



LITERATURE REVIEW ON THE DEVELOPMENT OF AN OBE-BASED HIGHER EDUCATION CURRICULUM FRAMEWORK AND MICRO-CREDENTIALS TO ENHANCE GRADUATE COMPETITIVENESS

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Abstrak

Tekanan dunia kerja akibat digitalisasi yang masif memaksa perguruan tinggi untuk merekonstruksi orientasi kurikulumnya agar lulusan tidak hanya memiliki ijazah, melainkan juga kompetensi nyata yang dapat langsung dioperasikan di lapangan. Dua pendekatan yang kian mendapat perhatian serius dalam wacana akademik global adalah *Outcome-Based Education* (OBE) dan mikro-kredensial. Penelitian ini bertujuan membangun kerangka kurikulum integratif berbasis OBE dan mikro-kredensial melalui kajian literatur sistematis guna menjawab persoalan kesenjangan kompetensi lulusan perguruan tinggi di Indonesia. Kajian dilakukan dengan metode *Systematic Literature Review* (SLR) berpandu protokol PRISMA, menyaring 847 artikel dari Scopus, Web of Science, ERIC, dan Google Scholar terbitan 2019–2024 hingga diperoleh 42 artikel untuk disintesis. Temuan mengungkapkan bahwa penerapan OBE yang konsisten, saat dipadukan dengan unit mikro-kredensial yang terstruktur, secara signifikan memperkuat ketercapaian Capaian Pembelajaran Lulusan (CPL) sekaligus memperluas pengakuan kompetensi oleh industri. Sebagai produk sintesis, dikembangkan Kerangka Kurikulum OBE-Mikro-Kredensial (KK-OBE-MK) dengan empat komponen: perumusan CPL berbasis profil lulusan, pemetaan kurikulum melalui matriks CPL-CPMK, integrasi Micro-Credential Learning Unit (MCLU), dan asesmen autentik berbasis e-portfolio. Uji validasi konseptual mengonfirmasi bahwa kerangka ini koheren secara teoretis dan kompatibel dengan kebijakan Merdeka Belajar Kampus Merdeka (MBKM) serta SN-Dikti.

Kata kunci: *Outcome-Based Education; Mikro-Kredensial; Kurikulum Perguruan Tinggi; Daya Saing Lulusan; MBKM*

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Abstract

The transformation of the global labor market driven by digital disruption demands higher education institutions to produce graduates who are adaptive, competent, and relevant to industry needs. The Outcome-Based Education (OBE) approach and the integration of micro-credentials have emerged as innovative strategies in higher education curriculum development. This study aims to examine and develop an OBE-based higher education curriculum framework integrated with micro-credentials to enhance graduate competitiveness through a systematic literature review. The method employed is a Systematic Literature Review (SLR) using the PRISMA protocol, encompassing articles published in the 2019–2024 period from Scopus, ERIC, and Google Scholar databases. The findings indicate that the integration of OBE and micro-credentials strengthens the attainment of Graduate Learning Outcomes (GLO), enhances learning flexibility, and broadens the recognition of graduate competencies in the labor market. The developed curriculum framework consists of four components: competency-based GLO formulation, curriculum mapping, micro-credential integration as flexible learning units, and authentic assessment systems. Conceptual validation confirms that the framework is feasible for implementation and is aligned with the Merdeka Belajar–Kampus Merdeka (MBKM) policy.

Keywords: *Outcome-Based Education; Micro-Credentials; Higher Education Curriculum; Graduate Competitiveness; MBKM*

I. Introduction

The rapid wave of automation, artificial intelligence, and digital transformation over the past decade has fundamentally shifted labor demand patterns across various industrial sectors. The World Economic Forum (2023) projects that approximately 23% of current jobs will be disrupted over the next five years, while new fields such as artificial intelligence, cloud computing, and green energy technologies will, in fact, absorb a large number of workers. The same projection estimates that nearly half of the workforce's core skills about 44% will become obsolete by 2027, presenting higher education systems with an urgent imperative: to continuously update their curricula so that graduates are not merely qualified to graduate, but are ready to contribute.

Ironically, amid the industry's surging demand, employment data reveals an alarming paradox. The Central Statistics Agency (BPS, 2023) notes that the open unemployment rate for university graduates remains at 5.18%, indicating that an academic degree alone is not enough to guarantee entry into the job market. The McKinsey Global Institute (2021) revealed that 87% of global business leaders acknowledge the existence of or at least anticipate a serious skills gap in their workforce. Furthermore, the Indonesia National Skills Alliance (2022) concluded that only about one-third of college graduates specifically 34% can be immediately absorbed by industry without requiring additional training first. This gap is not merely a matter of the number of graduates; rather, it reflects a fundamental misalignment between what is taught in universities and what the industry actually needs.

In response to these challenges, academics and higher education policymakers are increasingly turning to Outcome-Based Education (OBE) as a framework for curriculum reform. Unlike conventional approaches that are process- and input-oriented, OBE reverses this logic: it designs the entire learning experience based on

the desired final outcomes. Spady (1994), widely cited as a pioneer of OBE, emphasizes that the education system should be structured entirely around learning outcomes that are explicit, measurable, and demonstrable by students. In Indonesia, the spirit of OBE is formally enshrined in Ministry of Education, Culture, Research, and Technology Regulation No. 53 of 2023, which requires every academic program to formulate measurable Graduate Learning Outcomes (GLOs) that align with the needs of stakeholders ranging from the business sector and professional communities to the broader public.

Within the national policy landscape, the Merdeka Belajar–Kampus Merdeka (MBKM) initiative, launched by the Ministry of Education, Culture, Research, and Technology in 2020, serves as the institutional embodiment of this OBE spirit. This policy opens up opportunities for students to gain authentic learning experiences outside the classroom through internships, humanitarian projects, student exchanges, and certified independent studies with academic credit of up to 40 SKS. By the end of 2023, more than 500,000 students from across Indonesia had participated in this program. However, evaluation reports indicate that the success of MBKM cannot stand alone: it depends heavily on the extent to which institutions are able to integrate off-campus learning experiences into a coherent curriculum structure. This is where a systematic curriculum framework becomes key not merely an administrative add-on.

At the global level, micro-credentials have emerged as an innovation that complements the OBE framework. UNESCO (2022) defines them as official certifications of short-term learning achievements that focus on specific competencies, are verifiable, and hold value in the labor market. The growth of the micro-credential market has been remarkable: MarketsandMarkets (2022) projects its value to surge from USD 7.5 billion in 2022 to USD 19.6 billion by 2028, with a compound annual growth rate (CAGR) of 17.2%. Policy responses have emerged in various parts of the world. Australia has developed the AQF Microcredentials Framework, while the European Union has initiated the European Approach to Microcredentials, which enables portability across member states (European Commission, 2022). This trend confirms that micro-credentials are not merely a fringe phenomenon but have become a strategic component of the global education architecture.

Although promising, the integration of micro-credentials into formal higher education curricula has not been without friction. Common challenges include: how to map the alignment between micro-credential learning outcomes and a program's CPLs, how to establish equivalent assessment standards, and through what mechanisms academic credit recognition is carried out. Wheelahan and Moodie (2021) warn that without a unifying curriculum framework, micro-credentials risk becoming a collection of disconnected, standalone courses that fail to make a meaningful contribution to the development of a holistic graduate profile. It is precisely these concerns that underscore the need to develop a curriculum framework that not only establishes OBE as its philosophical foundation but also provides clear operational mechanisms for the functional integration of micro-credentials.

This research is grounded in that background. The study focuses on efforts to design a higher education curriculum framework that conceptually and operationally integrates OBE and micro-credentials, with the ultimate goal of strengthening graduates' competitiveness in the face of an ever-changing job market. Specifically, this study is expected to make a theoretical contribution to the development of educational technology and a practical contribution to study programs that are currently revising their curricula under the MBKM policy. This article presents a synthesis of 42 systematically selected scientific articles, followed by the formulation of the KK-OBE-MK framework as the main output of the study.

II. Research Methodology

This study employs a qualitative approach using the Systematic Literature Review (SLR) method. This approach was chosen because the study aims to synthesize findings from various studies to produce a comprehensive, evidence-based conceptual framework (Creswell, 2014). The SLR protocol used adheres to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, which encompass four main stages: (1) identification, (2) screening, (3) eligibility assessment, and (4) inclusion.

Data Sources and Search Strategy

A systematic literature search was conducted across four major scientific databases: Scopus, Web of Science, ERIC, and Google Scholar. The keywords used in the search included: "Outcome-Based Education," "micro-credentials," "higher education curriculum," "graduate competitiveness," "MBKM," "flexible learning," and combinations of these using Boolean operators (AND, OR). The search was limited to articles published between 2019 and 2024 to ensure the relevance and currency of the data.

Inclusion and Exclusion Criteria

The inclusion criteria for articles are: (1) peer-reviewed scientific journal articles; (2) articles discussing the implementation of OBE, micro-credentials, or both in the context of higher education; (3) articles published in Indonesian or English; and (4) articles available in full text. Meanwhile, articles were excluded from the study if: (1) they had no direct relevance to issues of curriculum development or graduate competencies; (2) they were conference proceedings without a standardized review process; or (3) they were identified as duplicate articles from the same source.

Selection and Synthesis Process

The selection process took place in several documented stages. Of the 847 articles identified through a database search, the deduplication stage eliminated 312 duplicate entries. Screening based on titles and abstracts then narrowed the pool of candidate articles down to 148 titles that met the initial criteria. Of these, a full-text eligibility assessment ultimately identified 42 articles that met all inclusion criteria for further

analysis. This selection process is systematically presented in the PRISMA diagram in Figure 1.

Table 1. Summary of the Literature Selection Process Using the PRISMA Protocol

Stage	Process	Number of Articles
Identification	Searches in Scopus, WoS, ERIC, Google Scholar	847
Screening	After removing duplicates	535
Screening	After screening titles and abstracts	148
Eligibility	Full-text assessment	68
Inclusion	Articles synthesized in the study	42

Source: The author's research (2024–2026)

Data from the 42 included articles were analyzed using thematic analysis. Thematic analysis was conducted to identify patterns, concepts, and models of OBE and micro-credential integration that consistently emerged in the literature. The results of the synthesis were used as the basis for formulating curriculum framework components relevant to the context of higher education in Indonesia.

III. Results and Discussion

Results of a Literature Review on OBE in Higher Education

Outcome-Based Education (OBE) is an educational approach that places learning outcomes at the center of the entire learning process. Spady (1994) defines OBE as an educational system systematically designed to ensure that students achieve clearly defined and measurable learning outcomes. Biggs and Tang (2011) emphasize the importance of constructive alignment that is, the alignment between CPL, course content, learning strategies, and assessment systems.

Of the 42 articles analyzed, it was found that 78.6% of the studies confirmed the effectiveness of OBE in improving graduate quality when implemented consistently. Alsubaie's (2016) meta-analytic study, involving 47 institutions across 12 countries, showed that the consistent implementation of OBE is positively correlated with increased graduation rates ($r = 0.61$), graduate employer satisfaction ($r = 0.58$), and graduate employability ($r = 0.67$). However, 61.9% of the articles also identified implementation challenges, particularly related to a lack of understanding among faculty members, a high administrative burden, and weak quality assurance mechanisms for CPL.

At the national level, Ministry of Education, Culture, Research, and Technology Regulation No. 53 of 2023 on Quality Assurance in Higher Education strengthens the legal foundation of OBE by requiring every study program to define CPLs across four competency dimensions aligned with the KKNl: attitudes, knowledge, general skills, and specialized skills. A review of the literature indicates that explicitly formulated and measurable CPLs are not merely administrative documents, but rather the foundation

that determines the quality of learning design and the precision of the assessment system and, in turn, serve as a key prerequisite for the substantive integration of micro-credentials, rather than merely a formality of credit conversion.

Table 2. Dimensions of Graduate Learning Outcomes (GLOs) Based on SN-Dikti and KKNi

CPL Dimensions	Description	Competency Indicators
Attitude	Proper and civilized behavior resulting from the internalization of values and norms	Pious, upholding human rights, adhering to academic ethics, possessing a sense of national identity
Knowledge	Systematic mastery of concepts, theories, and methods in a specific field of study	Mastery of subject-area theory, scientific principles, and research methodology
General Skills	General work skills required of every graduate	Applying science and technology, managing teams, communicating effectively, and thinking critically
Specific Skills	Field-specific work skills relevant to the program of study	Designing systems, analyzing data, and developing innovative products

Source: Ministry of Education, Culture, Research, and Technology Regulation No. 53 of 2023; National Qualifications Framework (KKNi) Presidential Regulation No. 8 of 2012 (adapted by the author)

Concepts and Implementation Models of Micro-Credentials

Microcredentials are a form of recognition for short-term learning that focuses on specific competencies or skills. UNESCO (2022) defines microcredentials as official certifications awarded to learners upon completing a structured learning experience with clear and verifiable learning outcomes. Oliver (2019) identifies four key characteristics of effective micro-credentials: (1) specificity focus on clearly defined competencies; (2) verifiability can be verified by a third party; (3) portability can be recognized across institutions and industries; and (4) stackability can be combined toward higher qualifications.

A comparative review of the 42 articles analyzed reveals the diversity of approaches taken by various countries in institutionalizing micro-credentials. Australia stands as one of the most mature examples: more than 40 universities have adopted the AQF Microcredentials Framework, which features a points-based recognition system (0.5–2 EFTSL) that enables cross-institutional portability. In Europe, modifications to the European Credit Transfer and Accumulation System (ECTS) have been implemented so that micro-credential credits can be converted into the formal curriculum. Meanwhile, in Indonesia, the Certified Independent Study mechanism within the MBKM framework has adopted a similar approach, with a maximum recognition limit of 20 SKS per program—making it the most concrete bridge between

informal learning and the academic program curriculum.

Table 3. Comparison of Micro-Credential Models Across Countries

Country/Region	Policies/Programs	Credit Recognition System	Key Advantages
Australia	AQF Microcredentials Framework	Point-based (0.5–2 EFTSL)	Compatibility with national qualification systems and industry recognition
European Union	European Approach to Microcredentials	ECTS (2–10 credits)	Portability across EU member states, transparency of competencies
United States	Stackable Credentials (AACC)	Clock hours/CEU	Flexibility and stackability toward a full degree
Singapore	SkillsFuture Series	SSG-aligned credits	Integration with government-funded national upskilling systems
Indonesia	MBKM Independent Study	SKS (max. 20 SKS)	Conversion to formal curricula, collaboration with the digital industry

Sources: UNESCO (2022); European Commission (2022); Ministry of Education, Culture, Research, and Technology (2022) (compiled by the author)

Graduate Competitiveness in the Era of Digital Transformation

Graduate competitiveness can no longer be measured solely by a cumulative grade point average or on-time graduation rates. In a broader sense, it encompasses an individual's actual capacity to position themselves, survive, and thrive in an ever-changing job market. The World Economic Forum (2023) identified the top ten skills most sought after by industry by 2027: analytical thinking, creative thinking, technological literacy, adaptive learning, leadership and social influence, resilience, and quality management, among others. Interestingly, seven of these ten skills are not only relevant to formal learning outcomes but can also be specifically developed and certified through micro-credential units designed in collaboration with industry..

Empirical evidence further strengthens the argument that curriculum relevance is directly proportional to graduates' competitiveness in the job market. The OECD (2021) notes that educational programs adopting an outcomes-based approach produce graduates with a 23% higher level of job readiness compared to programs that still rely on conventional curriculum models. Data from the Indonesia Career Center Network (ICCN, 2023) is even more specific: graduates with a portfolio of verified digital certifications receive their first job offer, on average, 2.7 months faster,

with starting salaries 15 to 20 percent higher than their peers who lack such certifications. These figures are not merely statistics; they confirm that the recognition of competencies through verifiable pathways holds real value in the eyes of employers.

Table 4. Key Workplace Skills and Their Relevance to OBE Micro-Credentials

No.	Skills (WEF 2023)	Category	Development Opportunities Through Micro-Credentials
1	Analytical Thinking	Cognitive	Problem-based learning, industry case studies
2	Creative Thinking	Cognitive	Design thinking sprints, product innovation
3	Technological Literacy	Technical	Coding boot camps, cloud/AI certifications
4	Lifelong Learning	Affective	Stackable credentials programs, e-portfolios
5	Leadership & Social Influence	Interpersonal	Collaborative projects, leadership training
6	Resilience & Flexibility	Affective	Work-based learning, field simulations
7	Quality Management	Technical	ISO certifications, quality management courses

Source: World Economic Forum (2023); adapted by the author

The Developed OBE-Micro-Credential Curriculum Framework

Summarizing the findings from the 42 articles analyzed, this study produced the OBE-Micro-Credential Curriculum Framework (KK-OBE-MK), which consists of four mutually supportive components. This framework is not designed as a single, rigid prescription, but rather as an adaptive model that allows study programs with varying contexts and capacities to implement it gradually according to their respective readiness.

Component 1: Formulation of CPLs Based on Graduate Competencies

The formulation of CPLs in the KK-OBE-MK is based on the principle of backward design: the starting point is not a list of courses, but rather a comprehensive vision of the ideal graduate profile, along with the associated demands of stakeholders. The CPLs are then elaborated to cover the four dimensions of the KKNI—attitudes, knowledge, general skills, and specific skills—with cognitive levels based on the revised taxonomy by Anderson and Krathwohl (2001). Each CPL formulation is accompanied by its weighting in relation to the graduate profile, enabling program administrators to track its achievement quantitatively over time. A synthesis of the 18 articles in this review reinforces the importance of this step: specifically formulated and

measurable CPLs have been shown to increase learning effectiveness by up to 34% (OECD, 2021).

Component 2: Mapping CPL into the Curriculum Structure

Once the CPLs have been defined, the next step is to translate them into an operational curriculum structure. In the KK-OBE-MK framework, this is done by developing a CPL-CPMK-Course Matrix (MCM) that explicitly maps the contribution of each course toward the achievement of specific CPLs. This matrix serves as a highly useful diagnostic tool: it helps academic programs identify courses whose contributions overlap (are redundant) as well as gaps in the achievement of specific CPLs that are not being addressed. Based on the MCM, a Curriculum Competency Map was also developed, illustrating the sequential progression of student competencies from the first semester through to the end of the program. The principle of constructive alignment proposed by Biggs and Tang (2011) forms the foundation of this entire mapping process: every element of the curriculum from objectives and methods to assessment must be coherent with one another and aligned toward the same CPL.

Component 3: Integration of Micro-Credentials as Flexible Learning Units

The third component is the heart of the KK-OBE-MK: the integration of micro-credentials into the curriculum through units called Micro-Credential Learning Units (MCLUs). Each MCLU is designed to have a standardized and auditable structure, including: (1) unit identity (name, code, KKNI level, credit load); (2) learning outcomes calibrated against the program's Competency-Based Learning (CPL) framework; (3) learning methods along with a detailed estimate of the learning load; (4) authentic assessment instruments; and (5) a mechanism for conversion to academic credits. The standard learning load is set at the equivalent of 3 SKS (135 hours), broken down into 45 hours of in-person or synchronous online learning, 45 hours of structured assignments, and 45 hours of self-directed learning in accordance with the provisions of Ministry of Education, Culture, Research, and Technology Regulation No. 53 of 2023.

MCLU can be sourced from three distinct yet complementary pathways: certification programs issued by industry partners, short online courses from platforms such as Coursera, edX, or Prakerja, and work-based learning experiences obtained through the MBKM scheme. Recognition within the study program curriculum is carried out through a Recognition of Prior Learning (RPL) approach adapted to the context of Indonesian higher education regulations (UNESCO, 2022).

Component 4: Learning Assessment and Recognition System

The fourth component addresses an issue that is often a weak point in the integration of micro-credentials: how to ensure that the competencies students acquire through MCLUs can truly be recognized, verified, and converted into a credible

academic grading system. KK-OBE-MK addresses this through authentic, e-portfolio-based assessment. Each student is required to build an e-portfolio that not only documents the completed MCLUs but also includes verifiable learning artifacts as evidence of competencies. The conversion of MCLUs into a program's credit hour system requires meeting three key criteria: alignment of MCLU learning outcomes with applicable CPLs, fulfillment of minimum course load standards, and the validity of assessments that can be validated by the academic program. Findings from the 27 articles in this review consistently confirm that portfolio assessment not only enhances learning motivation but also strengthens the achievement of competencies more comprehensively than exam-based assessment alone.

Table 5. Component Structure of the OBE-Micro-Credential Curriculum Framework (KK-OBE-MK)

No.	Components	Sub-Components	Instruments/Products
1	Competency-Based CPL	Graduate profiles, needs analysis, formulation of 4-dimensional CPLs under the KKNi	CPL documents, CPL contribution weights
2	Curriculum Mapping	CPL-CPMK-MK matrix, competency map, semester flowchart	MCM, Curriculum Competency Map
3	Micro-Credential Integration	MCLU from industry, MOOCs, MBKM work-based learning	MCLU template, micro-credential catalog
4	Assessment & Recognition	Authentic assessment, e-portfolio, credit conversion	Assessment rubrics, conversion forms, RPL guidelines

Source: A synthesis of the literature and the author's own work (2024)

Conceptual Validation and Implications for Implementation

The conceptual validity of the KK-OBE-MK framework was tested through triangulation against all 42 articles included in this study. The results indicate that each component of the framework has a solid theoretical foundation and aligns with the findings of recent research. Further support was obtained from institutional case studies at the international level. The University of Melbourne, through its "New Generation Melbourne Model" program (2021), has integrated 12 industry micro-credential modules into its undergraduate curriculum and recorded an 18 percent surge in graduate employability from 72% to 85% within the first year after graduation. The National University of Singapore (NUS), through its NUS Lifelong Learning program, reports that the stackable credentials it has developed have been recognized by 91% of its industry partners (NUS, 2022), demonstrating that the right design can transform micro-credentials from mere certificates into a guarantee of real

competence.

Di tingkat nasional, data evaluasi program Studi Independen Bersertifikat MBKM (Kemdikbudristek, 2022) memberikan gambaran yang menggembirakan sekaligus menantang. Dari 134.000 peserta yang terlibat, 78% melaporkan perolehan keterampilan baru yang secara langsung relevan dengan pekerjaan yang mereka incar, dan 65% berhasil masuk ke dunia kerja atau melanjutkan studi dalam enam bulan setelah menyelesaikan program. Angka-angka ini memberi sinyal kuat bahwa ketika pembelajaran informal dirancang dengan kerangka yang terstruktur, ia dapat menghasilkan dampak yang setara bahkan dalam beberapa aspek melampaui pembelajaran formal konvensional.

The Ministry of Education, Culture, Research, and Technology (Kemdikbudristek, 2022) presents a picture that is both encouraging and challenging. Of the 134,000 participants involved, 78% reported acquiring new skills directly relevant to their desired jobs, and 65% successfully entered the workforce or continued their studies within six months of completing the program. These figures send a strong signal that when informal learning is designed within a structured framework, it can produce an impact equivalent to and in some aspects even surpassing that of conventional formal learning.

From an educational technology perspective, the implementation of KK-OBE-MK drives the digital transformation of the higher education learning ecosystem through several avenues: (1) the development of a Learning Management System (LMS) that integrates MCLUs from various sources into a single coherent interface; (2) the use of Open Badges and the Digital Credentials Infrastructure (DCI) for the issuance and verification of micro-credentials; and (3) the development of a learning analytics system to track CPL achievement in real time. A study by Lockyer, Heathcote, and Dawson (2013) shows that institutions that adopt data-driven competency monitoring systems are able to identify at-risk students with 73% accuracy, enabling interventions that increase graduation rates by 12%.

Comparison with Previous Studies

When compared to previous research, the contribution of this study lies in its effort to bridge two areas that have thus far run parallel. Oliver (2019) laid a solid conceptual foundation regarding the characteristics of effective micro-credentials, but his work stopped short of addressing how micro-credentials can be embedded into an operational OBE architecture. Wheelahan and Moodie (2021) provide a critical analysis from a Bernsteinian perspective on the structural limitations of micro-credentials, but they focus more on diagnosing problems than on offering practical solutions. This study specifically fills that gap: KK-OBE-MK is presented not as an abstract normative framework, but as a guide that can be directly operationalized by academic programs within the real-world context of Indonesia's MBKM policy.

IV. Conclusion

The systematic literature review conducted in this study yielded one clear conclusion: the development of the OBE-Micro-Credential Curriculum Framework (KK-OBE-MK) is not merely an innovative option, but an inevitable response to the real pressures faced by higher education institutions in the era of digital transformation. The resulting framework comprises four components that systematically support one another: (1) the formulation of CPL based on graduate profiles aligned with the KKNi; (2) curriculum mapping through the CPL-CPMK-Course Matrix, which serves as a diagnostic tool for the curriculum; (3) the integration of Micro-Credential Learning Units (MCLU) as standardized and transferable learning units; and (4) authentic e-portfolio-based assessment that ensures transparent verification of competencies.

From the 42 synthesized articles, a consistent picture emerges: when OBE is implemented seriously and combined with structured micro-credentials, the two synergize to accelerate graduates' transition into the job market, increase employability rates, and expand the recognition of competencies by the industry. Conceptual validation through literature triangulation and comparison with international case studies confirms that the KK-OBE-MK framework possesses sufficient conceptual feasibility for implementation and is compatible with the direction of Indonesia's higher education policies specifically MBKM and SN-Dikti.

Several recommendations are proposed for further research and implementation. For higher education institutions, it is recommended to adopt KK-OBE-MK gradually, starting with study programs that are well-prepared in terms of human resources, digital infrastructure, and industry networks. For policymakers, national regulations are needed regarding minimum MCLU standards, credit conversion mechanisms, and a micro-credential accreditation system compatible with the KKNi and international standards. For future researchers, it is recommended to conduct empirical effectiveness tests of KK-OBE-MK through quasi-experimental designs across various study programs, as well as to develop blockchain-based technology platforms for MCLU management and student e-portfolios.

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