldırım

& Şimşek, 2016). In case of disagreements, the researchers met to discuss the relevant codes and themes and reached a consensus with support from the literature. Additionally, to support the validity and reliability of the study, direct quotations from faculty members' views on codes and themes were presented in the findings.

Findings

This study aimed to deeply explore faculty members' views on micro-credentials. The data obtained from the interviews were thoroughly examined, and as a result of the analysis, participants' views on micro-credentials were categorized under the 2 main themes and 12 sub-themes presented in Figure 1.

Figure 1. Themes



Knowledge of Micro-Credentials

The codes related to the main themes and sub-themes presented in Figure 1 are sequentially provided in the findings. Firstly, participants' views on knowledge of micro-credentials are presented. The findings on how micro-credentials are conceptualised within the institutions are presented in Table 2.

Table 2. Views on the Concept of Micro-Credentials

Sub-theme 1 – Concept Name	f
1. Micro-Credit	5
2. Not Used/Absent	4
3. Micro-Credential	3

According to Table 2, five participants indicated that the term is used as micro-credit, and three participants stated it is used as micro-credential, while four participants revealed that the term is not used due to insufficient familiarity within their institutions.

Next, the participants' definitions of micro-credentials were examined. Three levels of definition were identified based on the extent to which participants defined the concept of micro-credentials. The findings are presented in Table 3.

Table 3. Definition Levels of Micro-Credentials by Academic Staff

Sub-theme 2 – Definition Level	f
1. Full: <i>Detailed and includes fundamental features of the concept.</i>	3
2. Mid-Level: <i>Similar to literature but includes some features of the concept.</i>	5
3. Weak: <i>Superficial definition.</i>	3

Note: One participant's response did not include a definition and therefore was not categorized.

According to Table 3, five participants provided a mid-level definition, three participants provided detailed and basic definitions, and one participant did not offer a definition of the concept. Examples of each definition level are provided below:

Detailed Definition:

“A micro-credential is a smaller skill that refers to a more specific skill than a macro-level competency or a larger skill, with characteristics such as being accumulative, transferable, and integratable, and it can be combined with a degree or macro-level qualification. It is a small skill earned either remotely or face-to-face.” (P4).

Mid-Level Definition:

“What I perceive as a micro-credential is, in essence, a unit not included in the normal curriculum, which could be from an institution, organization, or private sector. A credit is assigned based on the fulfillment of certain competencies, which is then incorporated into your own regulations.” (P5)

Superficial Definition:

"When I talk about micro-credentials, I mean bringing together entrepreneurship and the sectors where children can work. This is essentially our internal definition." (P1)

The components emphasized by participants in their definitions of micro-credentials form another theme of the study. The obtained data are presented in Table 4.

Table 4. Views on Micro-Credential Components

Sub-theme 3 - Micro-Credential Components	f
1. Skill or Competency Focus	10
2. Connection with Traditional Programs	9
3. Assessment	6
4. Quality and Accreditation	6
5. Flexibility	4
6. Relevance to the Workplace and Employers	2
7. Short Duration	2
8. Digital Storage and Shareability	1
9. Personalized Instruction	1
10. Instructional Design Process/Improvement Potential	1

According to Table 4, the most frequently mentioned components are "skill or competency focus" (f=10), "connection with traditional programs" (f=9), "assessment" (f=6), and "quality and accreditation" (f=6). Additionally, components such as flexibility (f=4), relevance to the workplace and employers (f=2), and short duration (f=2) have been identified.

As the fourth Sub-theme, the structures that participants believe are similar to micro-credentials have been examined. The findings are presented in Table 5.

Table 5. Existing Structures Similar to Micro-Credentials

Sub-theme 4 – Existing Structures Similar to Micro-Credentials	f
1. University Applications:	
– Courses offered by Lifelong Learning Centers or Continuing Education Centers	4
– Undergraduate courses	3

- University partnerships	3
- Erasmus Mobility	2
- Non-thesis Master's Programs	1
2. Non-University Applications:	
- Public institutions (e.g., Ministry of Education, Ministry of Industry)	4
- Private organizations (e.g., MOOCs)	4

Table 5 shows that participants most frequently likened micro-credentials to courses offered at “Lifelong Learning Centers” or “Continuing Education Centers” within universities (f=4). Additionally, some courses at the undergraduate level (f=3) and university-industry partnerships (f=3) were also considered comparable to micro-credentials. Some participant views are as follows:

“...training programs are provided at lifelong learning centers that are targeted at specific areas, have a defined program, are monitored, then tested, and certified” (P2).

“There is something called a sector campus, managed by the Ministry of Industry. Large companies are engaged, such as Turkcell, Arçelik, or Vestel. People interested in providing education are found. They develop programs within a curriculum. For instance, someone from Turkcell teaches an artificial intelligence course. Partner universities direct their students here, and these are accepted in the curriculum in exchange for something. This might be one of the first examples of micro-credentials being implemented in Turkey... our students can take this course, and the grades they receive can count as technical elective credits.” (P5)

Regarding non-university applications, skill-focused training provided by public institutions (f=4) and MOOCs (f=4) were noted as being similar to micro-credentials. The participant’s views on this are:

“The Ministry of National Education has released new report cards. Did you see them? On the left side, there are grades, and on the right side, there are behavior scores. They have changed those behavior scores. They have defined four levels for artistic and sports activities, such as participation, performance, and awards. On the right side, there is a scale that continues from school, district, and provincial levels to national and international levels. I think this is also a micro-credential. It will likely be binding for universities as well.” (P7).

“MOOCs are available. There are courses there. I also took some, especially during the pandemic. Like Udemy and Coursera. Those courses are also a kind of micro-credential. There are courses according to your needs; you participate, learn something for a certain period, there is an evaluation at the end, and you can get a certificate. You can prove what you have learned or not learned” (P3).

The fifth sub-theme examined views on the institutional implementation of micro-credentials. The findings are presented in Table 6.

Table 6. Views on Institutional Structuring of Micro-Credentials

Sub-theme 5 - Type of Institutional Structure	f
1. External stakeholders as providers and universities in recognition roles	6
2. Universities as providers and recognition bodies	4
3. Sector-University Collaborations	4
4. Identification of accredited training institutions	3
5. Consortia (University Partnerships)	2
6. Action according to industry supply under the umbrella of the Council of Higher Education (CoHE), Vocational Qualifications Authority (VQA), and Ministry of National Education (MoNE)	2
7. Departments as decision-makers	1

According to Table 6, most participants believe that external stakeholders, such as MOOC providers or public institutions, should serve as providers, while universities should be responsible for the recognition of micro-credentials (f=6). One participant expressed their views as follows:

“IBM should come and open a workshop in Turkey where students can learn a programming language up to a certain level. When they come back, I should be able to assess them or accept the certificate they received. The distance education part is complete. Of course, on an international level, they might have to go abroad. But I am personally against universities managing this on their own because if I could provide the necessary training, I should be able to offer it within my unit.” (P10)

Moreover, it was also emphasized that the implementation of micro-credentials should be under the initiative of universities (f=4). In other words, it was suggested that universities should assume both provider and recognition roles. One participant commented:

“The evaluation mechanism of Continuing Education Center courses could be strengthened and turned into micro-credits. Especially research universities could lead this. Who will be responsible for implementing micro-credentials in our institution? The educational coordination office? The distance education center? The exemption commissions? We need a commission with representatives from each department.” (P6)

Additionally, some participants suggested that applying micro-credentials through university-sector collaborations (f=4) would be more effective. A participant expressed their views as follows:

“Higher education cannot solve this issue on its own. The purpose of micro-credentials is to develop skills for the job market, or what we call reskilling and upskilling. With the rapid advancements in artificial intelligence and other fields, it is becoming increasingly difficult for someone with outdated knowledge to continue in their career. For those who are already in the workforce, what value do these micro-credentials offer? Perhaps the Ministry of Labor and Social Security, similar to vocational qualification institutions, can collaborate with other government agencies for the regulation of professional qualifications. This is not something that higher education alone can address.” (P4)

Furthermore, recommendations include identifying internationally recognized accredited training institutions (f=3), forming university partnerships (f=2), and managing the process under the coordination of the Council of Higher Education (CoHE), Vocational Qualifications Authority (VQA), and Ministry of National Education (MoNE) (f=2).

As the sixth sub-theme, participants' views on the importance of micro-credentials have been examined. The findings are presented in Table 7.

Table 7. Importance of Micro-Credentials

Sub-theme 6 - Importance	f
1. Supporting quality and equitable education	7
2. Increasing employment	6
3. Responding to changing learner needs	5
4. Addressing skill gaps due to changing job conditions (upskill and reskill)	4
5. Supporting innovative pedagogies	4
6. Providing flexibility in learning	3
7. Promoting lifelong learning	3

8. Increasing the institution's revenue and reputation	2
9. Connecting disciplines	1
10. Tool for obtaining feedback from the sector	1
11. Supporting professional development and workplace training	1
12. Creating a competitive environment for metropolitan areas	1

When examining Table 7, the most frequently expressed views on the importance of micro-credentials are "supporting quality and equitable education" (f=7), "increasing employment" (f=6), and "responding to changing learner needs" (f=5). Other important aspects include addressing skill gaps due to changing job conditions (f=4), supporting innovative pedagogies (f=4), providing flexibility in learning (f=3), and promoting lifelong learning (f=3). Some participant opinions on the topic are as follows:

"University programs may not address sector requirements, so students might wish to enhance themselves with additional training. Universities need to act proactively in this regard, bringing it to the forefront and designing relevant systems. This is crucial for both serving society and improving the employability of our students. For example, if you have been working as an accountant for fifteen years and need to learn new software, where will you gain this competency, or if you need to change professions? There is an increasing need for micro-credentials in professional life, both for acquiring new skills and updating existing ones." (P3)

"These are not pieces of information that can be obtained simply by reading. They are very current... and there are no such sources available. However, when we listen to experts, we save time and learn a lot." (P9)

Practice of Micro-Credentials

According to the findings obtained in the study, the second main theme was determined to consist of the participants' views on their practices of micro-credential. In this context, the seventh sub-theme explores the participants' experiences with micro-credentials. The findings are presented in Table 8.

Table 8. Experiences of Faculty with Micro-Credentials

Sub-theme 7 - Experience	f
1. Participation as a student in MOOCs	6
2. No experience	4
3. MOOC design / instructing	3

According to Table 8, most participants have engaged with MOOCs as students ($f=6$), while fewer have been involved in MOOC design or instructing ($f=3$). There are also participants who reported having no experience with micro-credentials ($f=4$). Some participant views on the topic are as follows:

“I took a course from something called Istanbul Academy. It was quite rigorous, with exams and live classes that I could attend, and if I missed them, I could watch the recordings. There were exams for certification. There is also Khan Academy.” (P2)

“We conducted a project with the British Council to shift faculty members' perspectives towards student-centered learning. The goals were developed by the Turkish Higher Education Quality Council (THEQC). I was part of the design team. We designed an advanced teaching package for this purpose. It was a program spread over about 45 hours, including 16 hours face-to-face.” (P8)

“Our university has a Lifelong Learning Center. Last semester, we launched a Certificate Program for Sustainable Development Goals related to Climate Change. I was involved in both the design and the training process.” (P9)

As the eighth sub-theme, participants' views on the existing institutional infrastructure and resources that would facilitate the implementation of micro-credentials in higher education were examined. The findings are presented in Table 9.

Table 9. Existing Infrastructure and Resources of Universities for Implementing Micro-Credentials

Sub-theme 8 - Infrastructure and Resources	f
1. Distance education technical infrastructure	4
2. Infrastructure of faculties and institutes (e.g., non-thesis master's programs, open education, technopolis collaborations)	4
3. Support from senior management	3
4. Expertise of academic staff	3
5. Infrastructure of lifelong learning or continuing education centers	1

According to Table 9, the most frequently mentioned supportive elements in the implementation of micro-credentials are distance education technical infrastructure ($f=4$), infrastructure of faculties and institutes ($f=4$), support from senior management ($f=3$), and expertise of academic staff ($f=3$). One participant referred to the Lifelong Learning Center or Continuing Education Center as an infrastructure/resource. A participant who noted improvements in distance education infrastructure, especially during the pandemic, expressed their views as follows:

"Due to both the pandemic and the earthquake, the distance education infrastructure has been established in all universities, so the same infrastructure could have been easily provided here as well. Therefore, I don't think there will be any problems in conducting the process through distance education at the university. There is all the necessary infrastructure available, and we don't have a serious problem with integrating it into the curriculum." (P5)

Other participants' views on the topic are as follows:

"The management's support in this matter is very significant. It's not yet a process, but management cares, so we're working on it. Research universities being pioneers in this area is critical." (P1)

"If we were to open an internationally recognized program, we could easily introduce it to the market using UZEM's infrastructure." (P7)

The ninth sub-theme examines the potential problems that might arise during the implementation of micro-credentials. The findings are presented in Table 10.

Table 10. Problems in the Implementation of Micro-Credentials

Theme 9 - Potential Problems	f
1. Council of Higher Education (CoHE) regulations	9
2. Lack of regulatory institutional strategies	9
3. Time constraints	3
4. Faculty issues	2
5. Conceptual confusion	2
6. Lack of Turkish-language platforms	1
7. Perception as an additional workload	1
8. Costs	1
9. Commercialization	1
10. Creation of inequality in opportunities	1

Examining Table 10, the most frequently mentioned problems are CoHE regulations (f=9), lack of regulatory institutional strategies (f=9), and time constraints (f=3). A problem related to CoHE regulations was noted by one participant as follows:

"Unless CoHE makes a change in the main legislation, any action we take may cause legal problems for us... A regulatory change is needed at the CoHE"

level... You are giving students credits and ultimately a diploma at a point where the framework is not defined, and the structure is not yet established. If a legal situation arises that might lead to the cancellation of these credits, students will suffer the consequences.” (P5)

Under the lack of regulatory institutional strategies, three subcategories were identified: a) remuneration, b) copyright and monitoring, and c) uncertainties in assessment and recognition. A participant's view on the issue is:

“When this professor publishes these resources as a book and puts it on the market, they will earn a lot of money. How can we tell a law professor to put all their lecture notes in open access without any compensation? Fine, let’s make it open access for our own students, but if external students could buy it for a fee, and we give this fee to the professor.” (P9)

A participant discussing time constraints mentioned:

“It seems that concerns about academic publishing and lack of time stem from this. Extra time needs to be allocated for such innovative practices, or time management needs to be done well. It may be difficult for many academics to allocate time for this.” (P8)

An example of a participant noting resistance from faculty is:

“Everyone tends to resist new things. No, everyone will take my class; I teach this course best. There is a perception that no one else can teach this subject.” (P10)

Under the tenth sub-theme, the views of the participant faculties on the policies and studies on micro-competencies conducted by the institutions where they work were examined. The findings are presented in Table 11.

Table 11. Policies and studies conducted by universities on micro-competencies

Sub-theme 10 - Policies and Practices	f
1. Preparation at the initial stage	4
2. No activity	4
3. Detailed preparation in terms of regulations and implementation	2
4. No knowledge	2

Table 11 shows that in the universities where the participants work, either there is general preparation at the initial stage (f=4) or no work has been done yet (f=4) regarding the implementation of micro-credentials. A few institutions have reported detailed

preparation (f=2), while some participants (f=2) have stated that they have no knowledge of developments in this area. Some participant views on the topic are as follows:

“When a directive was issued on the recognition of prior learning, micro-credentials came up, and a directive study on micro-credentials was also conducted.” (P3)

“We have reached a sustainable cycle regarding this issue. As mentioned, infrastructure is important. Both the education staff and the competence of those requesting this training are important. These have been prepared and are ready in our university, but we have only produced the policy, so to speak.” (P11)

Sub-theme 11 explores the participants' views on the evaluation of micro-credentials. The findings are presented in Table 12.

Table 12. Evaluation of Micro-Credentials

Sub-theme 11 - Evaluation	f
1. Clear and specific evaluation	5
2. Flexibility in evaluation	4
3. Competency/skill-based evaluation	4
4. Process evaluation	3

According to Table 12, the most frequently emphasized aspects in the evaluation of micro-credentials are clear and specific evaluation (f=5), competency/skill-based evaluation (f=4), and flexibility in evaluation (f=4). Additionally, the necessity of process evaluation (f=3) is another highlighted element. Some participant views on the topic are as follows:

“We need to see the following in the certificate they receive: How many hours was it, what were the achievements? What was the exam based on? For example, in the European Union, they look at this. They categorize the certificate’s value based on whether the exam was conducted under supervision, an online exam, or a portfolio-based assessment.” (P3)

“The evaluation should depend on the student, the graduate, and the type of micro-credential targeted. Not every micro-credential needs an exam. If the person is enthusiastic about learning and using it in their profession, we should differentiate whether they will use it professionally. However, for professional qualifications, which are all exam-based, the certificate must be validated through an exam to prove the qualification.” (P2)

“Let’s specialize the tasks to truly understand what the student has gained and what remains with them. In today’s higher education, we want to focus on skills. Therefore, we should implement multiple assessments differently. Measure their participation, how much time they spend, how long they remain in the system, track their classes, and assess the assignments and reflective writings periodically.” (P7)

Twelfth and lastly, participants' views on the recognition and validation processes of micro-competencies were examined. The data obtained are presented in Table 13.

Table 13. Process of recognition and validation of micro-competencies

Sub-theme 12 - Recognition and Validation	f
1. Diploma Supplement	6
2. Clarity of recognition and validation criteria	4
3. Linking with prior learning	2
4. Department-level recognition	2

According to Table 13, the most frequently emphasized aspect of the recognition and validation process for micro-credentials is the use of diploma supplements (f=6). Ensuring clarity of criteria (f=4), linking with prior learning (f=2), and department-level recognition (f=2) are also noted. Some participants' views on the topic are as follows:

“A diploma supplement could be used. It should be separate from regular credits. Existing credits are already insufficient for acquiring competencies.” (P2)

“I think the recognition should be well-structured. There should be flexibility, but to prevent misuse, the recognition principles should be well-developed. With the Bologna Process and the use of ECTS, it should be simple to calculate the ECTS credits for these courses based on workload. The workload should be clear in advance.” (P4)

“If we convert equivalent competencies to the recognition of prior learning, it seems like an effortless solution. It seems much more logical to integrate it into the micro-credentialing framework.” (P7)

Conclusion and Discussion

In this study, which investigated the opinions and expectations of faculty members regarding the integration of micro-credentials into higher education, interviews were conducted with 12 faculty members. It was found that almost all the interviewees have a positive perspective on the implementation of micro-credentials.

According to the research findings, there is no consensus among participants regarding the terminology of the concept. The term "micro-credentials" (EU, 2020) has been translated into Turkish as "mikro-yeterlilik," but it is believed that this term does not fully capture the concept. Many participants expressed that "micro-credits" might be a more suitable term. Additionally, some participants highlighted that this term is either not used or not well-known in institutions. In the national literature, Kozanoğlu (2021) used the term "micro-certificates," while Kır and Bozkurt (2022) used "micro-credit." The Vocational Qualifications Authority (VQA) has adopted the term "mikro-yeterlilik." Therefore, it can be argued that micro-credentials are not yet sufficiently conceptualized at the higher education level in Turkey.

The study found that most participants provided mid-level definitions of the concept, encompassing only certain aspects of it. Notably, participants who provided comprehensive and clear definitions of micro-credentials were those who had conducted academic work on the topic. Commonly emphasized components in participants' definitions of micro-credentials include connection with traditional programs, focus on skills or competencies, and methods of assessment. Other components mentioned include short duration, alignment with the workplace and employers, flexibility, quality, accreditation, and internationalization. These components resemble the definitions in reports outlining the fundamental features of micro-credentials (Bigelow et al., 2022; EU, 2020; Oliver, 2022). However, components such as short duration and alignment with the workplace and employers were mentioned by fewer participants.

Another finding of the research is that participants compared micro-credentials to various applications both within and outside universities. For example, courses offered by Lifelong Learning Centers or Continuing Education Centers within universities, vocational internships at the undergraduate level, and courses developed through university partnerships were likened to micro-credentials. Similarly, training or courses provided by the public or private sectors for specific purposes were also compared to micro-credentials. Participants related the characteristics of these trainings or courses, such as being created for specific needs and being short-term, including assessment and certification, to micro-credentials.

According to the research, participants proposed different models for the institutional implementation of micro-credentials. Most participants suggested that external stakeholders, such as MOOC providers or public institutions, should be the providers of micro-credentials, while universities should be responsible for recognition processes. In other words, they proposed that the development and distribution of micro-credentials

be handled by external stakeholders. On the other hand, some participants suggested models where sector-university collaborations and universities play roles in both provision and recognition. University partnerships were mentioned by very few participants. The general situation of micro-credential implementation reveals that two models are more common. The first model involves the development of micro-credentials in collaboration with MOOC providers, with MOOC providers handling distribution and universities being responsible for recognition processes. The second model involves universities creating, offering, and recognizing micro-credentials either independently or through partnerships. The second model is more commonly applied in countries such as the US, Canada, and Australia, while the first model is more prevalent in Europe. Since developing micro-credentials is a time-consuming process requiring infrastructure, the implementation of micro-credentials in higher education in Turkey may particularly begin through collaborations with MOOC providers during the initial stages.

Another significant finding from the study is that participants considered micro-credentials important due to their potential to support quality and equitable education, increase employability, and address changing learner needs. Other benefits mentioned include supporting innovative pedagogies, providing flexibility in learning, promoting lifelong learning, and closing skills gaps due to changing job conditions. Participants' views on the importance of micro-credentials align with studies highlighting these aspects (Che Ahmat et al., 2022; EU, 2020; McGreal et al., 2022; Msweli et al., 2022; Oliver, 2022). However, factors such as developing 21st-century skills and reducing educational costs, which are highlighted in the literature, were not mentioned in this study.

The study revealed that most participants have limited experience with micro-credentials. Some participants reported participating in MOOC courses as students, while others mentioned their involvement in design and teaching processes. However, there were no reports of taking micro-credential courses or being involved in their design. The faculty members participating in this study are those who attended VQA's workshop, indicating a certain level of awareness about micro-credentials and being among decision-makers at their universities. Although they reported developing some level of awareness after the workshop, it can be suggested that they have not yet been actively involved in the design and implementation processes of micro-credential courses. This may be due to the absence of concrete steps for implementing micro-credentials at the CoHE level and the unclear roadmap for micro-credentials in Turkey. In such uncertainty, faculty members may be reluctant to dedicate time and effort to micro-credentials.

According to the participants, facilitators for implementing micro-credentials in higher education include distance education infrastructure, support from top management, faculty expertise, and program infrastructure in faculties and institutes. It is known that universities' distance education infrastructure has significantly developed during the pandemic. However, the adequacy of existing distance education infrastructures for designing, distributing, and recognizing micro-credentials is unknown. It is

recommended to conduct studies in this regard. Additionally, faculty expertise, motivation, and management support are crucial in creating micro-credential content. Establishing a team or unit to manage the process of designing micro-credentials at the university level, making decisions based on the expertise of instructional designers, and developing institutional policies are also critical.

Another important finding of the study is that participants identified CoHE regulations and the lack of regulatory institutional strategies as the most likely problems in the implementation of micro-credentials. Indeed, a letter sent by CoHE to universities halted existing work on micro-credentials, stating that work could resume after the establishment of a framework by CoHE. CoHE plays a decisive role in higher education policies and structures in Turkey, and changes can be made within the limits allowed by regulations. Accordingly, the structure and decisions made by CoHE regarding the implementation of micro-credentials in universities will also be crucial. Similarly, since the extent of flexibility granted to universities is unknown, regulatory institutional strategies are expected to be somewhat dependent on CoHE regulations. In countries like Europe and the US, where micro-credentials are widely used, regulatory issues have largely been overcome. Other problems in the implementation process of micro-credentials include faculty resistance, lack of time, cost, and commercialization of universities. Similar problems are also discussed in literature (Clausen, 2022; Kozanoğlu, 2021; Murgatroyd, 2022; Stefaniak & Carey, 2019). It is particularly important to address faculty resistance and raise awareness about the potential of micro-credentials.

Regarding the policies and practices related to micro-credentials in institutions, it was observed that generally, either preparation is in the initial stages, or no work has yet been done. According to the findings, only a few institutions have made detailed preparations for the implementation of micro-credentials. Another important finding is that faculty members do not have detailed information about this topic.

In the process of evaluating micro-credentials, which is also a significant topic in literature, the most emphasized view is the need for clear and transparent evaluation. The necessity of competency/skill-based assessment was also highlighted by the participants. Flexible assessment and process-oriented evaluation were other views reached. Similar views on evaluation, which is one of the most critical aspects of micro-credentials, are also highlighted in the literature (Murgatroyd, 2022; Olcott, 2021; Ralston, 2021; Thi Ngoc Ha et al., 2022).

Another finding directly related to institutional structuring and policies is the process of recognition and validation of micro-credentials. The necessity of using diploma supplements and linking with prior learning was emphasized. Additionally, ensuring the clarity of criteria was highlighted as important in the evaluation process and in this theme. The necessity of recognition at the departmental level, related to institutional structuring, was also mentioned by the participants. Recognition is one of the most debated topics regarding micro-credentials. Although efforts are being made to create policies and

standards, uncertainties regarding recognition, especially in extracurricular areas, continue.

This study provides significant contributions to the national literature by deeply presenting the views of key faculty members in different institutions on various aspects of micro-credentials, from definition to recognition, which have not yet been integrated into higher education in Turkey but are planned. The study has some limitations. Firstly, participation in the research was based on voluntary willingness, and interviews were conducted with faculty members willing to participate. The study can be repeated with more participants from different regions of the country. Secondly, data was collected only through interviews in this study. Data could also be collected through surveys and examination of reports to present more comprehensive results on the topic. Thirdly, data collection from other key stakeholders in higher education, such as students and administrators, could provide a broader perspective on the integration of micro-credentials into higher education.

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Genişletilmiş Türkçe Özet

Son yıllarda oldukça önem kazanan bir kavram olan mikro-yeterlilikler, talep edilen bilgi birikimi, beceri ve deneyimi sağlamak üzere tasarlanmış kısa ve odaklı kredilerdir. Biriktirilen mikro-yeterlilikler ayrıca bir sertifika ya da dereceye giden bir yol sağlayabilir. Mikro-yeterlilikler, yükseköğretimde öğrenme ve öğretimin geleceği üzerinde önemli bir etkiye sahip olacak teknoloji ve uygulamalar arasında yer almaktadır (Pelletier vd., 2023). Uluslararası düzeyde benimsenen farklı yaklaşım ve uygulamalar nedeniyle mikro-yeterlilikler farklı ülkelerde ve farklı sağlayıcılar tarafından çeşitli şekillerde tanımlanmış ve etiketlenmiştir (Resei, Friedl, Staubitz ve Rohloff, 2019). Örneğin, mikro-yeterlilik yerine dijital yeterlilik, alternatif yeterlilik, dijital rozet, mikro-derece ve nanoderece gibi terimlerin eşanlamlı olarak kullanıldığı görülmektedir. Ayrıca, oluşturulan birkaç saatlik çok kısa derslerin, mevcut diploma veya derece derslerinden bazılarını biraraya getirerek oluşturulan kümelerin ve yeterliliklerden bağımsız olarak sadece bilgi ve anlayış geliştirmeye odaklanan derslerin mikro-yeterlilik olarak sunulması, ortaya çıkan manzarayı oldukça karmaşık ve dağınık hale getirmiştir (Cedefop, 2022; Oliver, 2021). Bu nedenle, mikro-yeterliliklere yönelik ortak bir anlayışı teşvik etmek ve kullanımına ilişkin farkındalığı artırmak üzere çalışmalar yapılmasına ihtiyaç duyulmuştur.

Dünya çapında üniversiteler arasında mikro-yeterliliklerin uygulanmasına yönelik artan ilgi ve çabalar söz konusu olsa da yükseköğretime mikro-yeterliliklerin entegrasyonu konusunda henüz başlangıç aşamasında bulunmaktadır. Mikro-yeterliliklerin yükseköğretime entegrasyonunun önünde mikro-yeterliliklerin tasarlanması, uygulanması ve tanınmasına ilişkin politika ve düzenlemelerin eksikliği, paydaşların mikro-yeterliliklerle ilgili düşük farkındalıkları, yetersiz teknik altyapı ve öğretim elemanlarının dijital yeterliliklerinin olmaması vb. engeller bulunmaktadır (Clausen, 2022; Stefaniak ve Carey, 2019). Üniversite ve endüstri liderlerinin katıldığı yakın tarihli bir uluslararası araştırmanın sonuçları, mikro-yeterlilikler ile ilgili olarak üzerinde anlaşmaya varılmış standartlar ve kalite güvencesi konusunda eksiklikler olduğunu ve bu nedenle mikro-yeterliliklerin henüz geniş çapta kabul görmediğini ortaya koymaktadır (Holon IQ, 2021). Bu noktada, mikro-yeterliliklerin kurumun vizyonuna başarılı biçimde entegre edilmesi, yükseköğretim liderlerinin tüm kilit paydaşlara mikro-yeterliliklerin önem ve değerini net olarak anlatması ve olası potansiyelleri konusunda ikna edici planları sunması gerekmektedir (Olcott, 2021).

Bu çalışmanın amacı, yükseköğretimde öğrenme ve öğretmenin geleceği üzerinde önemli bir etkiye sahip olacağına inanılan mikro-yeterliliklerle ilgili olarak öğretim elemanlarının görüş ve beklentilerini incelemektir.

Araştırmada nitel araştırma yöntemlerinden fenomenolojik yaklaşım izlenmiştir (Creswell, 2017). Bu kapsamda araştırmada ölçüt örnekleme tekniği ile belirlenen 2023-2024 öğretim yılı güz döneminde Ankara'da Mesleki Yeterlilik Kurumu tarafından düzenlenen "Mikro-yeterlilik Çalıştayına" katılım gösteren 12 öğretim elemanı ile görüşmeler yapılmıştır. Bu çalışmaya çağrılan katılımcılar kendi üniversitelerinde mikro-

yeterliliklerin kurumsal düzeyde entegrasyonu üzerine çalışan kilit öğretim elemanlarıdır. Araştırmada öğretim elemanlarının mikro-yeterliliklere ilişkin algıları ve deneyimlerini derinlemesine inceleyebilmek amacıyla araştırmacılar tarafından geliştirilen ve açık uçlu sorulardan oluşan yarı yapılandırılmış görüşme formundan yararlanılmıştır. Elde edilen verilerin analizi sonucunda konuya ilişkin 2 ana tema altında 12 alt-tema oluşturulmuştur. Her bir tema alt temaları çerçevesinde incelenerek frekansları ve doğrudan alıntıları ile birlikte bulgular başlığı altında detaylı şekilde sunulmuştur.

Araştırma sonucunda mikro-yeterlilik kavramının isimlendirmesi konusunda katılımcılar arasında bir fikir birliği bulunmamaktadır. Bu doğrultuda, mikro-yeterliliklerin ülkemizde yükseköğretim düzeyinde henüz yeterince kavramsallaşmadığı ileri sürülebilir. Çalışmada, kavramın tanımlanması konusunda katılımcıların çoğunun kavramın sadece belirli özelliklerini içeren orta düzey tanım sundukları belirlenmiştir. Katılımcıların mikro-yeterlilik tanımlarında en sık vurguladıkları bileşenler geleneksel programlarla bağlantı, beceri ya da yeterlik odağı ve değerlendirme şeklindedir. Bunların yanında, kısa süre, işyeri ve işverenle uygunluk, esneklik, kalite ve akreditasyon ve uluslararasılık gibi bileşenler de ifade edilmiştir.

Katılımcıların mikro-yeterlilikleri üniversite içi ve dışındaki farklı uygulamalara benzetmekle beraber, mikro-yeterliliklerin kurumsal düzeyde yapılanmasına yönelik katılımcı görüşleri farklı modeller ortaya koymaktadır. Katılımcıların çoğu MOOC sağlayıcılar ya da kamu kurumları gibi dış paydaşların mikro-yeterlilik sağlayıcı iken üniversitelerin tanınma süreçlerinden sorumlu olması gerektiğini belirtmişlerdir.

Araştırmadan elde edilen bir başka sonuca göre, katılımcılar mikro-yeterlilikleri özellikle kaliteli ve eşit eğitimi destekleme, istihdamı artırma ve değişen öğrenen ihtiyaçlarına cevap verme potansiyellerinden dolayı önemli bulmuşlardır. Ancak bunun yanında katılımcıların çoğunun mikro-yeterliliklere ilişkin deneyimlerinin sınırlı olduğu belirlenmiştir.

Araştırmada katılımcılara göre, uzaktan eğitim altyapısı, üst yönetim desteği, öğretim elemanı uzmanlığı ile fakülte ve enstitülerin program altyapıları mikro-yeterliliklerin yükseköğretimde uygulanmasını kolaylaştıracak olanaklardır. Bunun yanında katılımcılar, mikro-yeterliliklerin uygulanması sürecinde en fazla karşılaşılabilecek problemlerin Yüksek Öğretim Kurulu (YÖK) mevzuatı ve düzenleyici kurumsal stratejilerin eksikliği olduğunu ifade etmişlerdir. Nitekim, YÖK tarafından üniversitelere gönderilen bir yazı ile mikro-yeterliliklere ilişkin yapılan mevcut çalışmaların durdurulması bildirilmiş ve YÖK tarafından oluşturulacak bir çatı sonrasında çalışmalara devam edilebileceği belirtilmiştir.

Mikro-yeterliliklerin uygulanmasına ilişkin kurumlarda yürütülen politika ve çalışmalara yönelik katılımcıların görüşleri incelendiğinde genel olarak ya başlangıç aşamasında hazırlık yapıldığı ya da henüz çalışma yapılmadığı görülmektedir. Elde edilen bulgulara göre henüz mikro-yeterliliklerin uygulanmasına yönelik olarak az sayıda kurumun

detaylı hazırlık yapmış olduğu söylenebilir. Yine öğretim elemanlarının bu konuya ilişkin detaylı bilgiye sahip olmamaları da önemli bir bulgu olarak karşımıza çıkmaktadır.

Alan yazında da önemli bir yer kaplayan mikro-yeterliliklerin değerlendirilmesi sürecine ilişkin en çok vurgulanan görüş açık ve net değerlendirme yapılmasıdır. Yeterlilik/beceri odaklı değerlendirmenin gerekliliği de katılımcılar tarafından vurgulanmıştır. Esnek değerlendirme ve süreç odaklı değerlendirme ise diğer ulaşılan görüşler arasındadır.

Mikro-yeterliliklere ilişkin kurumsal yapılanma ve hazırlanan politikalarla da doğrudan ilişkili olan bir diğer bulgu mikro-yeterliliklerin tanınması ve doğrulanması sürecine ilişkindir. Konuya ilişkin olarak diploma eki kullanımı ve önceki öğrenmelerle ilişkilendirme yapılması gerekliliği vurgulanmıştır. Bunun yanında ölçütlerin netliğinin sağlanması da değerlendirme sürecinde vurgulandığı gibi bu tema altında da vurgulanmıştır.

Bu çalışma henüz ülkemizde yükseköğretime entegre edilmemiş ancak planlaması yapılan mikro-yeterliliklerin tanımlanmasından tanınmasına kadar farklı boyutları hakkında farklı kurumlardaki kilit öğretim elemanları görüşlerini derinlemesine ortaya koyması açısından özellikle ulusal alanyazına önemli katkılar sağlamaktadır. Çalışmanın bazı sınırlılıkları bulunmaktadır. Öncelikle, araştırmaya katılım gönüllük esasına dayanmıştır ve çalışmaya katılım göstermeye istekli öğretim elemanları ile görüşme yapılabilmektedir. Ülkenin farklı kesimlerinden daha fazla katılımcıyla görüşmeler yapılarak çalışma tekrarlanabilir. İkincisi, bu çalışma kapsamında sadece görüşme yoluyla veri toplanmıştır. Anket ve raporların incelenmesi yollarıyla da veri toplanıp konuya ilişkin daha bütüncül sonuçlar ortaya konulabilir. Üçüncüsü, yükseköğretimdeki diğer kilit paydaşlar olan öğrenciler ve yöneticilerden veri toplanıp mikro-yeterliliklerin yükseköğretime entegrasyonu daha geniş bir perspektiften incelenebilir.

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