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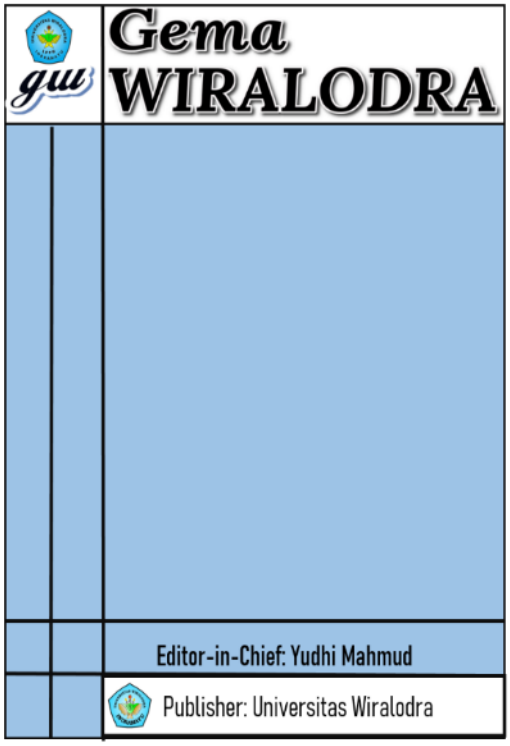

Curriculum Development in Various Countries at The University Level: Recommendations and Solutions

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Curriculum Development in Various Countries at The University Level: Recommendations and Solutions

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ABSTRACT
This study is a Systematic Literature Review (SLR) that examines the development of higher education curricula in various countries during the 2015-2025 period. Using the PRISMA 2020 guidelines, 52 articles from the Scopus, Web of Science, and ERIC databases were systematically analyzed. The objectives of this study are: (1) to identify trends and models of curriculum reform in various countries; (2) to analyze the challenges of implementing competency-based curricula (CBC) and learning outcomes-based curricula (OBE); (3) to examine policy responses to the industrial revolution 4.0 and Society 5.0; and (4) to formulate strategic recommendations and solutions. The results of the study indicate that there are five main models of global higher education curriculum reform: (a) Outcome-Based Education (OBE) which is dominant in Asia and North America; (b) cross-disciplinary competency-based curriculum in Europe; (c) industry-integrated curriculum (Work-Integrated Learning) in Australia and Canada; (d) research-based curriculum in Northern European universities; and (e) digital-transformative curriculum post-COVID-19 pandemic globally. Three critical challenges identified include: the implementation gap between policy and practice, faculty resistance to change, and the disparity in technological resources across countries. This article offers five evidence-based recommendations to improve the quality and relevance of higher education curricula globally.
Keywords: Higher Education Curriculum, Curriculum Reform, OBE, Competence, SLR, Global Higher Education.

1. Introduction

Universities worldwide are facing unprecedented transformational pressures. The acceleration of the Fourth Industrial Revolution, post-COVID-19 digital disruption, rapidly changing job market demands, and UNESCO's Sustainable Development Goals (SDGs) agenda have pushed higher education institutions to fundamentally reimagine their curricula. In this context, a fundamental question facing policymakers and academics is: how should higher education curricula evolve to remain relevant, inclusive, and able to prepare graduates for the complexities of the 21st century?

A university curriculum is more than just a list of courses. It reflects a nation's values, goals, and orientation toward higher education (Barnett & Coate, 2005). Its development is influenced by geopolitical contexts, government policies, industry pressures, institutional capacity, and global knowledge dynamics. International comparative studies indicate global convergence in approaches to curriculum reform particularly through the adoption of Outcome-Based Education (OBE) and competency-based curricula but their implementation varies widely depending on the local context of each country (Cuong et al., 2024; Tikhonova & Raitskaya, 2025).

The current wave of curriculum reforms is also driven by the internationalization of higher education. The Bologna Process in Europe, ABET accreditation in the United States, the Malaysian Qualifications Framework (MQF) in Malaysia, and similar policies have promoted curriculum standardization and harmonization worldwide (Leask, 2015). However, there is

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significant academic debate about the risks of curriculum homogenization, which could erode cultural richness and local wisdom in higher education (Zapp & Lerch, 2020; Cuong et al., 2024).

While numerous individual studies have documented curriculum reforms in specific countries, there remains a gap in the comprehensive literature on comparative patterns, common challenges, and adaptable solutions across contexts. This research aims to fill this gap through a systematic and transparent Systematic Literature Review (SLR) approach.

The objectives of this study are: (1) to map the main trends in higher education curriculum development in various countries in the period 2015-2025; (2) to identify the most widely adopted and empirically proven effective curriculum reform models; (3) to analyze recurring and cross-context implementation challenges; and (4) to formulate evidence-based recommendations and solutions for higher education stakeholders.

2. Method

2.1 Concept of Higher Education Curriculum

Curriculum in higher education has a broader meaning than just a syllabus or lesson plan. Barnett (2000) defined the higher education curriculum as a planned learning experience designed to develop students' capacities as active individuals and responsible citizens. In the contemporary context, Leask (2015) expanded this definition to include international, intercultural, and global dimensions in curriculum content, learning outcomes, teaching methods, and assessment systems.

In modern academic discourse, there are several main paradigms of higher education curricula. First, the content-centered curriculum emphasizes the structured transmission of disciplinary knowledge. Second, the learner-centered curriculum focuses on developing students' capacities and needs. Third, the outcome-based curriculum (OBE), which emphasizes what students should be able to do after completing a study program. Fourth, the competency-based curriculum (CBE), which focuses on developing integrated competencies for work and life readiness (Tikhonova & Raitskaya, 2025).

2.2 Theoretical Framework of Curriculum Reform

Higher education curriculum reform can be understood through several theoretical frameworks. Social Constructivism Theory (Vygotsky, 1978) emphasizes the importance of social context and collaboration in the learning process, encouraging a curriculum that emphasizes problem-based learning (PBL) and collaborative projects. Transformative Learning Theory (Mezirow, 1991) emphasizes a curriculum that encourages students to critically reflect on and reconstruct their underlying assumptions. Complexity Theory (Davis & Sumara, 2006) offers the perspective that the curriculum must be adaptive, responsive, and able to manage uncertainty.

In the context of global policy, New Public Management (NPM) theory has encouraged the adoption of outcomes-based accountability and indicator-based quality models in higher education curricula globally. Meanwhile, Decolonization of Education Theory challenges the dominance of Global North knowledge and values in curricula, encouraging the incorporation of more diverse local epistemologies and perspectives (Zapp & Lerch, 2020).

2.3 Globalization and Internationalization of the Curriculum

Curriculum internationalization (IoC) has become a key agenda for global higher education reform. Leask (2015) defines IoC as the incorporation of international, intercultural, and global dimensions into curriculum content, learning outcomes, assessment tasks, teaching methods, and support services. A bibliometric analysis by Cuong et al. (2024) shows significant

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growth in IoC research over the past decade, with contributions from the Global North dominating.

The Bologna Process in Europe is the most ambitious example of international curriculum harmonization efforts, successfully standardizing academic degree structures across 48 countries and encouraging massive academic mobility of students and faculty. In Asia, similar initiatives such as the ASEAN Credit Transfer System (ACTS) and various bilateral qualification recognition agreements have promoted regional curriculum harmonization, albeit at a lower intensity than the European model (Altbach & de Wit, 2018).

2.4 Research Design

This study used a Systematic Literature Review (SLR) design following the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. SLRs were chosen for their ability to synthesize evidence from multiple studies in a systematic, transparent, and replicable manner. This approach allows for the identification of patterns and more reliable conclusions than conventional narrative reviews (Page et al., 2021).

2.5 Search Strategy

A systematic literature search was conducted on three major academic databases: Scopus, Web of Science (WoS), and ERIC in February 2025. The search string was constructed using a combination of English terms and Boolean operators:

TITLE-ABS-KEY(("curriculum development" OR "curriculum reform" OR "curriculum design" OR "curriculum change") AND ("higher education" OR "university" OR "tertiary education") AND ("international comparison" OR "cross-national" OR "global" OR "comparative") AND PUBYEAR > 2014)

Inclusion criteria: (1) scientific journal articles indexed by Scopus, WoS, or ERIC; (2) published between January 2015 and December 2024; (3) focused on higher education (college/university) curricula; (4) containing a cross-country or international comparative context; (5) empirical studies or systematic reviews with clear methods; and (6) available in English or Indonesian. Exclusion criteria: opinion/editorial articles, studies that only focus on one study program without a comparative context, and articles that are not available in full text.

2.6 Article Selection and PRISMA Procedures

The article selection process followed the four-stage PRISMA 2020 framework. The identification phase yielded 1,247 articles from three databases (Scopus: 612, WoS: 487, ERIC: 148). After removal of duplicates, 894 unique articles remained. Screening based on title and abstract yielded 187 articles that met the initial criteria. Full-text evaluation of these 187 articles yielded 52 articles that met all inclusion criteria and became the corpus for analysis in this SLR. The screening process was conducted independently by two researchers, with an inter-coder reliability of 0.87 (Cohen's Kappa), indicating near-perfect agreement.

2.7 Data Analysis

Data analysis was conducted in two stages. First, a descriptive analysis encompassed the temporal, geographic, and typological distribution of articles. Second, an inductive thematic analysis, following the approach of Thomas & Harden (2008), identified key recurring themes in the literature. Coding was performed using NVivo 14 software, and a conceptual map of the themes was constructed using a narrative synthesis approach following Cochrane guidelines.

3. Results

3.1 Study Characteristics

Of the 52 articles analyzed, the majority (67%) were published between 2019 and 2024, reflecting the acceleration of research on higher education curriculum reform in the wake of the COVID-19 pandemic. Geographically, the United States accounted for 18% of the articles,

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followed by the United Kingdom (12%), Australia (10%), Malaysia (9%), China (8%), Germany (7%), and other countries. Indonesia, despite having the largest higher education sector in Southeast Asia, only contributed 4% of the total articles, indicating a significant research gap.

Table 1. Distribution of Articles by Country/Region and Focus of Curriculum Reform

Country/Region	% Articles	Dominant Model	Main Issues
United States of America	18%	CBE & OBE	Employability, ABET accreditation, decolonizing the curriculum
English / Western Europe	19%	International curriculum	Post-Brexit, Bologna process, blended learning
Australia & Canada	10%	Work-Integrated Learning	Graduate employability, industry-based curriculum
China	8%	OBE + Nationalism	Balance of global standards vs. national values
Malaysia & ASEAN	9%	OBE via MQF	Quality assurance, digital infrastructure gap
Germany & Northern Europe	7%	Research-based curriculum	Humboldt model, digitalization, integrated STEM
India	5%	NEP 2020 + OBE	Multidisciplinary, inclusion, technology access
Indonesia	4%	Independent Learning-MBKM	Flexible curriculum, industry collaboration, digital literacy
Africa & Latin America	6%	Local OBE adaptation	Resource inequality, context relevance
Cross Country	14%	Comparative/Global SLR	Policy convergence, international harmonization

3.2 Five Main Models of Global Higher Education Curriculum Reform

3.2.1 Outcome-Based Education (OBE) Model

OBE is the most dominant curriculum reform model globally. Its fundamental principle is to orient all elements of the curriculum—including learning outcomes, teaching methods, and assessment systems—based on the competencies expected of graduates (Spady, 1994). A systematic study by Tan et al. (2018) and a recent analysis by OBE Discover Sustainability (2025) document the widespread adoption of OBE in North America, Asia, and parts of Africa.

In the United States and Canada, OBE is implemented through the ABET accreditation framework for engineering and science programs, and CAEP accreditation for education programs. In Malaysia, the Malaysian Qualifications Agency (MQA) requires all study programs to define clear and measurable learning outcomes. In India, the 2020 National Education Policy (NEP) comprehensively adopted OBE principles across all levels of higher

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education. In Indonesia, the KKNI (Indonesian National Qualifications Framework) and MBKM (Merdeka Belajar-Kampus Merdeka) frameworks integrate OBE principles with pedagogical flexibility (Kemendikbudristek, 2020).

The main challenges of OBE implementation include: difficulties in defining and measuring higher-order thinking learning outcomes, high administrative burdens for lecturers, and the risk of reducing free intellectual exploration in order to meet predetermined indicators (Morcke et al., 2013).

3.2.2 Cross-Disciplinary Competency-Based Curriculum Model (Europe)

In Europe, higher education curriculum reform has been largely influenced by the Bologna Process, which began in 1999 and continues to evolve. The Dublin Descriptors and the European Qualifications Framework (EQF) promote a curriculum oriented toward cross-disciplinary competencies—including technical, communication, leadership, and global citizenship. A study by Vandeput et al. (2025) shows that five visions of a competence-based curriculum have evolved in parallel across various European contexts, ranging from mere add-on courses to complete curriculum transformation.

The uniqueness of the European model lies in its emphasis on soft skills competencies and active citizenship, rather than simply work readiness. Germany and the Scandinavian countries maintain the Humboldtian tradition—which deeply integrates teaching and research—while adapting elements of modern competencies. This results in a more holistic model than the more labor-market-oriented OBE model (Kehm & Teichler, 2007).

3.2.3 Work-Integrated Learning / WIL Model (Australia & Canada)

Australia and Canada have developed Work-Integrated Learning (WIL) curriculum models that systematically integrate real-world work experiences into the academic curriculum. WIL includes structured internships, industry projects, professional studios, job simulations, and co-op programs that provide students with real-world work experience off-campus. Research by Jackson & Collings (2018) and Rowe et al. (2020) documented that WIL consistently improves graduates' employability, professional confidence, and workplace adaptability.

Key to the success of WIL is an active partnership between universities and industry in designing curricula, supervising internships, and evaluating student competency. Australia established WACE (World Association for Cooperative and Work-Integrated Education), which has become a platform for the exchange of best WIL practices globally. This model has become even more relevant post-pandemic as industry demand for graduates with practical work experience increases.

3.2.4 Research-Based Curriculum Model

World-class universities in Northern Europe (particularly Germany, the Netherlands, and the Scandinavian countries), the United Kingdom (Oxford, Cambridge), and the United States (MIT, Harvard) have maintained and developed a research-based curriculum model rooted in the Humboldtian tradition. In this model, students not only learn from existing knowledge but are also invited to participate in the process of knowledge production through research, projects, and inquiry (Brew, 2013).

Comparative studies by Healey et al. (2014) and Trowler & Wareham (2008) identified four research-based curriculum orientations: research-led (following a research agenda), research-tutored (discussing research in tutorials), research-oriented (developing research capacity), and research-based (research projects as the core of the curriculum). These models

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are increasingly important in an era where critical, analytical, and innovative thinking skills are key competencies required in the 21st century.

3.2.5 Post-COVID-19 Digital-Transformative Curriculum Model

The COVID-19 pandemic (2020-2022) forced universities worldwide to undertake a massive and sudden digital curriculum transformation. This initial crisis response later evolved into more planned and systemic reforms. A study by Tikhonova & Raitskaya (2025) identified digital transformation and AI integration as the most dominant themes in higher education research from 2024 to 2025.

The digital-transformative curriculum model includes: (1) blended/hybrid learning as a new standard curriculum format; (2) integration of digital competencies and data literacy as mandatory outcomes across study programs; (3) personalized learning assisted by AI and learning analytics; (4) a curriculum based on micro-credentials and stackable credentials that is more modular and flexible; and (5) integration of Open Educational Resources (OER) and massive open online courses (MOOCs) platforms into the formal curriculum.

3.3 Cross-Country Comparison: Case Studies

Table 2. Comparison of Higher Education Curriculum Reform Approaches in Selected Countries

Country	Main Policy	Curriculum Model	Key Achievements	Main Challenges
US & Canada	ABET, ABA, CAEP accreditation	CBE + OBE hybrid	High employability, work readiness	Education costs, access gap
German	Bologna Process, Exzellenz-initiative	Research-based + CBE	Integrated research, industrial innovation	Slow digitalization, curriculum rigidity
English	Teaching Excellence Framework (TEF)	OBE + Interdisciplinary	Standardized graduate outcomes	Brexit, decline in EU students
Australia	Australian Qualifications Framework	WIL + OBE	Employability & work readiness	International student dependency
China	MOE Double First-Class	OBE + national values	Global research, high STEM achievements	Global vs national balance
Malaysia	MQF, MQA standards	National compulsory OBE	International accreditation increases	Infrastructure, quality of teachers

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Country	Main Policy	Curriculum Model	Key Achievements	Main Challenges
India	NEP 2020	Multidisciplinary OBE	Flexibility & inclusivity	The gap between IIT vs regular colleges
Indonesia	KKNI + MBKM	Freedom to Learn OBE	Student industry experience	Uneven digital infrastructure
Finland	Phenomenon-based learning	PBL + Research-based	21st century literacy, independent learning	Scalability to other contexts

3.4 Critical Challenges of Curriculum Reform Implementation

3.4.1 Implementation Gap: Between Policy and Practice

The first and most dominant challenge identified in the literature is the significant gap between ambitious curriculum reform policies and the reality of classroom implementation. In the context of OBE, the challenges of integrating outcome-based education (OBE) in HEIs include seven critical dimensions: (1) burdensome ongoing assessment, (2) inefficient time and resource management, (3) inadequate development of learning materials, (4) resistance to changing teacher mindsets, (5) complex curriculum redesign, (6) increasing the capacity of lecturers as facilitators, and (7) diversification of assessment methods (HRMARS, 2024).

This phenomenon is also observed in the context of curriculum internationalization, where many universities have comprehensive IoC policies but their implementation is limited to cosmetic changes such as the addition of international references without true pedagogical transformation (Leask, 2015). Cuong et al. (2024) found that the dominance of the Global North in IoC discourse creates curriculum models that do not always fit the epistemological context and local needs.

3.4.2 Faculty Resistance and Institutional Inertia

The second challenge is resistance from within the academic community itself. Lecturers and professors, particularly at universities with long academic traditions, often view competency-based curriculum reforms as a threat to academic autonomy and a degradation of intellectual depth for the sake of short-term job market pragmatism (Vandeput et al., 2025). Kang et al.'s (2025) umbracle review analysis found that faculty resistance is a major obstacle to CBE implementation across various global contexts.

Institutional inertia also stems from hierarchical and slow-to-change university governance structures, excessively long curriculum review cycles (typically every 4-5 years), and a mismatch between academic incentive systems (which reward research) and the demands of teaching and curriculum reform. Identified solutions include: transformative leadership from university leaders, ongoing faculty professional development programs, and incentive systems that reward teaching innovation equally with research productivity.

3.4.3 Technological Resource Gap and Digital Divide

A third challenge, particularly relevant post-pandemic, is the significant gap in technological resources between countries and even between institutions within a single country. A systematic study of educators' digital competencies in higher education (MDPI,

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2024) found that while DigCompEdu is the dominant framework in Europe, there are significant gaps in the validation of assessment instruments in Asia—reflecting unequal access to digital technology and training. In developing countries, digital curriculum transformation is often hampered by inadequate internet infrastructure, limited student device ownership, and faculty capacity to effectively utilize learning technologies.

4. Discussion

Global Convergence vs. Local Diversity

The main findings of this study confirm the dual convergence-divergence thesis in global higher education curriculum reform. On the one hand, there is a strong convergence towards OBE principles, internationalization, and curriculum digitalization driven by pressures from international accreditation, global competition, and UNESCO's SDGs agenda. On the other hand, implementation varies widely depending on the historical, cultural, economic, and political context of each country.

This convergence does not always result in the homogenization of curriculum that some academics worry. A study by Zapp & Lerch (2020) shows that the adoption of global curriculum frameworks (such as OBE or the Dublin Descriptors) often undergoes recontextualization—a process in which global elements are adapted, modified, and integrated into local contexts, resulting in unique hybrids. Indonesia, with its MBKM (Educational Learning), China, with its balance of OBE and national values, and Finland, with its phenomenon-based learning, each offer examples of productive recontextualization.

Implications of the Industrial Revolution 4.0 and Society 5.0

All curriculum reform models identified in this study, to varying degrees, respond to the demands of the Industrial Revolution 4.0 and the vision of Society 5.0. Digital competencies, data literacy, computational thinking skills, interdisciplinary collaboration, and artificial intelligence are increasingly becoming integral components of curricula across countries. However, there is significant variation in how systematically and deeply this integration is implemented.

Tikhonova & Raitskaya (2025) identified that technology and digital transformation, as well as AI integration and AI competency development, were the most widely discussed themes in higher education research from 2024 to 2025. This indicates that higher education curricula now face a fundamental new challenge: how to prepare students to work alongside AI, not just understand it.

The Role of the COVID-19 Pandemic as a Catalyst

The COVID-19 pandemic has had a paradoxically transformative impact on higher education curricula. On the one hand, it has forced the massive and rapid adoption of digital learning technologies, in many cases accelerating previously slow-moving reforms. On the other hand, it has exacerbated inequalities in educational access, increased student mental stress, and exposed previously hidden weaknesses in digital infrastructure. Studies consistently show that universities that had previously invested in digital curriculum reforms experienced significantly greater resilience during the pandemic.

Recommendations for Higher Education Institutions

Recommendation 1: Adopt a Competency-Contextual Hybrid Curriculum Model

Universities are advised not to adopt a monolithic curriculum reform model, but rather to develop hybrid models that combine the strengths of various approaches tailored to the

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institutional context. For example, a combination of OBE (for clarity of outcomes and accountability) with elements of WIL (for industry relevance), research-based learning (for intellectual depth), and strengthening local/indigenous knowledge (for contextual relevance) is recommended. A universal curriculum design framework validated for various cultural contexts needs to be developed and disseminated.

Recommendation 2: Sustainable Investment in Lecturer Professional Development

Lecturer resilience and capacity are key determinants of the success of curriculum reform. Higher education institutions need to invest in systematic, sustainable, and practice-oriented faculty professional development programs. These programs should include training in OBE-based curriculum design, innovative pedagogy (PBL, flipped classroom, gamification), digital literacy and AI, and authentic assessment skills. An incentive system that rewards teaching innovation equally with research productivity needs to be consistently implemented.

Recommendation 3: Building a Structural University-Industry Partnership Ecosystem

The relevance of higher education curricula in the Society 5.0 era depends heavily on the active involvement of industry and society in curriculum design, implementation, and evaluation. Institutions need to establish structural partnership mechanisms—not just ad-hoc internship programs—that provide space for industry representation on curriculum boards, joint course development, professional mentoring, and joint applied research projects. The Australian WIL model can serve as a reference, adapted to local contexts.

Recommendation 4: Strengthening Inclusion and Decolonizing the Curriculum

Higher education curricula need to proactively incorporate more diverse perspectives, including local/indigenous knowledge and epistemologies, gender perspectives, and the voices of communities that have been marginalized from mainstream academic discourse. Concrete steps include: critically reviewing Global North bias in curricula and required reading references; developing teaching materials that reflect local contexts and richness; and designing learning experiences that recognize and value the diversity of students' backgrounds.

Recommendation 5: Systematic Integration of Digital Competence and AI in the Curriculum

Amidst digital transformation and the era of generative AI, every study program—without exception—needs to integrate digital competencies as standardized, cross-curricular outcomes. This goes beyond software skills to encompass data literacy, digital ethics, computational thinking skills, and critical AI literacy. The European-developed DigCompEdu framework can serve as a reference with contextual adaptations. Governments and institutions need to collaborate to provide equitable and accessible technology infrastructure for all students.

Recommendations for Policy Makers

For national policymakers, this study suggests five strategic steps. First, develop a national qualifications framework (NQF) that is internationally compatible yet flexible enough to accommodate local curriculum innovation. Second, invest in external quality assurance systems that encourage innovation beyond procedural compliance. Third, facilitate cross-institutional and cross-national collaboration in curriculum development and resource sharing. Fourth, implement affirmative action policies to address the digital divide in higher education. Fifth, conduct publicly funded longitudinal research to evaluate the long-term impact of curriculum reforms on student and societal outcomes.

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5. Conclusion

This Systematic Literature Review has successfully mapped the development of higher education curricula in various countries from 2015 to 2025 through a systematic analysis of 52 scientific articles. Five main models of curriculum reform were identified: OBE, interdisciplinary competency-based curriculum, Work-Integrated Learning, research-based curriculum, and digital-transformative curriculum. Each model has distinct strengths, limitations, and implementation contexts.

This research also identified three critical challenges across contexts: the gap between policy and actual implementation, faculty resistance and institutional inertia, and the technological resource gap that creates disparities in educational quality. Five evidence-based recommendations have been formulated to address these challenges.

The findings of this study confirm that no single model of higher education curriculum is universally superior. The success of curriculum reform depends on the alignment of the adopted model with the institutional context, human resource capacity, leadership commitment, and authentic stakeholder engagement. Further research, particularly longitudinal and comparative studies with stronger representation from the Global South, is essential to generate a more comprehensive and equitable understanding of global higher education curriculum development.

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