



LEARNING SOMETHING, OR NOT LEARNING AT ALL? EXPERIENCES OF DIGITAL OPEN BADGES IN ACADEMIC STAFF DEVELOPMENT

Sanna Ruhaalahti¹ⁱ,

Annukka Tapani¹,

Sanna Brauer^{1,2},

Hanna Ilola¹

¹Tampere University of Applied Sciences,
Faculty of Pedagogical Innovations and Culture,
Tampere, Finland

²University of Oulu,
Faculty of Education and Psychology,
Oulu, Finland

Abstract:

Micro-credentials have gained increasing prominence in higher education as flexible, competence-based instruments for professional learning, lifelong learning, and responsiveness to labour market needs. While existing research has extensively examined micro-credentials at the levels of policy, system design, and learner participation, significantly less attention has been paid to how micro-credentials are experienced pedagogically by academic staff themselves. Little is known about how institutionally embedded quality practices, including criteria-based quality systems such as digital open badge (DOB) frameworks, function as academic staff competence development within higher education. This qualitative study addresses this gap by examining DOBs as micro-credentials for pedagogical competence development and exploring the learning experiences they generate for academic staff at a university of applied sciences. The data (n = 35) were collected in 2024 from academic staff who had completed an institution-specific pedagogical development programme and earned DOBs aligned with the European approach to micro-credentials. The data were analysed using inductive content analysis. The findings identify four qualitatively different learning experiences: (1) learning together through collegial discussion and shared reflection, (2) learning 'something' in a limited or confirmatory manner, (3) individual learning focused on organising and validating existing competence, and (4) experiences of non-learning, characterised by perceived irrelevance or resistance. The results highlight a central tension: although the DOBs were underpinned by transparent, competence-based criteria, documented learning outcomes, and internal quality assurance processes, they

ⁱ Correspondence: email sanna.ruhaalahti@tuni.fi

did not consistently translate into meaningful learning for all participants. The study contributes to scholarly debates on micro-credentials, professional competence development, and quality in higher education by demonstrating that quality assurance arrangements support trust, consistency, and comparability at the system level, but do not in themselves guarantee pedagogically meaningful learning experiences. By foregrounding academic staff learning experiences, including ambivalence and non-learning, the article offers empirically grounded insights into how 'quality in the small' is lived and contested in practice, with implications for the design, implementation, and evaluation of micro-credentials in higher education.

Keywords: higher education pedagogy; micro-credential; digital open badge; professional learning; quality assurance

1. Introduction

Micro-credentials have gained increasing prominence in higher education (HE) as flexible, competence-based instruments for professional and lifelong learning. While existing research has extensively examined micro-credentials at the levels of policy, governance, system design, and employability, considerably less attention has been paid to how institutionally embedded quality practices such as micro-credentials for pedagogical upskilling are experienced by academic staff themselves. In particular, empirical knowledge remains limited on how institutional quality systems and criteria-based micro-credential frameworks function as learning experiences within HE quality systems (Ahsan *et al.*, 2023; Brown & Duarte, 2024; Varadarajan *et al.*, 2023). Recent European analysis highlights that the quality of micro-credentials should primarily be assured through adapted internal and external quality assurance processes already established in higher education, with particular attention to purpose, context, and proportionality (Cirlan, 2023).

From the perspective of quality in HE, this raises a fundamental question: how does formally assured quality relate to pedagogically meaningful learning in practice? Quality assurance arrangements emphasise transparency, consistency, and trust, yet these system-level qualities do not automatically translate into meaningful learning experiences for those who engage with micro-credentials (Brown *et al.*, 2023; McGreal & Olcott, 2022). Understanding this relationship is central to examining *quality in the small*, the lived realities through which micro-credential systems gain or lose legitimacy in everyday academic practice.

In the context of academic staff professional learning, competence development has traditionally been supported through formal courses, pedagogical studies, and structured professional development programmes. More recently, competence-based approaches and micro-credentials have been introduced as complementary systems that emphasise self-directed learning, recognition of prior learning, peer collaboration, and competence demonstration in authentic contexts (Hunt *et al.*, 2020; Cheng *et al.*, 2018).

Although frequently presented as flexible and empowering, competence-based micro-credential approaches may also generate ambivalence, uneven learning outcomes, or resistance, particularly when they challenge established understandings of learning, expertise, and professional recognition (Carey & Stefaniak, 2019; Fan *et al.*, 2024).

This study addresses these issues by examining digital open badges (DOB) as quality-assured micro-credentials for pedagogical competence development and exploring how they are experienced by academic staff at a university of applied sciences. Rather than focusing on the technical design of micro-credentials, the study foregrounds academic staff lived learning experiences, including learning, confirmation of existing competence, limited learning, and non-learning. By doing so, the article connects quality assurance arrangements with their pedagogical consequences and contributes empirically grounded insights into how micro-credentials are experienced and contested in practice.

In this study, DOBs are examined as enablers of HE pedagogical competence development (Wheelahan & Moodie, 2022). HE pedagogy is understood as an umbrella concept encompassing both university pedagogy and universities of applied sciences pedagogy, referring to pedagogical principles, approaches, and practices in teaching and learning (Toom *et al.*, 2023). From this perspective, pedagogical competence development should be examined not only through local practices but also through their underlying conditions and knowledge interests (Heikkinen & Kukkonen, 2019), particularly when competence-based and quality-assured learning frameworks are introduced at institutional scale.

2. Digital Open Badges accelerating Quality of Competence Development in HE

This study is grounded in a competence-based conception of learning in HE and in DOBs as opportunities for both demonstrating competence and facilitating learning. While the concept of competence has been discussed in educational research for decades, competence-based education entered higher education discourse more firmly in the 2000s (Council of the European Union, 2018; Laukia, 2022). At its core, competence-based education combines clearly defined objectives with flexible pathways for acquiring expertise, including learning derived from work experience, prior studies, and non-formal contexts.

In the context of universities of applied sciences, competence-based frameworks help to concretise pedagogical competence requirements and support the formation of new competence entities (Brauer *et al.*, 2022). Flexible and inclusive continuous development programmes are essential for enabling academic staff both to develop new competences and to validate existing ones (Brown *et al.*, 2023). The Council of the European Union (2022) has explicitly recommended the development, implementation, and recognition of micro-credentials as small, quality-assured competence units. The adoption of micro-credentials supports educational quality and effectiveness by

equipping teachers with competences needed to apply new technologies and pedagogical approaches in practice (Brauer, 2019).

In the context of international research literature, DOBs are frequently conceptualised as a form of digital credential (Lim *et al.*, 2018). In the European policy context, these micro-credentials are defined through standardised information requirements, including learning outcomes, assessment type, workload, qualification level, and quality assurance arrangements (Council of the European Union, 2022). From a Finnish perspective, DOBs largely already comply with these requirements. Importantly, they also enable learners to decide themselves how and where their competences are presented, while supporting stackability and the accumulation of competence into broader learning pathways.

DOB constellations, grounded in clearly defined criteria, facilitate agile responses to the dynamic shifts in the labour market and the evolving demands for organisational competence (Brauer *et al.*, 2020; Halttunen *et al.*, 2024). These constellations emphasise the significance of practical competence and its demonstration within a contextual framework. At the organisational level, DOBs can support education design, human-resource processes, and competence anticipation, while for learners they provide transparency regarding expected competences and opportunities for self-directed learning (Brauer & Korhonen, 2022; Cheng, 2018). Badge constellations typically consist of smaller micro-badges and higher-level meta-badges, which integrate demonstrated competences through documented evidence of applied knowledge and skills (Brauer, 2019).

Empirical research indicates that DOBs can motivate competence development in both initial and continuing teacher education by supporting flexible learning pathways, peer learning, feedback, and autonomy (Berry *et al.*, 2016; Brauer, 2019; Brauer & Korhonen, 2022; Fan *et al.*, 2024). However, research has also identified persistent challenges related to competence scope, assessment validity, and shared understanding of what constitutes learning and competence (Brown *et al.*, 2023; McGreal & Olcott, 2022; Varadarajan *et al.*, 2023). Without a common conceptual language, DOBs may be perceived as bureaucratic, organisationally bounded, or insufficiently meaningful for professional growth (Brauer, 2021; 2023; Stefaniak & Carey, 2019).

Critical perspectives further question whether competence-based measurement adequately captures the full breadth of professional and human development (Fan *et al.*, 2024). At a practical level, challenges persist in pedagogical implementation, resourcing, and integration into everyday academic work (Brauer *et al.*, 2021). These tensions underscore the importance of examining not only the design and quality assurance of DOBs as micro-credentials, but also how they are experienced as learning by academic staff in HE.

3. Digital Open Badges as Micro-credentials in Pedagogical Development

Competence development guided micro-credentials such as DOBs provide one

structured approach to developing the pedagogical competence of academic staff in universities of applied sciences. As competence-based practices gain prominence in HE, shared understanding of related concepts and terminology has become increasingly important, particularly in the context of continuous learning and changing professional demands (Brauer, 2021). Against this backdrop, Tampere University of Applied Sciences (TAMK) initiated the development of a competence-based badge constellation as part of its institutional pedagogical development programme in 2022.

The programme aims to support the long-term pedagogical development of academic staff, teams, and faculties. TAMK's pedagogical principles, *Learning orientation*, *Participatory learning communities*, *Expertise in working-life development*, and *Sustainable future*, were defined through extensive institutional collaboration, with internationalisation and digitalisation operating as cross-cutting themes (Ilola *et al.*, 2025; Tampere University of Applied Sciences, n.d.).

At the time of data collection in 2024, the badge constellation for academic staff comprised 21 badges, organised under four overarching meta-badges aligned with the pedagogical principles. The constellation was subsequently expanded with the green competences of Sustainable Future with four additional DOBs in December 2025 (Figure 1). The meta-badges can be earned by completing an agreed number of associated micro-badges, and participation has been supported through institutional communication, guidance sessions, workshops, and alignment with organisational competence and goal-setting discussions.

The pedagogical development programme underpinning the DOBs comprises explicit competence objectives, assessment criteria, learning resources, and modes of competence demonstration. DOBs can be completed individually or collaboratively, thereby supporting both self-directed learning and peer learning. They are designed to enable the application of new competences in academic staff's everyday practice or to make existing competences visible. While competence-based education allows flexibility in how competence is acquired and demonstrated, consistent assessment criteria and shared practices remain essential for credible identification and recognition of competence.

At Tampere University of Applied Sciences, the quality assurance of DOBs is grounded in the European approach to micro-credentials, which defines micro-credentials as assessed learning outcomes underpinned by transparent and well-defined quality assurance arrangements. In line with the Council Recommendation (Council of the European Union, 2022), TAMK's DOBs are designed around explicit learning outcomes, assessed against documented criteria, and supported by internal quality processes that ensure consistency, reliability, and fairness across learning contexts.

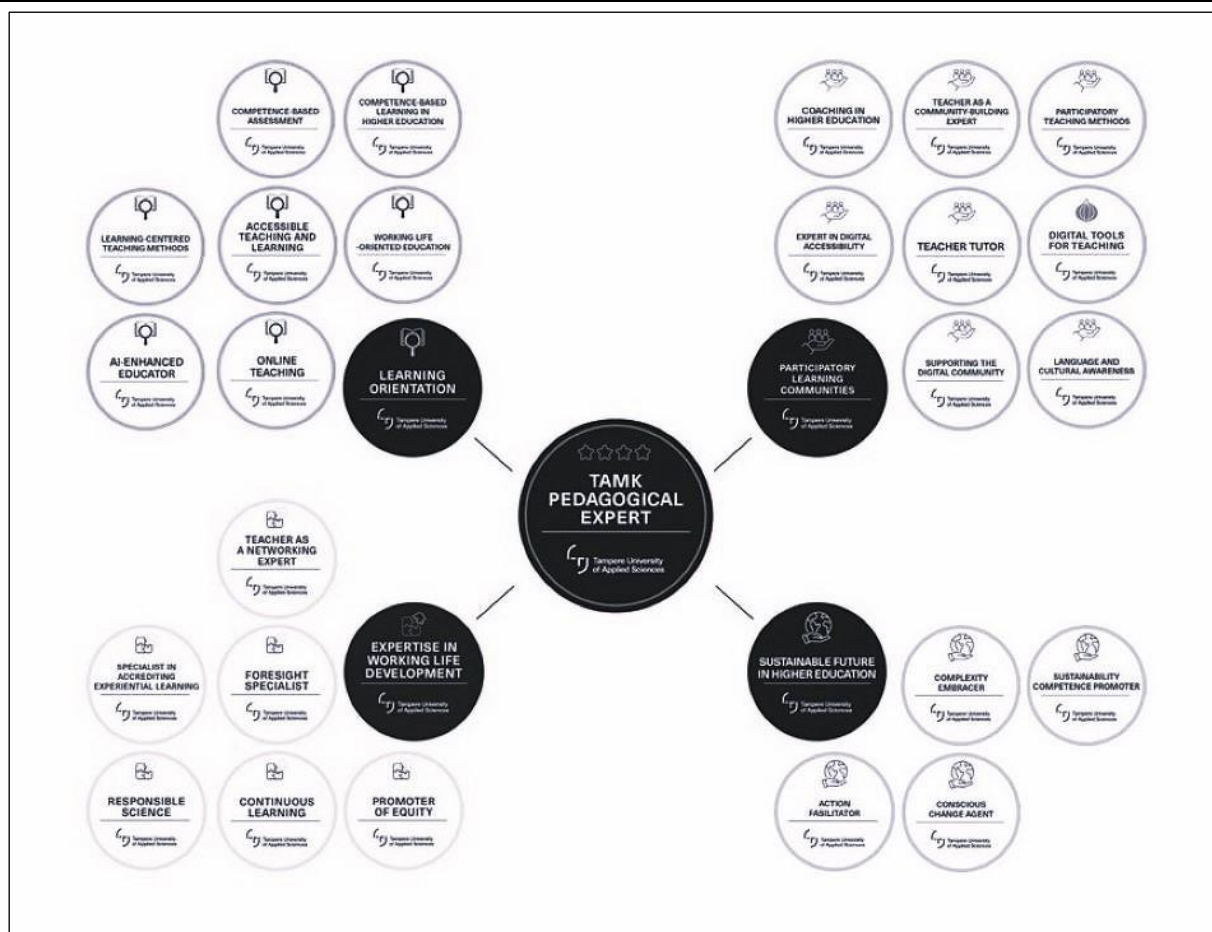


Figure 1: The evolving digital open badge constellation of TAMK's pedagogical development programme as depicted in December 2025

4. Research Settings

This study is grounded in a competence-based approach to HE, operationalised through DOBs as micro-credentials for quality-assured pedagogical competence development. DOBs are utilised as an institution-wide approach to academic staff development, constituting a strategic innovation in the domain of HE. This calls for research that generates a comprehensive understanding of how micro-credentials function as systemic quality enablers of competence development.

The study examines DOBs both as part of an evaluation of a pedagogical development programme from the perspective of its participants and as a means of generating new knowledge on micro-credentials as tools for pedagogical competence development in universities of applied sciences. The focus is on the pedagogical competence development of academic staff in HE through the use of DOBs. The study addresses the following research questions:

- What kinds of learning experiences have digital open badges generated for academic staff in a university of applied sciences?
- How do academic staff in a university of applied sciences justify and explain their learning experiences?

4.1 Research Implementation

The data were collected from academic staff at Tampere University of Applied Sciences who had completed at least one DOBs included in the institution's pedagogical development programme by the end of May 2024. Eligible participants were contacted by email in spring 2024, with a reminder sent after the summer holiday period. The email included information about the study, data protection, and a link to an online questionnaire, and participants were offered access to the research plan and data management plan prior to responding.

Participation was voluntary and anonymous. Questionnaire responses collected via Microsoft Forms could not be linked to individual badge earners, and access to badge completion data in the Open Badge Factory system was restricted to one researcher responsible for distributing the research invitations. The questionnaire focused on respondents' learning experiences with DOBs as part of academic staff's pedagogical competence development. Participants were asked to describe, using concrete examples, how the badges had influenced their professional competence, work tasks, and skill development. Background questions addressed pedagogical qualifications, participation in pedagogical continuing professional development during the previous three years, and length of experience in teaching and guidance roles.

At the time of data collection, Tampere University of Applied Sciences employed approximately 524 academic staff. A total of 438 digital open badges had been completed at the institution by 258 individuals. The questionnaire was sent to 248 badge earners, as ten individuals had left the employment of the university. One hundred individuals had completed more than one digital open badge. The final dataset consisted of responses from 35 participants.

In total, 21 digital open badges were available in 2024. The most frequently completed badges were *Accessible Teaching and Learning*, *Teacher Tutor*, *Digital Tools for Teaching*, and *Language and Cultural Awareness*. The respondents were predominantly experienced academic staff: the majority held a pedagogical qualification (33 out of 35) and had more than five years of professional experience (31 out of 35). However, only a small proportion had participated in pedagogical continuing professional development during the previous three years (9 out of 35). Background information was collected to contextualise respondents' baseline pedagogical competence and to support an institution-level understanding of pedagogical competence development.

4.2 Data Analysis and Analytical Framework

The open-ended questionnaire data were analysed using qualitative inductive content analysis (Schreier, 2012). The analysis was data-driven, with no predefined units of analysis, and focused on identifying patterns that characterised respondents' learning experiences with digital open badges. To preserve the authenticity of participants' accounts, the analysis remained closely grounded in respondents' own formulations and meanings.

Each response was coded into a single category representing its core meaning. Two authors independently read and reduced the data and developed the initial categorisation, after which the emerging categories were reviewed collaboratively among the author team and refined through iterative comparison. Reduced expressions were grouped into subcategories, which were further abstracted into upper-level categories and main categories (Schreier, 2012). The analysis focused on identifying similarities and differences across responses rather than quantifying individual statements.

Experience was used as a central analytical concept to support the interpretation of participants' responses. As a concept, experience is exceptionally valuable at the individual level, while at the same time its recognition is important at a more general level, while keeping in mind that the experiences are always from the others' lifeworld (Varto, 1992). Experience is connected to shared and socially accepted knowledge, and it also participates in shaping what is considered generally accepted knowledge (Toikkanen & Virtanen, 2018, p. 9). In this study, the identification of meanings was facilitated by the shared culture of the educational field connecting both researchers and respondents, including commonly understood terminology and pedagogical language. This shared, socially constructed reality allows phenomena to be approached not as entirely novel, but as meaningful within existing frameworks of understanding. Educational experiences of one's competences and fostering them can thus be examined through processes of meaning-making and interconnected networks of meaning, constructed within the shared field of education (Hammersley & Atkinson, 2019) and seen through the lenses of quality in the framework of micro-credentials (Brown *et al.*, 2023).

Taken together, this analytical approach foregrounds participants' lived experiences while acknowledging their situatedness within a broader educational and cultural context. Firstly, digital open badges generated learning experiences characterised by *learning together with others*. These experiences emphasised collegial dialogue, the sharing of good practices, and the perceived alignment of competence levels among colleagues. Respondents described learning together as a shared learning experience that supported reflection and confidence-building, even in cases where digital open badges were not perceived to have directly impacted competence, despite competence having been strengthened through the process.

Secondly, a learning experience described as *learning 'something'* was identified. Respondents in this category acknowledged having gained something new, such as reminders or minor insights, although they did not perceive these experiences as transformative for their professional competence. Learning was framed as incremental and confirmatory rather than developmental, often expressed through the notion that 'you always learn something'.

Thirdly, *individual learning experiences* were identified, comprising two analytically distinct orientations. For some respondents, digital open badges functioned as tools for *organising one's own competence*, increasing awareness of existing expertise, supporting reflection, and consolidating professional knowledge, metaphorically described as

‘organising a cupboard’ or taking a deeper dive into one’s own competence. For others, individual learning focused on *learning the digital open badge as a model itself*, including its structure, criteria, and possibilities, often accompanied by a desire for stronger disciplinary specificity and closer alignment with subject-based teaching contexts.

Fourthly, *experiences of non-learning* were identified. In these accounts, digital open badges were perceived as artificial, unnecessary, or ineffective for competence development. Respondents described badges as meaningless, bureaucratic, or outdated forms of demonstrating competence, favouring traditional degrees and course certificates instead. In these cases, digital open badges were viewed as a waste of time or as lacking credibility as indicators of professional competence.

Table 1 presents the analytically derived categories of learning experiences identified through inductive content analysis, including the main categories, upper categories, and subcategories, together with illustrative quotations from the data.

Table 1: Categories of learning experiences associated with digital open badges and their justifications

Main category	Upper category	Subcategory	Quotation
Experience of Learning Together	Learning together with others	learning with others, perceived alignment of competence levels, a shared learning experience.	<i>‘When completing a digital open badge with colleagues, you hear about good practices that help develop and facilitate work.’</i> <i>‘It is more about ensuring that we have a shared understanding and that I personally feel confident about whether I have understood the concepts correctly, or whether it might be time to seek a new perspective.’</i>
Experience of Learning ‘Something’	‘Something’ learners	something new was gained, reminders, you always learn something.	<i>‘You always learn something new, but I do not see this as particularly transformative for my own competence development.’</i> <i>‘The instructions were good and provided sufficient flexibility regarding implementation.’</i>
Individual Learning	Organisers of one’s own competence	compiling one’s own competence, awareness, recap, justifications for existing competence and for demonstrating it through digital open badges.	<i>‘So far, the badges I have applied for have mostly been about demonstrating competence that I already had.’</i> <i>‘...they have helped to bring thoughts together. These could of course be deepened further, but at the moment this feels a bit like organising a cupboard.’</i>

	Learners of the digital open badge model	disciplinary specificity, connection to teachers within one's own field, learning the model.	<i>'Completing the badge itself has familiarised me with the badge model and its possibilities. At the moment, the badge themes do not necessarily support learning related to my own subject field very much, which, from the perspective of subject teachers, would probably be the most interesting area.'</i>
Experience of Non-Learning	Non-learners	artificiality of digital open badges meaningless learning experiences when implemented through badges, a waste of time, good content but digital open badges are not seen as valid indicators of competence.	<i>'I do not feel that it has had any major impact on how I perform my work tasks.'</i> <i>'Old-fashioned ways to demonstrate competences'</i>

Analysis of the data revealed qualitatively different ways in which DOBs were experienced as learning by academic staff. These experiences varied in terms of perceived learning value, orientation towards collective or individual learning, and the extent to which learning opportunities were realised.

5. Results

As learning experiences, digital open badges generated collegial discussion, the sharing of good practices, and the recognition of existing competence. From a second perspective, they produced more vaguely defined experiences of learning 'something', while for some respondents' digital open badges were perceived as having no significant impact on competence development. A third learning experience concerned increased awareness of existing competence and opportunities to consolidate one's own thinking. As a fourth learning experience, non-learning was described, whereby digital open badges were perceived as irrelevant for competence development, as respondents felt they already possessed sufficient competence. In addition, a practice-oriented learning experience related to becoming familiar with the digital open badge as a model itself was identified, alongside a wish for greater discipline-specific relevance within the badges.

The justifications provided for these learning experiences emphasised, on the one hand, learning together with colleagues and, on the other hand, individually identifying and structuring one's own competence. Digital open badges were also justified as instrumental tools for learning about the badge as a model itself. Respondents who

reported learning ‘something’ typically justified their experiences through reminders and revision, whereas non-learners expressed a generally critical stance towards the digital open badge system. Both collective and individual orientations to learning were evident: some respondents foregrounded collegial collaboration, while others highlighted individual reflection and competence organisation.

Although the questionnaire explicitly requested concrete examples of substantive competence or skills development, such examples were largely absent from the data. Only a small number of respondents reported having learned about the digital open badge system itself, and some expressed a desire for more discipline-specific application of the badges. In contrast, many respondents stated that they had not learned anything new through completing digital open badges.

Several tensions and contradictions were evident in the responses. DOBs were sometimes described as having no impact, even though they had supported competence visibility and collegial learning. Similarly, the digital open badge-driven model, and particularly the modes of competence demonstration, was described as outdated, while traditional degrees and course-based certificates were simultaneously regarded as meaningful learning experiences. In some cases, the credibility of responses was weakened by limited justification, especially claims that ‘you always learn something’ without further concretisation.

Overall, the responses highlighted a clear need for collegial, competence-related discussion and the recognition of competence, both of which were enabled through the digital open badge system. Colleagues emerged as significant sources of learning, and digital open badges appeared to function as triggers for peer learning. At the same time, respondents frequently distinguished between learning ‘something’ and meaningful competence development, noting that digital open badges supported reflection and competence organisation without necessarily leading to substantive pedagogical professional growth. Consequently, while DOBs familiarised respondents with the badge as a model and supported consolidation of existing competence, a substantial proportion of respondents reported that they had no meaningful impact on the development of their pedagogical professional competence.

6. Discussion

In this study, we examined the learning experiences generated by digital open badges as micro-credentials for academic staff in a university of applied sciences and how these experiences were justified by participants. Based on the findings, micro-credentials support the development of HE institutionally embedded quality practices in a tensioned manner.

The findings indicate that the development of pedagogical competence through the utilisation of DOBs is a process characterised by conflicting pressures. On the one hand, it is possible to identify those who would benefit from a structured framework that emphasises the collective development of competence through peer learning (‘learning

together’). On the other hand, there are participants who primarily develop their competence individually while making existing expertise visible (‘organising the cupboard’). However, when DOBs are examined as learning contents, a substantial group of participants, positioned between these two categories, can be identified as ‘learning something’ or ‘non-learners’, whose learning opportunities remain only partially realised. These findings are strongly aligned with previous research on the use of digital open badges in HE pedagogy (Brauer *et al.*, 2018; Brauer *et al.*, 2020). The upper-level categories identified in this study (Table 1) correspond closely with the experiential categories described by Brauer *et al.* (2018; 2019; 2020) in Table 2.

Table 2: Results in relation to previous research

Upper category	Brauer <i>et al.</i> , 2018	Brauer, 2018	Brauer <i>et al.</i> , 2020
Learners of the digital open badge model (collective benefit)	Building and expanding a learning community	Team builder	Developing digital open badges strengthens collegial collaboration and a shared understanding of teaching content.
Learning together (learning with others, alignment of competence levels)	Supporting individual and customised learning	Team player	Digital open badges help to understand the process of collaborative problem-solving and open up new perspectives for conceptualising and structuring group activity and joint work.
Organisers of one’s own competence (individual performances, assembling one’s own competence)	Supporting professional competence development	Badge enthusiastic	Receiving each earned badge produces a sense of satisfaction and joy for the earner.
Learning ‘something’ (nothing distinct compared to other ways of learning)	Completing learning assignments	Assignment doer	The badges felt like separate, disconnected tasks; it was difficult to perceive the overall progression.
Non-learners	Compulsory performance	One way of getting grades	Automatically awarded badges are not valued. Badges granted for already verified competence may negatively affect learner motivation.

The results show that digital open badges particularly supported competence development for respondents who valued collective learning, such as collegial dialogue, peer learning, and shared reflection, as well as for those who benefitted from individual reflection, described metaphorically as organising or consolidating one’s own competence. These two dominant orientations are clearly visible in the categories presented in Table 1 and align closely with earlier research identifying both collaborative and individual learning trajectories in digital open badge-driven professional development (Brauer, 2018; Brauer *et al.*, 2018; 2020). The correspondence between the categories identified in this study and those in previous research suggests that similar patterns of learning experiences persist across institutional contexts.

At the same time, the findings highlight a substantial group of respondents whose experiences were characterised by learning ‘something’ or by non-learning’ (Table 1). For these respondents, digital open badges functioned primarily as reminders, revision, or administrative tasks rather than as meaningful learning opportunities. This finding is particularly noteworthy given the respondents’ generally high levels of professional experience and pedagogical qualification (Table 2). It supports earlier research indicating that micro-credentials and digital open badges may remain pedagogically weak or insufficiently transformative if their purpose is unclear or if they lack strong links to discipline-specific practice (Brauer *et al.*, 2020; McGreal & Olcott, 2022).

A central contribution of this study lies in the identification of ambivalence and contradiction within academic staff learning experiences. Respondents frequently reported that digital open badges had no impact on competence development, even though they acknowledged increased awareness of competence, peer learning, or reflection (Table 1). Similarly, modes of competence demonstration were described as outdated or artificial, while traditional degrees and course-based qualifications were simultaneously framed as meaningful indicators of learning. These contradictions point to tensions between competence visibility, learning, and recognition, and reinforce the importance of distinguishing between learning ‘something’ and pedagogically meaningful competence development.

The findings further indicate that digital open badges functioned as triggers for collegial discussion and peer learning, regardless of whether they were perceived to lead to competence growth. Colleagues emerged as significant sources of learning, confirming earlier research emphasising the role of communal and dialogical learning in HE pedagogical development (Brauer, 2019; Fun *et al.*, 2024). However, the absence of concrete examples of substantive competence development, despite explicit prompts in the questionnaire, suggests that opportunities for deeper learning and higher-order thinking remained underutilised, even among experienced staff (Table 2).

From a quality perspective, the study demonstrates that institutionally embedded practices, including criteria-based quality systems such as competence-based assessment and digital open badge constellations, support trust, coherence, and comparability in HE. In line with European guidelines (Council of the European Union, 2022), reflective documentation and earner feedback can be used to inform continuous improvement of badge design and assessment practices. Nevertheless, as reflected in the learning experience categories presented in Table 1, quality assurance arrangements alone do not guarantee meaningful learning experiences. This underscores the distinction between system-level quality and lived pedagogical quality, often described as ‘*quality in the small*’ (see Cirlan, 2023).

Finally, the findings reveal persistent assumptions that learning occurs primarily through formal courses and that competence is demonstrated mainly through traditional certificates. Despite policy-level emphasis on competence-based education and micro-credentials (Council of the European Union, 2018; Brauer, 2021; Laukia, 2022), these frameworks have not yet become fully embedded in academic staff’s everyday

understandings of learning and professional growth. Taken together, the results presented in Tables 1 and 2 suggest that competence-based micro-credential frameworks require not only technical implementation and quality assurance, but also ongoing dialogue, shared meaning-making, and cultural change within academic communities.

Overall, this study contributes to debates on micro-credentials, professional learning, and quality in HE by demonstrating that digital open badges can support competence visibility, reflection, and peer learning, but do not automatically lead to substantive pedagogical competence development. The findings under consideration herein highlight the lived realities through which micro-credential systems may gain legitimacy, i.e. quality in small. It is asserted that there is a necessity to design micro-credential frameworks that intentionally integrate collegial learning, disciplinary relevance, and opportunities for deeper reflection. It is further asserted that different learning orientations require different forms of pedagogical and organisational support.

6. Conclusions

This study examined digital open badges as competence-based micro-credentials within a quality-proof pedagogical development programme and as tools for academic staff competence development. The findings demonstrate that the process of learning facilitated by digital open badges is characterised by tensions. While badges support competence, visibility, reflection, and collegial learning, they do not consistently lead to substantive pedagogical competence development. The study thus confirms that no single competence development framework is applicable to all academic staff, and that competence-based, self-directed development requires shared spaces for dialogue and joint interpretation in order to become pedagogically meaningful.

At the community level, the shift from traditional course-based professional development to stand-alone micro-credentials proved challenging for many participants. These findings underline that competence-based education requires not only structural and technical solutions but also the construction of shared understanding within academic communities. Digital open badges should therefore be understood not merely as credentials or instruments of certification, but as pedagogical tools whose meaning must be continuously negotiated and contextualised.

The study also identifies underexplored potential in the use of digital open badges and the learning data they generate in organisational and HR-related processes, such as onboarding, career development, and competence anticipation. Although digital open badges can be technically integrated into HR systems, there are currently few established practices for utilising accumulated competence data in recruitment or workforce planning. Further development is needed in frameworks that support the usability, transferability, and ethical use of competence data, including the potential role of data spaces and artificial intelligence.

The study is limited by its focus on a single Finnish university of applied sciences and a relatively small dataset, which restricts broader comparison across institutional

contexts. Nevertheless, the richness of the qualitative data and the inclusion of diverse learning experiences, including experiences of non-learning, support the trustworthiness and analytical depth of the findings. Trustworthiness was further strengthened through reflexivity, dialogical analysis, and close alignment between analytical categories and participants' own language.

Finally, the findings point to several directions for future research. Further studies could explore how deep learning and higher-order thinking skills are reflected in documented competence demonstrations or examine digital open badge-driven learning (Brauer, 2019) through the lens of self-determination theory, focusing on autonomy, competence, and relatedness. Such research would deepen understanding of how competence-based micro-credential frameworks function as lived learning experiences within HE quality systems.

Acknowledgements

The authors thank the participants for their valuable contributions to this study.

Creative Commons License Statement

This research work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc-nd/4.0>. To view the complete legal code, visit <https://creativecommons.org/licenses/by-nc-nd/4.0/legalcode.en>. Under the terms of this license, members of the community may copy, distribute, and transmit the article, provided that proper, prominent, and unambiguous attribution is given to the authors, and the material is not used for commercial purposes or modified in any way. Reuse is only allowed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.

Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Author(s)

Sanna Ruhalahti (PhD) works as a Principal lecturer at TAMK UAS, Applied Research Centre. She has been working as a teacher educator for 20 years, and her key expertise is collaborative methods, pedagogical blended learning design, microcredentials, and teachers' soft skills. She has been developing and exploring digital badges for teachers' professional development.

ORCID: <https://orcid.org/0000-0002-5554-1600>

Annukka Tapani (PhD) works as a Senior Lecturer at Tampere University of Applied Sciences, School of Professional Teacher Education. She has been working as a teacher educator for 17 years, and her key expertise is teachers' well-being, studies in vocational education and research-based education.

ORCID: <https://orcid.org/0000-0001-6274-7028>

Sanna Brauer (PhD) is an expert in digital pedagogy and professional teacher education, with over 20 years of experience as a teacher trainer and RDI professional. She currently works at Tampere University of Applied Sciences, focusing on innovative approaches to competence-based learning and professional development. In 2019, she completed a groundbreaking doctoral dissertation—the first to explore digital open badges and badge-driven learning, pioneering research that bridges technology and pedagogy.

ORCID: <https://orcid.org/0000-0002-5303-6600>

Dean **Hanna Ilola** works as the Head of the Faculty of Pedagogical Innovations and Culture at Tampere University of Applied Sciences (TAMK), Finland. Her expertise focuses on higher education pedagogy, competence development, curriculum innovation, and the strategic development of learning and teaching.

References

- Ahsan, K., Akbar, S., Kam, B., & Abdulrahman, M. D.-A. (2023). Implementation of micro-credentials in higher education: A systematic literature review. *Education and Information Technologies*, 28, 13505–13540. <https://doi.org/10.1007/s10639-023-11739-z>
- Berry, B., Airhart, K. M., & Byrd, P. A. (2016). Microcredentials: Teacher learning transformed. *Phi Delta Kappan*, 98(3), 34–40.
- Brauer, S. (2018, October 24–26). *Digital open badge-driven learning: Practical applications to support emerging ecosystems* [Conference paper]. 16th International ePortfolio and Identity Conference (ePIC 2018), Paris, France. Retrieved from https://www.researchgate.net/publication/341446185_Digital_Open_Badge-Driven_Learning_-_Practical_Applications_to_Support_Emerging_Ecosystems
- Brauer, S. (2019). *Digital open badge-driven learning: Competence-based professional development for vocational teachers* (Doctoral dissertation, University of Lapland). <https://urn.fi/URN:ISBN:978-952-337-110-1>
- Brauer, S. (2021). Towards competence-oriented higher education: A systematic literature review of different perspectives on successful exit profiles. *Education + Training*, 63(9), 1376–1390. <https://doi.org/10.1108/ET-07-2020-0216>
- Brauer, S. (2023). *Case study Finland: Microcredentials for labour market education and training. First look at mapping microcredentials in European labour-market-related education, training and learning: take-up, characteristics and functions*. Cedefop. https://www.cedefop.europa.eu/files/finland_microcredentials_mapping.pdf
- Brauer, S., & Korhonen, A. (2022). 360-degree view of digital open badge-driven learning. In D. Piedra (Ed.), *Innovations in the design and application of alternative digital credentials* (pp. 95–130). IGI Global. <https://doi.org/10.4018/978-1-7998-7697-7.ch005>
- Brauer, S., Kettunen, J., & Hallikainen, V. (2018). Learning online for vocational teachers: Visualisation of a competence-based approach in digital open badge-driven

- learning. *Ammattikasvatuksen aikakauskirja*, 20(2), 13–29. <https://journal.fi/akakk/article/view/84651>
- Brauer, S., Korhonen, A.-M., & Palsa, L. (2022). Osaamismerkkit korkeakoulupedagogisena työkaluna [Digital open badges as a tool for higher education pedagogy]. In K. Mäki & L. Vanhanen-Nuutinen (Eds.), *Korkeakoulupedagogiikka: Ajat, paikat ja tulkinnat* (pp. 200–211). Haaga-Helia. https://www.theseus.fi/bitstream/handle/10024/779743/Osaamismerkkit_korkeakoulupedagogisena_tyokaluna.pdf?sequence=1
- Brauer, S., Siklander, P., Impiö, N., & Vuopala, E. (2020). Osaamismerkkit arvioinnin menetelmänä: Uutta ajattelua opetussuunnitelmiin [Digital open badges as an assessment method: New thinking for curricula]. In A. Virtanen, J. Helin, & P. Tynjälä (Eds.), *Työelämäpedagogiikka korkeakoulutuksessa: Käsikirja* (pp. 119–123). Jyväskylän yliopisto.
- Brown, M., & Duart, J. M. (2024). Exploring gaps in the quality assurance of micro-credentials: A global mapping review of current practices. *Journal of Open, Distance and Digital Education*, 1(1), 1–16. <https://doi.org/10.1191/1478088706qp063oa>
- Brown, M., McGreal, R., & Peters, M. (2023). A strategic institutional response to micro-credentials: Key questions for educational leaders. *Journal of Interactive Media in Education*, 2023(1). <https://doi.org/10.5334/jime.801>
- Cheng, Z., Watson, S. L., & Newby, T. J. (2018). Goal setting and open digital badges in higher education. *TechTrends*, 62, 190–196. <https://doi.org/10.1007/s11528-018-0249-x>
- Cirlan, E. (2023). *Approaches to quality assurance of micro-credentials: A report on policies and practices to assure the quality of micro-credentials in the European Higher Education Area*. European Association for Quality Assurance in Higher Education. Retrieved from https://eadtu.eu/images/IMINQA-MC-report_Approaches-to-Quality-Assurance-of-Micro-credentials.pdf
- Council of the European Union. (2018). *Recommendation on key competences for lifelong learning*. Official Journal of the European Union, C189, 1–13.
- Council of the European Union. (2022). *Council recommendation of 16 June 2022 on a European approach to micro-credentials for lifelong learning and employability*. Official Journal of the European Union, C243, 10–25.
- Fan, X., Wei, X., Lewis, A., & Watts, J. (2024). Micro-credentialing as an approach to educator professional learning: Voices from developers, pursuers, and assessors. *Teaching and Teacher Education*, 148, 104700. <https://doi.org/10.1016/j.tate.2024.104700>
- Halttunen, T., Brauer, S., & Jutila, S. (2024). Role of micro-credentials and open badges in sustainable tourism education. In C. Dragin-Jensen, G. Kwiatkowski, & O. Oklevik (Eds.), *Nordic coastal tourism*. Springer. https://doi.org/10.1007/978-3-031-73187-7_14
- Hammersley, M., & Atkinson, P. (2019). *Ethnography: Principles in practice* (4th ed.). Routledge. <https://doi.org/10.4324/9781315146027>

- Heikkinen, H. L. T., & Kukkonen, H. (2019). Ammattikorkeakoulu toisin ajateltuna: Osaaminen, sivistys ja tiedon intressit [Rethinking the university of applied sciences: Competence, Bildung, and knowledge interests]. *Aikuiskasvatus*, 39(4), 262–275. <https://doi.org/10.33336/aik.88096>
- Hunt, T., Carter, R., Zhang, L., & Yang, S. (2020). Micro-credentials: The potential of personalised professional development. *Development and Learning in Organizations*, 34(2), 33–35. <https://doi.org/10.1108/DLO-09-2019-0215>
- Ilola, H., Ruhalahti, S., & Tapani, A. (2025). Strengthening higher education pedagogy competences at Tampere University of Applied Sciences. *TAMK International Blog*. <https://blogs.tuni.fi/tamk-international/education/strengthening-higher-education-pedagogy-competences-at-tampere-university-of-applied-sciences/>
- Laukia, J. (2022). Korkeakoulupedagogiikkaa yhdistäviä tekijöitä [Factors unifying higher education pedagogy]. In K. Mäki & L. Vanhanen-Nuutinen (Eds.), *Korkeakoulupedagogiikka: Ajat, paikat ja tulkinnat*. Haaga-Helia.
- Lim, C. L., Nair, P. K., Keppell, M. J., Hassan, N., & Ayub, E. (2018). Developing a framework for the university-wide implementation of micro-credentials and digital badges: A case study from a Malaysian private university. In *Proceedings of the 2018 IEEE 4th International Conference on Computer and Communications (ICCC)* (pp. 1715–1719). <https://doi.org/10.1109/CompComm.2018.8780706>
- McGreal, R., & Olcott, D. (2022). A strategic reset: Micro-credentials for higher education leaders. *Smart Learning Environments*, 9, Article 9. <https://doi.org/10.1186/s40561-022-00190-1>
- Schreier, M. (2012). *Qualitative content analysis in practice*. Sage. Retrieved from <https://methods.sagepub.com/book/mono/qualitative-content-analysis-in-practice/toc#>
- Stefaniak, J., & Carey, K. (2019). Instilling purpose and value in the implementation of digital badges in higher education. *International Journal of Educational Technology in Higher Education*, 16, Article 44. <https://doi.org/10.1186/s41239-019-0175-9>
- Tampere University of Applied Sciences. (n.d.). *Pedagogical development programme*. <https://www.tuni.fi/en/tamk/information/strategy/pedagogical-development-programme>
- Toikkanen, J., & Virtanen, I. A. (2018). Tracing the concept and uses of experience. In J. Toikkanen & I. A. Virtanen (Eds.), *Kokemuksen tutkimus VI: Kokemuksen käsite ja käyttö* (pp. 7–24). Lapland University Press.
- Toom, A., Heide, T., Jäppinen, V., Karjalainen, A., Mäki, K., Tynjälä, P., Huusko, M., Nurkka, N., Vahtivuori-Hänninen, S., & Karvonen, A. (2023). *Korkeakoulupedagogiikan tila ja uudistaminen: Arviointi* [The state and renewal of higher education pedagogy: An evaluation]. Finnish Education Evaluation Centre.
- Universities of Applied Sciences Act. (2014). *Universities of Applied Sciences Act*. <https://www.finlex.fi/en/legislation/translations/2014/eng/932>
- Varadarajan, S., Koh, J. H. L., & Daniel, B. K. (2023). A systematic review of the opportunities and challenges of micro-credentials for multiple stakeholders.

- International Journal of Educational Technology in Higher Education*, 20(1), 1–24.
<https://doi.org/10.1186/s41239-023-00381-x>
- Varto, J. (1992). *Laadullisen tutkimuksen metodologia* [Qualitative research methodology].
Kirjayhtymä. Retrieved from <https://research.aalto.fi/en/publications/laadullisen-tutkimuksen-metodologia/>
- Wheelahan, L., & Moodie, G. (2022). Gig qualifications for the gig economy: Micro-credentials and the hungry mile. *Higher Education*, 83, 1279–1295.
<https://doi.org/10.1007/s10734-021-00742-3>