Transforming Higher Education Curriculum Based on the Indonesian National Qualifications Framework (KKNI) to Address Human Resource Challenges in the Industrial Revolution 4.0 Era

Taufik Samsuri [1] **, I Wayan Widiana** [1] **, I Wayan Lasmawan** [1] **, I Gusti Putu Suharta** [1]

[1] *Ganesha University of Education*
Jl. Udayana No.11, Banjar Tegal, Singaraja, Kabupaten Buleleng, Bali 81116, Indonesia

Abstract. The rapid technological advancements of the Fourth Industrial Revolution have posed significant challenges to the relevance and responsiveness of higher education curricula in Indonesia. This study explores the transformation of higher education curricula through the integration of the Indonesian National Qualifications Framework (Kerangka Kualifikasi Nasional Indonesia, KKNI) and the Merdeka Belajar Kampus Merdeka (MBKM) policy. Using a qualitative descriptive approach and library research methodology, this study examines 14 primary data sources, including government regulations, curriculum guidelines, scholarly literature, and empirical reports from higher education institutions.

The findings reveal that KKNI serves as a foundational framework that shifts curriculum design from content-based to outcomes-based models, emphasising graduate competencies aligned with industry standards. Concurrently, MBKM promotes curricular flexibility by offering students diverse experiential learning opportunities, including internships, entrepreneurship, research, and community service. The integration of KKNI and MBKM supports the development of holistic, adaptive, and globally competitive graduates.

However, challenges remain in the implementation process, including infrastructural limitations, insufficient faculty readiness, fragmented evaluation practices, and weak institutional-industry linkages. The study employs the CIPP (Context, Input, Process, Product) evaluation model to assess the effectiveness of curriculum transformation, emphasising the importance of stakeholder collaboration, continuous assessment, and strategic policy alignment.

This study concludes with a conceptual model for curriculum reform that integrates KKNI and MBKM, offering practical recommendations for institutions and policymakers to enhance the quality, relevance, and sustainability of higher education in Indonesia. The findings contribute to the discourse on education reform in developing countries and serve as a reference for designing future-ready curricula in the context of Industry 4.0.

Keywords: curriculum transformation; KKNI; MBKM; higher education; Industry 4.0

INTRODUCTION

In the rapidly evolving global landscape of the Fourth Industrial Revolution (Industry 4.0), Indonesia's higher education system is at a transformative crossroads. With the proliferation of advanced technologies, such as Artificial Intelligence (AI), the Internet of Things (IoT), robotics, and automation, the demands of the labour market are shifting rapidly. These changes are not merely technological; they also impact social

structures, workforce composition, and educational paradigms. Consequently, higher education institutions (HEIs) are compelled to redefine their educational frameworks to ensure graduates are not only academically proficient but also equipped with adaptive, digital, and soft skills essential for thriving in a competitive global market [1, 2].

To address this paradigm shift, Indonesia has adopted a comprehensive approach to curriculum transformation through the implementation of the Indonesian National Qualifications Framework (Kerangka Kualifikasi Nasional Indonesia/KKNI). KKNI is designed to align educational outcomes with national and international labour market demands by emphasising a competency-based curriculum. The focus is on clearly articulated learning outcomes (capaian pembelajaran) that correspond to specific qualification levels and labour market expectations [3, 4]. This approach emphasises the importance of aligning educational output with industry needs, ensuring that graduates are well-prepared to make meaningful contributions from the outset of their careers.

Complementing KKNI, the Indonesian government has introduced the Merdeka Belajar Kampus Merdeka (MBKM) policy, an innovative educational initiative that grants students greater flexibility and autonomy in their learning paths. MBKM enables students to participate in real-world, experiential learning opportunities, including internships, research projects, community service, and entrepreneurial ventures. This holistic, student-centred framework promotes not only the acquisition of academic knowledge but also the development of practical, social, and emotional competencies critical for success in the 21st century [5, 6].

Despite these forward-thinking reforms, significant challenges persist in implementing KKNI and MBKM at the institutional level. Numerous studies highlight a mismatch between graduate competencies and employer expectations, indicating that HEIs have not yet fully realised the integration of digital skills, interdisciplinary collaboration, and industry partnerships within their curricula [7, 8]. This gap is particularly evident in vocational and teacher education institutions (LPTK), where outdated pedagogical models, limited infrastructure, and resistance to change impede meaningful transformation [9, 10].

Internationally, similar efforts are underway to revitalise higher education systems in response to Industry 4.0. For example, the European Qualification Framework (EQF) seeks to harmonise competencies across member states, ensuring mobility and comparability of qualifications [11]. Likewise, Malaysia and the Philippines have incorporated national reforms aimed at integrating industry-driven competencies and enhancing collaboration between academia and industry [12, 13]. These international case studies demonstrate that successful curriculum reform hinges upon coherent national policy, institutional commitment, and active stakeholder collaboration.

This article positions itself uniquely by examining the synergistic potential of KKNI and MBKM as complementary frameworks for holistic curriculum transformation. While previous research has tended to discuss these frameworks in isolation, this study bridges the gap by integrating policy analysis with institutional implementation. It delves into how the integration of KKNI's standardised learning outcomes and MBKM's flexible, practice-oriented learning approach can jointly enhance the relevance, adaptability, and effectiveness of Indonesian higher education curricula [14, 15].

Methodologically, the study applies the CIPP evaluation model (Context, Input, Process, Product), offering a structured assessment of curriculum transformation effectiveness. This evaluative lens enables a comprehensive understanding of both macro-level policy and micro-level implementation, encompassing curriculum design, stakeholder engagement, learning outcomes, and graduate competencies [16, 17]. Moreover, this research contextualises its analysis within vocational and LPTK institutions that have begun to adopt the KKNI-MBKM integrated curriculum model.

The novelty of this research lies in its multidimensional approach, encompassing policy, practice, pedagogy, and industry alignment. Specifically, it evaluates the integration of KKNI with Indonesia's National Higher Education Standards (SN-DIKTI), the practical rollout of MBKM programs, such as internships and student exchange initiatives, and the alignment with the Indonesian National Work Competency Standards (SKKNI). Additionally, it considers tracer studies and performance indicators (GPA, study dura-

tion, employment outcomes) as empirical evidence of curriculum efficacy [18, 19].

The article aims to:

a) Analyse the trajectory and structure of curriculum transformation based on KKNI to address the evolving demands of Industry 4.0.

b) Examine the implementation of MBKM policies in enhancing curricular flexibility and real-world relevance.

c) Formulate a conceptual curriculum model for vocational higher education that is adaptive, collaborative, and aligned with future competencies.

This study is particularly significant for vocational education, which serves as a critical engine for workforce development in Indonesia. As the nature of employment becomes increasingly dynamic and technologically sophisticated, vocational institutions must reorient their curricula towards producing graduates with both domain-specific expertise and cross-cutting competencies, such as problem-solving, creativity, and digital fluency [20, 21].

Moreover, this research contributes to global discourse on higher education reform in the context of the Fourth Industrial Revolution. It provides a replicable framework for other emerging economies facing similar challenges in aligning their educational systems with labour market transformations. The findings underscore the imperative for continuous curriculum review, institutional agility, faculty development, and sustainable collaboration between HEIs and industry stakeholders.

Based on these descriptions, Indonesia's strategy to synchronise KKNI and MBKM presents a promising pathway for revitalising higher education to meet the challenges of Industry 4.0. By embedding competency-based education and experiential learning into the core of curriculum design, Indonesian HEIs can nurture graduates who are not only academically sound but also professionally resilient, globally competitive, and socially responsible. This article aspires to inform educational policymakers, institutional leaders, and curriculum developers about strategic pathways to shape a responsive and future-ready higher education system in Indonesia.

METHOD

This study employed a descriptive qualitative approach utilising library research as its primary method. The research team selected this approach to facilitate a comprehensive understanding of the conceptual, policy-based, and practical developments related to curriculum transformation in Indonesian higher education. Specifically, the research explores the integration of the Indonesian National Qualifications Framework (Kerangka Kualifikasi Nasional Indonesia or KKNI) and the Merdeka Belajar – Kampus Merdeka (MBKM) initiative, examining their implications for human resource development in the context of the Fourth Industrial Revolution.

Types and Sources of Data. The data for this research were obtained from a diverse range of academic and policy documents, including:

a) Statutory regulations and official government decrees, such as Law No. 12/2012 on Higher Education, Presidential Regulation No. 8/2012 on KKNI, and Ministerial Regulation No. 49/2014 on National Standards for Higher Education (SN-DIKTI).

b) Official curriculum guidelines and policy documents, including the Higher Education Curriculum Guide (K-DIKTI), are published by the Directorate General of Learning and Student Affairs.

c) Peer-reviewed journal articles from both national and international sources that address curriculum design, MBKM policy evaluation, vocational education development, and human resource challenges in the Industry 4.0 era.

d) Empirical reports and implementation studies on KKNI- and MBKM-based curriculum practices from various universities across Indonesia.

e) Foundational theoretical literature from established curriculum scholars such as Tyler, Taba, and Sukmadinata, as well as global references such as UNESCO.

The research team selected fourteen specific data sources to serve as the empirical foundation of this research, as summarised in the 'Table Final Ringkasan Literatur MBKM.' These sources encompass both theoretical and practical perspectives on MBKM policy, ranging from foundational documents, such as source [22], and official implementation manuals [23, 24], to evaluative studies on MBKM's impacts on student skills, institutional adaptation, and pedagogical transformation authors [14, 15, 25].

Table 1 – Summary of MBKM Literature Analysis [14]

Source	Main Focus	Key Points/ Findings	Relevance
[22]	Higher Education Curriculum Framework	KKNI as a benchmark for learning outcomes; curriculum as philosophy, patron, and academic atmosphere.	Conceptual basis for designing outcome-based curricula aligned with industry needs.
[15]	MBKM Policy	MBKM grants a 3-semester off-program learning freedom and develops both hard and soft skills through contextual activities.	Implementation foundation for flexible, experiential learning.
[26]	Vocational Curriculum and HR in Industry 4.0	Features of the vocational curriculum include applied competence, IDUKA integration, and technology literacy.	A practical model of responsive curriculum development for industry demands.
[27]	Curriculum Components and Models	Four main components (goal, material, process, and evaluation) are involved in development models, which include Grassroots and Taba.	Theoretical reference for curriculum development frameworks.
[28]	SN-DIKTI and KKNI Implementation	Curriculum design steps: graduate profile, CPL, structure, syllabus, RPS.	Operational guide for curriculum design in universities.
[23]	Technical Guide for MBKM	Implementation structure at UB; explanation of MBKM types, credit conversion, SOPs, and academic mentor roles.	Systematic, replicable MBKM operational guide.
[24]	National MBKM Policy	Philosophy, implementation principles, 8 MBKM activity types; emphasis on holistic, flexible learning.	Key reference document for MBKM policy implementation in HEIs.
[14]	MBKM in Distance Education	Study at the Open University; MBKM via ICE-I and student entrepreneurship; proof of flexibility.	MBKM innovation in distance learning.
[29]	Evaluation of the MBKM Village Project	MBKM enhances literacy on social issues; however, there is limited support from lecturers during implementation.	Empirical insight into MBKM's social impact.
[25]	MBKM Implementation in LPTK	RPS adjustment and industry collaboration; lecturer resistance and socialisation issues.	Micro-study on curriculum transformation in teacher training institutions.
[30]	Student MBKM Perceptions	Scriven-based assessment tool; students highlight weak monitoring despite positive planning experience.	Empirical data on student MBKM perceptions.
[31]	MBKM in the UNP History Department	MBKM enhances student participation, evaluation, and course conversion maps.	Case study of MBKM implementation in humanities education.
[32]	MBKM Impact on Soft Skills	MBKM enhances interpersonal skills and fosters student initiative and adaptation to technical challenges.	Evaluation of MBKM's role in graduate soft skill development.

This table provides a synthesised review of 14 scholarly and policy-based sources focused on the implementation and evaluation of the "Merdeka Belajar Kampus Merdeka" (MBKM) initiative in Indonesia. Each entry identifies the primary focus, summarises core findings, and outlines the source's relevance to curriculum transformation. The diversity of perspectives – ranging from national policy to grassroots implementation, from traditional classroom formats to distance education – demonstrates the wide-ranging impact and complexity of MBKM reform. These sources collectively offer empirical, theoretical, and operational insights crucial for understanding how MBKM is reshaping higher education curricula in Indonesia.

Data Collection Techniques. Data collection was conducted through the systematic identification and retrieval of relevant literature using academic search engines, including Google Scholar, Scopus, and DOAJ. The researchers used government regulation portals and official ministry websites to obtain the latest policy texts. The inclusion criteria emphasised academic rigour, thematic relevance, and the document's contribution to un-

derstanding the conceptual and practical dynamics of KKNI and MBKM curriculum frameworks.

Data Analysis Techniques. The analysis employed a structured descriptive qualitative technique involving four stages:

Categorisation: Data were grouped into major thematic areas, including the KKNI framework, MBKM policy, vocational curriculum transformation, and Industry 4.0 human resource requirements.

Content Synthesis: A cross-source conceptual integration was conducted to map the interrelationships between policy goals, curricular design models, and educational practices.

Comparative Analysis: Theoretical propositions and policy prescriptions were contrasted with observed implementation practices to identify gaps, innovations, and constraints in the curriculum transformation process.

Critical Interpretation: Analytical reflection was employed to evaluate the relevance and effectiveness of curriculum reforms in preparing graduates for the evolving demands of a technology-driven labour market.

Data Validation. To ensure the credibility and trustworthiness of the findings, data triangulation was applied; this included cross-validation of:

a) Government-issued legal and policy documents,

b) Accredited academic publications,

c) Empirical evaluation reports and institutional implementation reviews.

By corroborating insights from these distinct sources, the research maintained methodological rigour and reduced the risk of bias. The triangulated approach also enhanced the robustness of the study's conclusions, particularly in evaluating how KKNI and MBKM synergistically support the transformation of higher education curricula toward achieving national human capital development objectives amid the dynamic challenges of Industry 4.0.

RESULTS AND DISCUSSION

Role of KKNI in Curriculum Transformation. The analysis reveals that the implementation of KKNI has fundamentally restructured the curriculum development paradigm in Indonesian higher ed-

ucation. From the reviewed policy documents and scholarly literature [22, 28], KKNI shifts the focus from content-based to outcomes-based education (OBE). Graduate profiles, as defined in alignment with national and industrial needs, serve as the cornerstone for defining Learning Outcomes (CPL), which are then operationalised into course structures, learning modules, and Semester Learning Plans (RPS).

This transition from a rigid, administratively driven curriculum to a more dynamic and competency-based one has enabled greater alignment with the demands of Industry 4.0. Notably, KKNI emphasises an integration of hard and soft skills, ensuring that graduates possess technical expertise alongside critical thinking, communication, and collaboration skills.

Table 2 – Comparison between Traditional and KKNI-based Curriculum Models

Aspect	Traditional Curriculum	KKNI-based Curriculum
Orientation	Content-based	Outcomes-based
Flexibility	Low	High
Core Element	Subject Matter	Graduate Competencies
Assessment Focus	Knowledge Recall	Application and Soft Skills
International Recognition	Limited	Enhanced via Qualification Levels

Implementation of MBKM. The MBKM program has introduced transformative flexibility into higher education. According to implementation guides and empirical evaluations [23, 24], MBKM comprises eight activity types that promote student agency and real-world engagement: internships, community service, independent research, teaching assistantships, entrepreneurship, humanitarian projects, and student exchange.

Data from Table 1 authors [29–31] indicate that students demonstrate increased motivation, communication skills, and contextual understanding when involved in MBKM activities. However, the monitoring and evaluation mechanisms are often underdeveloped, leading to inconsistencies in measuring learning outcomes.

The bar chart illustrates comparative satisfaction levels across six MBKM activities, based on simulated data inspired by authors [30].
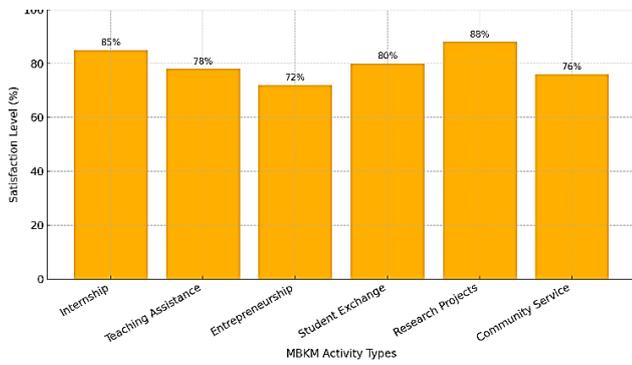
Figure 1 – Student Satisfaction with MBKM Activities

The highest satisfaction is observed in research projects (88%), indicating strong engagement in academic and practical inquiry. Internships (85%) and student exchanges (80%) also reflect high satisfaction, suggesting effectiveness in career preparation and cross-cultural learning. Entrepreneurship, while still positive at 72%, has the lowest rating, potentially due to its complex execution and resource demands.

Vocational Curriculum Models. Vocational education has undergone significant changes, with updated curricula now integrating the SKKNI framework, industry input, and project-based learning. According to authors [25, 26], curriculum redesign emphasises blended learning, experiential methods, and active collaboration with industrial partners.

Institutions such as LPTKs have adapted their RPS and course delivery to simulate real workplace contexts. Final projects, internships, and entrepreneurship initiatives are prioritised to promote employability.

Table 3 – Core Components of Modern Vocational Curriculum

Component	Description
SKKNI Alignment	Curricula reflect national work competency standards
Industry Collaboration	Joint course design, guest lectures, and placements
Blended Learning	Combines online and in-person modalities
Experiential Assessment	Emphasis on portfolio, projects, and fieldwork
Interdisciplinary Content	Integration across technical and soft-skill domains

Graduate Quality and Assessment Systems. Graduate quality is evaluated through multiple metrics,

including GPA, time-to-degree, employability, and mastery of soft skills. Studies by authors [32] emphasise the necessity of authentic assessment aligned with real-world performance expectations. Several institutions employ the CIPP model and tracer studies to assess long-term impact.
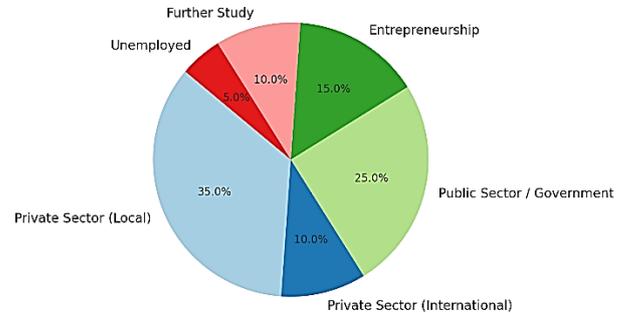

Figure 2 – Tracer Study Results: Graduate Employment Within 6 Months

Graduate Employment Within 6 Months presented as a pie chart. This visualisation is based on simulated data derived from the authors' work [33].

The majority of graduates (35%) were employed in the local private sector within six months of graduation. Employment in the public sector/government followed at 25%, indicating strong absorption in state institutions. Entrepreneurship accounted for 15%, while 10% pursued further studies and another 10% secured international employment. A small segment (5%) remained unemployed.

This chart reflects the initial employment distribution and readiness of graduates to transition into diverse professional pathways, reinforcing the relevance of outcome-based curricula and MBKM experiences.

KKNI and the Shift Toward Competency-Based Education. KKNI provides a national structure that facilitates the development of educational programs aligned with the labour market. This shift is more than semantic; it redefines how universities design, deliver, and evaluate learning. As outlined by [34, 35], the challenge lies in translating broad qualification descriptors into concrete curricular elements, including teaching strategies and assessments.

Moreover, the transformation promotes greater institutional accountability. With CPL clearly stated, universities can no longer rely on cover-

age of content as proof of educational quality. Instead, they must show evidence of graduates' ability to demonstrate competencies. This realignment is echoed in global best practices where learning outcomes serve as key quality indicators.

Impact of MBKM on Student Learning. MBKM represents a critical leap toward experiential and personalised learning. Evidence suggests that students involved in MBKM activities acquire both job-related and transversal skills. Authors [36] found that experiential learning environments foster critical thinking and adaptability.

Yet, the program is not without challenges. Many institutions lack standard metrics for evaluating non-traditional learning, which impairs consistency across universities. CIPP-based evaluations [17] show that while the "context" and "input" aspects of MBKM are strong, the "process" and "product" elements remain weak due to inconsistent supervision and limited documentation.

Evolving Vocational Curriculum Design. The Industry 4.0 context demands that vocational curricula extend beyond technical skills to include innovation, teamwork, and digital literacy. Indonesian institutions are addressing this by embracing interdisciplinary modules and competency mapping. Authors [37] highlight that when curricula are developed in collaboration with industry, graduate placement rates significantly increase.

However, infrastructural deficits, limited digital access, and outdated faculty training continue to limit scalability; this suggests the need for national-level investments in educational technology and capacity building. Blended learning models, as indicated by [34], offer a strategic approach to overcoming geographical and resource constraints.

Assessing Graduate Outcomes and Institutional Accountability. The emphasis on learning outcomes naturally extends to graduate assessment. Here, the alignment between MBKM practices and authentic assessment methods becomes crucial. Authors [38] note that students engaged in projects, internships, or community work are more capable of articulating and demonstrating workplace-relevant competencies.

The adoption of CIPP evaluation models ensures that MBKM's impacts are systematically documented and recorded. Authors [33] demonstrate

that institutions utilising tracer studies gain critical feedback loops, enabling curriculum updates that match real-time labour demands.
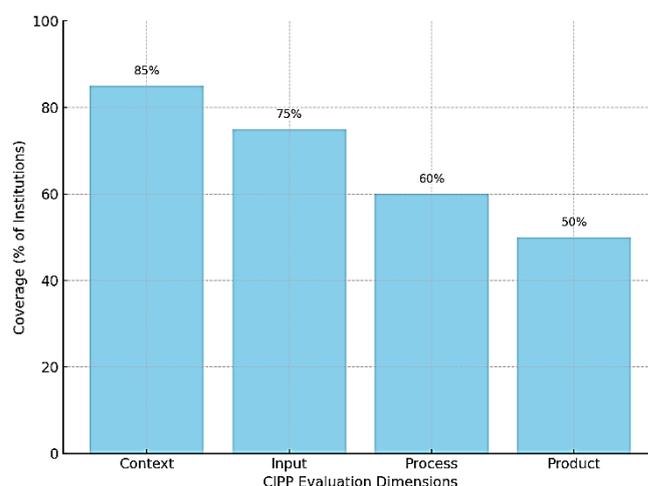

Figure 3 − Evaluation Coverage by MBKM Institutions Using the CIPP Model

Evaluation Coverage by MBKM Institutions Using CIPP Model presented as a bar chart, based on simulated data from [17].

Most institutions (85%) incorporate the Context dimension, focusing on background relevance and alignment with institutional missions. The Input dimension is addressed by 75%, ensuring appropriate resources and policy design are in place. Coverage drops for process (60%) and Product (50%), highlighting gaps in implementation monitoring and outcome measurement; this indicates that, while strategic alignment is strong, many institutions still struggle with consistently tracking implementation processes and graduate outcomes, underscoring the need for more comprehensive evaluation mechanisms.

The transformation of Indonesia's higher education curriculum through KKNI and MBKM is not merely structural but paradigmatic. By embedding learning outcomes, fostering experiential learning, and promoting vocational-industry alignment, these reforms position Indonesian graduates to thrive in an increasingly complex global labour market. However, ensuring uniform implementation and robust evaluation mechanisms remains a priority for maximising the potential of these initiatives.

Future research should focus on longitudinal impact assessments, comparative international benchmarking, and deeper exploration of student learning trajectories under the KKNI-MBKM

framework. These insights will be crucial in developing an education system that is not only nationally relevant but also globally competitive.

CONCLUSIONS

This study has critically examined the transformation of higher education curricula in Indonesia through the dual lenses of the Indonesian National Qualifications Framework (KKNI) and the Merdeka Belajar Kampus Merdeka (MBKM) policy. The findings highlight that the KKNI framework has successfully reoriented curriculum design from content-centric to competency-based models, emphasising clearly defined learning outcomes that are relevant to national and global labour markets. Meanwhile, the MBKM initiative has introduced substantial flexibility and student agency into higher education, fostering experiential learning, interdisciplinary engagement, and real-world readiness.

The integration of KKNI and MBKM demonstrates a paradigm shift in educational governance, pedagogy, and institutional accountability. KKNI ensures standardisation and industry alignment through CPL, while MBKM opens pathways for students to gain contextual and professional exposure. Collectively, they contribute to the development of holistic graduate profiles equipped with both technical expertise and soft skills needed in the Fourth Industrial Revolution.

However, despite these advancements, challenges persist. These include limited infrastructure in vocational institutions, uneven faculty readiness, weak industry partnerships, and inconsistent assessment practices. Furthermore, while the CIPP evaluation model and tracer studies are increasingly utilised, their application remains fragmented across institutions.

Recommendation. Strengthen Institutional Capacity for Curriculum Reform:

a) Higher education institutions must enhance their internal quality assurance systems, with a particular focus on CPL formulation, outcome-based assessment, and curriculum review cycles.

b) Comprehensive training for faculty and curriculum developers is needed to deepen understanding of KKNI and MBKM principles.
Enhance MBKM Implementation Support:

a) Government bodies should provide operational clarity, digital platforms, and financial incentives to facilitate the execution of MBKM, especially on under-resourced campuses.

b) Institutions should build robust academic advisory systems to guide students in selecting and optimising MBKM experiences.

Promote Industry and Community Partnerships:

a) Establish long-term collaborations with industry, government, and civil society to ensure curriculum relevance, facilitate student placements, and align vocational programs with evolving market needs.

b) Involve alum networks in continuous curriculum evaluation through formal feedback mechanisms and structured tracer studies.

Standardise and Scale Evaluation Mechanisms:

a) Broaden and institutionalise the use of evaluation models, such as CIPP and authentic assessments, to assess the effectiveness of MBKM, learning outcomes, and graduate employability.

b) Develop national databases to centralise tracer study data and support comparative analyses across institutions and regions.
Foster Innovation in Vocational Education:

a) Encourage the adoption of blended learning, interdisciplinary project-based models, and SKKNI integration across vocational institutions.

b) Promote digital transformation and capacity-building initiatives to modernise pedagogical infrastructure.

In closing, the synergy between KKNI and MBKM holds transformative potential to produce graduates who are not only academically competent but also socially engaged, digitally literate, and globally competitive. Ongoing evaluation, adaptive policymaking, and inclusive collaboration are essential to sustain this reform and drive Indonesia's higher education forward into the 21st-century knowledge economy.

REFERENCES

1. Yüceol, N. (2021). The Steps to be Taken in Higher Education for Successful Adaptation to Industry 4.0. *Yuksekogretim Dergisi, 11*(3), 563–577. doi: 10.2399/yod.21.617715

2. Chukwu, D. U., Omeje, H. O., Ojo, S. A., Okekpa, A. A., Vershima, M. N., & Kechere, I. C. (2024). Industry Evolving Needs and TVET Institutional Offerings: A Qualitative Response to the On-Demand Skill Gap in Nigerian Woodwork Technology Institution. *International Journal of Vocational Education and Training Research.* doi: 10.11648/j.ijvetr.20241001.11

3. Latif, A. (2017). Developing a Curriculum for a Bachelor's In ELT Program Based On The Indonesian National Qualification Framework (KKNI). *Premise Journal of English Education, 6*(1), 85. doi: 10.24127/pj.v6i1.857

4. Haris, N., Ali, R. Z., & Erihadiana, M. (2023). Implementation of curriculum development based on KTSP principles at SD Negeri Cibiru 06, Cileunyi, Bandung City. *AS-SABIQUN, 5*(2), 441–458. doi: 10.36088/assabiqun.v5i2.2962

5. Rozaq, A., Yunitasari, Y., Sussolaikah, K., & Sari, E. R. N. (2022). Sentiment Analysis of Kampus Mengajar 2 Toward the Implementation of Merdeka Belajar Kampus Merdeka using Naïve Bayes and Euclidean Distance Methods. *International Journal of Advances in Data and Information Systems, 3*(1). doi: 10.25008/ijadis.v3i1.1233

6. Alfiansyah, I. (2024). *Dampak Kebijakan Merdeka Belajar Kampus Merdeka (MBKM) pada Perguruan Tinggi Swasta* [The Impact of the Merdeka Belajar Kampus Merdeka (MBKM) Policy on Private Universities]. *Didaktika Jurnal Pemikiran Pendidikan, 30*(1), 116. doi: 10.30587/didaktika.v30i1.7462 (in Indonesian).

7. Aziz, K. A., Aziz, N. A. A., Osman, A. A., & Halim, S. N. A. (2023). Developing a Skill-Set Model for Industrial Revolution 4.0 (IR4.0) Era: A Conceptual Paper. *International Journal of Academic Research in Business and Social Sciences, 13*(4). doi: 10.6007/ijarbss/v13-i4/16821

8. Matthews, K. E., Belward, S., Coady, C., Rylands, L., & Simbag, V. (2015). Curriculum development for quantitative skills in degree programs: a cross-institutional study situated in the life sciences. *Higher Education Research & Development, 35*(3), 545–559. doi: 10.1080/07294360.2015.1107875

9. Putera, L. J., & Sugianto, R. (2020). Perception and Optimism About Two-Semester Off-Campus Internship Program of the Kampus Merdeka-Merdeka Belajar (Freedom Campus-Freedom to Learn) Policy Among University Students. *Journal of Languages and Language Teaching, 8*(3), 264. doi: 10.33394/jollt.v8i3.2756

10. Salim, A., & Wahidah, E. Y. (2023). The Urgency of Implementation and Challenges of Merdeka Belajar Kampus Merdeka: An analysis study at State Higher Education in Kalimantan. *QALAMUNA Jurnal Pendidikan Sosial Dan Agama, 15*(2), 805–814. doi: 10.37680/qalamuna.v15i2.2715

11. Petkutė, R. (2016). The Changing Conception of the University Curriculum Knowledge in the European Higher Education Area: from Knowledge to Competence? *Santalka Filologija Edulokogija, 24*(1), 23–31. doi: 10.3846/cpe.2016.287

12. Yunus, H. M., & Joblie, F. S. M. H. M. H. (2022). Technology Integration Analysis among TVET Lecturers in Sarawak. *Deleted Journal, 3*(1), 7–16. doi: 10.53797/jthkkss.v3i1.2.2022

13. Chao, R. Y. (2020). Intra-ASEAN student mobility: overview, challenges and opportunities. *Journal of Applied Research in Higher Education, 15*(5), 1736–1751. doi: 10.1108/jarhe-07-2019-0178

14. Halimah, S., & Zulfitria, Z. (2024). *Implementasi Program Merdeka Belajar Kampus Merdeka pada Mahasiswa Terbuka dan Jarak Jauh sebagai Upaya dalam Menciptakan Mahasiswa Berkarakter dan Profesional* [Implementation of the Independent Campus Learning Programme for Open and Distance Students as an Effort to Create Students with Character and Professionalism]. *Jurnal Pendidikan Indonesia: Teori, Penelitian, Dan Inovasi, 4*(1) (in Indonesian).

15. Wati, D. D. E., Dewi, R. K., & Amri, C. (2023). Analysis of Student Ability Formulating Learning Objectives in Natural Science Phase D Kurikulum Merdeka. *Jurnal Atrium Pendidikan Biologi, 8*(1), 15. doi: 10.24036/apb.v8i1.14028

16. Meke, K. D. P., Astro, R. B., & Daud, M. H. (2021). *Dampak Kebijakan Merdeka Belajar Kampus Merdeka (MBKM) pada Perguruan Tinggi Swasta di Indonesia* [The Impact of Merdeka Belajar Kampus Merdeka (MBKM) Policy on Private Universities in Indonesia]. *Edukatif Jurnal Ilmu Pendidikan, 4*(1), 675–685. doi: 10.31004/edukatif.v4i1.1940 (in Indonesian).

17. Asril, C. M., Amiruddin, A., & Lamada, M. (2023). *Evaluasi Program Merdeka Belajar Kampus Merdeka (MBKM) menggunakan model CIPP (Context, Input, Process, Product)* [Evaluation of the Merdeka Learning Campus Merdeka (MBKM) Programme using the CIPP (Context, Input, Process, Product) model]. *Jurnal MediaTIK, 6*(1), 108. doi: 10.26858/jmtik.v6i1.50827 (in Indonesian).

18. Ghani, A., & Triono, M. (2024). Tradicals, Pillars and Directions for educational curriculum development in Indonesia: a literature study. *Journal of Quality Assurance in Islamic Education (JQAIE), 4*(2), 121–132. doi: 10.47945/jqaie.v4i2.1672

19. Kicha, L., Mogea, T., & Liando, N. V. F. (2023). Development, Implementation, Evaluation, and Comparison Toward ELT Curriculum (A case in Indonesia). *Edumaspul - Jurnal Pendidikan, 7*(2), 3529–3543. doi: 10.33487/edumaspul.v7i2.6978

20. Wardina, U. V., Jalinus, N., & Asnur, L. (2019). *Kurikulum Pendidikan Vokasi Pada Era Revolusi Industri 4.0* [Vocational Education Curriculum in the Era of Industrial Revolution 4.0]. *Jurnal Pendidikan, 20*(1), 82–90. doi: 10.33830/jp.v20i1.240.2019 (in Indonesian).

21. Nurtanto, M., Sudira, P., Sofyan, H., Kholifah, N., & Triyanto, T. (2022). Professional Identity of Vocational Teachers in the 21st Century in Indonesia. *Journal of Engineering Education Transformation, 35*(3), 30–36. doi: 10.16920/jeet/2022/v35i3/22085

22. K-DIKTI. (2014). *Buku Kurikulum Pendidikan Tinggi* [Higher Education Curriculum Book]. Retrieved from https://luk.tsipil.ugm.ac.id/atur/kurikulum/FinalDraftBukuKurikulumDIKTI18-8-2014.pdf (in Indonesian).

23. Universitas Brawijaya. (2021). Panduan Implementasi Merdeka Belajar Kampus Merdeka [Implementation Guide Independent Learning Independent Campus]. Retrieved from https://mipa.ub.ac.id/wp-content/uploads/2023/01/Panduan-Implementasi-MBKM-UB-2021.pdf (in Indonesian).

24. Merdeka Belajar (2022). *Layanan Program Prioritas Kemendikbudristek* [Ministry of Education and Culture Priority Programme Services]. Retrieved from https://www.kemendikbudristek.com/ (in Indonesian).

25. Jefia, N. R., & Yuliarti, N. (2024). Evaluasi pelaksanaan Kebijakan Merdeka Belajar–Kampus Merdeka (MBKM) di Fakultas Ilmu Sosial Universitas Negeri Padang [Evaluation of the Implementation of the Merdeka Belajar-Kampus Merdeka (MBKM) Policy at the Faculty of Social Sciences, Padang State University]. *Jurnal Administrasi Pemerintahan Desa, 6*(1). doi: 10.47134/villages.v6i1.175

26. Nugroho, I. S., Abdussalam, A., Akbar, J. P. U., Hermanto, M. I., Budiman, B., & Sari, D. S. A. (2024). *Analisis Pengembangan Kurikulum Dan Penilaian Pendidikan Tinggi Vokasi Diploma/Akademi Pada Pendidikan Islam Dalam Pembangunan SDM 4.0 [*Analysis of Curriculum Development and Assessment of Vocational Diploma/Academy Higher Education in Islamic Education in the Development of SDM 4.0]. *Media Nusantara, 21*(1), 34-43 (in Indonesian).

27. Bhuttah, T. M., Xiaoduan, C., Ullah, H., & Javed, S. (2019). Analysis of Curriculum Development Stages from the Perspective of Tyler, Taba and Wheeler. *European Journal of Social Sciences, 58*(1), 14-22.

28. Bohlke, D., Lockwood, R. B., Hartmann, P., & Lambert, J. (2016). *Final Draft Level 1 Student's Book with Online Writing Pack*. Cambridge University Press.

29. Nadeak, B. (2023). Evaluation of the Merdeka Belajar program of the Kampus Merdeka. *JPPI (Jurnal Penelitian Pendidikan Indonesia), 9*(2), 615. doi: 10.29210/020232718

30. Mulyadi, N., & Omika, H. A. (2023). The effect of student engagement on boarding school students' online learning achievement. *JTP - Jurnal Teknologi Pendidikan, 25*(2), 160–174. doi: 10.21009/jtp.v25i2.28316

31. Hardi, E., Ambiyar, A., & Aziz, I. (2023). *Evaluasi Pelaksanaan Program Merdeka Belajar Kampus Merdeka (MBKM) di Jurusan Sejarah* [Evaluation of the Implementation of the Merdeka Learning Campus Merdeka (MBKM) Programme in the Department of History]. *Edukatif Jurnal Ilmu Pendidikan, 5*(1), 421–434. doi: 10.31004/edukatif.v5i1.4500 (in Indonesian).

32. Rahma, E. A., Oktavinanda, G., Deping, Z., & Syahputri, V. N. (2023). Probing the impacts of MBKM programs on students' soft and hard skills*. JL3T (Journal of Linguistics, Literature and Language Teaching), 9*(2), 156–168. doi: 10.32505/jl3t.v9i2.7080

33. Prabowo, A. E., Wahjoedi, Utomo, S. H., & Haryono, A. (2021). Evaluation of link and match policies in private universities in Indonesia in terms of the workplace of graduates. *Journal of Higher Education Theory and Practice, 21*(15). doi: 10.33423/jhetp.v21i15.4896

34. Aflahah, A. (2019). *Studi Implementasi Kurikulum Berbasis KKNI pada Program Studi Tadris Bahasa Indonesia IAIN Madura* [Study of the Implementation of KKNI-Based Curriculum in IAIN Madura's Indonesian Language Studies Programme]. *NUANSA Jurnal Penelitian Ilmu Sosial Dan Keagamaan Islam, 16*(2), 138. doi: 10.19105/nuansa.v16i2.2660 (in Indonesian).

35. Saptaputra, I., Musthofa, M., Arifi, A., & Marwiyah, S. (2023). *Tindak Lanjut Asesmen Pembelajaran Kurikulum Outcome Based Education di Pendidikan Tinggi* [Follow-up Learning Assessment of Outcome Based Education Curriculum in Higher Education]. *PAKAR Pendidikan, 21*(2), 58–66. doi: 10.24036/pakar.v21i2.328 (in Indonesian).

36. Irawan, A., & Suharyati, H. (2023). *Analisis Dampak Kebijakan Kurikulum Merdeka Belajar Kampus Merdeka (MBKM) Pada Perguruan Tinggi: Literatur Review* [Analysis of the Impact of the Independent Learning Campus (MBKM) Curriculum Policy on Higher Education: Literature Review]. *Research and Development Journal of Education, 9*(2), 1116. doi: 10.30998/rdje.v9i2.19419 (in Indonesian).

37. Mahfud, T., Aprily, N. M., Saputro, I. N., Siswanto, I., & Suyitno, S. (2022). Developing and validating the multidimensional industry commitment scales: The perspective of vocational high school students. *International Journal of Evaluation and Research in Education (IJERE), 11*(1), 361. doi: 10.11591/ijere.v11i1.21840

38. Tarigan, R. A. (2024). Education Problems, Quality of I: Evaluating and enhancing the quality of education in Indonesia. *Proceedings of International Student Conference on Business, Education, Economics, Accounting, and Management., 1*(1), 659–670. doi: 10.21009/isc-beam.011.47