



BEYOND THE INTERNSHIP CERTIFICATE: A VERIFIABLE MICRO-CREDENTIALING MODEL FOR RECOGNIZING COMPETENCIES ACQUIRED IN PROFESSIONAL PRACTICE

Akbarov Behzodbek Saybjon o'g'li

*Ministry of Higher Education, Science and Innovation of the Republic of
Uzbekistan*

e-mail: bek.akbarov1992@gmail.com | ORCID: 0009-0002-0751-332X

Zafarova Sariya Rustamovna

*Bachelor's degree graduate of Tashkent State University of Uzbek
Language and Literature*

Abstract. Considerable progress has been made in organizing, digitalizing and assessing student internships, yet the way their outcome is recorded has changed little: most internships still conclude with a single, coarse certificate of completion that conveys almost nothing about which competencies were actually demonstrated. This study reframes the problem as one of recognition rather than assessment and proposes a verifiable micro-credentialing model that converts internship activity into granular, portable and independently verifiable evidence of competence. Drawing on a conceptual-analytical methodology supported by expert appraisal, the model specifies a five-stage credentialing pipeline and a three-party trust architecture linking issuer, holder and verifier through a credential registry. Comparative expert assessment indicates that verifiable micro-credentials substantially outperform the conventional certificate in transparency, portability, granularity and resistance to fraud, and that their recognition value decays far more slowly over the years following graduation. The findings suggest that the principal untapped value of an internship lies not in confirming attendance but in producing trustworthy, fine-grained credentials that the labour market can read directly. The model offers a transferable framework for institutions seeking to modernize the recognition of work-based learning.



Keywords: *micro-credentials, verifiable credentials, internship, recognition of learning, competency-based education, higher education, labour market, work-based learning.*

1. Introduction

Professional internships are among the few moments in higher education where a student's competencies are demonstrated in authentic working conditions rather than inferred from coursework. Substantial effort has recently gone into organizing this experience, ensuring its continuity and digitalizing its monitoring and assessment. These advances have improved how internships are managed and observed. They have not, however, changed the way an internship is ultimately recorded for the outside world.

The record remains coarse. In the prevailing arrangement an internship concludes with a single certificate of completion, often accompanied by an aggregate grade. This document attests that the student attended a placement and reached some overall standard, but it discloses almost nothing about which specific competencies were demonstrated, to what level, or on whose authority. A prospective employer reading such a certificate learns that an internship occurred, not what the graduate can actually do. The rich, situated evidence generated during the placement — mentor judgements, completed tasks, employer feedback — is compressed into a single opaque token and effectively lost.

This paper argues that the next meaningful advance in internship outcomes is not a further refinement of assessment but a change in the form of recognition — from a coarse certificate toward granular, portable and verifiable evidence of competence. The central proposition is that the evidence already produced during an internship can be issued as a set of micro-credentials, each attesting to a specific competency and each independently verifiable by any future employer. The objective of the study is to design and justify a verifiable micro-credentialing model that transforms the internship record from a statement of completion into trustworthy, machine-readable evidence the labour market can act upon directly.

2. Literature Review



Research on internship outcomes has traditionally concentrated on assessment: how to grade student performance fairly, how to combine mentor and employer judgements, and how to align evaluation with intended learning outcomes. This body of work has produced increasingly sophisticated instruments for measuring performance, but it generally stops at the grade. The question of how that performance is afterwards recorded, communicated and recognized in the labour market has received comparatively little attention within the internship-management tradition.

In parallel, a distinct and rapidly maturing body of work on micro-credentials and verifiable digital credentials has emerged in the wider education and skills literature. This work develops the principles of granular, stackable recognition and of trust architectures in which credentials can be issued, held and verified by independent parties without intermediaries. Yet this literature has been applied chiefly to short courses, professional development and online learning, and only rarely to the specific context of university internships, where the evidence of competence is unusually rich and authentic. A clear gap therefore separates the two traditions: internship research has matured the production of evidence but not its recognition, while credentialing research has matured the recognition of evidence but seldom in the internship setting. The present study positions itself precisely at this intersection, transferring the verifiable-credential paradigm into the recognition of competencies acquired through professional practice.

3. Research Methodology

The study adopts a conceptual-analytical design supplemented by structured expert appraisal, an approach suited to constructing and validating a recognition model rather than estimating population parameters. The work proceeded in three stages. First, the conventional certificate-based practice was decomposed analytically to expose the points at which rich evidence of competence is generated but then discarded in the final record. Second, a verifiable micro-credentialing model was synthesized to preserve that evidence, organized as a credentialing pipeline coupled to a trust architecture. Third, the model was submitted to experienced

internship supervisors, faculty coordinators and enterprise mentors, who rated the comparative effectiveness of the certificate and micro-credential approaches.

Three complementary methods underpinned the process. Systemic analysis treated the internship outcome not as an isolated grade but as a flow of evidence with issuers, holders and verifiers. Comparative analysis contrasted what the certificate and the micro-credential do with the same underlying evidence. Expert appraisal, conducted through semi-structured evaluation, provided a defensible basis for judging the model's plausibility in the absence of a full longitudinal deployment. The reliability of the conclusions rests on the convergence of these three perspectives and on grounding the model in the documented characteristics of internship evidence.

4. The Proposed Verifiable Micro-Credentialing Model

The model reorganizes the internship outcome around a single question: how can the evidence demonstrated during a placement be turned into recognition the labour market can read directly and trust? It answers this through two coupled components — a credentialing pipeline that produces the evidence and a trust architecture that makes it verifiable. The pipeline is presented in Figure 1.



Figure 1. The five-stage micro-credentialing pipeline, transforming internship activity into a portable, verifiable record of competence.

As Figure 1 shows, the pipeline begins by defining a competency framework against which evidence will be assessed, then captures evidence during the placement, has it validated by mentors and employers, issues a discrete micro-credential for each demonstrated competency, and finally records that credential in a portable, verifiable form. Crucially, each stage adds a verifiable layer to the



competency claim rather than aggregating it away, so that the final record retains the granularity of the underlying evidence instead of collapsing it into a single grade.

The difference between the conventional and proposed approaches is summarized in Table 1.

Table 1. Comparison of the certificate-based and micro-credential approaches to internship recognition.

Dimension	Certificate of completion	Verifiable micro-credential
Granularity	Single aggregate token	One credential per competency
Evidence retained	Discarded after grading	Preserved and linked to the claim
Verification	Manual, trust in paper	Independent, registry-based
Portability	Bound to issuing document	Portable across employers
Information to employer	Internship occurred	Specific competencies demonstrated
Resistance to fraud	Low	High, cryptographically checkable

Table 1 makes clear that the two approaches do not differ in the evidence generated during the internship, which may be identical, but in what becomes of that evidence afterwards. The certificate exhausts its informational content at the moment of issuance; the micro-credential preserves the evidence and keeps it verifiable. This distinction is the conceptual core of the contribution.

For micro-credentials to be useful they must be trustworthy to parties who did not witness the internship. This requires a trust architecture, set out in Figure 2.

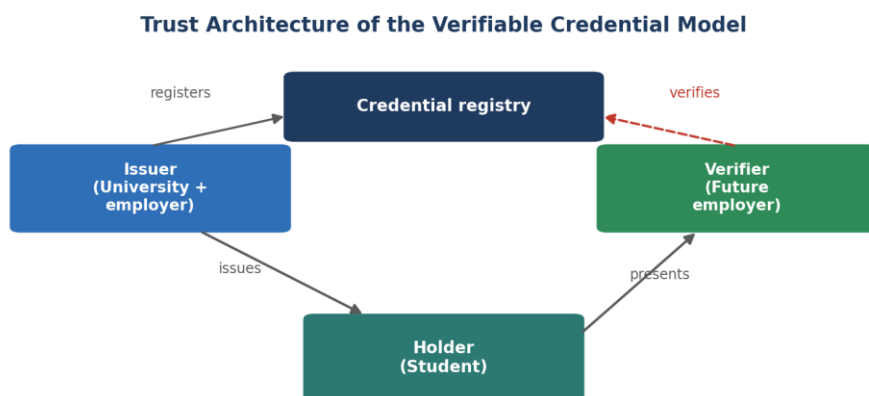


Figure 2. Three-party trust architecture, in which the issuer registers and issues a credential, the student holds and presents it, and a future employer independently verifies it against the registry.

Figure 2 describes the standard issuer–holder–verifier triangle adapted to the internship context. The university and host employer act jointly as the issuer, registering each credential in a credential registry and issuing it to the student. The student, as holder, controls the credential and presents it to a prospective employer. The verifier then checks the credential against the registry without needing to contact the original issuer. This separation of roles is what gives the credential its value: trust is established not by the reputation of a piece of paper but by independent, registry-based verification.

The competencies that the model credentials, together with the evidence on which each rests, are detailed in Table 2.

Table 2. Representative internship competencies, their evidence sources and credentialing rationale.

Competency	Evidence source	Credentialing rationale
Applied technical skill	Completed work tasks	Demonstrates job-ready capability in authentic conditions
Problem solving	Case assignments	Captures judgement that grades obscure



Competency	Evidence source	Credentialing rationale
Professional communication	Mentor and peer feedback	Documents a skill employers value but rarely see certified
Workplace collaboration	Supervisor observation	Records situated, hard-to-fake teamwork evidence
Professional responsibility	Conduct and reliability log	Attests behavioural qualities beyond technical output

Table 2 shows that none of the credentialed competencies requires evidence beyond what a supervised internship already produces. The novelty lies in preservation and recognition rather than additional measurement: evidence that would otherwise be aggregated into a grade and discarded is instead retained, attached to a specific competency and made verifiable. This economy of means is deliberate, since it allows the model to be layered onto existing internship practice without imposing new assessment burdens.

5. Results and Discussion

A distinctive property of verifiable micro-credentials is that their value to the labour market persists over time, whereas the signal carried by a generic certificate erodes. Figure 3 contrasts the two.

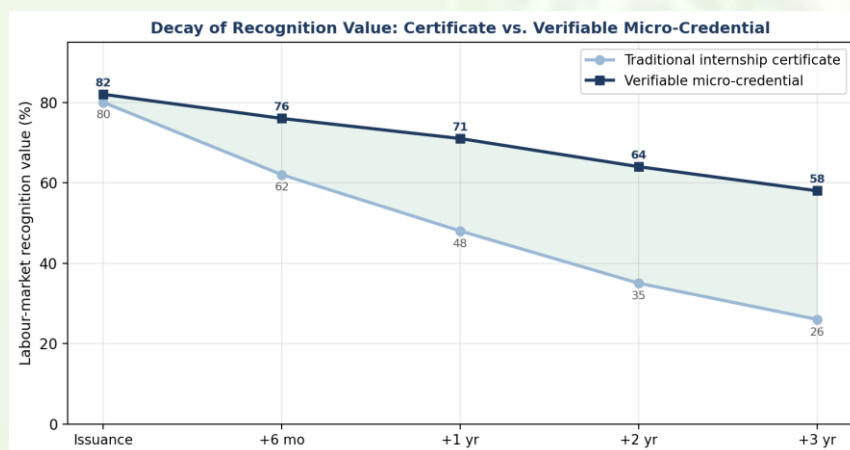


Figure 3. Decay of labour-market recognition value over the years following graduation for a traditional certificate and a verifiable micro-credential.



Figure 3 indicates that both forms of recognition start from a similar value at issuance, but they diverge sharply thereafter. The traditional certificate loses recognition value rapidly, since its opaque, aggregate signal becomes harder to interpret and easier to discount as time passes and the issuing context recedes. The verifiable micro-credential decays far more slowly because its granular, independently checkable evidence remains legible regardless of elapsed time. The shaded area between the curves represents the cumulative recognition advantage the model confers across a graduate's early career.

The expert appraisal compared the two approaches across five credentialing criteria. The results are reported in Table 3 and visualized in Figure 4.

Table 3. Expert-rated effectiveness of the certificate and micro-credential approaches across five criteria (%).

Criterion	Traditional certificate	Verifiable micro-credential
Transparency of evidence	38	83
Portability across employers	30	86
Granularity of skills	26	80
Speed of verification	44	77
Resistance to fraud	35	88

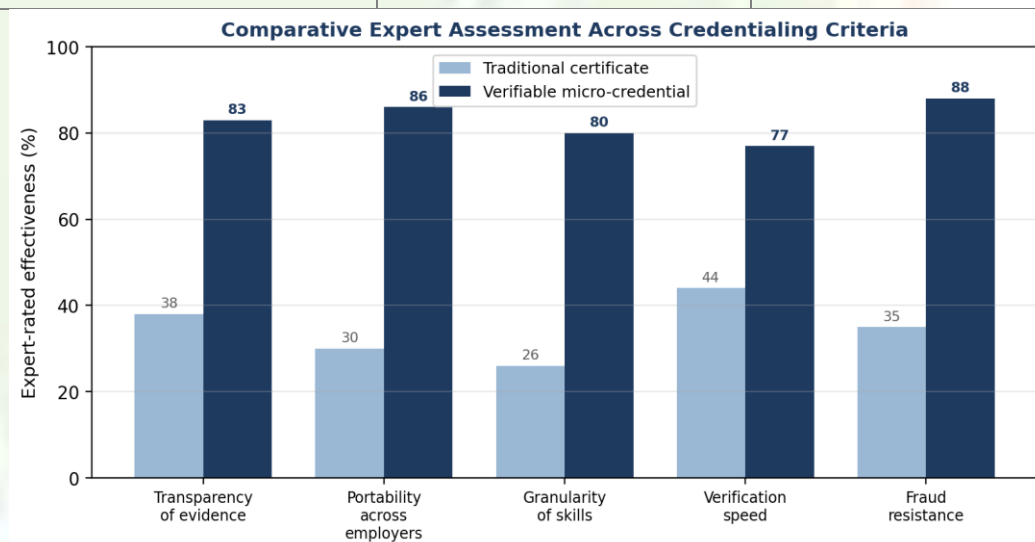




Figure 4. Comparative expert assessment of the certificate and micro-credential approaches across the five credentialing criteria.

Both Table 3 and Figure 4 point in the same direction. The micro-credential is rated substantially higher on every criterion, with the largest margins in portability, granularity and fraud resistance — precisely the dimensions where a single aggregate certificate is structurally weakest. The narrower advantage in verification speed reflects a more modest but real benefit: registry-based checking removes the delays of contacting issuers manually, though it depends on the registry's availability. The pattern is the expected signature of the shift from aggregation toward granular, verifiable recognition described in Section 4.

These results should be read with appropriate caution. They derive from expert judgement rather than from a controlled longitudinal trial, and represent estimates of plausible rather than realized effect. The convergence of the ratings across independent evaluators nonetheless lends them weight, and they are consistent with the established behaviour of verifiable-credential systems in adjacent domains. The discussion also surfaces a genuine tension: micro-credentialing distributes recognition across many fine-grained units, which risks fragmentation and credential inflation if the competency framework is poorly governed. The model addresses this partly by anchoring credentials to a shared framework and partly by the registry, which constrains who may issue and thereby preserves the credentials' meaning.

Situated against the broader literature, the model advances the field in a specific way. It does not contest the value of better internship assessment established by prior work; it builds on it. What it adds is the missing recognition step that turns assessment evidence into portable, verifiable credentials the labour market can read. In doing so it connects the internship-management tradition with the verifiable-credential paradigm — a connection that, on the evidence assembled here, is both feasible and worth pursuing.

6. Conclusion and Recommendations

This study set out to reframe the internship outcome as a problem of recognition rather than assessment. It proposed a verifiable micro-credentialing



model that converts the rich evidence generated during a placement into granular, portable and independently verifiable credentials, and it showed, through expert appraisal, that this reorientation yields its largest benefits exactly where the conventional certificate is weakest: in portability, granularity and fraud resistance, and in the durability of recognition over time. The central conclusion is that the principal untapped value of an internship lies not in certifying attendance but in producing trustworthy, fine-grained credentials the labour market can act upon.

Several recommendations follow. The model should be layered onto existing internship practice, reusing evidence that is already generated and avoiding new assessment burdens. Credentials should be anchored to a shared, well-governed competency framework so that granularity does not slide into fragmentation. A credential registry should underpin verification, with clear rules governing who may issue, so that the credentials retain their meaning. Issuance should be a joint act of university and host employer, since the authority of the credential rests on both. Future work should move beyond expert appraisal to a controlled longitudinal deployment capable of estimating realized effects on graduate employability, and should examine the governance and equity implications of micro-credentialing, whose importance grows as such credentials gain weight in hiring.

REFERENCES

1. Akbarov, B. S. (2024). Theoretical analysis of the management of the processes of organizing and conducting continuous professional practice of students. *Western European Journal of Modern Experiments and Scientific Methods*, 2(7), 1–4.
2. Akbarov, B. S. (2025). Digitalization of internship processes and ways of improving their management. *Tadqiqotlar*, 64(1), 311–314.
3. Brown, M., & Mhichil, M. N. G. (2021). Unboxing micro-credentials: An inside, upside and downside view. *Culture and Education*, 33(3), 1–27.
4. Deschaine, M. E., & Jankens, B. P. (2017). Creating successful and sustainable educational administrative internship experiences. *Higher Education, Skills and Work-Based Learning*, 7(1), 5–20.



5. Haddad-Adaimi, M., Zeid-Daou, J. A., & Ducq, Y. (2022). Internship assessment and evaluation in higher education. *International Journal on Integrating Technology in Education*, 11(1), 17–33.
6. Kroon, N., & Franco, M. (2022). Antecedents, processes and outcomes of an internship program: An employer's perspective. *Journal of Applied Research in Higher Education*, 14(2), 556–574.
7. Narayanan, V. K., Olk, P. M., & Fukami, C. V. (2010). Determinants of internship effectiveness: An exploratory model. *Academy of Management Learning & Education*, 9(1), 61–80.
8. OECD. (2021). *The state of higher education: One year into the COVID-19 pandemic*. OECD Publishing.
9. UNESCO. (2022). *Towards a common definition of micro-credentials*. UNESCO Publishing.
10. Wheelahan, L., & Moodie, G. (2022). Gig qualifications for the gig economy: Micro-credentials and the 'hungry mile'. *Higher Education*, 83(6), 1279–1295.